ประกาศกรมเจ้าท่า

ที่ ๒๓๗/๒๕๖๖

เรื่อง การดำเนินการต่อสิ่งของที่อาจทำให้เกิดอันตรายขึ้นได้ทางน้ำระหว่างประเทศ

ตามที่องค์การทางทะเลระหว่างประเทศ (International Maritime Organization) ได้กำหนดในอนุสัญญาระหว่างประเทศว่าด้วยความปลอดภัยแห่งชีวิตในทะเล ค.ศ. ๑๙๗๔ และที่แก้ไขเพิ่มเติม (International Convention for the Safety of Life at Sea, 1974 as amended (SOLAS 1974)) บทที่ VII Carriage of dangerous goods ให้ใช้ประมวลข้อบังคับว่าด้วยการขนส่งสิ่งของที่อาจทำให้เกิดอันตรายขึ้นได้ทางน้ำระหว่างประเทศ (International Maritime Dangerous Goods Code: IMDG Code) ดังนั้น เพื่อให้การปฏิบัติตามพันธกรณีระหว่างประเทศเป็นไปตามหลักเกณฑ์และมาตรฐานสากล รวมถึงการบังคับใช้กฎหมายมีประสิทธิภาพและเกิดประสิทธิผลสูงสุด ตลอดจนไม่เป็นภาระแก่ผู้ประกอบการโดยไม่จำเป็น

อาศัยอำนาจตามความในมาตรา ๑๙๐ แห่งพระราชบัญญัติการเดินเรือในน่านน้ำไทย พระพุทธศักราช ๒๔๕๖ แก้ไขเพิ่มเติมโดยพระราชบัญญัติการเดินเรือในน่านน้ำไทย (ฉบับที่ ๑๔) พ.ศ. ๒๕๓๕ และข้อ ๑๗ แห่งกฎกระทรวงการดำเนินการสำหรับสิ่งของที่อาจทำให้เกิดอันตรายขึ้นได้ พ.ศ. ๒๕๖๔ อธิบดีกรมเจ้าท่า จึงออกประกาศไว้ ดังต่อไปนี้

ข้อ ๑ ประกาศนี้ให้ใช้บังคับนับถัดจากวันที่ประกาศในราชกิจจานุเบกษาเป็นต้นไป

ข้อ ๒ ให้ยกเลิกประกาศกรมเจ้าท่า ที่ ๑๙๑/๒๕๖๕ เรื่อง การดำเนินการต่อสิ่งของที่อาจทำให้เกิดอันตรายขึ้นได้ทางน้ำระหว่างประเทศ ลงวันที่ ๒๕ สิงหาคม ๒๕๖๕

ข้อ ๓ ให้นายเรือ เจ้าของเรือ ตัวแทนเจ้าของเรือ ผู้ส่งสินค้าทางเรือ และผู้รับขนสินค้าทางเรือดำเนินการปรับใช้แนวทางและข้อกำหนดเกี่ยวกับการบรรจุหีบห่อ การจัดเก็บ การจัดแยก การจัดทำและแสดงเครื่องหมาย การจัดให้มีเอกสารที่จำเป็น และการขนถ่ายสิ่งของที่อาจทำให้เกิดอันตรายขึ้นได้ ทั้งนี้ ให้เป็นไปโดยสอดคล้องกับประมวลข้อบังคับว่าด้วยการขนส่งสิ่งของที่อาจทำให้เกิดอันตรายขึ้นได้ทางน้ำระหว่างประเทศ (IMDG Code) โดยรายละเอียดเป็นไปตามภาคผนวกที่แนบท้ายประกาศนี้

ประกาศ ณ วันที่ ๒๙ สิงหาคม พ.ศ. ๒๕๖๖
กริชเพชร ชัยช่วย
ผู้ตรวจราชการกระทรวงคมนาคม รักษาราชการแทน
อธิบดีกรมเจ้าท่า

ภาคผนวก

ประมวลข้อบังคับว่าด้วยการขนส่งสิ่งของที่อาจทำให้เกิดอันตรายขึ้นได้ทางน้ำระหว่างประเทศ (การแก้ไขเพิ่มเติมที่ ๔๑-๒๒)

International Maritime Dangerous Goods Code (IMDG Code)

(Amendment 41-22)

International Maritime Dangerous Goods Code (IMDG Code) (Amendment 41-22)

ประมวลข้อบังคับว่าด้วยการขนส่งสิ่งของที่อาจทำให้เกิดอันตรายขึ้นได้ทางน้ำระหว่างประเทศ (การแก้ไขเพิ่มเติมที่ ๔๑-๒๒)

สารบัญ

ส่วนที่ ๔ ข้อกำหนดการบรรจุและการใช้แท็งก์ (part 4, Packing and tank provisions)

(๑) การใช้บรรจุภัณฑ์รวมทั้งบรรจุภัณฑ์สินค้าเทกองขนาดกลาง (IBCs) และบรรจุภัณฑ์ขนาดใหญ่ (Use of packaging, including intermediate bulk containers (IBCs) and large packaging) (part 4, chapter 4.1)

(๒) การใช้แท็งก์ที่ยกและเคลื่อนย้ายได้และภาชนะบรรจุก๊าซแบบกลุ่ม (MEGCs) (Use of portable tanks and multiple-element gas containers (MEGCs)) (part 4, chapter 4.2)

(๓) การใช้บรรจุภัณฑ์สินค้าเทกอง (Use of bulk containers) (part 4, chapter 4.3)

ส่วนที่ ๕ ขั้นตอนการนำส่งสินค้าอันตราย (part 5, Consignment procedures)

(๑) ข้อกำหนดทั่วไป (General provisions) (part 5, chapter 5.1)

(๒) การทำเครื่องหมายและติดฉลากรวมถึงบรรจุภัณฑ์สินค้าเทกองขนาดกลาง (IBCs) (Marking and labelling of packages including IBCs) (part 5, chapter 5.2)

(๓) ป้ายและเครื่องหมายที่ติดแสดงบนหน่วยบรรทุกสินค้าและตู้สินค้าเทกอง (Placarding and marking of cargo transport units and bulk containers) (part 5, chapter 5.3)

(๔) เอกสารกำกับการขนส่งสินค้าอันตราย (Documentation) รวมถึงเอกสารที่ต้องมีบนเรือ และระเบียบปฏิบัติการตอบสนองฉุกเฉินสำหรับเรือบรรทุกสินค้าอันตราย (EMS Guide) (part 5, chapter 5.4) (Emergency response procedures for ships carrying dangerous goods (EMS Guide)

(๕) ข้อกำหนดพิเศษ (Special provisions) (part 5, chapter 5.5)

ส่วนที่ ๖ ข้อกำหนดสำหรับการสร้างและการทดสอบบรรจุภัณฑ์แบบสินค้าเทกองขนาดกลาง (IBCs) บรรจุภัณฑ์ขนาดใหญ่ แท็งก์ที่ยกและเคลื่อนย้ายได้ ภาชนะบรรจุก๊าซแบบกลุ่ม (MEGCs) และรถบรรทุกแท็งก์ (part 6, Construction and testing of packaging, Intermediate Bulk Containers (IBCs), large packaging, portable tanks, Multiple-Element Gas Containers (MEGCs) and road tank vehicles)

(๑) ข้อกำหนดในการสร้างและทดสอบบรรจุภัณฑ์ (Provisions for the construction and testing of packaging) (part 6, chapter 6.1)

(๒) ข้อกำหนดสำหรับการสร้างและการทดสอบภาชนะปิดรับความดัน ภาชนะปิดบรรจุสารที่ฉีดเป็นละออง และภาชนะปิดขนาดเล็กที่บรรจุก๊าซ และเซลล์เชื้อเพลิงที่บรรจุก๊าซเหลวไวไฟ (Provisions for the construction and testing of pressure receptacles, aerosol dispensers, small receptacles containing gas (gas cartridges) and fuel cell cartridges containing liquefied flammable gas) (part 6, chapter 6.2)

(๓) ข้อกำหนดในการสร้างและทดสอบบรรจุภัณฑ์สำหรับสินค้าอันตรายประเภทที่ ๖.๒ สารติดเชื้อชนิด A (Provisions for the construction and testing of packaging for class 6. 2 infectious substances of category A (UN 2814 and UN 2900)) (part 6, chapter 6.3)

(๔) ข้อกำหนดในการต่อสร้าง การทดสอบ และการรับรองหีบห่อและวัสดุสำหรับสินค้าอันตรายวัสดุกัมมันตรังสี (ชั้นที่ ๗) และการรับรองวัสดุนั้น (Provisions for the construction, testing and approval of packages for radioactive material and for the approval of such material) (part 6, chapter 6.4)

(๕) ข้อกำหนดสำหรับการต่อสร้างและทดสอบภาชนะบรรจุสินค้าเทกองขนาดกลาง (IBCs) (Provisions for the construction and testing of Intermediate Bulk Containers (IBCs)) (part 6, chapter 6.5)

(๖) ข้อกำหนดสำหรับการสร้างและการทดสอบบรรจุภัณฑ์ขนาดใหญ่ (Provisions for the construction and testing of large packaging) (part 6, chapter 6.6)

(๗) ข้อกำหนดการออกแบบ การต่อสร้าง การตรวจสอบ และการทดสอบแท็งก์ที่ยกและเคลื่อนย้ายได้และภาชนะบรรจุก๊าซแบบกลุ่ม (Provisions for the design, construction, inspection and testing of portable tanks and Multiple-Element Gas Containers (MEGCs)) (part 6, chapter 6.7)

(๘) ข้อกำหนดสำหรับรถบรรทุกแท็งก์ และรถบรรทุกก๊าซแท็งก์ (Provisions for road tank vehicles and road gas elements vehicles) (part 6, chapter 6.8)

(๙) ข้อกำหนดสำหรับการออกแบบ การต่อสร้าง การตรวจสอบ และการทดสอบภาชนะบรรจุสินค้าเทกอง (Provisions for the design, construction, inspection and testing of bulk containers) (part 6, chapter 6.9)

(๑๐) ข้อกำหนดสำหรับการออกแบบ การต่อสร้าง การตรวจสอบ และการทดสอบภาชนะบรรจุภัณฑ์ประเภทวัสดุพาสติกเสริมเส้นใย (Provisions for the design, construction, inspection and testing of portable tanks with shells made of fibre-reinforced plastics (FRP) materials) (part 6, chapter 6.10)

ส่วนที่ ๗ ข้อกำหนดเกี่ยวกับเงื่อนไขการขนส่ง การบรรทุก การขนถ่ายและการขนย้าย (part 7, Provisions concerning transport operations)

(๑) ข้อกำหนดทั่วไปในการจัดเก็บสินค้า (General stowage provisions) (part 7, chapter 7.1)

(๒) ข้อกำหนดทั่วไปในการจัดแยกสินค้า (General segregation provisions) (part 7, chapter 7.2)

(๓) การดำเนินการขนส่งสินค้าโดยคำนึงถึง บรรจุภัณฑ์ หน่วยในการบรรทุกสินค้า (CTUs) และข้อกำหนดที่เกี่ยวข้อง (Consigning operations concerning the packing and use of Cargo Transport Units (CTUs) and related provisions) (IMDG Code part 7, chapter 7.3)

(๔) การจัดเก็บและการจัดแยกสินค้าในเรือประเภทบรรทุกตู้คอนเทนเนอร์ (Stowage and segregation on containerships) (IMDG Code part 7, chapter 7.4)

(๕) การจัดเก็บและการจัดแยกสินค้าในเรือประเภทบรรทุกรถยนต์ (Stowage and segregation on ro-ro ships) (IMDG Code part 7, chapter 7.5)

(๖) การจัดเก็บและการจัดแยกสินค้าในเรือประเภทบรรทุกสินค้าทั่วไป (Stowage and segregation on general cargo ships) (IMDG Code part 7, chapter 7.6)

(๗) การบรรทุกสินค้าอันตรายในเรือลำเรียง (Shipborne barges on barge-carrying ships) (IMDG Code part 7, chapter 7.7)

(๘) ข้อกำหนดพิเศษเมื่อเกิดอุบัติการณ์ต่างๆ และมาตรการป้องกันอัคคีภัยที่เกี่ยวข้องกับสินค้าอันตราย (Special requirements in the event of an incident and fire precautions involving dangerous goods) (IMDG Code part 7, chapter 7.8)

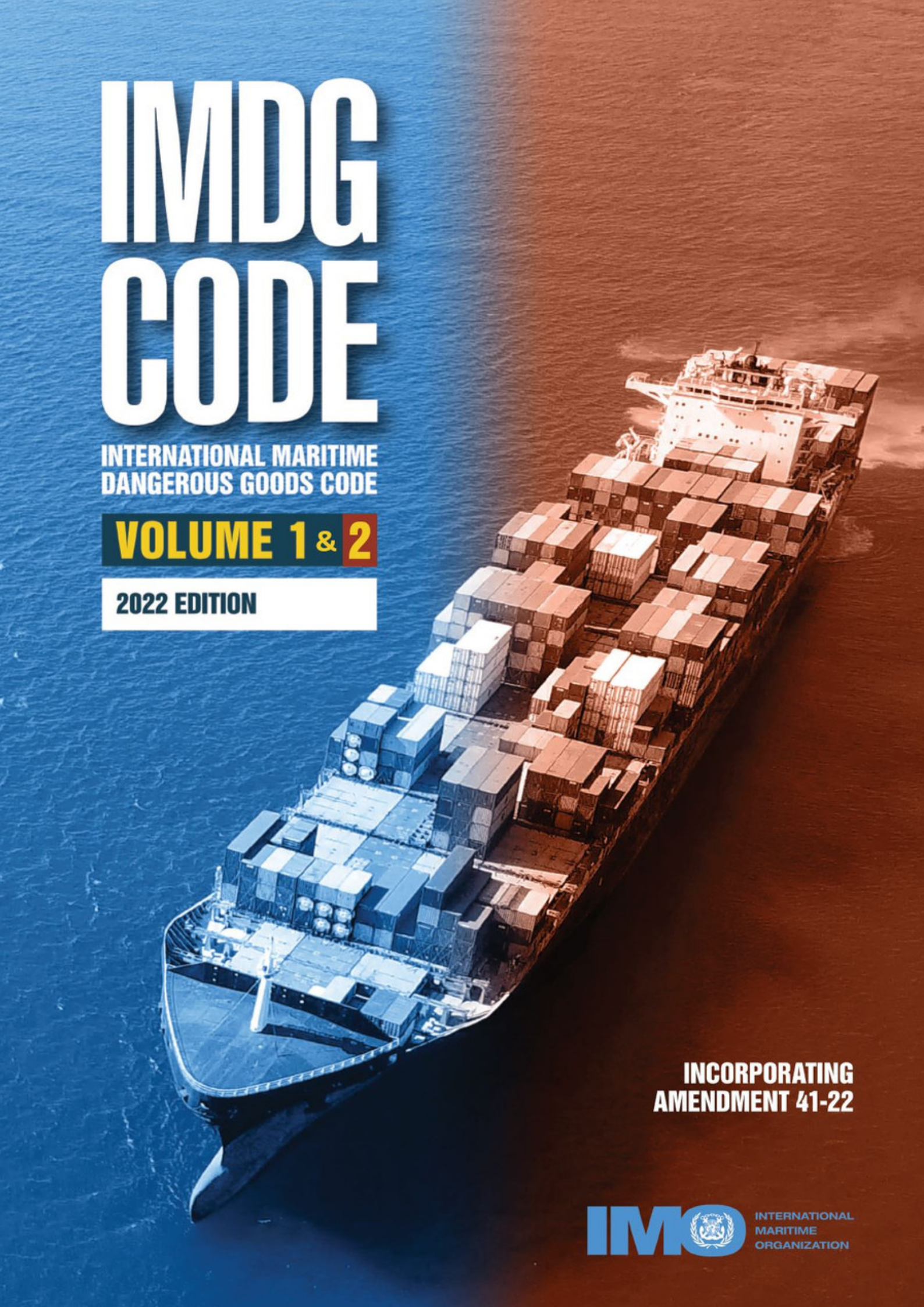
(๙) ข้อยกเว้น การรับรอง และใบสำคัญรับรอง (Exemptions, Approvals and Certificates) (IMDG Code part 7, chapter 7.9)

IMDG CODE

INTERNATIONAL MARITIME DANGEROUS GOODS CODE

VOLUME 1 & 2

2022 EDITION



INCORPORATING AMENDMENT 41-22

IMO INTERNATIONAL MARITIME ORGANIZATION

IMDG CODE

INTERNATIONAL MARITIME DANGEROUS GOODS CODE

VOLUME 1

2022 EDITION

INCORPORATING AMENDMENT 41-22

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Foreword

The International Convention for the Safety of Life at Sea, 1974 (SOLAS), as amended, deals with various aspects of maritime safety and contains in chapter VII the mandatory provisions governing the carriage of dangerous goods in packaged form or in solid form in bulk. The carriage of dangerous goods is prohibited except in accordance with the relevant provisions of chapter VII, which are amplified by the *International Maritime Dangerous Goods Code* (IMDG Code).

Regulation II-2/19 of the SOLAS Convention, as amended, specifies the special requirements for a ship intended to carry dangerous goods, the keel of which was laid or which was at a similar stage of construction on or after 1 July 2002.

The International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL), deals with various aspects of prevention of marine pollution, and contains in its Annex III the mandatory provisions for the prevention of pollution by harmful substances carried by sea in packaged form. Regulation 1(2) prohibits the carriage of harmful substances in ships except in accordance with the provisions of Annex III, which are also amplified by the IMDG Code.

In accordance with the Provisions concerning Reports on Incidents Involving Harmful Substances (Protocol I to MARPOL), incidents involving losses of such substances from ships must be reported by the master or other person having charge of the ship concerned.

The IMDG Code that was adopted by resolution A.716(17) and amended by amendments 27 to 30 was recommended to Governments for adoption or for use as the basis for national regulations in pursuance of their obligations under regulation VII/1.4 of the 1974 SOLAS Convention, as amended, and regulation 1(3) of Annex III of MARPOL. The IMDG Code, as amended, attained mandatory status from 1 January 2004 under the umbrella of SOLAS; however, some parts of the Code continue to be recommendatory. Observance of the Code harmonizes the practices and procedures followed in the carriage of dangerous goods by sea and ensures compliance with the mandatory provisions of the SOLAS Convention and of Annex III of MARPOL.

The Code, which sets out in detail the requirements applicable to each individual substance, material or article, has undergone many changes, in both layout and content, in order to keep pace with the expansion and progress of industry. IMO's Maritime Safety Committee (MSC) is authorized by the Organization's Assembly to adopt amendments to the Code, thus enabling IMO to respond promptly to developments in transport.

The MSC at its one hundred and fifth session agreed that, in order to facilitate the multimodal transport of dangerous goods, the provisions of the IMDG Code, 2022 edition, may be applied from 1 January 2023 on a voluntary basis, pending their official entry into force on 1 January 2024 without any transitional period. This is described in resolution MSC.501(105) and the Preamble to this Code. It needs to be emphasized that, in the context of the language of the Code, the words "shall", "should" and "may", when used in the Code, mean that the relevant provisions are "mandatory", "recommendatory" and "optional", respectively.

Reference marks

The following symbols placed against an item indicate changes from the previous edition, in accordance with Amendment 41-22 to the IMDG Code:

- ■ Insertion of an item
- ⊗ Deletion of an item
- △ Change to an item

The IMDG Code is also available as a fully searchable Internet (subscription) version. For more information, please visit the IMO Publishing Service website at www.imo.org. If and when required, the IMO website will also include any files that show errata or corrigenda to this edition of the IMDG Code.

Preamble

1 Carriage of dangerous goods by sea is regulated in order to reasonably prevent injury to persons or damage to ships and their cargoes. Carriage of marine pollutants is primarily regulated to prevent harm to the marine environment. The objective of the IMDG Code is to enhance the safe carriage of dangerous goods while facilitating the free unrestricted movement of such goods and prevent pollution to the environment.

2 Over the years, many maritime countries have taken measures to regulate the transport of dangerous goods by sea. The various regulations, codes and practices, however, differed in their framework and, in particular, in the identification and labelling of such goods. Both the terminology used and the provisions for packaging and stowage varied from country to country and created difficulties for all directly or indirectly concerned with the transport of dangerous goods by sea.

3 The need for international regulation of the transport of dangerous goods by sea was recognized by the 1929 International Conference on Safety of Life at Sea (SOLAS), which recommended that rules on the subject have international effect. The classification of dangerous goods and certain general provisions concerning their transport in ships were adopted by the 1948 SOLAS Conference. This Conference also recommended further study with the object of developing international regulations.

4 Meanwhile, the Economic and Social Council of the United Nations had appointed an ad hoc Committee of Experts on the Transport of Dangerous Goods (UN Committee of Experts), which had been actively considering the international aspect of the transport of dangerous goods by all modes of transport. This committee completed a report in 1956 dealing with classification, listing and labelling of dangerous goods and with the transport documents required for such goods. This report, with subsequent modifications, offered a general framework to which existing regulations could be harmonized and within which they could be further developed. The primary goal being world-wide uniformity for regulations concerning the transport of dangerous goods by sea as well as other modes of transport.

5 As a further step towards meeting the need for international rules governing the transport of dangerous goods in ships, the 1960 SOLAS Conference, in addition to laying down a general framework of provisions in chapter VII of the SOLAS Convention, invited IMO (Recommendation 56) to undertake a study with a view to establishing a unified international code for the transport of dangerous goods by sea. This study would be pursued in cooperation with the UN Committee of Experts and should take account of existing maritime practices and procedures. The Conference further recommended that the unified code be prepared by IMO and that it be adopted by the Governments that were Parties to the 1960 Convention.

6 To implement Recommendation 56, IMO's Maritime Safety Committee (MSC) appointed a working group drawn from those countries having considerable experience in the transport of dangerous goods by sea. Preliminary drafts for each class of substances, materials and articles were subsequently brought under close scrutiny by the working group to take into account throughout the practices and procedures of a number of maritime countries in order to make the Code as widely acceptable as possible. This new *International Maritime Dangerous Goods Code* (IMDG Code) was approved by the MSC and recommended to Governments by the Assembly of IMO in 1965.

7 During another SOLAS Conference held in 1974, chapter VII of the Convention remained essentially unchanged. Since that date, several amendments to chapter VII adopted by the MSC have entered into force. Although invoked by a footnote reference in regulation 1 of chapter VII, the IMDG Code itself had only recommendatory status until 31 December 2003.

8 At the International Conference on Marine Pollution, 1973, the need was recognized to preserve the marine environment. It was further recognized that negligent or accidental release of marine pollutants transported by sea in packaged form should be minimized. Consequently, provisions were established and adopted by the Conference, and are contained in Annex III of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL). The Marine Environment Protection Committee (MEPC) decided in 1985 that Annex III should be implemented through the IMDG Code. This decision was also endorsed by the MSC in 1985. Since that date, several amendments to Annex III to MARPOL have entered into force.

9 The UN Committee of Experts has continued to meet until the present day and its published *Recommendations on the Transport of Dangerous Goods* are updated biennially. In 1996, the MSC agreed that the IMDG Code should be reformatted consistent with the format of the UN *Recommendations on the Transport of Dangerous Goods*. The consistency in format of the UN Recommendations, the IMDG Code and other dangerous goods transport regulations is intended to enhance user-friendliness, compliance with the regulations, and the safe transport of dangerous goods.

10 In 2002, the MSC adopted amendments to SOLAS chapter VII to make the IMDG Code mandatory, which came into force on 1 January 2004. Since then, further amendments were adopted to facilitate user friendliness and promote uniform implementation of the Code. In addition, at its one hundred and fifth session in April 2022, the MSC adopted Amendment 41-22 to the mandatory IMDG Code, which will enter into force on 1 January 2024 without any transitional period. However, in accordance with resolution MSC.501(105), Governments were encouraged to apply this amendment in whole or in part on a voluntary basis from 1 January 2023.

11 In order to keep the Code up to date from the maritime transport operational aspect, the MSC will continue to take into account technological developments, as well as changes to chemical classifications and the related consignment provisions that primarily concern the shipper/consignor. The two-year periodicity of amendments to the UN Recommendations on Transport of Dangerous Goods will also provide the source of most future updating of the IMDG Code.

12 The MSC will also have regard to future implications for the carriage of dangerous goods by sea, in particular, arising from any acceptance by the UN Conference on Environmental Development (UNCED) of common criteria for the classification of chemicals on the basis of a Global Harmonization System (GHS).

13 Attention is drawn to IMO document FAL.6/Circ.14/Rev.1, a list of existing publications relevant to areas and topics relating to ship/port interface matters.

14 Advice on emergency procedures and for initial management of chemical poisoning and diagnosis that may be used in conjunction with the IMDG Code is published separately in The EmS Guide*: Revised Emergency Response Procedures for Ships Carrying Dangerous Goods (MSC.1/Circ.1588/Rev.2) and in the Medical First Aid Guide for Use in Accidents Involving Dangerous Goods (MFAG*) (see MSC/Circ.857 and DSC 3/15/Add.2), respectively.

15 In addition, referring to part D of chapter VII of the SOLAS Convention, a ship transporting INF cargo, as defined in regulation VII/14.2, shall comply with the requirements of the International Code for the Safe Carriage of Packaged Irradiated Nuclear Fuel, Plutonium and High-Level Radioactive Wastes on board Ships (INF Code*).

* The EmS Guide, MFAG and the INF Code are reproduced in the Supplement to the IMDG Code.

PART 1

GENERAL PROVISIONS, DEFINITIONS AND TRAINING

Chapter 1.1

General provisions

1.1.0 Introductory note

It should be noted that other international and national modal regulations exist and that those regulations may recognize all or part of the provisions of this Code. In addition, port authorities and other bodies and organizations should recognize the Code and may use it as a basis for their storage and handling bye-laws within loading and discharge areas.

1.1.1 Application and implementation of the Code

1.1.1.1 The provisions contained in this Code are applicable to all ships to which the International *Convention for the Safety of Life at Sea, 1974* (SOLAS), as amended, applies and which are carrying dangerous goods as defined in regulation 1 of part A of chapter VII of that Convention.

1.1.1.2 The provisions of regulation II-2/19 of that Convention apply to passenger ships and to cargo ships constructed on or after 1 July 2002.

For:

.1 a passenger ship constructed on or after 1 September 1984 but before 1 July 2002; or

.2 a cargo ship of 500 gross tons or over constructed on or after 1 September 1984 but before 1 July 2002; or

.3 a cargo ship of less than 500 gross tons constructed on or after 1 February 1992 but before 1 July 2002,

the requirements of regulation II-2/54 of SOLAS, as amended by resolutions MSC.1(XLV), MSC.6(48), MSC.13(57), MSC.22(59), MSC.24(60), MSC.27(61), MSC.31(63) and MSC.57(67), apply (see II-2/1.2).

For cargo ships of less than 500 gross tons constructed on or after 1 September 1984 and before 1 February 1992, it is recommended that Contracting Governments extend such application to these cargo ships as far as possible.

1.1.1.3 All ships, irrespective of type and size, carrying substances, materials or articles identified in this Code as marine pollutants are subject to the provisions of this Code.

1.1.1.4 In certain parts of this Code, a particular action is prescribed, but the responsibility for carrying out the action is not specifically assigned to any particular person. Such responsibility may vary according to the laws and customs of different countries and the international conventions into which these countries have entered. For the purpose of this Code, it is not necessary to make this assignment, but only to identify the action itself. It remains the prerogative of each Government to assign this responsibility.

1.1.1.5 Although this Code is legally treated as a mandatory instrument under chapter VII of SOLAS, as amended, the following provisions of the Code remain recommendatory:

.1 paragraph 1.1.1.8 (Notification of infringements);

.2 paragraphs 1.3.1.4 to 1.3.1.7 (Training);

.3 chapter 1.4 (Security provisions) except 1.4.1.1, which is mandatory;

.4 section 2.1.0 of chapter 2.1 (Class 1 – Explosives, Introductory notes);

.5 section 2.3.3 of chapter 2.3 (Determination of flashpoint);

.6 columns 15 and 17 of the Dangerous Goods List in chapter 3.2;

.7 the segregation flow chart and example in the annex to chapter 7.2;

.8 section 5.4.5 of chapter 5.4 (Multimodal Dangerous Goods Form), insofar as the layout of the form is concerned;

.9 chapter 7.8 (Special requirements in the event of an incident and fire precautions involving dangerous goods);

.10 section 7.9.3 (Contact information for the main designated national competent authorities); and

.11 appendix B.

1.1.1.6 Application of standards

Where the application of a standard is required and there is any conflict between the standard and the provisions of this Code, the provisions of this Code take precedence. The requirements of the standard that do not conflict with the provisions of this Code shall be applied as specified, including the requirements of any other standard, or part of a standard, referenced within that standard as normative.

1.1.1.7 Transport of dangerous goods used as a coolant or conditioner

Dangerous goods, that are only asphyxiant (which dilute or replace the oxygen normally in the atmosphere), when used in cargo transport units for cooling or conditioning purposes are only subject to the provisions of section 5.5.3.

Note: When carried on board as ship's stores or equipment, these coolants and conditioners are not subject to the provisions of this Code.

1.1.1.8 Notification of infringements

When a competent authority has reasons to believe that the safety of the transport of dangerous goods is compromised as a result of serious or repeated infringements of this Code by an enterprise which has its headquarters on the territory of another competent authority, it should if necessary notify that competent authority of such infringements.

1.1.1.9 Lamps containing dangerous goods

The following lamps are not subject to this Code provided that they do not contain radioactive material and do not contain mercury in quantities above those specified in special provision 366 of chapter 3.3:

.1 lamps that are collected directly from individuals and households when transported to a collection or recycling facility;

.2 lamps each containing not more than 1 g of dangerous goods and packaged so that there is not more than 30 g of dangerous goods per package, provided that:

(i) the lamps are manufactured according to a certified quality management system;

Note: The application of ISO 9001:2008 may be considered acceptable for this purpose.

and

(ii) each lamp is either individually packed in inner packagings, separated by dividers, or surrounded with cushioning material to protect the lamps and packed into strong outer packagings meeting the general provisions of 4.1.1.1 and capable of passing a 1.2 m drop test.

.3 used, damaged or defective lamps each containing not more than 1 g of dangerous goods with not more than 30 g of dangerous goods per package when transported from a collection or recycling facility. The lamps shall be packed in strong outer packagings sufficient for preventing release of the contents under normal conditions of transport meeting the general provisions of 4.1.1.1 and that are capable of passing a drop test of not less than 1.2 m.

Note: Lamps containing radioactive material are addressed in 2.7.2.2.2.2.

.4 lamps containing only gases of class 2.2 (according to 2.2.2.2) provided they are packaged so that the projectile effects of any rupture of the bulb will be contained within the package.

1.1.1.10 Dangerous goods in equipment in use or intended for use during transport

For dangerous goods in equipment in use or intended for use during transport, see section 5.5.4.

1.1.2 Conventions

1.1.2.1 International Convention for the Safety of Life at Sea, 1974

Part A of chapter VII of the International Convention for the Safety of Life at Sea, 1974 (SOLAS), as amended, deals with the carriage of dangerous goods in packaged form, and is reproduced in full:

Chapter VII
Carriage of dangerous goods

Part A
Carriage of dangerous goods in packaged form

Regulation 1
Definitions

For the purpose of this chapter, unless expressly provided otherwise:

1 *IMDG Code* means the International Maritime Dangerous Goods (IMDG) Code adopted by the Maritime Safety Committee of the Organization by resolution MSC.122(75), as may be amended by the Organization, provided that such amendments are adopted, brought into force and take effect in accordance with the provisions of article VIII of the present Convention concerning the amendment procedures applicable to the annex other than chapter I.

2 *Dangerous goods* mean the substances, materials and articles covered by the IMDG Code.

3 *Packaged form* means the form of containment specified in the IMDG Code.

Regulation 2
Application[*]

1 Unless expressly provided otherwise, this part applies to the carriage of dangerous goods in packaged form in all ships to which the present regulations apply and in cargo ships of less than 500 gross tonnage.

2 The provisions of this part do not apply to ships' stores and equipment.

3 The carriage of dangerous goods in packaged form is prohibited except in accordance with the provisions of this chapter.

4 To supplement the provisions of this part, each Contracting Government shall issue, or cause to be issued, detailed instructions on emergency response and medical first aid relevant to incidents involving dangerous goods in packaged form, taking into account the guidelines developed by the Organization.[†]

Regulation 3
Requirements for the carriage of dangerous goods

The carriage of dangerous goods in packaged form shall be in compliance with the relevant provisions of the IMDG Code.

Regulation 4
Documents

1 Transport information relating to the carriage of dangerous goods in packaged form and the container/vehicle packing certificate shall be in accordance with the relevant provisions of the IMDG Code and shall be made available to the person or organization designated by the port State authority.

2 Each ship carrying dangerous goods in packaged form shall have a special list, manifest or stowage plan setting forth, in accordance with the relevant provisions of the IMDG Code, the dangerous goods on board and the location thereof. A copy of one of these documents shall be made available before departure to the person or organization designated by the port State authority.

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[*] Refer to:
.1 part D which contains special requirements for the carriage of INF cargo; and
.2 regulation II-2/19, which contains special requirements for ships carrying dangerous goods.

[†] Refer to:
.1 the *Revised Emergency Response Procedures for Ships Carrying Dangerous Goods* (EmS Guide) (MSC.1/Circ.1588/Rev.2); and
.2 the *Medical First Aid Guide for Use in Accidents Involving Dangerous Goods* (MFAG).
These Guides are reproduced in the Supplement to the IMDG Code published by the Organization.

Regulation 5
Cargo Securing Manual

Cargo, cargo units* and cargo transport units shall be loaded, stowed and secured throughout the voyage in accordance with the Cargo Securing Manual approved by the Administration. The Cargo Securing Manual shall be drawn up to a standard at least equivalent to the guidelines developed by the Organization.†

Regulation 6
Reporting of incidents involving dangerous goods

1 When an incident takes place involving the loss or likely loss overboard of dangerous goods in packaged form into the sea, the master, or other person having charge of the ship, shall report the particulars of such an incident without delay and to the fullest extent possible to the nearest coastal State. The report shall be drawn up based on general principles and guidelines developed by the Organization.‡

2 In the event of the ship referred to in paragraph 1 being abandoned, or in the event of a report from such a ship being incomplete or unobtainable, the company, as defined in regulation IX/1.2, shall, to the fullest extent possible, assume the obligations placed upon the master by this regulation.

1.1.2.2 International Convention for the Prevention of Pollution from Ships (MARPOL)

1.1.2.2.1 Annex III of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL), deals with the prevention of pollution by harmful substances carried by sea in packaged form and is reproduced in full, as revised by the Marine Environment Protection Committee.

Annex III
Regulations for the prevention of pollution by harmful substances carried by sea in packaged form

Chapter 1 – General

Regulation 1
Definitions

Definitions

1 For the purposes of this Annex:

Harmful substances are those substances which are identified as marine pollutants in the International Maritime Dangerous Goods Code (IMDG Code)§ or which meet the criteria in the appendix of this Annex.

2 *Packaged form* is defined as the forms of containment specified for harmful substances in the IMDG Code.

3 *Audit* means a systematic, independent and documented process for obtaining audit evidence and evaluating it objectively to determine the extent to which audit criteria are fulfilled.

4 *Audit Scheme* means the IMO Member State Audit Scheme established by the Organization and taking into account the guidelines developed by the Organization.¶

5 *Code for Implementation* means the IMO Instruments Implementation Code (III Code) adopted by the Organization by resolution A.1070(28).

6 *Audit Standard* means the Code for Implementation.

* As defined in the *Code of Safe Practice for Cargo Stowage and Securing* (resolution A.714(17), as amended).

† Refer to *Revised guidelines for the preparation of the Cargo Securing Manual* (MSC.1/Circ.1353/Rev.2).

‡ Refer to *General principles for ship reporting systems and ship reporting requirements, including Guidelines for reporting incidents involving dangerous goods, harmful substances and/or marine pollutants* (resolution A.851(20), as amended).

§ Refer to the IMDG Code (resolution MSC.122(75), as amended).

¶ Refer to *Framework and Procedures for the IMO Member State Audit Scheme* (resolution A.1067(28)).

Regulation 2
Application

1 The carriage of harmful substances is prohibited, except in accordance with the provisions of this Annex.

2 To supplement the provisions of this Annex, the Government of each Party to the Convention shall issue, or cause to be issued, detailed requirements on packing, marking, labelling, documentation, stowage, quantity limitations and exceptions for preventing or minimizing pollution of the marine environment by harmful substances.

3 For the purposes of this Annex, empty packagings which have been used previously for the carriage of harmful substances shall themselves be treated as harmful substances unless adequate precautions have been taken to ensure that they contain no residue that is harmful to the marine environment.

4 The requirements of this Annex do not apply to ship's stores and equipment.

Regulation 3
Packing

Packages shall be adequate to minimize the hazard to the marine environment, having regard to their specific contents.

Regulation 4
Marking and labelling

1 Packages containing a harmful substance shall be durably marked or labelled to indicate that the substance is a harmful substance in accordance with the relevant provisions of the IMDG Code.

2 The method of affixing marks or labels on packages containing a harmful substance shall be in accordance with the relevant provisions of the IMDG Code.

Regulation 5*
Documentation

1 Transport information relating to the carriage of harmful substances shall be in accordance with the relevant provisions of the IMDG Code and shall be made available to the person or organization designated by the port State authority.

2 Each ship carrying harmful substances shall have a special list, manifest or stowage plan setting forth, in accordance with the relevant provisions of the IMDG Code, the harmful substances on board and the location thereof. A copy of one of these documents shall be made available before departure to the person or organization designated by the port State authority.

Regulation 6
Stowage

Harmful substances shall be properly stowed and secured so as to minimize the hazards to the marine environment without impairing the safety of the ship and persons on board.

Regulation 7
Quantity limitations

Certain harmful substances may, for sound scientific and technical reasons, need to be prohibited for carriage or be limited as to the quantity which may be carried aboard any one ship. In limiting the quantity, due consideration shall be given to size, construction and equipment of the ship, as well as the packaging and the inherent nature of the substances.

Regulation 8
Exceptions

1 Jettisoning of harmful substances carried in packaged form shall be prohibited, except where necessary for the purpose of securing the safety of the ship or saving life at sea.

2 Subject to the provisions of the present Convention, appropriate measures based on the physical, chemical and biological properties of harmful substances shall be taken to regulate the washing of leakages overboard, provided that compliance with such measures would not impair the safety of the ship and persons on board.

* Reference to "documents" in this regulation does not preclude the use of electronic data processing (EDP) and electronic data interchange (EDI) transmission techniques as an aid to paper documentation.

Regulation 9
Port State control on operational requirements[*]

1 A ship when in a port or an offshore terminal of another Party is subject to inspection by officers duly authorized by such Party concerning operational requirements under this Annex.

2 Where there are clear grounds for believing that the master or crew are not familiar with essential shipboard procedures relating to the prevention of pollution by harmful substances, the Party shall take such steps, including carrying out detailed inspection and, if required, will ensure that the ship shall not sail until the situation has been brought to order in accordance with the requirements of this Annex.

3 Procedures relating to the port State control prescribed in article 5 of the present Convention shall apply to this regulation.

4 Nothing in this regulation shall be construed to limit the rights and obligations of a Party carrying out control over operational requirements specifically provided for in the present Convention.

Chapter 2 – Verification of compliance with the provisions of this Annex

Regulation 10
Application

Parties shall use the provisions of the Code for Implementation in the execution of their obligations and responsibilities contained in this Annex.

Regulation 11
Verification of compliance

1 Every Party shall be subject to periodic audits by the Organization in accordance with the audit standard to verify compliance with and implementation of this annex.

2 The Secretary-General of the Organization shall have responsibility for administering the Audit Scheme, based on the guidelines developed by the Organization.

3 Every Party shall have responsibility for facilitating the conduct of the audit and implementation of a programme of actions to address the findings, based on the guidelines developed by the Organization.[†]

4 Audit of all Parties shall be:

.1 based on an overall schedule developed by the Secretary-General of the Organization, taking into account the guidelines developed by the Organization; and

.2 conducted at periodic intervals, taking into account the guidelines developed by the Organization.

[*] Refer to *Procedures for port State control, 2021* (resolution A.1155(32)).

[†] Refer to *Framework and Procedures for the IMO Member State Audit Scheme* (resolution A.1067(28)).

Appendix to Annex III
Criteria for the identification of harmful substances in packaged form

For the purpose of this Annex, substances, other than radioactive materials,* identified by any one of the following criteria are harmful substances:†

(a) Acute (short-term) aquatic hazard

Category: Acute 1	
96 hr LC_{50} (for fish)	≤ 1 mg/L and/or
48 hr EC_{50} (for crustacea)	≤ 1 mg/L and/or
72 or 96 hr ErC_{50} (for algae or other aquatic plants)	≤ 1 mg/L

(b) Long-term aquatic hazard

(i) Non-rapidly degradable substances for which there are adequate chronic toxicity data available

Category: Chronic 1	
Chronic NOEC or EC_x (for fish)	≤ 0.1 mg/L and/or
Chronic NOEC or EC_x (for crustacea)	≤ 0.1 mg/L and/or
Chronic NOEC or EC_x (for algae or other aquatic plants)	≤ 0.1 mg/L

Category: Chronic 2	
Chronic NOEC or EC_x (for fish)	≤ 1 mg/L and/or
Chronic NOEC or EC_x (for crustacea)	≤ 1 mg/L and/or
Chronic NOEC or EC_x (for algae or other aquatic plants)	≤ 1 mg/L

(ii) Rapidly degradable substances for which there are adequate chronic toxicity data available

Category: Chronic 1	
Chronic NOEC or EC_x (for fish)	≤ 0.01 mg/L and/or
Chronic NOEC or EC_x (for crustacea)	≤ 0.01 mg/L and/or
Chronic NOEC or EC_x (for algae or other aquatic plants)	≤ 0.01 mg/L

Category: Chronic 2	
Chronic NOEC or EC_x (for fish)	≤ 0.1 mg/L and/or
Chronic NOEC or EC_x (for crustacea)	≤ 0.1 mg/L and/or
Chronic NOEC or EC_x (for algae or other aquatic plants)	≤ 0.1 mg/L

* Refer to class 7, as defined in chapter 2.7 of the IMDG Code.

† The criteria are based on those developed by the United Nations Globally Harmonized System of Classification and Labelling of Chemicals (GHS), as amended. For definitions of acronyms or terms used in this appendix, refer to the relevant paragraphs of the IMDG Code.

(iii) Substances for which adequate chronic toxicity data are not available

Category: Chronic 1	
96 hr LC_{50} (for fish)	$\leq$ 1 mg/L and/or
48 hr EC_{50} (for crustacea)	$\leq$ 1 mg/L and/or
72 or 96 hr ErC_{50} (for algae or other aquatic plants)	$\leq$ 1 mg/L
and the substance is not rapidly degradable and/or the experimentally determined BCF is $\geq$ 500 (or, if absent, the log $K_{ow} \geq 4$).	

Category: Chronic 2	
96 hr LC_{50} (for fish)	> 1 mg/L but $\leq$ 10 mg/L and/or
48 hr EC_{50} (for crustacea)	> 1 mg/L but $\leq$ 10 mg/L and/or
72 or 96 hr ErC_{50} (for algae or other aquatic plants)	> 1 mg/L but $\leq$ 10 mg/L
and the substance is not rapidly degradable and/or the experimentally determined BCF is $\geq$ 500 (or, if absent, the log $K_{ow} \geq 4$).	

Additional guidance on the classification process for substances and mixtures is included in the IMDG Code.

1.1.2.3 International Convention for Safe Containers, 1972 (CSC Convention), as amended

1.1.2.3.1 Regulations 1 and 2 of annex I to the *International Convention for Safe Containers, 1972* (CSC Convention), as amended, deal with safety approval plates and maintenance and examination of containers, and are reproduced in full.

Annex I
Regulations for the testing, inspection, approval and maintenance of containers

Chapter I
Regulations common to all systems of approval

Regulation 1
Safety Approval Plate

1 **(a)** A Safety Approval Plate conforming to the specifications set out in the appendix to this annex shall be permanently affixed to every approved container at a readily visible place, adjacent to any other approval plate issued for official purposes, where it would not be easily damaged.

(b) On each container, all maximum operating gross mass markings shall be consistent with the maximum operating gross mass information on the Safety Approval Plate.

(c) The owner of the container shall remove the Safety Approval Plate on the container if:

(i) the container has been modified in a manner which would void the original approval and the information found on the Safety Approval Plate, or

(ii) the container is removed from service and is not being maintained in accordance with the Convention, or

(iii) the approval has been withdrawn by the Administration.

2 **(a)** The plate shall contain the following information in at least the English or French language:

CSC SAFETY APPROVAL

Country of approval and approval reference

Date (month and year) of manufacture

Manufacturer's identification number of the container or, in the case of existing containers for which that number is unknown, the number allotted by the Administration

Maximum operating gross mass (kg and lb)

Allowable stacking load for 1.8*g* (kg and lb)

Transverse racking test force (newtons).

(b) A blank space should be reserved on the plate for insertion of end-wall and/or side-wall strength values (factors) in accordance with paragraph 3 of this regulation and annex II, tests 6 and 7. A blank space should also be reserved on the plate for the first and subsequent maintenance examination dates (month and year) when used.

3 Where the Administration considers that a new container satisfies the requirements of the present Convention in respect of safety and if, for such container, the end-wall and/or side-wall strength values (factors) are designed to be greater or less than those stipulated in annex II, such values shall be indicated on the Safety Approval Plate. Where the stacking or racking values are less than 192,000 kg or 150 kN, respectively, the container shall be considered as having limited stacking or racking capacity and shall be conspicuously marked, as required under the relevant standards,* at or before their next scheduled examination or before any other date approved by the Administration, provided this is not later than 1 July 2015.

4 The presence of the Safety Approval Plate does not remove the necessity of displaying such labels or other information as may be required by other regulations which may be in force.

5 A container, the construction of which was completed prior to 1 July 2014, may retain the Safety Approval Plate as permitted by the Convention prior to that date as long as no structural modifications occur to that container.

Regulation 2
Maintenance and examination

1 The owner of the container shall be responsible for maintaining it in safe condition.

2 **(a)** The owner of an approved container shall examine the container or have it examined in accordance with the procedure either prescribed or approved by the Contracting Party concerned, at intervals appropriate to operating conditions.

(b) The date (month and year) before which a new container shall undergo its first examination shall be marked on the Safety Approval Plate.

(c) The date (month and year) before which the container shall be re-examined shall be clearly marked on the container on or as close as practicable to the Safety Approval Plate and in a manner acceptable to that Contracting Party which prescribed or approved the particular examination procedure involved.

(d) The interval from the date of manufacture to the date of the first examination shall not exceed five years. Subsequent examination of new containers and re-examination of existing containers shall be at intervals of not more than 30 months. All examinations shall determine whether the container has any defects which could place any person in danger.

3 **(a)** As an alternative to paragraph 2, the Contracting Party concerned may approve a continuous examination programme if satisfied, on evidence submitted by the owner, that such a programme provides a standard of safety not inferior to the one set out in paragraph 2 above.

(b) To indicate that the container is operated under an approved continuous examination programme, a mark showing the letters **ACEP** and the identification of the Contracting Party which has granted approval of the programme shall be displayed on the container on or as close as practicable to the Safety Approval Plate.

(c) All examinations performed under such a programme shall determine whether a container has any defects which could place any person in danger. They shall be performed in connection with a major repair, refurbishment, or on-hire/off-hire interchange and in no case less than once every 30 months.

4 As a minimum, approved programmes should be reviewed once every 10 years to ensure their continued viability. In order to ensure uniformity by all involved in the inspection of containers and their ongoing operational safety, the Contracting Party concerned shall ensure the following elements are covered in each prescribed periodic or approved continuous examination programme:

(a) methods, scope and criteria to be used during examinations;

(b) frequency of examinations;

(c) qualifications of personnel to carry out examinations;

(d) system of keeping records and documents that will capture:

(i) the owner's unique serial number of the container;

(ii) the date on which the examination was carried out;

(iii) identification of the competent person who carried out the examination;

(iv) the name and location of the organization where the examination was carried out;

* Refer to current standard ISO 6346, *Freight containers – Coding, identification and marking.*

(v) the results of the examination; and

(vi) in the case of a periodic examination scheme (PES), the next examination date (NED);

(e) a system for recording and updating the identification numbers of all containers covered by the appropriate examination scheme;

(f) methods and systems for maintenance criteria that addresses the design characteristics of the specific containers;

(g) provisions for maintaining leased containers if different than those used for owned containers; and

(h) conditions and procedures for adding containers into an already approved programme.

5 The Contracting Party shall carry out periodic audits of approved programmes to ensure compliance with the provisions approved by the Contracting Party. The Contracting Party shall withdraw any approval when the conditions of approval are no longer complied with.

6 For the purpose of this regulation, *the Contracting Party concerned* is the Contracting Party of the territory in which the owner is domiciled or has his head office. However, in the event that the owner is domiciled or has his head office in a country the government of which has not yet made arrangements for prescribing or approving an examination scheme and until such time as the arrangements have been made, the owner may use the procedure prescribed or approved by the Administration of a Contracting Party which is prepared to act as the Contracting Party concerned. The owner shall comply with the conditions for the use of such procedures set by the Administration in question.

7 Administrations shall make information on approved continuous examination programmes publicly available.

1.1.3 Dangerous goods forbidden from transport

1.1.3.1 Unless provided otherwise by this Code, the following are forbidden from transport:

Any substance or article which, as presented for transport, is liable to explode, dangerously react, produce a flame or dangerous evolution of heat or dangerous emission of toxic, corrosive or flammable gases or vapours under normal conditions of transport.

In chapter 3.3, special provisions 349, 350, 351, 352, 353 and 900 list certain substances, which are forbidden for transport.

Chapter 1.2

Definitions, units of measurement and abbreviations

1.2.1 Definitions

The following is a list of definitions of general applicability that are used throughout this Code. Additional definitions of a highly specific nature are presented in the relevant chapters.

For the purposes of this Code:

Aerosols or *aerosol dispensers* means an article consisting of non-refillable receptacles meeting the provisions of 6.2.4, made of metal, glass or plastics and containing a gas compressed, liquefied or dissolved under pressure, with or without a liquid, paste or powder, and fitted with a release device allowing the contents to be ejected as solid or liquid particles in suspension in a gas, as a foam, paste or powder or in a liquid state or in a gaseous state.

Alternative arrangement means an approval granted by the competent authority for a portable tank or MEGC that has been designed, constructed or tested to technical requirements or testing methods other than those specified in this Code (see, for instance, 6.7.5.11.1).

Animal material means animal carcasses, animal body parts, foodstuffs or feedstuffs derived from animals.

Approval

Multilateral approval, for the transport of radioactive material, means approval by the relevant competent authority of the country of origin of the design or shipment, as applicable, and also, where the consignment is to be transported through or into any other country, approval by the competent authority of that country.

Unilateral approval, for the transport of radioactive material, means an approval of a design which is required to be given by the competent authority of the country of origin of the design only.

Bags means flexible packagings made of paper, plastic film, textiles, woven material, or other suitable materials.

Barge-carrying ship means a ship specially designed and equipped to transport shipborne barges.

Barge feeder vessel means a vessel specially designed and equipped to transport shipborne barges to or from a barge-carrying ship.

Boxes means packagings with complete rectangular or polygonal faces, made of metal, wood, plywood, reconstituted wood, fibreboard, plastics, or other suitable material. Small holes for purposes such as ease of the handling or opening of the box or to meet classification provisions are permitted as long as they do not compromise the integrity of the packaging during transport.

Bulk containers are containment systems (including any liner or coating) intended for the transport of solid substances which are in direct contact with the containment system. Packagings, intermediate bulk containers (IBCs), large packagings and portable tanks are not included.

Bulk containers:

- are of a permanent character and accordingly strong enough to be suitable for repeated use;
- are specially designed to facilitate the transport of goods by one or more means of transport without intermediate reloading;
- are fitted with devices permitting ready handling; and
- have a capacity of not less than 1 cubic metre.

Examples of bulk containers are freight containers, offshore bulk containers, skips, bulk bins, swap bodies, trough-shaped containers, roller containers, load compartments of vehicles or flexible bulk containers.

△ *Bundles of cylinders* are pressure receptacles comprising an assembly of cylinders or cylinder shells that are fastened together and which are interconnected by a manifold and transported as a unit. The total water

capacity shall not exceed 3,000 L except that bundles intended for the transport of gases of class 2.3 shall be limited to 1,000 L water capacity.

Cargo transport unit means a road transport tank or freight vehicle, a railway transport tank or freight wagon, a multimodal freight container or portable tank, or an MEGC.

Carrier means any person, organization or Government undertaking the transport of dangerous goods by any means of transport. The term includes both carriers for hire or reward (known as *common* or *contract carriers* in some countries) and carriers on own account (known as *private carriers* in some countries).

Cellular ship means a ship in which containers are loaded under deck into specially designed slots giving a permanent stowage of the container during sea transport. Containers loaded on deck in such a ship are specially stacked and secured on fittings.

Closed cargo transport unit, with the exception of class 1, means a cargo transport unit which totally encloses the contents by permanent structures with complete and rigid surfaces. Cargo transport units with fabric sides or tops are not considered closed cargo transport units; for definition of closed cargo transport unit for class 1, see 7.1.2.

■ *Closed cryogenic receptacles* are thermally insulated pressure receptacles for refrigerated liquefied gases of a water capacity of not more than 1,000 L.

Closed ro-ro cargo space means a ro-ro cargo space which is neither an open ro-ro cargo space nor a weather deck.

Closure means a device which closes an opening in a receptacle.

■ **Note:** For pressure receptacles, closures are, for example, valves, pressure relief devices, pressure gauges or level indicators.

Combination packagings means a combination of packagings for transport purposes, consisting of one or more inner packagings secured in an outer packaging in accordance with 4.1.1.5.

Competent authority means any body or authority designated or otherwise recognized as such for any purpose in connection with this Code.

Compliance assurance means a systematic programme of measures applied by a competent authority which is aimed at ensuring that the provisions of this Code are met in practice.

Composite packagings means packagings consisting of an outer packaging and an inner receptacle so constructed that the inner receptacle and the outer packaging form an integral packaging. Once assembled, it remains thereafter an integrated single unit; it is filled, stored, transported and emptied as such.

Confinement system, for the transport of radioactive material, means the assembly of fissile material and packaging components specified by the designer and agreed to by the competent authority as intended to preserve criticality safety.

Consignee means any person, organization or Government which is entitled to take delivery of a consignment.

Consignment means any package or packages, or load of dangerous goods, presented by a consignor for transport.

Consignor means any person, organization or Government which prepares a consignment for transport.

Containment system, for the transport of radioactive material, means the assembly of components of the packaging specified by the designer as intended to retain the radioactive material during transport.

Control temperature means the maximum temperature at which certain substances (such as organic peroxides and self-reactive and related substances) can be safely transported during a prolonged period of time.

Conveyance means:

.1 for transport by road or rail: any vehicle,

.2 for transport by water: any ship, or any cargo space or defined deck area of a ship,

.3 for transport by air: any aircraft.

Crates are outer packagings with incomplete surfaces.

Criticality safety index (CSI) *assigned to a package, overpack or freight container containing fissile material*, for the transport of radioactive material, means a number which is used to provide control over the accumulation of packages, overpacks or freight containers containing fissile material.

Critical temperature is the temperature above which the substance cannot exist in the liquid state.

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CTU Code means the IMO/ILO/UNECE *Code of Practice for Packing of Cargo Transport Units* (MSC.1/Circ.1497).*

△ *Cylinders* are pressure receptacles of a water capacity not exceeding 150 L.

Defined deck area means the area, of the weather deck of a ship, or of a vehicle deck of a roll-on/roll-off ship, which is allocated for the stowage of dangerous goods.

Design, for the transport of radioactive material, means the description of fissile material excepted under 2.7.2.3.5.6, special form radioactive material, low dispersible radioactive material, package or packaging which enables such an item to be fully identified. The description may include specifications, engineering drawings, reports demonstrating compliance with regulatory requirements, and other relevant documentation.

Design life, for composite cylinders and tubes, means the maximum life (in number of years) to which the cylinder or tube is designed and approved in accordance with the applicable standard.

Dose rate means the ambient dose equivalent or the directional dose equivalent, as appropriate, per unit time, measured at the point of interest.

Drums means flat-ended or convex-ended cylindrical packagings made of metal, fibreboard, plastics, plywood or other suitable materials. This definition also includes packagings of other shapes, such as round taper-necked packagings, or pail-shaped packagings. Wooden barrels and jerricans are not covered by this definition.

Elevated temperature substance means a substance which is transported or offered for transport:

- in the liquid state at a temperature at or above 100°C
- in the liquid state with a flashpoint above 60°C that is intentionally heated to a temperature above its flashpoint; or
- in the solid state at a temperature at or above 240°C.

Emergency temperature means the temperature at which emergency procedures shall be implemented.

Exclusive use, for the transport of radioactive material, means the sole use, by a single consignor, of a conveyance or of a large freight container, in respect of which all initial, intermediate and final loading and unloading and shipment are carried out in accordance with the directions of the consignor or consignee, where so required by the provisions of this Code.

Filling ratio means the ratio of the mass of gas to the mass of water at 15°C that would fill completely a pressure receptacle fitted ready for use.

Flashpoint means the lowest temperature of a liquid at which its vapour forms an ignitable mixture with air.

Foodstuff includes foodstuffs, feeds or other edible substances intended for consumption by humans or animals.

Freight container means an article of transport equipment that is of a permanent character and accordingly strong enough to be suitable for repeated use; specially designed to facilitate the transport of goods, by one or more modes of transport, without intermediate reloading; designed to be secured and/or readily handled, having fittings for these purposes, and approved in accordance with the *International Convention for Safe Containers, 1972* (CSC Convention), as amended. In addition: *Small freight container* means a freight container that has an internal volume of not more than 3 m^3. *Large freight container* means a freight container that has an internal volume of more than 3 m^3.

For freight containers for the transport of radioactive material, a freight container may be used as a packaging. A small freight container is that which has either any overall outer dimension less than 1.5 m, or an internal volume of not more than 3 m^3. Any other freight container is considered to be a large freight container.

Fuel cell means an electrochemical device that converts the chemical energy of a fuel to electrical energy, heat and reaction products.

Fuel cell engine means a device used to power equipment and which consists of a fuel cell and its fuel supply, whether integrated with or separate from the fuel cell, and includes all appurtenances necessary to fulfil its function.

△ *GHS* means the ninth revised edition of the *Globally Harmonized System of Classification and Labelling of Chemicals*, published by the United Nations as document ST/SG/AC.10/30/Rev.9.

* Further practical guidance and background information related to the CTU Code are available as informative material (MSC.1/Circ.1498). The CTU Code and the Informative Material may be found at www.unece.org/trans/wp24/guidelinespackingctus/intro.html.

■ *IAEA Regulations for the Safe Transport of Radioactive Material* means one of the editions of those Regulations, as follows:

.1 for the 1985, 1985 (as amended 1990) editions: IAEA Safety Series No. 6;

.2 for the 1996 edition: IAEA Safety Series No. ST-1;

.3 for the 1996 (revised) edition: IAEA Safety Series No. TS-R-1 (ST-1, Revised);

.4 for the 1996 (as amended 2003), 2005, 2009 editions: IAEA Safety Standards Series No. TS-R-1;

.5 for the 2012 edition: IAEA Safety Standards Series No. SSR-6; and

.6 for the 2018 edition: IAEA Safety Standards Series No. SSR-6 (Rev.1).

IMO type 4 tank means a road tank vehicle for the transport of dangerous goods of classes 3 to 9 and includes a semi-trailer with a permanently attached tank or a tank attached to a chassis, with at least four twist locks that take account of ISO standards (e.g. ISO 1161:1984).

IMO type 6 tank means a road tank vehicle for the transport of non-refrigerated liquefied gases of class 2 and includes a semi-trailer with a permanently attached tank or a tank attached to a chassis which is fitted with items of service equipment and structural equipment necessary for the transport of gases.

IMO type 8 tank means a road tank vehicle for the transport of refrigerated liquefied gases of class 2 and includes a semi-trailer with a permanently attached thermally insulated tank fitted with items of service equipment and structural equipment necessary for the transport of refrigerated liquefied gases.

IMO type 9 tank means a road gas elements vehicle for the transport of compressed gases of class 2 with elements linked to each other by a manifold, permanently attached to a chassis, which is fitted with items of service equipment and structural equipment necessary for the transport of gases. Elements are cylinders, tubes and bundles of cylinders, intended for the transport of gases as defined in 2.2.1.1.

Inner packagings means packagings for which an outer packaging is required for transport.

Inner receptacles means receptacles which require an outer packaging in order to perform their containment function.

■ *Inner vessel*, for a closed cryogenic receptacle, means the pressure vessel intended to contain the refrigerated liquefied gas.

Inspection body means an independent inspection and testing body approved by the competent authority.

Intermediate bulk containers (IBCs) means rigid or flexible portable packagings, other than specified in chapter 6.1, that:

.1 have a capacity of:

.1 not more than 3.0 m^3 (3,000 L) for solids and liquids of packing groups II and III;

.2 not more than 1.5 m^3 for solids of packing group I when packed in flexible, rigid plastics, composite, fibreboard or wooden IBCs;

.3 not more than 3.0 m^3 for solids of packing group I when packed in metal IBCs;

.4 not more than 3.0 m^3 for radioactive material of class 7;

.2 are designed for mechanical handling; and

.3 are resistant to the stresses produced in handling and transport, as determined by tests.

Remanufactured IBCs are metal, rigid plastics or composite IBCs that:

.1 are produced as a UN type from a non-UN type; or

.2 are converted from one UN design type to another UN design type.

Remanufactured IBCs are subject to the same provisions of this Code that apply to new IBCs of the same type (see also design type definition in 6.5.6.1.1).

Repaired IBCs are metal, rigid plastics or composite IBCs that, as a result of impact or for any other cause (e.g. corrosion, embrittlement or other evidence of reduced strength as compared to the design type) are restored so as to conform to the design type and to be able to withstand the design type tests. For the purposes of this Code, the replacement of the rigid inner receptacle of a composite IBC with a receptacle conforming to the original design type from the same manufacturer is considered repair. However, routine maintenance of rigid IBCs (see definition below) is not considered repair. The bodies of rigid plastics IBCs and the inner receptacles of composite IBCs are not repairable. Flexible IBCs are not repairable, unless approved by the competent authority.

Routine maintenance of flexible IBCs is the routine performance on plastics or textile flexible IBCs of operations, such as:

.1 cleaning; or

.2 replacement of non-integral components, such as non-integral liners and closure ties, with components conforming to the original manufacturer's specification;

provided that these operations do not adversely affect the containment function of the flexible IBC or alter the design type.

Note: For rigid IBCs, see "Routine maintenance of rigid IBCs".

Routine maintenance of rigid IBCs is the routine performance on metal, rigid plastics or composite IBCs of operations such as:

.1 cleaning;

.2 removal and reinstallation or replacement of body closures (including associated gaskets), or of service equipment, conforming to the original manufacturer's specifications, provided that the leaktightness of the IBC is verified; or

.3 restoration of structural equipment not directly performing a dangerous goods containment or discharge pressure retention function so as to conform to the design type (e.g. the straightening of legs or lifting attachments) provided that the containment function of the IBC is not affected.

Note: For flexible IBCs, see "Routine maintenance of flexible IBCs".

Intermediate packagings means packagings placed between inner packagings, or articles, and an outer packaging.

Jerricans means metal or plastics packagings of rectangular or polygonal cross-section.

Large packagings means packagings consisting of an outer packaging which contains articles or inner packagings and which:

.1 are designed for mechanical handling; and

.2 exceed 400 kg net mass or 450 L capacity but have a volume of not more than 3 m^3.

Large salvage packaging means a special packaging which:

.1 is designed for mechanical handling; and

.2 exceeds 400 kg net mass or 450 L capacity but has a volume of not more than 3 m^3;

into which damaged, defective, leaking or non-conforming dangerous goods packages, or dangerous goods that have spilled or leaked are placed for purposes of transport for recovery or disposal.

Liner means a separate tube or bag inserted into a packaging (including IBCs and large packagings) but not forming an integral part of it, including the closures of its openings.

Liquids are dangerous goods which at 50°C have a vapour pressure of not more than 300 kPa (3 bar), which are not completely gaseous at 20°C and at a pressure of 101.3 kPa, and which have a melting point or initial melting point of 20°C or less at a pressure of 101.3 kPa. A viscous substance for which a specific melting point cannot be determined shall be subjected to the ASTM D 4359-90 test; or to the test for determining fluidity (penetrometer test) prescribed in section 2.3.4 of Annex A of the European Agreement concerning the *International Carriage of Dangerous Goods by Road* (ADR).*

Long international voyage means an international voyage that is not a short international voyage.

Management system, for the transport of radioactive material, means a set of interrelated or interacting elements (system) for establishing policies and objectives and enabling the objectives to be achieved in an efficient and effective manner.

△ *Manual of Tests and Criteria* means the seventh revised edition of the United Nations publication entitled *Manual of Tests and Criteria* (ST/SG/AC.10/11/Rev.7 and Amend.1).

Maximum capacity as used in 6.1.4 means the maximum inner volume of receptacles or packagings expressed in litres.

Maximum net mass as used in 6.1.4 means the maximum net mass of contents in a single packaging or maximum combined mass of inner packagings and the contents thereof and is expressed in kilograms.

Maximum normal operating pressure, for the transport of radioactive material, means the maximum pressure above atmospheric pressure at mean sea-level that would develop in the containment system in a period of one year under the conditions of temperature and solar radiation corresponding to environmental conditions in the absence of venting, external cooling by an ancillary system, or operational controls during transport.

△ * United Nations Publication: ECE/TRANS/300 (Sales No. E.21.VIII.1).

△ *Metal hydride storage system* means a single complete hydrogen storage system, including a pressure receptacle shell, metal hydride, pressure relief device, shut-off valve, service equipment and internal components used for the transport of hydrogen only.

Multiple-element gas containers (MEGCs) are multimodal assemblies of cylinders, tubes or bundles of cylinders which are interconnected by a manifold and which are assembled within a framework. The MEGC includes service equipment and structural equipment necessary for the transport of gases.

Net explosive mass (NEM) means the total mass of the explosive substances, without the packagings, casings, etc. (*Net explosive quantity* (NEQ), *net explosive contents* (NEC), or *net explosive weight* (NEW) are often used to convey the same meaning.)

Neutron radiation detector is a device that detects neutron radiation. In such a device, a gas may be contained in a hermetically-sealed electron tube transducer that converts neutron radiation into a measureable electric signal.

Offshore bulk container means a bulk container specially designed for repeated use for the transport of dangerous goods to, from and between offshore facilities. An offshore bulk container is designed and constructed in accordance with *Guidelines for the approval of offshore containers handled in open seas* (MSC/Circ.860).

Open cargo transport unit means a unit which is not a closed cargo transport unit.

Open cryogenic receptacle means a transportable thermally insulated receptacle for refrigerated liquefied gases maintained at atmospheric pressure by continuous venting of the refrigerated liquefied gas.

Open ro-ro cargo space means a ro-ro cargo space either open at both ends, or open at one end and provided with adequate natural ventilation effective over its entire length through permanent openings in the side plating or deckhead to the satisfaction of the Administration.

Outer packaging means the outer protection of a composite or combination packaging together with any absorbent materials, cushioning and any other components necessary to contain and protect inner receptacles or inner packagings.

Overpack means an enclosure used by a single consignor to contain one or more packages and to form one unit for the convenience of handling and stowage during transport. Examples of overpacks are a number of packages either:

.1 placed or stacked on to a load board, such as a pallet, and secured by strapping, shrink-wrapping, stretch-wrapping, or other suitable means; or

.2 placed in a protective outer packaging such as a box or crate.

Overstowed means that a package or container is directly stowed on top of another.

Package means the complete product of the packing operation, consisting of the packaging and its contents prepared for transport.

Packaging means one or more receptacles and any other components or materials necessary for the receptacles to perform their containment and other safety functions.

△ *Pressure drums* are welded pressure receptacles of a water capacity exceeding 150 L and of not more than 1,000 L (e.g. cylindrical receptacles equipped with rolling hoops, spheres on skids).

△ *Pressure receptacles* are transportable receptacles intended for holding substances under pressure including its closure(s) and other service equipment and it is a collective term that includes cylinders, tubes, pressure drums, closed cryogenic receptacles, metal hydride storage systems, bundles of cylinders and salvage pressure receptacles.

■ *Pressure receptacle shell* means a cylinder, a tube, a pressure drum or a salvage pressure receptacle without its closures or other service equipment, but including any permanently attached device(s) (e.g. neck ring, foot ring, etc.).

Note: The terms “cylinder shell”, “pressure drum shell” and “tube shell” are also used.

Quality assurance means a systematic programme of controls and inspections applied by any organization or body which is aimed at providing adequate confidence that the standard of safety prescribed in this Code is achieved in practice.

Radiation detection system is an apparatus that contains radiation detectors as components.

Radioactive contents, for the transport of radioactive material, mean the radioactive material together with any contaminated or activated solids, liquids, and gases within the packaging.

Receptacles means containment vessels for receiving and holding substances or articles, including any means of closing.

Reconditioned packagings include:

.1 metal drums that:

.1 are cleaned to original materials of construction, with all former contents, internal and external corrosion, and external coatings and labels removed;

.2 are restored to original shape and contour, with chimes (if any) straightened and sealed, and all non-integral gaskets replaced; and

.3 are inspected after cleaning, but before painting, with rejection of packagings with visible pitting, significant reduction in material thickness, metal fatigue, damaged threads or closures, or other significant defects;

.2 plastic drums and jerricans that:

.1 are cleaned to original materials of construction, with all former contents, external coatings and labels removed;

.2 have all non-integral gaskets replaced; and

.3 are inspected after cleaning, with rejection of packagings with visible damage such as tears, creases or cracks, or damaged threads or closures, or other significant defects.

Recycled plastics material means material recovered from used industrial packagings that has been cleaned and prepared for processing into new packagings. The specific properties of the recycled material used for production of new packagings shall be assured and documented regularly as part of a quality assurance programme recognized by the competent authority. The quality assurance programme shall include a record of proper pre-sorting and verification that each batch of recycled plastics material has the proper melt flow rate, density, and tensile yield strength, consistent with that of the design type manufactured from such recycled material. This necessarily includes knowledge about the packaging material from which the recycled plastics have been derived, as well as awareness of the prior contents of those packagings if those prior contents might reduce the capability of new packagings produced using that material. In addition, the packaging manufacturer's quality assurance programme under 6.1.1.3 shall include performance of the mechanical design type test in 6.1.5 on packagings manufactured from each batch of recycled plastics material. In this testing, stacking performance may be verified by appropriate dynamic compression testing rather than static load testing.

△ **Note:** ISO 16103:2005, *Packaging – Transport packages for dangerous goods – Recycled plastics material*, provides additional guidance on procedures to be followed in approving the use of recycled plastics material. These guidelines have been developed based on the experience of the manufacturing of drums and jerricans from recycled plastics material and as such may need to be adapted for other types of packagings, IBCs and large packagings made of recycled plastics material.

Remanufactured IBCs (see *Intermediate bulk containers* (IBCs)).

Remanufactured large packaging means a metal or rigid plastics large packaging that:

.1 is produced as a UN type from a non-UN type; or

.2 is converted from one UN design type to another UN design type.

Remanufactured large packagings are subject to the same provisions of this Code that apply to new large packagings of the same type (see also design type definition in 6.6.5.1.2).

Remanufactured packagings include:

.1 metal drums that:

.1 are produced as a UN type from a non-UN type;

.2 are converted from one UN type to another UN type; or

.3 undergo the replacement of integral structural components (such as non-removable heads); or

.2 plastic drums that:

.1 are converted from one UN type to another UN type (such as 1H1 to 1H2); or

.2 undergo the replacement of integral structural components.

Remanufactured drums are subject to the same provisions of this Code that apply to a new drum of the same type.

Repaired IBCs (see *Intermediate bulk containers* (IBCs)).

Re-used large packaging means a large packaging to be refilled which has been examined and found free of defects affecting the ability to withstand the performance tests: the term includes those which are refilled

with the same or similar compatible contents and are transported within distribution chains controlled by the consignor of the product.

Re-used packagings means packagings to be refilled which have been examined and found free of defects affecting the ability to withstand the performance tests; the term includes those which are refilled with the same or similar compatible contents and are transported within distribution chains controlled by the consignor of the product.

Road tank vehicle means a vehicle equipped with a tank with a capacity of more than 450 L, fitted with pressure-relief devices.

Ro-ro cargo space means spaces not normally subdivided in any way and extending to either a substantial length or the entire length of the ship in which goods (packaged or in bulk, in or on rail or road cars, vehicles (including road or rail tankers), trailers, containers, pallets, demountable tanks or in or on similar stowage units or other receptacles) can be loaded and unloaded normally in a horizontal direction.

Ro-ro ship (roll-on/roll-off ship) means a ship which has one or more decks, either closed or open, not normally subdivided in any way and generally running the entire length of the ship, carrying goods which are normally loaded and unloaded in a horizontal direction.

Routine maintenance of IBCs (see *Intermediate bulk containers* (IBCs)).

Salvage packagings are special packagings into which damaged, defective, leaking or non-conforming dangerous goods packages, or dangerous goods that have spilled or leaked, are placed for purposes of transport for recovery or disposal.

Salvage pressure receptacle means a pressure receptacle with a water capacity not exceeding 3,000 L into which are placed damaged, defective, leaking or non-conforming pressure receptacle(s) for the purpose of transport, e.g. for recovery or disposal.

Self-accelerating decomposition temperature (SADT) means the lowest temperature at which self-accelerating decomposition may occur in a substance in the packaging, IBC or portable tank as offered for transport. The SADT shall be determined in accordance with the test procedures given in Part II, Section 28 of the *Manual of Tests and Criteria*.

Self-accelerating polymerization temperature (SAPT) means the lowest temperature at which self-accelerating polymerization may occur with a substance in the packaging, IBC or portable tank as offered for transport. The SAPT shall be determined in accordance with the test procedures established for the self-accelerating decomposition temperature for self-reactive substances in accordance with part II, Section 28 of the *Manual of Tests and Criteria*.

Semi-trailer means any trailer designed to be coupled to a motor vehicle in such a way that part of it rests on the motor vehicle and a substantial part of its mass and of the mass of its load is borne by the motor vehicle.

■ *Service equipment* of a pressure receptacle means closure(s), manifold(s), piping, porous, absorbent or adsorbent material and any structural devices, e.g. for handling.

Service life, for composite cylinders and tubes, means the number of years the cylinder or tube is permitted to be in service.

Settled pressure means the pressure of the contents of a pressure receptacle in thermal and diffusive equilibrium.

Shipborne barge or *barge* means an independent, non-self-propelled vessel, specially designed and equipped to be lifted in a loaded condition and stowed aboard a barge-carrying ship or barge feeder vessel.

Shipment means the specific movement of a consignment from origin to destination.

Shipper, for the purpose of this Code, has the same meaning as *consignor*.

Short international voyage means an international voyage in the course of which a ship is not more than 200 miles from a port or place in which the passengers and crew could be placed in safety. Neither the distance between the last port of call in the country in which the voyage begins and the final port of destination nor the return voyage shall exceed 600 miles. The final port of destination is the last port of call in the scheduled voyage at which the ship commences its return voyage to the country in which the voyage began.

Sift-proof packagings are packagings impermeable to dry contents, including fine solid material produced during transport.

Solid bulk cargo means any material, other than liquid or gas, consisting of a combination of particles, granules or any larger pieces of material, generally uniform in composition, which is loaded directly into the cargo spaces of a ship without any intermediate form of containment (this includes a material loaded in a barge on a barge-carrying ship).

Solids are dangerous goods, other than gases, that do not meet the definition of *liquids* in this chapter.

Special category space means an enclosed space, above or below deck, intended for the transport of motor vehicles with fuel in their tanks for their own propulsion, into and from which such vehicles can be driven and to which passengers have access.

Tank means a portable tank (including a tank-container), a road tank-vehicle, a rail tank-wagon or a receptacle to contain solids, liquids, or liquefied gases and has a capacity of not less than 450 L when used for the transport of gases as defined in 2.2.1.1.

Test pressure means the required pressure applied during a pressure test for qualification or requalification (for portable tanks, see 6.7.2.1).

Through or into means through or into the countries in which a consignment is transported but specifically excludes countries "over" which a consignment is carried by air, provided that there are no scheduled stops in those countries.

Transboundary movement of wastes means any shipment of wastes from an area under the national jurisdiction of one country to or through an area under the national jurisdiction of another country, or to or through an area not under the national jurisdiction of any country, provided at least two countries are concerned by the movement.

Transport index (TI) assigned to a package, overpack or freight container, or to unpackaged LSA-I or SCO-I or SCO-III, for the transport of radioactive material, means a number which is used to provide control over radiation exposure.

△ *Tube* means a pressure receptacle of seamless or composite construction having a water capacity exceeding 150 L and of not more than 3,000 L.

Unit load means that a number of packages are either:

.1 placed or stacked on and secured by strapping, shrink-wrapping, or other suitable means to a load board, such as a pallet;

.2 placed in a protective outer enclosure, such as a pallet box;

.3 permanently secured together in a sling.

Vehicle means a road vehicle (including an articulated vehicle, i.e. a tractor and semi-trailer combination) or railroad car or railway wagon. Each trailer shall be considered as a separate vehicle.

Wastes means substances, solutions, mixtures, or articles containing or contaminated with one or more constituents which are subject to the provisions of this Code and for which no direct use is envisaged but which are transported for dumping, incineration, or other methods of disposal.

Water-reactive means a substance which, in contact with water, emits flammable gas.

Weather deck means a deck which is completely exposed to the weather from above and from at least two sides.

Wooden barrels means packagings made of natural wood, of round cross-section, having convex walls, consisting of staves and heads and fitted with hoops.

△ *Working pressure:*

.1 for a compressed gas, means the settled pressure at a reference temperature of 15°C in a full pressure receptacle;

.2 for UN 1001 acetylene, dissolved, means the calculated settled pressure at a uniform reference temperature of 15°C in an acetylene cylinder containing the specified solvent content and the maximum acetylene content; and

.3 for UN 3374 acetylene, solvent free, means the working pressure which was calculated for the equivalent cylinder for UN 1001 acetylene, dissolved.

1.2.1.1 Clarifying examples for certain defined terms

The following explanations and examples are meant to assist in clarifying the use of some of the packaging terms defined in this chapter.

The definitions in this chapter are consistent with the use of the defined terms throughout the Code. However, some of the defined terms are commonly used in other ways. This is particularly evident in respect of the term "inner receptacle" which has often been used to describe the "inners" of a combination packaging.

The "inners" of "combination packagings" are always termed "inner packagings", not "inner receptacles". A glass bottle is an example of such an "inner packaging".

The "inners" of "composite packagings" are normally termed "inner receptacles". For example, the "inner" of a 6HA1 composite packaging (plastics material) is such an "inner receptacle" since it is normally not designed to perform a containment function without its "outer packaging" and is not, therefore, an "inner packaging".

1.2.2 Units of measurement

1.2.2.1 The following units of measurement* are applicable in this Code:

Measurement of:	SI unit[a]		Acceptable alternative unit		Relationship between units	
Length	m	(metre)	–		–	
Area	m^2	(square metre)	–		–	
Volume	m^3	(cubic metre)	L[b]	(litre)	1 L	$= 10^{-3}$ m^3
Time	s	(second)	min h d	(minute) (hour) (day)	1 min 1 h 1 d	= 60 s = 3,600 s = 86,400 s
Mass	kg	(kilogram)	g t	(gram) (ton)	1 g 1 t	$= 10^{-3}$ kg $= 10^3$ kg
Mass density	kg/m^3		kg/L		1 kg/L	$= 10^3$ kg/m^3
Temperature	K	(kelvin)	°C	(degree Celsius)	0°C	= 273.15 K
Difference of temperature	K	(kelvin)	°C	(degree Celsius)	1°C	= 1 K
Force	N	(newton)	–		1 N	= 1 kg·m/s^2
Pressure	Pa	(pascal)	bar	(bar)	1 bar 1 Pa	$= 10^5$ Pa = 1 N/m^2
Stress	N/m^2		N/mm^2		1 N/mm^2	= 1 MPa
Work Energy Quantity of heat	J	(joule)	kWh eV	(kilowatt hour) (electronvolt)	1 kWh 1 J 1 eV	= 3.6 MJ = 1 N·m = 1 W·s $= 0.1602 \times 10^{-18}$ J
Power	W	(watt)	–		1 W	= 1 J/s = 1 N·m/s
■ Electrical resistance	Ω	(ohm)	–		1 Ω	= 1 kg · m^2 · s^{-3} · A^{-2}
Kinematic viscosity	m^2/s		mm^2/s		1 mm^2/s	$= 10^{-6}$ m^2/s
Dynamic viscosity	Pa·s		mPa·s		1 mPa·s	$= 10^{-3}$ Pa·s
Activity	Bq	(becquerel)	–		–	
Dose equivalent	Sv	(sievert)	–		–	
Conductivity	S/m	(siemens/metre)	–		–	

[a] The International System of Units (SI) is the result of decisions taken at the General Conference on Weights and Measures (Address: Pavillon de Breteuil, Parc de St-Cloud, F-92312 Sèvres).

[b] The abbreviation "ℓ" for litre may also be used in place of the abbreviation "L".

* The following round figures are applicable for the conversion of the units hitherto used into SI units.

Force	**Stress**		
1 kg = 9.807 N	1 kg/mm^2 = 9.807 N/mm^2		
1 N = 0.102 kg	1 N/mm^2 = 0.102 kg/mm^2		
Pressure			
1 Pa = 1 N/m^2 = 10^{-5} bar	= 1.02×10^{-5} kg/cm^2	= 0.75×10^{-2} torr	
1 bar = 10^5 Pa	= 1.02 kg/cm^2	= 750 torr	
1 kg/cm^2 = 9.807×10^4 Pa	= 0.9807 bar	= 736 torr	
1 torr = 1.33×10^2 Pa	= 1.33×10^{-3} bar	= 1.36×10^{-3} kg/cm^2	
Energy, work, quantity of heat			
1 J = 1 N·m	= 0.278×10^{-6} kWh	= 0.102 kg·m	= 0.239×10^{-3} kcal
1 kWh = 3.6×10^6 J	= 367×10^3 kg·m	= 860 kcal	
1 kg·m = 9.807 J	= 2.72×10^{-6} kWh	= 2.34×10^{-3} kcal	
1 kcal = 4.19×10^3 J	= 1.16×10^{-3} kWh	= 427 kg·m	
Power		**Kinematic viscosity**	
1 W = 0.102 kg·m/s	= 0.86 kcal/h	1 m^2/s = 10^4 St (stokes)	
1 kg·m/s = 9.807 W	= 8.43 kcal/h	1 St = 10^{-4} m^2/s	
1 kcal/h = 1.16 W	= 0.119 kg·m/s		
Dynamic viscosity			
1 Pa·s = 1 N·s/m^2	= 10 P (poise)	= 0.102 kg·s/m^2	
1 P = 0.1 Pa·s	= 0.1 N·s/m^2	= 1.02×10^{-2} kg·s/m^2	
1 kg·s/m^2 = 9.807 Pa·s	= 9.807 N·s/m^2	= 98.07 P	

The decimal multiples and sub-multiples of a unit may be formed by prefixes or symbols, having the following meanings, placed before the name or symbol of the unit:

Multiplying factor				Prefix	Symbol
1 000 000 000 000 000 000	=	10^{18}	quintillion	exa	E
1 000 000 000 000 000	=	10^{15}	quadrillion	peta	P
1 000 000 000 000	=	10^{12}	trillion	tera	T
1 000 000 000	=	10^9	billion	giga	G
1 000 000	=	10^6	million	mega	M
1 000	=	10^3	thousand	kilo	k
100	=	10^2	hundred	hecto	h
10	=	10^1	ten	deca	da
0.1	=	10^{-1}	tenth	deci	d
0.01	=	10^{-2}	hundredth	centi	c
0.001	=	10^{-3}	thousandth	milli	m
0.000 001	=	10^{-6}	millionth	micro	μ
0.000 000 001	=	10^{-9}	billionth	nano	n
0.000 000 000 001	=	10^{-12}	trillionth	pico	p
0.000 000 000 000 001	=	10^{-15}	quadrillionth	femto	f
0.000 000 000 000 000 001	=	10^{-18}	quintillionth	atto	a

Note: 10^9 = 1 billion is United Nations usage in English. By analogy, so is 10^{-9} = 1 billionth.

1.2.2.2 [Reserved]

1.2.2.3 Whenever the mass of a package is mentioned, the gross mass is meant unless otherwise stated. The mass of containers or tanks used for the transport of goods is not included in the gross mass.

1.2.2.4 Unless expressly stated otherwise, the sign "%" represents:

.1 in the case of mixtures of solids or of liquids, and also in the case of solutions and of solids wetted by a liquid: a percentage mass based on the total mass of the mixture, the solution or the wetted solid;

.2 in the case of mixtures of compressed gases: when filled by pressure, the proportion of the volume indicated as a percentage of the total volume of the gaseous mixture, or, when filled by mass, the proportion of the mass indicated as a percentage of the total mass of the mixture;

.3 in the case of mixtures of liquefied gases and gases dissolved under pressure: the proportion of the mass indicated as a percentage of the total mass of the mixture.

1.2.2.5 Pressures of all kinds relating to receptacles (such as test pressure, internal pressure, safety-valve opening pressure) are always indicated in gauge pressure (pressure in excess of atmospheric pressure); however, the vapour pressure of substances is always expressed in absolute pressure.

1.2.2.6 Tables of equivalence

1.2.2.6.1 *Mass conversion tables*

1.2.2.6.1.1 *Conversion factors*

Multiply	*by*	*to obtain*
Grams	0.03527	Ounces
Grams	0.002205	Pounds
Kilograms	35.2736	Ounces
Kilograms	2.2046	Pounds
Ounces	28.3495	Grams
Pounds	16	Ounces
Pounds	453.59	Grams
Pounds	0.45359	Kilograms
Hundredweight	112	Pounds
Hundredweight	50.802	Kilograms

1.2.2.6.1.2 *Pounds to kilograms and vice versa*

When the central value in any row of these mass conversion tables is taken to be in pounds, its equivalent value in kilograms is shown on the left; when the central value is in kilograms, its equivalent in pounds is shown on the right.

kg	← lb	kg →	lb	kg	← lb	kg →	lb	kg	← lb	kg →	lb
0.227	0.5		1.10	22.7	50		110	90.7	200		441
0.454	1		2.20	24.9	55		121	95.3	210		463
0.907	2		4.41	27.2	60		132	99.8	220		485
1.36	3		6.61	29.5	65		143	102	225		496
1.81	4		8.82	31.8	70		154	104	230		507
2.27	5		11.0	34.0	75		165	109	240		529
2.72	6		13.2	36.3	80		176	113	250		551
3.18	7		15.4	38.6	85		187	118	260		573
3.63	8		17.6	40.8	90		198	122	270		595
4.08	9		19.8	43.1	95		209	125	275		606
4.54	10		22.0	45.4	100		220	127	280		617
4.99	11		24.3	47.6	105		231	132	290		639
5.44	12		26.5	49.9	110		243	136	300		661
5.90	13		28.7	52.2	115		254	159	350		772
6.35	14		30.9	54.4	120		265	181	400		882
6.80	15		33.1	56.7	125		276	204	450		992
7.26	16		35.3	59.0	130		287	227	500		1,102
7.71	17		37.5	61.2	135		298	247	545		1,202
8.16	18		39.7	63.5	140		309	249	550		1,213
8.62	19		41.9	65.8	145		320	272	600		1,323
9.07	20		44.1	68.0	150		331	318	700		1,543
11.3	25		55.1	72.6	160		353	363	800		1,764
13.6	30		66.1	77.1	170		375	408	900		1,984
15.9	35		77.2	79.4	175		386	454	1,000		2,205
18.1	40		88.2	81.6	180		397				
20.4	45		99.2	86.2	190		419				

1.2.2.6.2 *Liquid measure conversion tables*

1.2.2.6.2.1 *Conversion factors*

Multiply	*by*	*to obtain*
Litres	0.2199	Imperial gallons
Litres	1.759	Imperial pints
Litres	0.2643	US gallons
Litres	2.113	US pints

Gallons		8	Pints
Imperial gallons		4.546	Litres
Imperial gallons Imperial pints	}	1.20095	{ US gallons US pints
Imperial pints		0.568	Litres
US gallons		3.7853	Litres
US gallons US pints	}	0.83268	{ Imperial gallons Imperial pints
US pints		0.473	Litres

1.2.2.6.2.2 *Imperial pints to litres and vice versa*

When the central value in any row of these liquid measure conversion tables is taken to be in pints, its equivalent value in litres is shown on the left; when the central value is in litres, its equivalent in pints is shown on the right.

L	← pt →	L	pt
0.28	0.5		0.88
0.57	1		1.76
0.85	1.5		2.64
1.14	2		3.52
1.42	2.5		4.40
1.70	3		5.28
1.99	3.5		6.16
2.27	4		7.04
2.56	4.5		7.92
2.84	5		8.80
3.12	5.5		9.68
3.41	6		10.56
3.69	6.5		11.44
3.98	7		12.32
4.26	7.5		13.20
4.55	8		14.08

1.2.2.6.2.3 *Imperial gallons to litres and vice versa*

When the central value in any row of these liquid measure conversion tables is taken to be in gallons, its equivalent value in litres is shown on the left; when the central value is in litres, its equivalent in gallons is shown on the right.

L	← gal	→ L	gal	L	← gal	→ L	gal
2.27	0.5		0.11	159.11	35		7.70
4.55	1		0.22	163.65	36		7.92
9.09	2		0.44	168.20	37		8.14
13.64	3		0.66	172.75	38		8.36
18.18	4		0.88	177.29	39		8.58
22.73	5		1.10	181.84	40		8.80
27.28	6		1.32	186.38	41		9.02
31.82	7		1.54	190.93	42		9.24
36.37	8		1.76	195.48	43		9.46
40.91	9		1.98	200.02	44		9.68
45.46	10		2.20	204.57	45		9.90
50.01	11		2.42	209.11	46		10.12
54.55	12		2.64	213.66	47		10.34
59.10	13		2.86	218.21	48		10.56
63.64	14		3.08	222.75	49		10.78
68.19	15		3.30	227.30	50		11.00
72.74	16		3.52	250.03	55		12.09
77.28	17		3.74	272.76	60		13.20
81.83	18		3.96	295.49	65		14.29
86.37	19		4.18	318.22	70		15.40
90.92	20		4.40	340.95	75		16.49
95.47	21		4.62	363.68	80		17.60
100.01	22		4.84	386.41	85		18.69
104.56	23		5.06	409.14	90		19.80
109.10	24		5.28	431.87	95		20.89
113.65	25		5.50	454.60	100		22.00
118.19	26		5.72	613.71	135		29.69
122.74	27		5.94	681.90	150		32.98
127.29	28		6.16	909.20	200		43.99
131.83	29		6.38	1,022.85	225		49.48
136.38	30		6.60	1,136.50	250		54.97
140.92	31		6.82	1,363.80	300		65.99
145.47	32		7.04	1,591.10	350		76.96
150.02	33		7.26	1,818.40	400		87.99
154.56	34		7.48	2,045.70	450		98.95

1.2.2.6.3 *Temperature conversion tables*

Degrees Fahrenheit to degrees Celsius and vice versa

When the central value in any row of these temperature conversion tables is taken to be in °F, its equivalent value in °C is shown on the left; when the central value is in °C, its equivalent in °F is shown on the right.

General formula: $°F = (°C \times \frac{9}{5}) + 32$; $°C = (°F - 32) \times \frac{5}{9}$

°C	← °F	°C →	°F	°C	← °F	°C →	°F	°C	← °F	°C →	°F
−73.3	−100		−148	−21.1	−6		21.2	1.1	34		93.2
−67.8	−90		−130	−20.6	−5		23.0	1.7	35		95
−62.2	−80		−112	−20.0	−4		24.8	2.2	36		96.8
−56.7	−70		−94	−19.4	−3		26.6	2.8	37		98.6
−51.1	−60		−76	−18.9	−2		28.4	3.3	38		100.4
−45.6	−50		−58	−18.3	−1		30.2	3.9	39		102.2
−40	−40		−40	−17.8	0		32.0	4.4	40		104
−39.4	−39		−38.2	−17.2	1		33.8	5	41		105.8
−38.9	−38		−36.4	−16.7	2		35.6	5.6	42		107.6
−38.3	−37		−34.6	−16.1	3		37.4	6.1	43		109.4
−37.8	−36		−32.8	−15.6	4		39.2	6.7	44		111.2
−37.2	−35		−31	−15.0	5		41.0	7.2	45		113
−36.7	−34		−29.2	−14.4	6		42.8	7.8	46		114.8
−36.1	−33		−27.4	−13.9	7		44.6	8.3	47		116.6
−35.6	−32		−25.6	−13.3	8		46.4	8.9	48		118.4
−35	−31		−23.8	−12.8	9		48.2	9.4	49		120.2
−34.4	−30		−22	−12.2	10		50.0	10.0	50		122.0
−33.9	−29		−20.2	−11.7	11		51.8	10.6	51		123.8
−33.3	−28		−18.4	−11.1	12		53.6	11.1	52		125.6
−32.8	−27		−16.6	−10.6	13		55.4	11.7	53		127.4
−32.2	−26		−14.8	−10.0	14		57.2	12.2	54		129.2
−31.7	−25		−13	−9.4	15		59.0	12.8	55		131.0
−31.1	−24		−11.2	−8.9	16		60.8	13.3	56		132.8
−30.6	−23		−9.4	−8.3	17		62.6	13.9	57		134.6
−30	−22		−7.6	−7.8	18		64.4	14.4	58		136.4
−29.4	−21		−5.8	−7.2	19		66.2	15.0	59		138.2
−28.9	−20		−4	−6.7	20		68	15.6	60		140.0
−28.3	−19		−2.2	−6.1	21		69.8	16.1	61		141.8
−27.8	−18		−0.4	−5.6	22		71.6	16.7	62		143.6
−27.2	−17		1.4	−5	23		73.4	17.2	63		145.4
−26.7	−16		3.2	−4.4	24		75.2	17.8	64		147.2
−26.1	−15		5	−3.9	25		77	18.3	65		149.0
−25.6	−14		6.8	−3.3	26		78.8	18.9	66		150.8
−25.0	−13		8.6	−2.8	27		80.6	19.4	67		152.6
−24.4	−12		10.4	−2.2	28		82.4	20.0	68		154.4
−23.9	−11		12.2	−1.7	29		84.2	20.6	69		156.2
−23.3	−10		14.0	−1.1	30		86	21.1	70		158.0
−22.8	−9		15.8	−0.6	31		87.8	21.7	71		159.8
−22.2	−8		17.6	0	32		89.6	22.2	72		161.6
−21.7	−7		19.4	0.6	33		91.4	22.8	73		163.4

°C	← °F	→ °C	°F	°C	← °F	→ °C	°F	°C	← °F	→ °C	°F
23.3	74		165.2	37.8	100		212	52.2	126		258.8
23.9	75		167.0	38.3	101		213.8	52.8	127		260.6
24.4	76		168.8	38.9	102		215.6	53.3	128		262.4
25.0	77		170.6	39.4	103		217.4	53.9	129		264.2
25.6	78		172.4	40	104		219.2	54.4	130		266.0
26.1	79		174.2	40.6	105		221	55.0	131		267.8
26.7	80		176.0	41.1	106		222.8	55.6	132		269.6
27.2	81		177.8	41.7	107		224.6	56.1	133		271.4
27.8	82		179.6	42.2	108		226.4	56.7	134		273.2
28.3	83		181.4	42.8	109		228.2	57.2	135		275.0
28.9	84		183.2	43.3	110		230	57.8	136		276.8
29.4	85		185	43.9	111		231.8	58.3	137		278.6
30	86		186.8	44.4	112		233.6	58.9	138		280.4
30.6	87		188.6	45	113		235.4	59.4	139		282.2
31.1	88		190.4	45.6	114		237.2	60.0	140		284.0
31.7	89		192.2	46.1	115		239.0	65.6	150		302.0
32.2	90		194	46.7	116		240.8	71.1	160		320.0
32.8	91		195.8	47.2	117		242.6	76.7	170		338.0
33.3	92		197.6	47.8	118		244.4	82.2	180		356.0
33.9	93		199.4	48.3	119		246.2	87.8	190		374.0
34.4	94		201.2	48.9	120		248.0	93.3	200		392.0
35	95		203	49.4	121		249.8	98.9	210		410.0
35.6	96		204.8	50.0	122		251.6	104.4	220		428.0
36.1	97		206.6	50.6	123		253.4	110.0	230		446.0
36.7	98		208.4	51.1	124		255.2	115.6	240		464.0
37.2	99		210.2	51.7	125		257.0	121.1	250		482.0

1.2.3 List of abbreviations

ASTM	American Society for Testing and Materials (ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA, 19428-2959, United States of America)
CGA	Compressed Gas Association (CGA, 14501 George Carter Way, Suite 103, Chantilly, VA 20151, United States of America)
CCC	IMO Sub-Committee on Carriage of Cargoes and Containers
CSC	*International Convention for Safe Containers, 1972* (CSC Convention), as amended
ECOSOC	Economic and Social Council (UN)
EmS	The EmS Guide: Revised Emergency Response Procedures for Ships Carrying Dangerous Goods
EN (standard)	European standard published by the European Committee for Standardization (CEN) (CEN, 36 rue de Stassart, B-1050 Brussels, Belgium)
FAO	Food and Agriculture Organization (FAO, Viale delle Terme di Caracalla, 00100 Rome, Italy)
HNS Convention	*International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea* (IMO)
IAEA	International Atomic Energy Agency (IAEA, P.O. Box 100, A – 1400 Vienna, Austria)
ICAO	International Civil Aviation Organization (ICAO, 999 University Street, Montreal, Quebec H3C 5H7, Canada)
IEC	International Electrotechnical Commission (IEC, 3 rue de Varembé, P.O. Box 131, CH-1211 Geneva 20, Switzerland)
ILO	International Labour Organization/Office (ILO, 4 route des Morillons, CH-1211 Geneva 22, Switzerland)

IMGS	*International Medical Guide for Ships*
IMO	International Maritime Organization (IMO, 4 Albert Embankment, London SE1 7SR, United Kingdom)
IMDG Code	*International Maritime Dangerous Goods Code*
IMSBC Code	*International Maritime Solid Bulk Cargoes Code*
INF Code	*International Code for the Safe Carriage of Packaged Irradiated Nuclear Fuel, Plutonium and High-Level Radioactive Wastes on board Ships*
ISO (standard)	An international standard published by the International Organization for Standardization (ISO, 1, ch. de la Voie-Creuse, CH-1211 Geneva 20, Switzerland)
MARPOL	*International Convention for the Prevention of Pollution from Ships, 1973*, as amended by the 1978 and 1997 Protocols relating thereto
MAWP	Maximum allowable working pressure
MEPC	Marine Environment Protection Committee (IMO)
MFAG	Medical First Aid Guide for use in Accidents Involving Dangerous Goods
MSC	Maritime Safety Committee (IMO)
N.O.S.	not otherwise specified
SADT	self-accelerating decomposition temperature
SAPT	self-accelerating polymerization temperature
SOLAS	*International Convention for the Safety of Life at Sea, 1974*, as amended
UNECE	United Nations Economic Commission for Europe (UNECE, Palais des Nations, 8–14 avenue de la Paix, CH-1211 Geneva 10, Switzerland)
UN number	four-digit United Nations number is assigned to dangerous, hazardous and harmful substances, materials and articles most commonly transported
UNEP	United Nations Environment Programme (United Nations Avenue, Gigiri, PO Box 30552, 00100, Nairobi, Kenya)
UNESCO/IOC	UN Educational, Scientific and Cultural Organization/Intergovernmental Oceanographic Commission (UNESCO/IOC, 1 rue Miollis, 75732 Paris Cedex 15, France)
WHO	World Health Organization (Avenue Appia 20, CH-1211 Geneva 27, Switzerland)
WMO	World Meteorological Organization (WMO, 7bis, avenue de la Paix, Case postale No. 2300, CH-1211 Geneva 2, Switzerland)

Chapter 1.3

Training

1.3.0 Introductory note

The successful application of regulations concerning the transport of dangerous goods and the achievement of their objectives are greatly dependent on the appreciation by all persons concerned of the risks involved and on a detailed understanding of the regulations. This can only be achieved by properly planned and maintained initial and retraining programmes for all persons concerned with the transport of dangerous goods. The provisions of paragraphs 1.3.1.4 to 1.3.1.7 remain recommendatory (see 1.1.1.5).

1.3.1 Training of shore-side personnel

1.3.1.1 Shore-based personnel* engaged in the transport of dangerous goods intended to be transported by sea shall be trained in the contents of dangerous goods provisions commensurate with their responsibilities. Employees shall be trained in accordance with the provisions of 1.3.1 before assuming responsibilities and shall only perform functions, for which required training has not yet been provided, under the direct supervision of a trained person. Training requirements specific to security of dangerous goods in chapter 1.4 shall also be addressed.

Entities engaging shore-based personnel in such activities shall determine which staff will be trained, what levels of training they require and the training methods used to enable them to comply with the provisions of the IMDG Code. This training shall be provided or verified upon employment in a position involving dangerous goods transport. For personnel who have not yet received the required training, the entities shall ensure that those personnel may only perform functions under the direct supervision of a trained person. The training shall be periodically supplemented with refresher training to take account of changes in regulations and practice. The competent authority, or its authorized body, may audit the entity to verify the effectiveness of the system in place, in providing training of staff commensurate with their role and responsibilities in the transport chain.

1.3.1.2 Shore-based personnel such as those who:

- classify dangerous goods and identify proper shipping names of dangerous goods;
- pack dangerous goods;
- mark, label or placard dangerous goods;
- load/unload cargo transport units;
- prepare transport documents for dangerous goods;
- offer dangerous goods for transport;
- accept dangerous goods for transport;
- handle dangerous goods in transport;
- prepare dangerous goods loading/stowage plans;
- load/unload dangerous goods into/from ships;
- carry dangerous goods in transport;
- enforce or survey or inspect for compliance with applicable rules and regulations; or
- are otherwise involved in the transport of dangerous goods as determined by the competent authority

shall be trained in the following:

1.3.1.2.1 *General awareness/familiarization training:*

.1 each person shall be trained in order to be familiar with the general provisions of dangerous goods transport provisions;

* For the training of officers and ratings responsible for cargo handling on ships carrying dangerous and hazardous substances in solid form in bulk, or in packaged form, see the STCW Code, as amended.

.2 such training shall include a description of the classes of dangerous goods; labelling, marking, placarding, packing, stowage, segregation and compatibility provisions; a description of the purpose and content of the dangerous goods transport documents (such as the Multimodal Dangerous Goods Form and the Container/Vehicle Packing Certificate); and a description of available emergency response documents.

1.3.1.2.2 *Function-specific training:* Each person shall be trained in specific dangerous goods transport provisions which are applicable to the function that person performs. An indicative list, for guidance purposes only, of some of the functions typically found in dangerous goods transport operations by sea and training requirements is given in paragraph 1.3.1.6.

1.3.1.3 Records of training received according to this chapter shall be kept by the employer and made available to the employee or competent authority, upon request. Records shall be kept by the employer for a period of time established by the competent authority.

1.3.1.4 *Safety training*: Commensurate with the risk of exposure in the event of a release and the functions performed, each person should be trained in:

.1 methods and procedures for accident avoidance, such as proper use of package-handling equipment and appropriate methods of stowage of dangerous goods;

.2 available emergency response information and how to use it;

.3 general dangers presented by the various classes of dangerous goods and how to prevent exposure to those hazards, including, if appropriate, the use of personal protective clothing and equipment; and

.4 immediate procedures to be followed in the event of an unintentional release of dangerous goods, including any emergency response procedures for which the person is responsible and personal protection procedures to be followed.

1.3.1.5 **Recommended training needs for shore-side personnel involved in the transport of dangerous goods under the IMDG Code**

The following indicative table is for information purposes only as every entity is arranged differently and may have varied roles and responsibilities within that entity.

Function	Specific training requirements	Numbers in this column refer to the list of related codes and publications in 1.3.1.7
1 Classify dangerous goods and identify proper shipping name	Classification requirements, in particular – the structure of the description of substances – the classes of dangerous goods and the principles of their classification – the nature of the dangerous substances and articles transported (their physical, chemical and toxicological properties) – the procedure for classifying solutions and mixtures – identification by proper shipping name – use of Dangerous Goods List	.1, .4, .5 and .12
2 Pack dangerous goods	Classes Packaging requirements – type of packages (IBC, large packaging, tank container and bulk container) – UN marking for approved packagings – segregation requirements – limited quantities and excepted quantities Marking and labelling First aid measures Emergency response procedures Safe handling procedures	.1 and .4
3 Mark, label or placard dangerous goods	Classes Marking, labelling and placarding requirements – primary and subsidiary hazard labels – marine pollutants – limited quantities and excepted quantities	.1

Function	Specific training requirements	Numbers in this column refer to the list of related codes and publications in 1.3.1.7
4 Load/unload cargo transport units	Documentation Classes Marking, labelling and placarding Stowage requirements, where applicable Segregation requirements Cargo securing requirements (as contained in the CTU Code) Emergency response procedures First aid measures CSC requirements Safe handling procedures	.1, .6, .7 and .8
5 Prepare transport documents for dangerous goods	Documentation requirements – transport document – container/vehicle packing certificate – competent authorities' approval – waste transport documentation – special documentation, where appropriate	.1
6 Offer dangerous goods for transport	Thorough knowledge of the IMDG Code Local requirements at loading and discharge ports – port byelaws – national transport regulations	.1 to .10 and .12
7 Accept dangerous goods for transport	Thorough knowledge of the IMDG Code Local requirements at loading, transiting and discharge ports – port byelaws, in particular quantity limitations – national transport regulations	.1 to .12
8 Handle dangerous goods in transport	Classes and their hazards Marking, labelling and placarding Emergency response procedures First aid measures Safe handling procedures such as – use of equipment – appropriate tools – safe working loads CSC requirements, local requirements at loading, transit and discharge ports Port byelaws, in particular, quantity limitation National transport regulations	.1, .2, .3, .6, .7, .8 and .10
9 Prepare dangerous goods loading/ stowage plans	Documentation Classes Stowage requirements Segregation requirements Document of compliance Relevant IMDG Code parts, local requirements at loading, transit and discharge ports Port byelaws, in particular, quantity limitations	.1, .10, .11 and .12
10 Load/unload dangerous goods into/ from ships	Classes and their hazards Marking, labelling and placarding Emergency response procedures First aid measures Safe handling procedures such as – use of equipment – appropriate tools – safe working loads Cargo securing requirements CSC requirements, local requirements at loading, transit and discharge ports Port byelaws, in particular, quantity limitation National transport regulations	.1, .2, .3, .7, .9, .10 and .12

Function	Specific training requirements	Numbers in this column refer to the list of related codes and publications in 1.3.1.7
11 Carry dangerous goods	Documentation Classes Marking, labelling and placarding Stowage requirements, where applicable Segregation requirements Local requirements at loading, transit and discharge ports – port byelaws, in particular, quantity limitations – national transport regulations Cargo securing requirements (as contained in the CTU Code) Emergency response procedures First aid measures CSC requirements Safe handling procedures	.1, .2, .3, .6, .7, .10, .11 and .12
12 Enforce or survey or inspect for compliance with applicable rules and regulations	Knowledge of IMDG Code and relevant guidelines and safety procedures	.1 to .13
13 Are otherwise involved in the transport of dangerous goods, as determined by the competent authority	As required by the competent authority commensurate with the task assigned	–

1.3.1.6 Indicative table describing sections of the IMDG Code or other relevant instruments that may be appropriate to be considered in any training for the transport of dangerous goods

	Function	IMDG Code part/section																SOLAS chapter II-2/19	Port byelaws	National transport regulations	CSC	CTU Code	Emergency response procedures	First aid measures	Safe handling procedures
		1	2	2.0	3	4	5	6	6*	7.1	7.2	7.3	7.4	7.5	7.6	7.7	7.8	7.9								
1	Classify	X	X		X		X											X								
2	Pack	X		X	X	X	X	X			X	X						X						X	X	X
3	Mark, label, placard			X	X		X																			
4	Load/unload cargo transport units	X		X	X	X	X		X		X	X										X	X	X	X	X
5	Prepare transport documents	X		X	X		X											X						X	X	
6	Offer for transport	X	X		X	X	X	X		X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
7	Accept for transport	X	X		X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
8	Handle in transport	X		X	X		X		X			X								X	X	X		X	X	X
9	Prepare loading/ stowage plans	X		X	X	X	X			X	X	X	X	X	X	X	X	X	X	X				X		
10	Load/unload from ships	X	X		X		X					X			X			X		X		X	X	X	X	X
11	Carry	X		X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

* Only sections 6.1.2, 6.1.3, 6.5.2, 6.6.3, 6.7.2.20, 6.7.3.16 and 6.7.4.15 apply.

1.3.1.7 Related Codes and publications which may be appropriate for function-specific training

.1 *International Maritime Dangerous Goods Code* (IMDG Code), as amended

.2 The EmS Guide: Revised Emergency Response Procedures for Ships Carrying Dangerous Goods (EmS)

.3 *Medical First Aid Guide for Use in Accidents Involving Dangerous Goods* (MFAG), as amended

.4 *United Nations Recommendations on the Transport of Dangerous Goods – Model Regulations*, as amended

.5 *United Nations Recommendations on the Transport of Dangerous Goods – Manual of Tests and Criteria*, as amended

.6 *IMO/ILO/UNECE Code of Practice for Packing of Cargo Transport Units* (CTU Code)

.7 *Recommendations on the Safe Transport of Dangerous Cargoes and Related Activities in Port Areas*

.8 *International Convention for Safe Containers, 1972* (CSC Convention), as amended

.9 *Code of Safe Practice for Cargo Stowage and Securing* (CSS Code), as amended

.10 *Revised Recommendations on the safe use of pesticides in ships applicable to the fumigation of cargo transport units* (MSC.1/Circ.1361/Rev.1)

.11 *International Convention for the Safety of Life at Sea, 1974* (SOLAS), as amended

.12 *International Convention for the Prevention of Pollution from Ships, 1973* as modified by the Protocol of 1978 (MARPOL), as amended.

.13 *Inspection programmes for cargo transport units carrying dangerous goods* (MSC.1/Circ.1442, as amended by MSC.1/Circ.1521).

Chapter 1.4

Security provisions

1.4.0 Scope

1.4.0.1 The provisions of this chapter address the security of dangerous goods in transport by sea. National competent authorities may apply additional security provisions, which should be considered when offering or transporting dangerous goods. The provisions of this chapter remain recommendatory except 1.4.1.1 (see 1.1.1.5).

1.4.0.2 The provisions of 1.4.2 and 1.4.3 do not apply to:

.1 UN 2908 and UN 2909 excepted packages;

.2 UN 2910 and UN 2911 excepted packages with an activity level not exceeding the A_2 value; and

.3 UN 2912 LSA-I and UN 2913 SCO-I.

1.4.1 General provisions for companies, ships and port facilities*

1.4.1.1 The relevant provisions of chapter XI-2 of SOLAS, as amended, and of part A of the *International Ship and Port Facility Security Code* (ISPS Code) apply to companies, ships and port facilities engaged in the transport of dangerous goods and to which regulation XI-2 of SOLAS, as amended, apply taking into account the guidance given in part B of the ISPS Code.

1.4.1.2 For cargo ships of less than 500 gross tons engaged in the transport of dangerous goods, it is recommended that Contracting Governments to SOLAS, as amended, consider security provisions for these cargo ships.

1.4.1.3 Any shore-based company personnel, ship-based personnel and port facility personnel engaged in the transport of dangerous goods should be aware of the security requirements for such goods, in addition to those specified in the ISPS Code, and commensurate with their responsibilities.

1.4.1.4 The training of the company security officer, shore-based company personnel having specific security duties, port facility security officer and port facility personnel having specific duties, engaged in the transport of dangerous goods, should also include elements of security awareness related to those goods.

1.4.1.5 All shipboard personnel and port facility personnel who are not mentioned in 1.4.1.4 and are engaged in the transport of dangerous goods should be familiar with the provisions of the relevant security plans related to those goods, commensurate with their responsibilities.

1.4.2 General provisions for shore-side personnel

1.4.2.1 For the purpose of this subsection, shore-side personnel covers individuals mentioned in 1.3.1.2. However, the provisions of 1.4.2 do not apply to:

- the company security officer and appropriate shore-based company personnel mentioned in 13.1 of part A of the ISPS Code,
- the ship security officer and the shipboard personnel mentioned in 13.2 and 13.3 of part A of the ISPS Code,
- the port facility security officer, the appropriate port facility security personnel and the port facility personnel having specific security duties mentioned in 18.1 and 18.2 of part A of the ISPS Code.

For the training of those officers and personnel, refer to the *International Ship and Port Facility Security Code* (ISPS Code).

* Refer to *Guidelines on security-related training and familiarization for port facility personnel* (MSC.1/Circ.1341) and to *Guidelines on training and certification for port facility security officers* (MSC.1/Circ.1188).

1.4.2.2 Shore-side personnel engaged in transport by sea of dangerous goods should consider security provisions for the transport of dangerous goods commensurate with their responsibilities.

1.4.2.3 **Security training**

1.4.2.3.1 The training of shore-side personnel, as specified in chapter 1.3, shall also include elements of security awareness.

1.4.2.3.2 Security awareness training should address the nature of security risks, recognizing security risks, methods to address and reduce risks and actions to be taken in the event of a security breach. It should include awareness of security plans (if appropriate, refer to 1.4.3) commensurate with the responsibilities of individuals and their part in implementing security plans.

1.4.2.3.3 Such training should be provided or verified upon employment in a position involving dangerous goods transport and should be periodically supplemented with retraining.

1.4.2.3.4 Records of all security training received should be kept by the employer and made available to the employee or competent authority, upon request. Records should be kept by the employer for a period of time established by the competent authority.

1.4.3 Provisions for high consequence dangerous goods

1.4.3.1 **Definition of high consequence dangerous goods**

1.4.3.1.1 High consequence dangerous goods are those which have the potential for misuse in a terrorist event and which may, as a result, produce serious consequences such as mass casualties, mass destruction or, particularly for class 7, mass socio-economic disruption.

1.4.3.1.2 An indicative list of high consequence dangerous goods in classes and divisions other than class 7 is given in table 1.4.1 below.

Table 1.4.1 – *Indicative list of high consequence dangerous goods*

Class 1, Division 1.1	explosives
Class 1, Division 1.2	explosives
Class 1, Division 1.3	compatibility group C explosives
Class 1, Division 1.4	UN Nos. 0104, 0237, 0255, 0267, 0289, 0361, 0365, 0366, 0440, 0441, 0455, 0456, 0500, 0512 and 0513
Class 1, Division 1.5	explosives
Class 1, Division 1.6	explosives
Class 2.1	flammable gases in quantities greater than 3,000 L in a road tank vehicle, a railway tank wagon or a portable tank
Class 2.3	toxic gases
Class 3	flammable liquids of packing groups I and II in quantities greater than 3,000 L in a road tank vehicle, a railway tank wagon or a portable tank
Class 3	liquid desensitized explosives
Class 4.1	solid desensitized explosives
Class 4.2	goods of packing group I in quantities greater than 3,000 kg or 3,000 L in a road tank vehicle, a railway tank wagon, a portable tank or a bulk container
Class 4.3	goods of packing group I in quantities greater than 3,000 kg or 3,000 L in a road tank vehicle, a railway tank wagon, a portable tank or a bulk container
Class 5.1	oxidizing liquids of packing group I in quantities greater than 3,000 L in a road tank vehicle, a railway tank wagon or a portable tank
Class 5.1	perchlorates, ammonium nitrate, ammonium nitrate fertilizers and ammonium nitrate emulsions or suspensions or gels in quantities greater than 3,000 kg or 3,000 L in a road tank vehicle, a railway tank wagon, a portable tank or a bulk container

Class 6.1	toxic substances of packing group I
Class 6.2	infectious substances of Category A (UN 2814 and UN 2900) and medical waste of Category A (UN 3549)
Class 8	corrosive substances of packing group I in quantities greater than 3,000 kg or 3,000 L in a road tank vehicle, a railway tank wagon, a portable tank or a bulk container

1.4.3.1.3 For dangerous goods of class 7, high consequence radioactive material is that with an activity equal to or greater than a transport security threshold of 3,000 A_2 per single package (see also 2.7.2.2.1) except for the following radionuclides where the transport security threshold is given in table 1.4.2 below.

Table 1.4.2 – *Transport security thresholds for specific radionuclides*

Element	Radionuclide	Transport security threshold (TBq)
Americium	Am-241	0.6
Gold	Au-198	2
Cadmium	Cd-109	200
Californium	Cf-252	0.2
Curium	Cm-244	0.5
Cobalt	Co-57	7
Cobalt	Co-60	0.3
Caesium	Cs-137	1
Iron	Fe-55	8,000
Germanium	Ge-68	7
Gadolinium	Gd-153	10
Iridium	Ir-192	0.8
Nickel	Ni-63	600
Palladium	Pd-103	900
Promethium	Pm-147	400
Polonium	Po-210	0.6
Plutonium	Pu-238	0.6
Plutonium	Pu-239	0.6
Radium	Ra-226	0.4
Ruthenium	Ru-106	3
Selenium	Se-75	2
Strontium	Sr-90	10
Thallium	Tl-204	200
Thulium	Tm-170	200
Ytterbium	Yb-169	3

1.4.3.1.4 For mixtures of radionuclides, determination of whether or not the transport security threshold has been met or exceeded can be calculated by summing the ratios of activity present for each radionuclide divided by the transport security threshold for that radionuclide. If the sum of the fractions is less than 1, then the radioactivity threshold for the mixture has not been met nor exceeded.

This calculation can be made with the formula:

$$\sum_i \frac{A_i}{T_i} < 1$$

where:

A_i = activity of radionuclide *i* that is present in a package (TBq)

T_i = transport security threshold for radionuclide *i* (TBq).

1.4.3.1.5 When radioactive materials possess subsidiary hazards of other classes or divisions, the criteria of table 1.4.1 should also be taken into account (see also 1.5.5.1).

1.4.3.2 Specific security provisions for high consequence dangerous goods

1.4.3.2.1 The provisions of this section do not apply to ships and to port facilities (see the ISPS Code for ship security plan and for port facility security plan).

Note: In addition to the security provisions of this Code, competent authorities may implement further security provisions for reasons other than safety of dangerous goods during transport. In order to not impede international and multimodal transport by different explosives security marks, it is recommended that such marks be formatted consistent with an internationally harmonized standard (e.g. European Union Commission Directive 2008/43/EC).

1.4.3.2.2 *Security plans*

1.4.3.2.2.1 Consignors and others engaged in the transport of high consequence dangerous goods (see 1.4.3.1) should adopt, implement and comply with a security plan that addresses at least the elements specified in 1.4.3.2.2.2.

1.4.3.2.2.2 The security plan should comprise at least the following elements:

.1 specific allocation of responsibilities for security to competent and qualified persons with appropriate authority to carry out their responsibilities;

.2 records of dangerous goods or types of dangerous goods transported;

.3 review of current operations and assessment of vulnerabilities, including intermodal transfer, temporary transit storage, handling and distribution, as appropriate;

.4 clear statements of measures, including training, policies (including response to higher threat conditions, new employee/employment verification, etc.), operating practices (e.g. choice/use of routes where known, access to dangerous goods in temporary storage, proximity to vulnerable infrastructure, etc.), equipment and resources that are to be used to reduce security risks;

.5 effective and up-to-date procedures for reporting and dealing with security threats, breaches of security or security-related incidents;

.6 procedures for the evaluation and testing of security plans and procedures for periodic review and update of the plans;

.7 measures to ensure the security of transport information contained in the plan; and

.8 measures to ensure that the distribution of transport information is limited as far as possible. (Such measures shall not preclude provision of transport documentation required by chapter 5.4 of this Code.)

△ 1.4.3.2.3 For radioactive material, the provisions of this chapter are deemed to be complied with when the provisions of the Convention on Physical Protection of Nuclear Material (INFCIRC/274/Rev.1, IAEA, Vienna (1980)) and the IAEA circular on *Nuclear Security Recommendations on Physical Protection of Nuclear Material and Nuclear Facilities* (INFCIRC/225/Rev.5, IAEA, Vienna (2011)) are applied.

Chapter 1.5

General provisions concerning radioactive material

1.5.1 Scope and application

△ **1.5.1.1** The provisions of this Code establish standards of safety which provide an acceptable level of control of the radiation, criticality and thermal hazards to people, property and the environment that are associated with the transport of radioactive material. These provisions are based on the 2018 edition of the *IAEA Regulations for the Safe Transport of Radioactive Material*. Explanatory material can be found in *Advisory Material for the IAEA Regulations for the Safe Transport of Radioactive Material* (2018 Edition), *Safety Standard Series No. SSG-26 (Rev.1),* IAEA, Vienna (2019).

1.5.1.2 The objective of this Code is to establish provisions that shall be satisfied to ensure safety and to protect people, property and the environment from harmful effects of ionizing radiation during the transport of radioactive material. This protection is achieved by requiring:

.1 containment of the radioactive contents;

.2 control of external dose rate;

.3 prevention of criticality; and

.4 prevention of damage caused by heat.

These provisions are satisfied firstly by applying a graded approach to contents limits for packages and conveyances and to performance standards applied to package designs depending upon the hazard of the radioactive contents. Secondly, they are satisfied by imposing conditions on the design and operation of packages and on the maintenance of packagings, including a consideration of the nature of the radioactive contents. Thirdly, they are satisfied by requiring administrative controls including, where appropriate, approval by competent authorities. Finally, further protection is provided by making arrangements for planning and preparing emergency response to protect people, property and the environment.

1.5.1.3 The provisions of this Code apply to the transport of radioactive material by sea, including transport which is incidental to the use of the radioactive material. Transport comprises all operations and conditions associated with and involved in the movement of radioactive material; these include the design, manufacture, maintenance and repair of packaging, and the preparation, consigning, loading, transport including in-transit storage, unloading and receipt at the final destination of loads of radioactive material and packages. A graded approach is applied to the performance standards in the provisions of this Code that are characterized by three general severity levels:

.1 routine conditions of transport (incident-free);

.2 normal conditions of transport (minor mishaps); and

.3 accident conditions of transport.

1.5.1.4 The provisions of this Code do not apply to any of the following:

.1 radioactive material that is an integral part of the means of transport;

.2 radioactive material moved within an establishment which is subject to appropriate safety regulations in force in the establishment and where the movement does not involve public roads or railways;

.3 radioactive material implanted or incorporated into a person or live animal for diagnosis or treatment;

.4 radioactive material in or on a person who is to be transported for medical treatment because the person has been subject to accidental or deliberate intake of radioactive material or to contamination;

.5 radioactive material in consumer products which have received regulatory approval, following their sale to the end user;

.6 natural material and ores containing naturally occurring radionuclides (which may have been processed), provided the activity concentration of the material does not exceed 10 times the values specified in table 2.7.2.2.1, or calculated in accordance with 2.7.2.2.2.1 and 2.7.2.2.3 to 2.7.2.2.6. For natural materials

and ores containing naturally occurring radionuclides that are not in secular equilibrium the calculation of the activity concentration shall be performed in accordance with 2.7.2.2.4; and

.7 non-radioactive solid objects with radioactive substances present on any surfaces in quantities not in excess of the limit set out in the definition for "contamination" in 2.7.1.2.

1.5.1.5 Specific provisions for the transport of excepted packages

1.5.1.5.1 Excepted packages which may contain radioactive material in limited quantities, instruments, manufactured articles or empty packagings as specified in 2.7.2.4.1 shall be subject only to the following provisions of parts 5 to 7:

.1 the applicable provisions specified in 5.1.1.2, 5.1.2, 5.1.3.2, 5.1.5.2.2, 5.1.5.2.3, 5.1.5.4, 5.1.5.5, 5.2.1.7, 5.4.1.5.7.1.6.1 and .2, 5.4.1.5.7.1.9, 7.1.4.5.9, 7.1.4.5.10, 7.1.4.5.12, 7.8.4.1 to 7.8.4.6 and 7.8.9.1,

.2 the requirements for excepted packages specified in 6.4.4;

except when the radioactive material possesses other hazardous properties and has to be classified in a class other than class 7 in accordance with special provision 290 or 369 of chapter 3.3, where the provisions listed in .1 and .2 above apply only as relevant and in addition to those relating to the main class or division.

1.5.1.5.2 Excepted packages shall be subject to the relevant provisions of all other parts of this Code.

1.5.2 Radiation protection programme

1.5.2.1 The transport of radioactive material shall be subject to a radiation protection programme which shall consist of systematic arrangements aimed at providing adequate consideration of radiation protection measures.

1.5.2.2 Doses to persons shall be below the relevant dose limits. Protection and safety shall be optimized in order that the magnitude of individual doses, the number of persons exposed, and the likelihood of incurring exposure shall be kept as low as reasonably achievable, economic and social factors being taken into account, within the restrictions that the doses to individuals be subject to dose constraints. A structured and systematic approach shall be adopted and shall include consideration of the interfaces between transport and other activities.

1.5.2.3 The nature and extent of the measures to be employed in the programme shall be related to the magnitude and likelihood of radiation exposures. The programme shall incorporate the provisions in 1.5.2.2, 1.5.2.4 and 7.1.4.5.13 to 7.1.4.5.18. Programme documents shall be available, on request, for inspection by the relevant competent authority.

1.5.2.4 For occupational exposures arising from transport activities, where it is assessed that the effective dose either:

.1 is likely to be between 1 and 6 mSv in a year, a dose assessment programme via workplace monitoring or individual monitoring shall be conducted; or

.2 is likely to exceed 6 mSv in a year, individual monitoring shall be conducted.

When workplace monitoring or individual monitoring is conducted, appropriate records shall be kept.

Note: For occupational exposures arising from transport activities, where it is assessed that the effective dose is most unlikely to exceed 1 mSv in a year, no special work patterns, detailed monitoring, dose assessment programmes or individual record keeping need be required.

1.5.3 Management system

1.5.3.1 A management system based on international, national or other standards acceptable to the competent authority shall be established and implemented for all activities within the scope of this Code, as identified in 1.5.1.3, to ensure compliance with the relevant provisions of this Code. Certification that the design specification has been fully implemented shall be available to the competent authority. The manufacturer, consignor or user shall be prepared:

.1 to provide facilities for inspection during manufacture and use; and

.2 to demonstrate compliance with this Code to the competent authority.

Where competent authority approval is required, such approval shall take into account and be contingent upon the adequacy of the management system.

1.5.4 Special arrangement

1.5.4.1 *Special arrangement* shall mean those provisions, approved by the competent authority, under which consignments which do not satisfy all the provisions of this Code applicable to radioactive material may be transported.

1.5.4.2 Consignments for which conformity with any provision applicable to radioactive material is impracticable shall not be transported except under special arrangement. Provided the competent authority is satisfied that conformity with the radioactive material provisions of this Code is impracticable and that the requisite standards of safety established by this Code have been demonstrated through means alternative to the other provisions of this Code, the competent authority may approve special arrangement transport operations for a single consignment or a planned series of multiple consignments. The overall level of safety in transport shall be at least equivalent to that which would be provided if all the applicable provisions in this Code had been met. For international consignments of this type, multilateral approval shall be required.

1.5.5 Radioactive material possessing other dangerous properties

1.5.5.1 In addition to the radioactive and fissile properties, any subsidiary hazard of the contents of a package, such as explosiveness, flammability, pyrophoricity, chemical toxicity and corrosiveness, shall also be taken into account in the documentation, packing, labelling, marking, placarding, stowage, segregation and transport, in order to be in compliance with all relevant provisions for dangerous goods. (See also special provision 172 and, for excepted packages, special provision 290.)

1.5.6 Non-compliance

1.5.6.1 In the event of non-compliance with any limit in the provisions of this Code applicable to dose rate or contamination,

.1 the consignor, carrier , consignee and any organization involved during transport who may be affected, as appropriate, shall be informed of the non-compliance:

.1 by the carrier if the non-compliance is identified during transport; or

.2 by the consignee if the non-compliance is identified at receipt;

.2 the consignor, carrier, or consignee, as appropriate, shall:

.1 take immediate steps to mitigate the consequences of the non-compliance;

.2 investigate the non-compliance and its causes, circumstances and consequences;

.3 take appropriate action to remedy the causes and circumstances that led to the non-compliance and to prevent a recurrence of the causes and circumstances similar to those that led to the non-compliance; and

.4 communicate to the relevant competent authority(ies) on the causes of the non-compliance and the corrective or preventive actions taken or to be taken;

.3 The communication of the non-compliance to the consignor and relevant competent authority(ies), respectively, shall be made as soon as practicable and it shall be immediate whenever an emergency exposure situation has developed or is developing.

PART 2

CLASSIFICATION

Chapter 2.0

Introduction

Note: For the purposes of this Code, it has been necessary to classify dangerous goods in different classes, to subdivide a number of these classes and to define and describe characteristics and properties of the substances, materials and articles which would fall within each class or division. Moreover, in accordance with the criteria for the selection of marine pollutants for the purposes of Annex III of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL), a number of dangerous substances in the various classes have also been identified as substances harmful to the marine environment (MARINE POLLUTANTS).

2.0.0 Responsibilities

2.0.0.1 The classification shall be made by the shipper/consignor or by the appropriate competent authority where specified in this Code.

2.0.0.2 A consignor who has identified, on the basis of test data, that a substance listed by name in column 2 of the Dangerous Goods List in chapter 3.2 meets classification criteria for a hazard class or division that is not identified in the list, may, with the approval of the competent authority, consign the substance:

- under the most appropriate "generic" or "not otherwise specified" (N.O.S.) entry reflecting all hazards; or
- under the same UN number and name but with additional hazard communication information as appropriate to reflect the additional subsidiary hazard(s) (documentation, label, placard) provided that the primary hazard class remains unchanged and that any other transport conditions (e.g. limited quantity, packaging and tank provisions) that would normally apply to substances possessing such a combination of hazards are the same as those applicable to the substance listed.

Note: When a competent authority grants such approvals, it should inform the United Nations Sub-Committee of Experts on the Transport of Dangerous Goods accordingly and submit a relevant proposal of amendment to the Dangerous Goods List. Should the proposed amendment be rejected, the competent authority should withdraw its approval.

2.0.1 Classes, divisions, packing groups

2.0.1.1 Definitions

Substances (including mixtures and solutions) and articles subject to the provisions of this Code are assigned to one of the classes 1–9 according to the hazard or the most predominant of the hazards they present. Some of these classes are subdivided into divisions. These classes or divisions are as listed below:

Class 1: Explosives

- Division 1.1: substances and articles which have a mass explosion hazard
- Division 1.2: substances and articles which have a projection hazard but not a mass explosion hazard
- Division 1.3: substances and articles which have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but not a mass explosion hazard
- Division 1.4: substances and articles which present no significant hazard
- Division 1.5: very insensitive substances which have a mass explosion hazard
- Division 1.6: extremely insensitive articles which do not have a mass explosion hazard

Class 2: Gases

- Class 2.1: flammable gases
- Class 2.2: non-flammable, non-toxic gases
- Class 2.3: toxic gases

Class 3: Flammable liquids

Class 4: Flammable solids; substances liable to spontaneous combustion; substances which, in contact with water, emit flammable gases
- Class 4.1: flammable solids, self-reactive substances, solid desensitized explosives and polymerizing substances
- Class 4.2: substances liable to spontaneous combustion
- Class 4.3: substances which, in contact with water, emit flammable gases

Class 5: Oxidizing substances and organic peroxides
- Class 5.1: oxidizing substances
- Class 5.2: organic peroxides

Class 6: Toxic and infectious substances
- Class 6.1: toxic substances
- Class 6.2: infectious substances

Class 7: Radioactive material

Class 8: Corrosive substances

Class 9: Miscellaneous dangerous substances and articles

The numerical order of the classes and divisions is not that of the degree of danger.

2.0.1.2 Marine pollutants

2.0.1.2.1 Many of the substances assigned to classes 1 to 6.2, 8 and 9 are deemed as being *marine pollutants* (see chapter 2.10).

2.0.1.2.2 Known marine pollutants are noted in the Dangerous Goods List and are indicated in the Index.

2.0.1.3 For packing purposes, substances other than those of classes 1, 2, 5.2, 6.2 and 7, and other than self-reactive substances of class 4.1, are assigned to three packing groups in accordance with the degree of danger they present:

Packing group I: substances presenting high danger;

Packing group II: substances presenting medium danger; and

Packing group III: substances presenting low danger.

The packing group to which a substance is assigned is indicated in the Dangerous Goods List in chapter 3.2.

Articles are not assigned to packing groups. For packing purposes, any requirement for a specific packaging performance level is set out in the applicable packing instruction.

2.0.1.4 Dangerous goods are determined to present one or more of the dangers represented by classes 1 to 9, marine pollutants and, if applicable, the degree of danger (packing group) on the basis of the provisions in chapters 2.1 to 2.10.

2.0.1.5 Dangerous goods presenting a danger of a single class or division are assigned to that class or division and the packing group, if applicable, determined. When an article or substance is specifically listed by name in the Dangerous Goods List in chapter 3.2, its class or division, its subsidiary hazard(s) and, when applicable, its packing group are taken from this list.

2.0.1.6 Dangerous goods meeting the defining criteria of more than one hazard class or division and which are not listed by name in the Dangerous Goods List are assigned to a class or division and subsidiary hazard(s) on the basis of the precedence of hazard provisions prescribed in 2.0.3.

2.0.2 UN numbers and proper shipping names

2.0.2.1 Dangerous goods are assigned to UN numbers and proper shipping names according to their hazard classification and their composition.

2.0.2.2 Dangerous goods commonly transported are listed in the Dangerous Goods List in chapter 3.2. Where an article or substance is specifically listed by name, it shall be identified in transport by the proper shipping name in the Dangerous Goods List. Such substances may contain technical impurities (for example those deriving from the production process) or additives for stability or other purposes that do not affect their classification. However, a substance listed by name containing technical impurities or additives for stability or other purposes affecting its classification shall be considered a mixture or solution (see 2.0.2.5). For dangerous goods not specifically listed by name, “generic” or “not otherwise specified” entries are provided (see 2.0.2.7) to identify the article or substance in transport. The substances listed by name in column (2) of the Dangerous Goods List of chapter 3.2 shall be transported according to their classification in the list or under the conditions specified in 2.0.0.2.

Each entry in the Dangerous Goods List is assigned a UN number. This list also contains relevant information for each entry, such as hazard class, subsidiary hazard(s) (if any), packing group (where assigned), packing and tank transport provisions, EmS, segregation and stowage, properties and observations, etc.

Entries in the Dangerous Goods List are of the following four types:

.1 single entries for well-defined substances or articles:

e.g. UN 1090 acetone
UN 1194 ethyl nitrite solution

.2 generic entries for well-defined groups of substances or articles:

e.g. UN 1133 adhesives
UN 1266 perfumery product
UN 2757 carbamate pesticide, solid, toxic
UN 3101 organic peroxide type B, liquid

.3 specific N.O.S. entries covering a group of substances or articles of a particular chemical or technical nature:

e.g. UN 1477 nitrates, inorganic, N.O.S.
UN 1987 alcohols, N.O.S.

.4 general N.O.S. entries covering a group of substances or articles meeting the criteria of one or more classes:

e.g. UN 1325 flammable solid, organic, N.O.S.
UN 1993 flammable liquid, N.O.S.

2.0.2.3 All self-reactive substances of class 4.1 are assigned to one of 20 generic entries in accordance with the classification principles described in 2.4.2.3.3.

2.0.2.4 All organic peroxides of class 5.2 are assigned to one of 20 generic entries in accordance with the classification principles described in 2.5.3.3.

2.0.2.5 A mixture or solution meeting the classification criteria of this Code composed of a single predominant substance identified by name in the Dangerous Goods List and one or more substances not subject to the provisions of this Code and/or traces of one or more substances identified by name in the Dangerous Goods List, shall be assigned the UN number and proper shipping name of the predominant substance named in the Dangerous Goods List unless:

.1 the mixture or solution is identified by name in the Dangerous Goods List;

.2 the name and description of the substance named in the Dangerous Goods List specifically indicate that they apply only to the pure substance;

.3 the hazard class or division, subsidiary hazard(s), packing group, or physical state of the mixture or solution is different from that of the substance named in the Dangerous Goods List; or

.4 the hazard characteristics and properties of the mixture or solution necessitate emergency response measures that are different from those required for the substance identified by name in the Dangerous Goods List.

In those other cases, except the one described in .1, the mixture or solution shall be treated as a dangerous substance not specifically listed by name in the Dangerous Goods List.

2.0.2.6 When the class, physical state or packing group has changed in comparison with the pure substance, the solution or mixture shall be shipped in accordance with the provisions for the changed hazard under an appropriate N.O.S. entry.

2.0.2.7 Substances or articles which are not specifically listed by name in the Dangerous Goods List shall be classified under a “generic” or “not otherwise specified” (N.O.S.) proper shipping name. The substance or article shall be classified according to the class definitions and test criteria in this part, and the article or substance classified under the generic or “N.O.S.” proper shipping name in the Dangerous Goods List which most appropriately describes the article or substance. This means that a substance is only to be assigned to an entry of type .3, as defined in 2.0.2.2, if it cannot be assigned to an entry of type .2, and to an entry of type .4 if it cannot be assigned to an entry of type .2 or .3.*

2.0.2.8 When considering a solution or mixture in accordance with 2.0.2.5, due account shall be given to whether the dangerous constituent comprising the solution or mixture has been identified as a marine pollutant. If this is the case, the provisions of chapter 2.10 are also applicable.

* See also the generic or N.O.S. proper shipping name in appendix A.

2.0.2.9 A mixture or solution, containing one or more substances identified by name in this Code or classified under an N.O.S. or generic entry and one or more substances not subject to the provisions of this Code, is not subject to the provisions of this Code if the hazard characteristics of the mixture or solution are such that they do not meet the criteria (including human experience criteria) for any class.

2.0.2.10 A mixture or solution meeting the classification criteria of this Code that is not identified by name in the Dangerous Goods List and that is composed of two or more dangerous goods shall be assigned to an entry that has the proper shipping name, description, hazard class or division, subsidiary hazard(s) and packing group that most precisely describe the mixture or solution.

2.0.3 Classification of substances, mixtures and solutions with multiple hazards (precedence of hazard characteristics)

2.0.3.1 The table of precedence of hazard characteristics in 2.0.3.6 shall be used to determine the class of a substance, mixture or solution having more than one hazard when it is not specifically listed by name in this Code or to assign the appropriate entry for articles containing dangerous goods N.O.S. (UN 3537 to 3548, see 2.0.6). For substances, mixtures or solutions having multiple hazards which are not specifically listed by name, the most stringent packing group of those assigned to the respective hazards of the goods takes precedence over other packing groups, irrespective of the precedence of hazard table in 2.0.3.6.

2.0.3.2 The precedence of hazard table indicates which of the hazards shall be regarded as the primary hazard. The class which appears at the intersection of the horizontal line and the vertical column is the primary hazard and the remaining class is the subsidiary hazard. The packing groups for each of the hazards associated with the substance, mixture or solution shall be determined by reference to the appropriate criteria. The most stringent of the groups so indicated shall then become the packing group of the substance, mixture or solution.

2.0.3.3 The proper shipping name (see 3.1.2) of a substance, mixture or solution when classified in accordance with 2.0.3.1 and 2.0.3.2 shall be the most appropriate N.O.S. ("not otherwise specified") entry in this Code for the class shown as the primary hazard.

2.0.3.4 The precedence of hazard characteristics of the following substances, materials and articles have not been dealt with in the precedence of hazard table, as these primary hazards always take precedence:

.1 substances and articles of class 1;
.2 gases of class 2;
.3 liquid desensitized explosives of class 3;
.4 self-reactive substances and solid desensitized explosives of class 4.1;
.5 pyrophoric substances of class 4.2;
.6 substances of class 5.2;
.7 substances of class 6.1 with a packing group I vapour inhalation toxicity;
.8 substances of class 6.2; and
.9 materials of class 7.

2.0.3.5 Apart from excepted radioactive material (where the other hazardous properties take precedence), radioactive material having other hazardous properties shall always be classified in class 7, with the greatest of the additional hazards being identified. For radioactive material in excepted packages, except for UN 3507, URANIUM HEXAFLUORIDE, RADIOACTIVE MATERIAL, EXCEPTED PACKAGE, special provision 290 of chapter 3.3 applies.

2.0.3.6 **Precedence of hazards**

Class and Packing Group	4.2	4.3	5.1 I	5.1 II	5.1 III	6.1, I Dermal	6.1, I Oral	6.1 II	6.1 III	8, I Liquid	8, I Solid	8, II Liquid	8, II Solid	8, III Liquid	8, III Solid
3 I*		4.3				3	3	3	3	3	–	3	–	3	–
3 II*		4.3				3	3	3	3	8	–	3	–	3	–
3 III*		4.3				6.1	6.1	6.1	3†	8	–	8	–	3	–
4.1 II*	4.2	4.3	5.1	4.1	4.1	6.1	6.1	4.1	4.1	–	8	–	4.1	–	4.1
4.1 III*	4.2	4.3	5.1	4.1	4.1	6.1	6.1	6.1	4.1	–	8	–	8	–	4.1
4.2 II		4.3	5.1	4.2	4.2	6.1	6.1	4.2	4.2	8	8	4.2	4.2	4.2	4.2
4.2 III		4.3	5.1	5.1	4.2	6.1	6.1	6.1	4.2	8	8	8	8	4.2	4.2
4.3 I			5.1	4.3	4.3	6.1	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
4.3 II			5.1	4.3	4.3	6.1	4.3	4.3	4.3	8	8	4.3	4.3	4.3	4.3

Class and Packing Group	4.2	4.3	5.1 I	5.1 II	5.1 III	6.1, I Dermal	6.1, I Oral	6.1 II	6.1 III	8, I Liquid	8, I Solid	8, II Liquid	8, II Solid	8, III Liquid	8, III Solid
4.3 III			5.1	5.1	4.3	6.1	6.1	6.1	4.3	8	8	8	8	4.3	4.3
5.1 I						5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
5.1 II						6.1	5.1	5.1	5.1	8	8	5.1	5.1	5.1	5.1
5.1 III						6.1	6.1	6.1	5.1	8	8	8	8	5.1	5.1
6.1 I, Dermal										8	6.1	6.1	6.1	6.1	6.1
6.1 I, Oral										8	6.1	6.1	6.1	6.1	6.1
6.1 II, Inhalation										8	6.1	6.1	6.1	6.1	6.1
6.1 II, Dermal										8	6.1	8	6.1	6.1	6.1
6.1 II, Oral										8	8	8	6.1	6.1	6.1
6.1 III										8	8	8	8	8	8

* Substances of class 4.1 other than self-reactive substances and solid desensitized explosives and substances of class 3 other than liquid desensitized explosives.

† 6.1 for pesticides.

– Denotes an impossible combination.

For hazards not shown in this table, see 2.0.3.4 and 2.0.3.5.

2.0.4 Transport of samples

2.0.4.1 When the hazard class of a substance is uncertain and it is being transported for further testing, a tentative hazard class, proper shipping name and identification number shall be assigned on the basis of the consignor's knowledge of the substances and application of:

.1 the classification criteria of this Code; and

.2 the precedence of hazards given in 2.0.3.

The most severe packing group possible for the proper shipping name chosen shall be used.

Where this provision is used, the proper shipping name shall be supplemented with the word "SAMPLE" (such as FLAMMABLE LIQUID, N.O.S., SAMPLE). In certain instances, where a specific proper shipping name is provided for a sample of a substance considered to meet certain classification criteria (such as UN 3167, GAS SAMPLE, NON-PRESSURIZED, FLAMMABLE), that proper shipping name shall be used. When an N.O.S. entry is used to transport the sample, the proper shipping name need not be supplemented with the technical name as required by special provision 274.

2.0.4.2 Samples of the substance shall be transported in accordance with the provisions applicable to the tentative assigned proper shipping name provided:

.1 the substance is not considered to be a substance prohibited for transport by 1.1.3;

.2 the substance is not considered to meet the criteria for class 1 or considered to be an infectious substance or a radioactive material;

.3 the substance is in compliance with 2.4.2.3.2.4.2 or 2.5.3.2.5.1 if it is a self-reactive substance or an organic peroxide, respectively;

.4 the sample is transported in a combination packaging with a net mass per package not exceeding 2.5 kg; and

.5 the sample is not packed together with other goods.

2.0.4.3 Samples of energetic materials for testing purposes

2.0.4.3.1 Samples of organic substances carrying functional groups listed in tables A6.1 and/or A6.3 in appendix 6 (Screening Procedures) of the *Manual of Tests and Criteria* may be transported under UN 3224 (self-reactive solid type C) or UN 3223 (self-reactive liquid type C), as applicable, of class 4.1 provided that:

.1 the samples do not contain any:

- known explosives;
- substances showing explosive effects in testing;
- compounds designed with the view of producing a practical explosive or pyrotechnic effect; or
- components consisting of synthetic precursors of intentional explosives;

.2 for mixtures, complexes or salts of inorganic oxidizing substances of class 5.1 with organic material(s), the concentration of the inorganic oxidizing substance is:
- less than 15%, by mass, if assigned to packing group I (high hazard) or II (medium hazard); or
- less than 30%, by mass, if assigned to packing group III (low hazard);

.3 available data do not allow a more precise classification;

.4 the sample is not packed together with other goods; and

.5 the sample is packed in accordance with packing instruction P520 and special packing provisions PP94 or PP95 of 4.1.4.1, as applicable.

2.0.5 Transport of wastes

2.0.5.1 Preamble

Wastes, which are dangerous goods, shall be transported in accordance with the relevant international recommendations and conventions and, in particular, where it concerns transport by sea, with the provisions of this Code.

2.0.5.2 Applicability

2.0.5.2.1 The provisions of this chapter are applicable to the transport of wastes by ships and shall be considered in conjunction with all other provisions of this Code.

2.0.5.2.2 Substances, solutions, mixtures or articles containing or contaminated with radioactive material are subject to the applicable provisions for radioactive material in class 7, and are not to be considered as wastes for the purposes of this chapter.

2.0.5.3 Transboundary movements under the Basel Convention*

2.0.5.3.1 Transboundary movement of wastes is permitted to commence only when:

.1 notification has been sent by the competent authority of the country of origin, or by the generator or exporter through the channel of the competent authority of the country of origin, to the country of final destination; and

.2 the competent authority of the country of origin, having received the written consent of the country of final destination stating that the wastes will be safely incinerated or treated by other methods of disposal, has given authorization to the movement.

2.0.5.3.2 In addition to the transport document required in chapter 5.4, all transboundary movements of wastes shall be accompanied by a waste movement document from the point at which a transboundary movement commences to the point of disposal. This document shall be available at all times to the competent authorities and to all persons involved in the management of waste transport operations.

2.0.5.3.3 The transport of solid wastes in bulk in cargo transport units and road vehicles is only permitted with the approval of the competent authority of the country of origin.

2.0.5.3.4 In the event that packages and cargo transport units containing wastes are suffering from leakage or spillage, the competent authorities of the countries of origin and destination shall be immediately informed and advice on the action to be taken obtained from them.

2.0.5.4 Classification of wastes

2.0.5.4.1 A waste containing only one constituent which is a dangerous substance subject to the provisions of this Code shall be regarded as being that particular substance. If the concentration of the constituent is such that the waste continues to present a hazard inherent in the constituent itself, it shall be classified according to the criteria of the applicable classes.

2.0.5.4.2 A waste containing two or more constituents which are dangerous substances subject to the provisions of this Code shall be classified under the applicable class in accordance with their dangerous characteristics and properties as described in 2.0.5.4.3 and 2.0.5.4.4.

2.0.5.4.3 The classification according to the dangerous characteristics and properties shall be carried out as follows:

.1 determination of the physical and chemical characteristics and physiological properties by measurement or calculation followed by classification according to the criteria of the applicable class(es); or

* Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (1989).

.2 if the determination is not practicable, the waste shall be classified according to the constituent presenting the predominant hazard.

2.0.5.4.4 In determining the predominant hazard, the following criteria shall be taken into account:

.1 if one or more constituents fall within a certain class and the waste presents a hazard inherent in these constituents, the waste shall be included in that class; or

.2 if there are constituents falling under two or more classes, the classification of the waste shall take into account the order of precedence applicable to dangerous substances with multiple hazards set out in 2.0.3.

2.0.5.4.5 Wastes harmful to the marine environment only shall be transported under the class 9 entries for ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., UN 3082, or ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., UN 3077, with the addition of the word "WASTE". However, this is not applicable to substances which are covered by individual entries in this Code.

2.0.5.4.6 Wastes not otherwise subject to the provisions of this Code but covered under the Basel Convention may be transported under the class 9 entries for ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., UN 3082 or ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., UN 3077 with the addition of the word WASTE.

2.0.6 Classification of articles as articles containing dangerous goods N.O.S.

Note: For articles which do not have an existing proper shipping name and which contain only dangerous goods within the permitted limited quantity amounts specified in column 7a of the Dangerous Goods List, see UN 3363 and special provision 301 of chapter 3.3.

2.0.6.1 Articles containing dangerous goods may be classified as otherwise provided by this Code under the proper shipping name for the dangerous goods they contain or in accordance with this section. For the purposes of this section "article" means machinery, apparatus or other devices containing one or more dangerous goods (or residues thereof) that are an integral element of the article, necessary for its functioning, and that cannot be removed for the purpose of transport. An inner packaging shall not be an article.

2.0.6.2 Such articles may in addition contain batteries. Lithium batteries that are integral to the article shall be of a type proven to meet the testing requirements of the *Manual of Tests and Criteria*, part III, subsection 38.3, except when pre-production prototype batteries or batteries of a small production run, consisting of not more than 100 batteries, are installed in the article. Where a lithium battery installed in an article is damaged or defective, the battery shall be removed.

2.0.6.3 This section does not apply to articles for which a more specific proper shipping name already exists in the Dangerous Goods List of chapter 3.2.

2.0.6.4 This section does not apply to dangerous goods of class 1, class 6.2, class 7 or radioactive material contained in articles. However, this section applies to articles containing explosives which are excluded from Class 1 in accordance with 2.1.3.4.2.

2.0.6.5 Articles containing dangerous goods shall be assigned to the appropriate class determined by the hazards present using, where applicable, the Precedence of Hazards table in 2.0.3.6 for each of the dangerous goods contained in the article. If dangerous goods classified as class 9 are contained within the article, all other dangerous goods present in the article shall be considered to present a higher hazard.

2.0.6.6 Subsidiary hazards shall be representative of the primary hazard posed by the other dangerous goods contained within the article. When only one dangerous good is present in the article, the subsidiary hazard(s), if any, shall be the subsidiary hazard(s) identified in column 4 of the Dangerous Goods List. If the article contains more than one dangerous good and these could react dangerously with one another during transport, each of the dangerous goods shall be enclosed separately (see 4.1.1.6).

Chapter 2.1

Class 1 – Explosives

2.1.0 Introductory notes (these notes are not mandatory)

Note 1: Class 1 is a restricted class, that is, only those explosive substances and articles that are listed in the Dangerous Goods List in chapter 3.2 may be accepted for transport. However, the competent authorities retain the right by mutual agreement to approve transport of explosive substances and articles for special purposes under special conditions. Therefore entries have been included in the Dangerous Goods List for "Substances, explosive, not otherwise specified" and "Articles, explosive, not otherwise specified". It is intended that these entries should only be used when no other method of operation is possible.

Note 2: General entries such as "Explosive, blasting, type A" are used to allow for the transport of new substances. In preparing these provisions, military ammunition and explosives have been taken into consideration to the extent that they are likely to be transported by commercial carriers.

Note 3: A number of substances and articles in class 1 are described in appendix B. These descriptions are given because a term may not be well-known or may be at variance with its usage for regulatory purposes.

Note 4: Class 1 is unique in that the type of packaging frequently has a decisive effect on the hazard and therefore on the assignment to a particular division. The correct division is determined by use of the procedures provided in this chapter.

2.1.1 Definitions and general provisions

2.1.1.1 Class 1 comprises:

.1 explosive substances (a substance which is not itself an explosive but which can form an explosive atmosphere of gas, vapour or dust is not included in class 1), except those which are too dangerous to transport or those where the predominant hazard is one appropriate to another class;

.2 explosive articles, except devices containing explosive substances in such quantity or of such a character that their inadvertent or accidental ignition or initiation during transport shall not cause any effect external to the device either by projection, fire, smoke, heat or loud noise (see 2.1.3.4); and

.3 substances and articles not mentioned under .1 and .2 which are manufactured with a view to producing a practical explosive or pyrotechnic effect.

2.1.1.2 Transport of explosive substances which are unduly sensitive, or so reactive as to be subject to spontaneous reaction, is prohibited.

2.1.1.3 Definitions

For the purposes of this Code, the following definitions apply:

.1 *Explosive substance* means a solid or liquid substance (or a mixture of substances) which is in itself capable by chemical reaction of producing gas at such a temperature and pressure and at such a speed as to cause damage to the surroundings. Pyrotechnic substances are included even when they do not evolve gases.

.2 *Pyrotechnic substance* means a substance or a mixture of substances designed to produce an effect by heat, light, sound, gas or smoke or a combination of these as the result of non-detonative self-sustaining exothermic chemical reactions.

.3 *Explosive article* means an article containing one or more explosive substances.

.4 *Mass explosion* means one which affects almost the entire load virtually instantaneously.

.5 *Phlegmatized* means that a substance (or "phlegmatizer") has been added to an explosive to enhance its safety in handling and transport. The phlegmatizer renders the explosive insensitive, or less sensitive, to the following actions: heat, shock, impact, percussion or friction. Typical phlegmatizing agents include, but are not limited to: wax, paper, water, polymers (such as chlorofluoropolymers), alcohol and oils (such as petroleum jelly and paraffin).

2.1.1.4 Hazard divisions

The six hazard divisions of class 1 are:

Division 1.1 Substances and articles which have a mass explosion hazard

Division 1.2 Substances and articles which have a projection hazard but not a mass explosion hazard

Division 1.3 Substances and articles which have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but not a mass explosion hazard

This division comprises substances and articles:

.1 which give rise to considerable radiant heat; or

.2 which burn one after another, producing minor blast or projection effects or both.

Division 1.4 Substances and articles which present no significant hazard

This division comprises substances and articles which present only a small hazard in the event of ignition or initiation during transport. The effects are largely confined to the package and no projection of fragments of appreciable size or range is to be expected. An external fire must not cause virtually instantaneous explosion of almost the entire contents of the package.

Note: Substances and articles in this division are in compatibility group S if they are so packaged or designed that any hazardous effects arising from the accidental functioning are confined within the package unless the package has been degraded by fire, in which case all blast or projection effects are limited to the extent that they do not significantly hinder fire fighting or other emergency response efforts in the immediate vicinity of the package.

Division 1.5 Very insensitive substances which have a mass explosion hazard

This division comprises substances which have a mass explosion hazard but are so insensitive that there is very little probability of initiation or of transition from burning to detonation under normal conditions of transport.

Note: The probability of transition from burning to detonation is greater when large quantities are transported in a ship. As a consequence, the stowage provisions for explosive substances in division 1.1 and for those in division 1.5 are identical.

Division 1.6 Extremely insensitive articles which do not have a mass explosion hazard

This division comprises articles which predominantly contain extremely insensitive substances and which demonstrate a negligible probability of accidental initiation or propagation.

Note: The hazard from articles of division 1.6 is limited to the explosion of a single article.

2.1.1.5 Any substance or article having or suspected of having explosive characteristics shall first be considered for classification in class 1 in accordance with the procedures in 2.1.3. Goods are not classified in class 1 when:

.1 unless specially authorized, the transport of an explosive substance is prohibited because sensitivity of the substance is excessive;

.2 the substance or article comes within the scope of those explosive substances and articles which are specifically excluded from class 1 by the definition of this class; or

.3 the substance or article has no explosive properties.

2.1.2 Compatibility groups and classification codes

2.1.2.1 Goods of class 1 are considered to be “compatible” if they can be safely stowed or transported together without significantly increasing either the probability of an accident or, for a given quantity, the magnitude of the effects of such an accident. By this criterion, goods listed in this class have been divided into a number of compatibility groups, each denoted by a letter from A to L (excluding I), N and S. These are described in 2.1.2.2 and 2.1.2.3.

2.1.2.2 Compatibility groups and classification codes

Description of substance or articles to be classified	Compatibility group	Classification code
Primary explosive substance	A	1.1A
Article containing a primary explosive substance and not containing two or more effective protective features. Some articles, such as detonators for blasting, detonator assemblies for blasting and primers, cap-type, are included even though they do not contain primary explosives	B	1.1B 1.2B 1.4B
Propellant explosive substance or other deflagrating explosive substance or article containing such explosive substance	C	1.1C 1.2C 1.3C 1.4C
Secondary detonating explosive substance or black powder or article containing a secondary detonating explosive substance, in each case without means of initiation and without a propelling charge, or article containing a primary explosive substance and containing two or more effective protective features	D	1.1D 1.2D 1.4D 1.5D
Article containing a secondary detonating explosive substance, without means of initiation, with a propelling charge (other than one containing a flammable liquid or gel or hypergolic liquids)	E	1.1E 1.2E 1.4E
Article containing a secondary detonating explosive substance with its own means of initiation, with a propelling charge (other than one containing a flammable liquid or gel or hypergolic liquids) or without a propelling charge	F	1.1F 1.2F 1.3F 1.4F
Pyrotechnic substance, or article containing a pyrotechnic substance, or article containing both an explosive substance and an illuminating, incendiary, tear- or smoke-producing substance (other than a water-activated article or one containing white phosphorus, phosphides, a pyrophoric substance, a flammable liquid or gel, or hypergolic liquids)	G	1.1G 1.2G 1.3G 1.4G
Article containing both an explosive substance and white phosphorus	H	1.2H 1.3H
Article containing both an explosive substance and a flammable liquid or gel	J	1.1J 1.2J 1.3J
Article containing both an explosive substance and a toxic chemical agent	K	1.2K 1.3K
Explosive substance or article containing an explosive substance and presenting a special hazard (such as due to water-activation or presence of hypergolic liquids, phosphides or a pyrophoric substance) and needing isolation of each type (see 7.2.7.1.4, note 2)	L	1.1L 1.2L 1.3L
Articles predominantly containing extremely insensitive substances	N	1.6N
Substance or article so packaged or designed that any hazardous effects arising from accidental functioning are confined within the package unless the package has been degraded by fire, in which case all blast or projection effects are limited to the extent that they do not significantly hinder or prohibit fire fighting or other emergency response efforts in the immediate vicinity of the package	S	1.4S

Note 1: Articles of compatibility groups D and E may be fitted or packed together with their own means of initiation provided that such means have at least two effective protective features designed to prevent an explosion in the event of accidental functioning of the means of initiation. Such articles and packages shall be assigned to compatibility groups D or E.

Note 2: Articles of compatibility groups D and E may be packed together with their own means of initiation, which do not have two effective protective features when, in the opinion of the competent authority of the country of origin, the accidental functioning of the means of initiation does not cause the explosion of an article under normal conditions of transport. Such packages shall be assigned to compatibility groups D or E.

2.1.2.3 **Scheme of classification of explosives, combination of hazard division with compatibility group**

Hazard division	Compatibility group													∑ A–S
	A	B	C	D	E	F	G	H	J	K	L	N	S	
1.1	1.1A	1.1B	1.1C	1.1D	1.1E	1.1F	1.1G		1.1J		1.1L			9
1.2		1.2B	1.2C	1.2D	1.2E	1.2F	1.2G	1.2H	1.2J	1.2K	1.2L			10
1.3			1.3C			1.3F	1.3G	1.3H	1.3J	1.3K	1.3L			7
1.4		1.4B	1.4C	1.4D	1.4E	1.4F	1.4G						1.4S	7
1.5				1.5D										1
1.6												1.6N		1
∑ 1.1–1.6	1	3	4	4	3	4	4	2	3	2	3	1	1	35

2.1.2.4 The definitions of compatibility groups in 2.1.2.2 are intended to be mutually exclusive, except for a substance or article which qualifies for compatibility group S. Since the criterion of compatibility group S is an empirical one, assignment to this group is necessarily linked to the tests for assignment to division 1.4.

2.1.3 Classification procedure

2.1.3.1 Any substance or article having or suspected of having explosive characteristics shall be considered for classification in class 1. Substances and articles classified in class 1 shall be assigned to the appropriate division and compatibility group. Goods of class 1 shall be classified in accordance with the *Manual of Tests and Criteria*, as amended.

2.1.3.2 Prior to transport, the classification of all explosive substances and articles, together with the compatibility group assignment and the proper shipping name under which the substance or article is to be transported, shall have been approved by the competent authority of the country of manufacture. A new approval would be required for:

.1 a new explosive substance; or

.2 a new combination or mixture of explosive substances which is significantly different from other combinations or mixtures previously manufactured and approved; or

.3 a new design of an explosive article, an article containing a new explosive substance, or an article containing a new combination or mixture of explosive substances; or

.4 an explosive substance or article with a new design or type of packaging, including a new type of inner packaging.

2.1.3.3 Assessment of the hazard division is usually made on the basis of test results. A substance or article shall be assigned to the hazard division which corresponds to the results of the tests to which the substance or article, as offered for transport, has been subjected. Other test results, and data assembled from accidents which have occurred, may also be taken into account.

2.1.3.4 **Exclusion from class 1**

2.1.3.4.1 The competent authority may exclude an article or substance from class 1 by virtue of test results and the class 1 definition.

2.1.3.4.2 An article may be excluded from class 1 by the competent authority when three unpackaged articles, each individually activated by its own means of initiation or ignition or external means to function in the designed mode, meet the following test criteria:

.1 no external surface shall have a temperature of more than 65°C. A momentary spike in temperature up to 200°C is acceptable;

.2 no rupture or fragmentation of the external casing or movement of the article or detached parts thereof of more than one metre in any direction;

Note: Where the integrity of the article may be affected in the event of an external fire these criteria shall be examined by a fire test. One such method is described in ISO 14451-2 using a heating rate of 80 K/min.

.3 no audible report exceeding 135 dB(C) peak at a distance of one metre;

.4 no flash or flame capable of igniting a material such as a sheet of 80 ± 10 g/m² paper in contact with the article; and

.5 no production of smoke, fumes or dust in such quantities that the visibility in a one cubic metre chamber equipped with appropriately sized blow out panels is reduced more than 50% as measured by a calibrated light (lux) meter or radiometer located one metre from a constant light source located at the midpoint on opposite walls. The general guidance on Optical Density Testing in ISO 5659-1 and the general guidance on the Photometric System described in Section 7.5 in ISO 5659-2 may be used or similar optical density measurement methods designed to accomplish the same purpose may also be employed. A suitable hood cover surrounding the back and sides of the light meter shall be used to minimize effects of scattered or leaking light not emitted directly from the source.

Note 1: If during the tests addressing criteria .1, .2, .3 and .4 no or very little smoke is observed the test described in .5 may be waived.

Note 2: The competent authority may require testing in packaged form if it is determined that, as packaged for transport, the article may pose a greater hazard.

2.1.3.5 Assignment of fireworks to hazard divisions

2.1.3.5.1 Fireworks shall normally be assigned to hazard divisions 1.1, 1.2, 1.3, and 1.4 on the basis of test data derived from Test Series 6 of the *Manual of Tests and Criteria*. However:

.1 waterfalls containing flash composition (see note 2 of 2.1.3.5.5) shall be classified as 1.1G regardless of the results of Test Series 6;

.2 since the range of fireworks is very extensive and the availability of test facilities may be limited, assignment to hazard divisions may also be made in accordance with the procedure in 2.1.3.5.2.

2.1.3.5.2 Assignment of fireworks to UN Nos. 0333, 0334, 0335 or 0336, and assignments of articles to UN 0431 for those used for theatrical effects meeting the definition for article type and the 1.4G specification in the default fireworks classification table in 2.1.3.5.5 may be made on the basis of analogy, without the need for Test Series 6 testing, in accordance with the default fireworks classification table in 2.1.3.5.5. Such assignment shall be made with the agreement of the competent authority. Items not specified in the table shall be classified on the basis of test data derived from Test Series 6 of the *Manual of Tests and Criteria*.

Note: The addition of other types of fireworks to column 1 of the table in 2.1.3.5.5 shall only be made on the basis of full test data submitted to the UN Sub-Committee of Experts on the Transport of Dangerous Goods for consideration.

2.1.3.5.3 Where fireworks of more than one hazard division are packed in the same package they shall be classified on the basis of the highest hazard division unless test data derived from Test Series 6 of the *Manual of Tests and Criteria* indicate otherwise.

2.1.3.5.4 The classification shown in the table in 2.1.3.5.5 applies only for articles packed in fibreboard boxes (4G).

2.1.3.5.5 Default fireworks classification table[*]

Note 1: References to percentages in the table, unless otherwise stated, are to the mass of all pyrotechnic substances (e.g. rocket motors, lifting charge, bursting charge and effect charge).

Note 2: "Flash composition" in this table refers to pyrotechnic substances in powder form or as pyrotechnic units as presented in the fireworks that are used in waterfalls, or to produce an aural effect or used as a bursting charge, or propellant charge unless:

(a) the time taken for the pressure rise in the HSL Flash Composition Test in appendix 7 of the *Manual of Tests and Criteria* is demonstrated to be more than 6 ms for 0.5 g of pyrotechnic substance; or

(b) the pyrotechnic substance gives a negative "–" result in the US Flash Composition Test in Appendix 7 of the *Manual of Tests and Criteria*.

Note 3: Dimensions in millimetres refers to:

– for spherical and peanut shells, the diameter of the sphere of the shell;

– for cylinder shells, the length of the shell;

– for a shell in mortar, Roman candle, shot tube firework or mine, the inside diameter of the tube comprising or containing the firework;

– for a bag mine or cylinder mine, the inside diameter of the mortar intended to contain the mine.

[*] This table contains a list of firework classifications that may be used in the absence of Test Series 6, of the *Manual of Tests and Criteria*, data (see 2.1.3.5.2).

Type	Includes: / Synonym:	Definition	Specification	Classification
Shell, spherical or cylindrical	Spherical display shell: aerial shell, colour shell, dye shell, multi-break shell, multi-effect shell, nautical shell, parachute shell, smoke shell, star shell; report shell: maroon, salute, sound shell, thunderclap, aerial shell kit	Device with or without propellant charge, with delay fuse and bursting charge, pyrotechnic unit(s) or loose pyrotechnic substance and designed to be projected from a mortar	All report shells	1.1G
			Colour shell: ≥ 180 mm	1.1G
			Colour shell: < 180 mm with > 25% flash composition, as loose powder and/or report effects	1.1G
			Colour shell: < 180 mm with ≤ 25% flash composition, as loose powder and/or report effects	1.3G
			Colour shell: ≤ 50 mm, or ≤ 60 g pyrotechnic substance, with ≤ 2% flash composition as loose powder and/or report effects	1.4G
	Peanut shell	Device with two or more spherical aerial shells in a common wrapper propelled by the same propellant charge with separate external delay fuses	The most hazardous spherical aerial shell determines the classification	
	Preloaded mortar, shell in mortar	Assembly comprising a spherical or cylindrical shell inside a mortar from which the shell is designed to be projected	All report shells	
			Colour shell: ≥ 180 mm	1.1G
			Colour shell: > 25% flash composition as loose powder and/or report effects	1.1G
			Colour shell: > 50 mm and < 180 mm	1.2G
			Colour shell: ≤ 50 mm, or ≤ 60 g pyrotechnic substance, with ≤ 25% flash composition as loose powder and/or report effects	1.3G

Type	Includes: / Synonym:	Definition	Specification	Classification
	Shell of shells (spherical) (Reference to percentages for shell of shells are to the gross mass of the fireworks article)	Device without propellant charge, with delay fuse and bursting charge, containing report shells and inert materials and designed to be projected from a mortar	> 120 mm	1.1G
		Device without propellant charge, with delay fuse and bursting charge, containing report shells ≤ 25 g flash composition per report unit, with ≤ 33% flash composition and ≥ 60% inert materials and designed to be projected from a mortar	≤ 120 mm	1.3G
		Device without propellant charge, with delay fuse and bursting charge, containing colour shells and/or pyrotechnic units and designed to be projected from a mortar	> 300 mm	1.1G
		Device without propellant charge, with delay fuse and bursting charge, containing colour shells ≤ 70 mm and/or pyrotechnic units, with ≤ 25% flash composition and ≤ 60% pyrotechnic substance and designed to be projected from a mortar	> 200 mm and ≤ 300 mm	1.3G
		Device with propellant charge, with delay fuse and bursting charge, containing colour shells ≤ 70 mm and/or pyrotechnic units, with ≤ 25% flash composition and ≤ 60% pyrotechnic substance and designed to be projected from a mortar	≤ 200 mm	1.3G
Battery/ combination	Barrage, bombardos, cakes, finale box, flowerbed, hybrid, multiple tubes, shell cakes, banger batteries, flash banger batteries	Assembly including several elements either containing the same type or several types each corresponding to one of the types of fireworks listed in this table, with one or two points of ignition	The most hazardous firework type determines the classification	
Roman candle	Exhibition candle, candle, bombettes	Tube containing a series of pyrotechnic units consisting of alternate pyrotechnic substance, propellant charge, and transmitting fuse	≥ 50 mm inner diameter, containing flash composition, or < 50 mm with > 25% flash composition	1.1G
			≥ 50 mm inner diameter, containing no flash composition	1.2G
			< 50 mm inner diameter and ≤ 25% flash composition	1.3G
			≤ 30 mm inner diameter, each pyrotechnic unit ≤ 25 g and ≤ 5% flash composition	1.4G
Shot tube	Single shot Roman candle, small preloaded mortar	Tube containing a pyrotechnic unit consisting of pyrotechnic substance, propellant charge with or without transmitting fuse	≤ 30 mm inner diameter and pyrotechnic unit > 25 g, or > 5% and ≤ 25% flash composition	1.3G
			≤ 30 mm inner diameter, pyrotechnic unit ≤ 25 g and ≤ 5% flash composition	1.4G

Type	Includes: / Synonym:	Definition	Specification	Classification
Rocket	Avalanche rocket, signal rocket, whistling rocket, bottle rocket, sky rocket, missile type rocket, table rocket	Tube containing pyrotechnic substance and/or pyrotechnic units, equipped with stick(s) or other means for stabilization of flight, and designed to be propelled into the air	Flash composition effects only	1.1G
			Flash composition > 25% of the pyrotechnic substance	1.1G
			> 20 g pyrotechnic substance and flash composition ≤ 25 %	1.3G
			≤ 20 g pyrotechnic substance, black powder bursting charge and ≤ 0.13 g flash composition per report and ≤ 1 g in total	1.4G
Mine	Pot-a-feu, ground mine, bag mine, cylinder mine	Tube containing propellant charge and pyrotechnic units and designed to be placed on the ground or to be fixed in the ground. The principal effect is ejection of all the pyrotechnic units in a single burst producing a widely dispersed visual and/or aural effect in the air or: Cloth or paper bag or cloth or paper cylinder containing propellant charge and pyrotechnic units, designed to be placed in a mortar and to function as a mine	> 25% flash composition, as loose powder and/or report effects	1.1G
			≥ 180 mm and ≤ 25% flash composition, as loose powder and/or report effects	1.1G
			< 180 mm and ≤ 25% flash composition, as loose powder and/or report effects	1.3G
			≤ 150 g pyrotechnic substance, containing ≤ 5% flash composition as loose powder and/or report effects. Each pyrotechnic unit ≤ 25 g, each report effect < 2 g; each whistle, if any, ≤ 3 g	1.4G
Fountain	Volcanos, gerbs, lances, Bengal fire, flitter sparkle, cylindrical fountains, cone fountains, illuminating torch	Non-metallic case containing pressed or consolidated pyrotechnic substance producing sparks and flame **Note:** Fountains intended to produce a vertical cascade or curtain of sparks are considered to be waterfalls (see row below).	≥ 1 kg pyrotechnic substance	1.3G
			< 1 kg pyrotechnic substance	1.4G
Waterfall	Cascades, showers	Pyrotechnic fountain intended to produce a vertical cascade or curtain of sparks	Containing flash composition regardless of the results of Test Series 6 (see 2.1.3.5.1.1)	1.1G
			Not containing flash composition	1.3G
Sparkler	Handheld sparklers, non-handheld sparklers, wire sparklers	Rigid wire partially coated (along one end) with slow-burning pyrotechnic substance with or without an ignition tip	Perchlorate based sparklers: > 5 g per item or > 10 items per pack	1.3G
			Perchlorate based sparklers: ≤ 5 g per item and ≤ 10 items per pack Nitrate based sparklers: ≤ 30 g per item	1.4G
Bengal stick	Dipped stick	Non-metallic stick partially coated (along one end) with slow-burning pyrotechnic substance and designed to be held in the hand	Perchlorate based items: > 5 g per item or > 10 items per pack	1.3G
			Perchlorate based items: ≤ 5 g per item and ≤ 10 items per pack; nitrate based items: ≤ 30 g per item	1.4G

Type	Includes: / Synonym:	Definition	Specification	Classification
Low hazard fireworks and novelties	Table bombs, throwdowns, crackling granules, smokes, fog, snakes, glow worm, serpents, snaps, party poppers	Device designed to produce very limited visible and/or audible effect which contains small amounts of pyrotechnic and/or explosive substance	Throwdowns and snaps may contain up to 1.6 mg of silver fulminate; snaps and party poppers may contain up to 16 mg of potassium chlorate/red phosphorus mixture; other articles may contain up to 5 g of pyrotechnic substance, but no flash composition	1.4G
Spinner	Aerial spinner, helicopter, chaser, ground spinner	Non-metallic tube or tubes containing gas- or spark-producing pyrotechnic substance, with or without noise-producing substance, with or without aerofoils attached	Pyrotechnic substance per item > 20 g, containing ≤ 3% flash composition as report effects, or whistle composition ≤ 5 g	1.3G
			Pyrotechnic substance per item ≤ 20 g, containing ≤ 3% flash composition as report effects, or whistle composition ≤ 5 g	1.4G
Wheels	Catherine wheels, Saxon	Assembly including drivers containing pyrotechnic substance and provided with a means of attaching it to a support so that it can rotate	≥ 1 kg total pyrotechnic substance, no report effect, each whistle (if any) ≤ 25 g and ≤ 50 g whistle composition per wheel	1.3G
			< 1 kg total pyrotechnic substance, no report effect, each whistle (if any) ≤ 5 g and ≤ 10 g whistle composition per wheel	1.4G
Aerial wheel	Flying Saxon, UFOs, rising crown	Tubes containing propellant charges and sparks-, flame- and/or noise-producing pyrotechnic substances, the tubes being fixed to a supporting ring	> 200 g total pyrotechnic substance or > 60 g pyrotechnic substance per driver, ≤ 3% flash composition as report effects, each whistle (if any) ≤ 25 g and ≤ 50 g whistle composition per wheel	1.3G
			≤ 200 g total pyrotechnic substance and ≤ 60 g pyrotechnic substance per driver, ≤ 3% flash composition as report effects, each whistle (if any) ≤ 5 g and ≤ 10 g whistle composition per wheel	1.4G
Selection pack	Display selection box, display selection pack, garden selection box, indoor selection box; assortment	A pack of more than one type each corresponding to one of the types of fireworks listed in this table	The most hazardous firework type determines the classification	
Firecracker	Celebration cracker, celebration roll, string cracker	Assembly of tubes (paper or cardboard) linked by a pyrotechnic fuse, each tube intended to produce an aural effect	Each tube ≤ 140 mg of flash composition or ≤ 1 g black powder	1.4G
Banger	Salute, flash banger, lady cracker	Non-metallic tube containing report composition intended to produce an aural effect	> 2 g flash composition per item	1.1G
			≤ 2 g flash composition per item and ≤ 10 g per inner packaging	1.3G
			≤ 1 g flash composition per item and ≤ 10 g per inner packaging or ≤ 10 g black powder per item	1.4G

2.1.3.6 Classification documentation

2.1.3.6.1 A competent authority assigning an article or substance into class 1 should confirm with the applicant that classification in writing.

2.1.3.6.2 A competent authority classification document may be in any form and may consist of more than one page, provided pages are numbered consecutively. The document should have a unique reference.

2.1.3.6.3 The information provided shall be easy to identify, legible and durable.

2.1.3.6.4 Examples of the information that may be provided in the classification documents are as follows:

.1 the name of the competent authority and the provisions in national legislation under which it is granted its authority;

.2 the modal or national regulations for which the classification document is applicable;

.3 confirmation that the classification has been approved, made or agreed in accordance with the United Nations Recommendations on the Transport of Dangerous Goods or the relevant modal regulations;

.4 the name and address of the person in law to which the classification has been assigned and any company registration which uniquely identifies a company or other body corporate under national legislation;

.5 the name under which the explosives will be placed on the market or otherwise supplied for transport;

.6 the Proper Shipping Name, UN number, Class, Hazard Division and corresponding compatibility group of the explosives;

.7 where appropriate, the maximum net explosive mass of the package or article;

.8 the name, signature, stamp, seal or other identification of the person authorized by the competent authority to issue the classification document is clearly visible;

.9 where safety in transport or the hazard division is assessed as being dependent upon the packaging, the packaging mark or a description of the permitted:

- inner packagings
- intermediate packagings
- outer packagings

.10 the classification document states the part number, stock number or other identifying reference under which the explosives will be placed onto the market or otherwise supplied for transport;

.11 the name and address of the person in law who manufactured the explosives and any company registration which uniquely identifies a company or other body corporate under national legislation;

.12 any additional information regarding the applicable packing instruction and special packing provisions where appropriate;

.13 the basis for assigning the classification, i.e. whether on the basis of test results, default for fireworks, analogy with classified explosive, by definition from the Dangerous Goods List etc.;

.14 any special conditions or limitations that the competent authority has identified as relevant to the safety for transport of the explosives, the communication of the hazard and international transport; and

.15 the expiry date of the classification document is given where the competent authority considers one to be appropriate.

2

Chapter 2.2

Class 2 – Gases

2.2.0 Introductory note

"Toxic" has the same meaning as "poisonous".

2.2.1 Definitions and general provisions

2.2.1.1 A gas is a substance which:

.1 at 50°C has a vapour pressure greater than 300 kPa; or

.2 is completely gaseous at 20°C at a standard pressure of 101.3 kPa.

2.2.1.2 The transport condition of a gas is described according to its physical state as:

.1 *compressed gas:* a gas which when packaged under pressure for transport is entirely gaseous at −50°C; this category includes all gases with a critical temperature less than or equal to −50°C;

.2 *liquefied gas:* a gas which when packaged under pressure for transport is partially liquid at temperatures above −50 °C. A distinction is made between:

high pressure liquefied gas: a gas with a critical temperature between −50°C and +65°C, and

low pressure liquefied gas: a gas with a critical temperature above +65°C;

.3 *refrigerated liquefied gas*: a gas which when packaged for transport is made partially liquid because of its low temperature;

.4 *dissolved gas:* a gas which when packaged under pressure for transport is dissolved in a liquid phase solvent;

.5 *adsorbed gas:* a gas which when packaged for transport is adsorbed onto a solid porous material resulting in an internal receptacle pressure of less than 101.3 kPa at 20°C and less than 300 kPa at 50°C.

2.2.1.3 The class comprises compressed gases, liquefied gases, dissolved gases, refrigerated liquefied gases, adsorbed gases, mixtures of one or more gases with one or more vapours of substances of other classes, articles charged with a gas, aerosols and chemicals under pressure.

2.2.1.4 Gases are normally transported under pressure varying from high pressure in the case of compressed gases to low pressure in the case of refrigerated gases.

2.2.1.5 According to their chemical properties or physiological effects, which may vary widely, gases may be: flammable; non-flammable; non-toxic; toxic; supporters of combustion; corrosive; or may possess two or more of these properties simultaneously.

2.2.1.5.1 Some gases are chemically and physiologically inert. Such gases as well as other gases, normally accepted as non-toxic, will nevertheless be suffocating in high concentrations.

2.2.1.5.2 Many gases of this class have narcotic effects which may occur at comparatively low concentrations or may evolve highly toxic gases when involved in a fire.

2.2.1.5.3 All gases which are heavier than air will present a potential danger if allowed to accumulate in the bottom of cargo spaces.

2.2.2 Class subdivisions

Class 2 is subdivided further according to the primary hazard of the gas during transport:

Note: For UN 1950 AEROSOLS, see also the criteria in special provision 63. For chemicals under pressure of UN Nos. 3500 to 3505, see also special provision 362. For UN 2037 RECEPTACLES, SMALL, CONTAINING GAS (GAS CARTRIDGES), see also special provision 303.

2.2.2.1 Class 2.1 Flammable gases

Gases which at 20°C and a standard pressure of 101.3 kPa:

.1 are ignitable when in a mixture of 13% or less by volume with air; or

.2 have a flammable range with air of at least 12 percentage points regardless of the lower flammable limit. Flammability shall be determined by tests or calculation in accordance with methods adopted by the International Organization for Standardization (see ISO 10156:2017). Where insufficient data are available to use these methods, tests by a comparable method recognized by a national competent authority may be used.

2.2.2.2 Class 2.2 Non-flammable, non-toxic gases

Gases which:

.1 are asphyxiant – gases which dilute or replace the oxygen normally in the atmosphere; or

.2 are oxidizing – gases which may, generally by providing oxygen, cause or contribute to the combustion of other material more than air does; or

.3 do not come under the other classes.

Note: In 2.2.2.2.2, "gases which cause or contribute to the combustion of other material more than air does" means pure gases or gas mixtures with an oxidizing power greater than 23.5% as determined by a method specified in ISO 10156:2017.

2.2.2.3 Class 2.3 Toxic gases

Gases which:

.1 are known to be so toxic or corrosive to humans as to pose a hazard to health; or

.2 are presumed to be toxic or corrosive to humans because they have a LC_{50} value (as defined in 2.6.2.1) equal to or less than 5,000 mL/m^3 (ppm).

Note: Gases meeting the above criteria owing to their corrosivity are to be classified as toxic with a subsidiary corrosive hazard.

2.2.2.4 Gases and gas mixtures with hazards associated with more than one division take the following precedence:

.1 class 2.3 takes precedence over all other classes;

.2 class 2.1 takes precedence over class 2.2.

2.2.2.5 Gases of class 2.2 are not subject to the provisions of this Code if they are transported at a pressure of less than 200 kPa at 20°C and are not liquefied or refrigerated liquefied gases.

2.2.2.6 Gases of class 2.2 are not subject to the provisions of this Code when contained in the following:

.1 foodstuffs (except UN 1950), including carbonated beverages;

.2 balls intended for use in sports; or

.3 tyres (except for air transport).

Note: This exemption does not apply to lamps. For lamps see 1.1.1.9.

2.2.3 Mixtures of gases

For the classification of gas mixtures (including vapours of substances from other classes), the following principles shall be used:

.1 Flammability shall be determined by tests or calculation in accordance with methods adopted by the International Organization for Standardization (see ISO 10156:2017). Where insufficient data are available to use these methods, tests by a comparable method recognized by a national competent authority may be used.

.2 The level of toxicity is determined either by tests to measure the LC_{50} value (as defined in 2.6.2.1) or by a calculation method using the following formula:

$$LC_{50} \quad \text{Toxic (mixture)} = \frac{1}{\sum_{i=1}^{n} \frac{f_i}{T_i}}$$

where: f_i = mole fraction of the i^{th} component substance of the mixture;

T_i = toxicity index of the i^{th} component substance of the mixture (the T_i equals the LC_{50} value when available).

When LC_{50} values are unknown, the toxicity index is determined by using the lowest LC_{50} value of substances of similar physiological and chemical effects, or through testing if this is the only practical possibility.

.3 A gas mixture has a subsidiary hazard of corrosivity when the mixture is known by human experience to be destructive to the skin, eyes or mucous membranes or when the LC_{50} value of the corrosive components of the mixture is equal to or less than 5,000 mL/m^3 (ppm) when the LC_{50} is calculated by the formula:

$$LC_{50} \quad \text{Corrosive (mixture)} = \frac{1}{\sum_{i=1}^{n} \frac{f_{ci}}{T_{ci}}}$$

where: f_{ci} = mole fraction of the i^{th} corrosive component substance of the mixture;

T_{ci} = toxicity index of the i^{th} corrosive component substance of the mixture (the T_{ci} equals the LC_{50} value when available).

.4 Oxidizing ability is determined either by tests or by calculation methods adopted by the International Organization for Standardization (see note in 2.2.2.2).

2.2.4 Gases not accepted for transport

Chemically unstable gases of class 2 shall not be accepted for transport unless the necessary precautions have been taken to prevent the possibility of a dangerous decomposition or polymerization under normal conditions of transport or unless transported in accordance with special packing provision (r) of packing instruction P200 (5) of 4.1.4.1, as applicable. For the precautions necessary to prevent polymerization, see special provision 386 of chapter 3.3. To this end particular care shall be taken to ensure that receptacles and tanks do not contain any substances liable to promote these reactions.

Chapter 2.3

Class 3 – Flammable liquids

2.3.0 Introductory note

The flashpoint of a flammable liquid may be altered by the presence of an impurity. The substances listed in class 3 in the Dangerous Goods List in chapter 3.2 shall generally be regarded as chemically pure. Since commercial products may contain added substances or impurities, flashpoints may vary, and this may have an effect on classification or determination of the packing group for the product. In the event of doubt regarding the classification or packing group of a substance, the flashpoint of the substance shall be determined experimentally.

2.3.1 Definitions and general provisions

2.3.1.1 Class 3 includes the following substances:

.1 flammable liquids (see 2.3.1.2 and 2.3.1.3);

.2 liquid desensitized explosives (see 2.3.1.4).

2.3.1.2 *Flammable liquids* are liquids, or mixtures of liquids, or liquids containing solids in solution or suspension (such as paints, varnishes, lacquers, etc., but not including substances which, on account of their other dangerous characteristics, have been included in other classes) which give off a flammable vapour at or below 60°C closed-cup test (corresponding to 65.6°C open-cup test), normally referred to as the "flashpoint". This also includes:

.1 liquids offered for transport at temperatures at or above their flashpoint; and

.2 substances transported or offered for transport at elevated temperatures in a liquid state, which give off a flammable vapour at temperatures equal to or below the maximum transport temperature.

2.3.1.3 However, the provisions of this Code need not apply to such liquids with a flashpoint of more than 35°C which do not sustain combustion. Liquids are considered to be unable to sustain combustion for the purposes of the Code if:

.1 they have passed the suitable combustibility test (see the Sustained Combustibility Test prescribed in part III, 32.5.2 of the *Manual of Tests and Criteria*); or

.2 their fire point according to ISO 2592:1973 is greater than 100°C; or

.3 they are water-miscible solutions with a water content of more than 90%, by mass.

2.3.1.4 *Liquid desensitized explosives* are explosive substances which are dissolved or suspended in water or other liquid substances, to form a homogeneous liquid mixture to suppress their explosive properties. Entries in the Dangerous Goods List for liquid desensitized explosives are UN 1204, UN 2059, UN 3064, UN 3343, UN 3357 and UN 3379.

2.3.2 Assignment of packing group

2.3.2.1 The criteria in 2.3.2.6 are used to determine the hazard grouping of a liquid that presents a hazard due to flammability.

2.3.2.1.1 For liquids whose only hazard is flammability, the packing group for the substance is the hazard grouping shown in 2.3.2.6.

2.3.2.1.2 For a liquid with additional hazard(s), the hazard group determined from 2.3.2.6 and the hazard group based on the severity of the additional hazard(s) shall be considered, and the classification and packing group determined in accordance with the provisions in chapter 2.0.

2.3.2.2 Viscous flammable liquids such as paints, enamels, lacquers, varnishes, adhesives and polishes having a flashpoint of less than 23°C may be placed in packing group III in conformity with the procedures prescribed in the *Manual of Tests and Criteria*, part III, subsection 32.3, provided that:

.1 The viscosity* and flashpoint are in accordance with the following table:

Kinematic viscosity (extrapolated) v (at near-zero shear rate) mm^2/s at 23°C	Flow-time t in seconds	Jet diameter (mm)	Flashpoint (closed-cup) in °C
$20 < v \leq 80$	$20 < t \leq 60$	4	above 17
$80 < v \leq 135$	$60 < t \leq 100$	4	above 10
$135 < v \leq 220$	$20 < t \leq 32$	6	above 5
$220 < v \leq 300$	$32 < t \leq 44$	6	above –1
$300 < v \leq 700$	$44 < t \leq 100$	6	above –5
$700 < v$	$100 < t$	6	no limit

.2 less than 3% of the clear solvent layer separates in the solvent separation test;

.3 the mixture or any separated solvent does not meet the criteria for class 6.1 or class 8;

.4 the substances are packed in receptacles of not more than 450 L capacity.

2.3.2.3 [Reserved]

2.3.2.4 Substances classified as flammable liquids due to their being transported or offered for transport at elevated temperatures are included in packing group III.

2.3.2.5 Viscous liquids which:

- have a flashpoint of 23°C or above and less than or equal to 60°C;
- are not toxic or corrosive;
- are not environmentally hazardous or are environmentally hazardous transported in single or combination packagings containing a net quantity per single or inner packaging of 5 L or less, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8;
- contain not more than 20% nitrocellulose provided the nitrocellulose contains not more than 12.6% nitrogen by dry mass; and
- are packed in receptacles of not more than 450 L capacity,

are not subject to the provisions for the marking, labelling and testing of packages in chapters 4.1, 5.2 and 6.1, if:

.1 in the solvent separation test (see part III, 32.5.1 of the *Manual of Tests and Criteria*) the height of the separated layer of solvent is less than 3% of the total height; and

.2 the flowtime in the viscosity test (see part III, 32.4.3 of the *Manual of Tests and Criteria*) with a jet diameter of 6 mm is equal to or greater than:

.1 60 s; or

.2 40 s if the viscous liquid contains not more than 60% of class 3 substances.

The following statement shall be included in the transport document: “Transport in accordance with 2.3.2.5 of the IMDG Code” (see 5.4.1.5.10).

2.3.2.6 Hazard grouping based on flammability

Flammable liquids are grouped for packing purposes according to their flashpoint, their boiling point, and their viscosity. This table shows the relationship between two of these characteristics.

Packing group	Flashpoint (closed-cup) in °C	Initial boiling point in °C
I	–	≤ 35
II	< 23	> 35
III	≥ 23 to ≤ 60	> 35

* *Viscosity determination:* Where the substance concerned is non-Newtonian, or where a flow cup method of viscosity determination is otherwise unsuitable, a variable shear-rate viscometer shall be used to determine the dynamic viscosity coefficient of the substance, at 23°C, at a number of shear rates. The values obtained are plotted against shear rate and then extrapolated to zero shear rate. The dynamic viscosity thus obtained, divided by the density, gives the apparent kinematic viscosity at near-zero shear rate.

2.3.3 Determination of flashpoint

Note: The provisions of this section are not mandatory.

2.3.3.1 The flashpoint of a flammable liquid is the lowest temperature of the liquid at which its vapour forms an ignitable mixture with air. It gives a measure of the risk of formation of explosive or ignitable mixtures when the liquid escapes from its packing. A flammable liquid cannot be ignited so long as its temperature remains below the flashpoint.

Note: Do not confuse the flashpoint with the ignition temperature, which is the temperature to which an explosive vapour–air mixture must be heated to cause actual explosion. There is no relationship between the flashpoint and the ignition temperature.

2.3.3.2 The flashpoint is not an exact physical constant for a given liquid. It depends to some extent on the construction of the test apparatus used and on the testing procedure. Therefore, when providing flashpoint data, specify the name of the test apparatus.

2.3.3.3 Several standard apparatuses are in current use. They all operate on the same principle: a specified quantity of the liquid is introduced into a receptacle at a temperature well below the flashpoint to be expected, then slowly heated; periodically, a small flame is brought near to the surface of the liquid. The flashpoint is the lowest temperature at which a "flash" is observed.

2.3.3.4 The test methods can be divided into two groups, depending on the use in an apparatus of an open receptacle (open-cup methods) or a closed one which is only opened to admit the flame (closed-cup methods). As a rule, the flashpoints found in an open-cup test are a few degrees higher than in a closed-cup test.

2.3.3.5 In general, reproducibility in closed-cup apparatus is better than in open-cup.

2.3.3.5.1 It is therefore recommended that flashpoints, especially in the range around 23°C, shall be determined by means of closed-cup (c.c) methods.

2.3.3.5.2 Flashpoint data in this Code are generally based on closed-cup methods. In countries where it is customary to determine flashpoints by the open-cup method, the temperatures given by that method would need to be reduced to correspond with those in this Code.

2.3.3.6 **Determination of flashpoint**

The following methods for determining the flashpoint of flammable liquids may be used:

International standards:

ISO 1516
ISO 1523
ISO 2719
ISO 13736
ISO 3679
ISO 3680

National standards:

American Society for Testing Materials International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, Pennsylvania, USA 19428-2959:

ASTM D3828-07a, Standard Test Methods for Flash Point by Small Scale Closed Cup Tester
ASTM D56-05, Standard Test Method for Flash Point by Tag Closed Cup Tester
ASTM D3278-96(2004)e, Standard Test Methods for Flash Point of Liquids by Small Scale Closed-Cup Apparatus
ASTM D93-08, Standard Test Methods for Flash Point by Pensky-Martens Closed Cup Tester

Association française de normalisation, AFNOR, 11, rue Francis de Pressensé, 93571 La Plaine Saint-Denis Cedex:

French Standard NF M 07-019
French Standards NF M 07-011/NF T 30-050/NF T 66-009
French Standard NF M 07-036

Deutsches Institut für Normung, Burggrafenstr. 6, D-10787 Berlin:

Standard DIN 51755 (flashpoints below 65°C)

State Committee of the Council of Ministers for Standardization, 113813, GSP, Moscow, M-49 Leninsky Prospect, 9:

GOST 12.1.044-84

2.3.4 Determination of initial boiling point

The following methods for determining the initial boiling point of flammable liquids may be used:

International standards:

ISO 3924
ISO 4626
ISO 3405

National standards:

American Society for Testing Materials International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, Pennsylvania, USA 19428-2959:

ASTM D86-07a, Standard Test Method for Distillation of Petroleum Products at Atmospheric Pressure
ASTM D1078-05, Standard Test Method for Distillation Range of Volatile Organic Liquids

Further acceptable methods:

Method A.2 as described in Part A of the Annex to Commission Regulation (EC) No. 440/2008.*

2.3.5 Substances not accepted for transport

Chemically unstable substances of class 3 shall not be accepted for transport unless the necessary precautions have been taken to prevent the possibility of a dangerous decomposition or polymerization under normal conditions of transport. For the precautions necessary to prevent polymerization, see special provision 386 of chapter 3.3. To this end particular care shall be taken to ensure that receptacles and tanks do not contain any substances liable to promote these reactions.

* Commission Regulation (EC) No. 440/2008 of 30 May 2008 laying down test methods pursuant to Regulation (EC) No. 1907/2006 of the European Parliament and of the Council on the *Registration, Evaluation, Authorisation and Restriction of Chemicals* (REACH) (Official Journal of the European Union, No. L 142 of 31.05.2008, pages 1–739 and No. L 143 of 03.06.2008, page 55).

Chapter 2.4

Class 4 – Flammable solids; substances liable to spontaneous combustion; substances which, in contact with water, emit flammable gases

2.4.0 Introductory note

Since organometallic substances can be classified in classes 4.2 or 4.3 with additional subsidiary hazards, depending on their properties, a specific classification flowchart for these substances is given in 2.4.5.

2.4.1 Definition and general provisions

2.4.1.1 In this Code, class 4 deals with substances, other than those classified as explosives, which, under conditions of transport, are readily combustible or may cause or contribute to a fire. Class 4 is subdivided as follows:

Class 4.1 – Flammable solids
Solids which, under conditions encountered in transport, are readily combustible or may cause or contribute to fire through friction; self-reactive substances (solids and liquids) and polymerizing substances which are liable to undergo a strongly exothermic reaction; solid desensitized explosives which may explode if not diluted sufficiently;

Class 4.2 – Substances liable to spontaneous combustion
Substances (solids and liquids) which are liable to spontaneous heating under normal conditions encountered in transport, or to heating up in contact with air, and being then liable to catch fire;

Class 4.3 – Substances which, in contact with water, emit flammable gases
Substances (solids and liquids) which, by interaction with water, are liable to become spontaneously flammable or to give off flammable gases in dangerous quantities.

2.4.1.2 As referenced in this chapter, test methods and criteria, with advice on application of the tests, are given in the *Manual of Tests and Criteria* for the classification of following types of substances of class 4:

.1 flammable solids (class 4.1);

.2 self-reactive substances (class 4.1);

.3 polymerizing substances (class 4.1);

.4 pyrophoric solids (class 4.2);

.5 pyrophoric liquids (class 4.2);

.6 self-heating substances (class 4.2); and

.7 substances which, in contact with water, emit flammable gases (class 4.3).

Test methods and criteria for self-reactive substances and polymerizing substances are given in part II of the *Manual of Tests and Criteria*, and test methods and criteria for the other types of substances of class 4 are given in the *Manual of Tests and Criteria*, part III, section 33.

2.4.2 Class 4.1 – Flammable solids, self-reactive substances, solid desensitized explosives and polymerizing substances

2.4.2.1 General

Class 4.1 includes the following types of substances:

.1 flammable solids (see 2.4.2.2);

.2 self-reactive substances (see 2.4.2.3);

.3 solid desensitized explosives (see 2.4.2.4); and

.4 polymerizing substances (see 2.4.2.5).

Some substances (such as celluloid) may evolve toxic and flammable gases when heated or if involved in a fire.

2.4.2.2 Class 4.1 Flammable solids

2.4.2.2.1 *Definitions and properties*

2.4.2.2.1.1 For the purpose of this Code, *flammable solids* means readily combustible solids and solids which may cause fire through friction.

2.4.2.2.1.2 *Readily combustible solids* means fibres, powdered, granular, or pasty substances which are dangerous if they can be easily ignited by brief contact with an ignition source such as a burning match, and if the flame spreads rapidly. The danger may come not only from the fire but also from toxic combustion products. Metal powders are especially dangerous because of the difficulty of extinguishing a fire, since normal extinguishing agents such as carbon dioxide or water can increase the hazard.

2.4.2.2.2 *Classification of flammable solids*

2.4.2.2.2.1 Powdered, granular or pasty substances shall be classified as readily combustible solids of class 4.1 when the time of burning of one or more of the test runs, performed in accordance with the test method described in the *Manual of Tests and Criteria*, part III, subsection 33.2, is less than 45 s or the rate of burning is more than 2.2 mm/s. Powders of metals or metal alloys shall be classified in class 4.1 when they can be ignited and the reaction spreads over the whole length of the sample in 10 min or less.

2.4.2.2.2.2 Solids which may cause fire through friction shall be classified in class 4.1 by analogy with existing entries (such as matches) until definitive criteria are established.

2.4.2.2.3 *Assignment of packing groups*

2.4.2.2.3.1 Packing groups are assigned on the basis of the test methods referred to in 2.4.2.2.2.1. For readily combustible solids (other than metal powders), packing group II shall be assigned if the burning time is less than 45 s and the flame passes the wetted zone. Packing group II shall be assigned to powders of metal or metal alloys if the zone of reaction spreads over the whole length of the sample in five minutes or less.

2.4.2.2.3.2 Packing groups are assigned on the basis of the test methods referred to in 2.4.2.2.2.1. For readily combustible solids (other than metal powders), packing group III shall be assigned if the burning time is less than 45 s and the wetted zone stops the flame propagation for at least four minutes. Packing group III shall be assigned to metal powders if the reaction spreads over the whole length of the sample in more than five minutes but not more than 10 min.

2.4.2.2.3.3 For solids which may cause fire through friction, the packing group shall be assigned by analogy with existing entries or in accordance with any appropriate special provision.

2.4.2.2.4 Pyrophoric metal powders, if wetted with sufficient water to suppress their pyrophoric properties, may be classified as class 4.1.

2.4.2.3 Class 4.1 Self-reactive substances

2.4.2.3.1 *Definitions and properties*

2.4.2.3.1.1 For the purposes of this Code:

Self-reactive substances are thermally unstable substances liable to undergo a strongly exothermic decomposition even without participation of oxygen (air). Substances are not considered to be self-reactive substances of class 4.1, if:

.1 they are explosives according to the criteria of class 1;

.2 they are oxidizing substances according to the classification procedure for class 5.1 (see 2.5.2) except that mixtures of oxidizing substances which contain 5.0% or more of combustible organic substances shall be subjected to the classification procedure defined in note 3;

.3 they are organic peroxides according to the criteria of class 5.2;

.4 their heat of decomposition is less than 300 J/g; or

.5 their self-accelerating decomposition temperature (SADT) (see 2.4.2.3.4) is greater than 75°C for a 50 kg package.

Note 1: The heat of decomposition may be determined using any internationally recognized method such as differential scanning calorimetry and adiabatic calorimetry.

Note 2: Any substance which shows the properties of a self-reactive substance shall be classified as such, even if this substance gives a positive test result according to 2.4.3.2 for inclusion in class 4.2.

Note 3: Mixtures of oxidizing substances meeting the criteria of class 5.1 which contain 5.0% or more of combustible organic substances, which do not meet the criteria mentioned in .1, .3, .4 or .5 above, shall be subjected to the self-reactive substance classification procedure.

A mixture showing the properties of a self-reactive substance, types B to F, shall be classified as a self-reactive substance of class 4.1.

A mixture showing the properties of a self-reactive substance, type G, according to the principle of 2.4.2.3.3.2.7 shall be considered for classification as a substance of class 5.1 (see 2.5.2).

2.4.2.3.1.2 The decomposition of self-reactive substances can be initiated by heat, contact with catalytic impurities (such as acids, heavy-metal compounds, bases), friction or impact. The rate of decomposition increases with temperature and varies with the substance. Decomposition, particularly if no ignition occurs, may result in the evolution of toxic gases or vapours. For certain self-reactive substances, the temperature shall be controlled. Some self-reactive substances may decompose explosively, particularly if confined. This characteristic may be modified by the addition of diluents or by the use of appropriate packagings. Some self-reactive substances burn vigorously. Self-reactive substances are, for example, some compounds of the types listed below:

.1 aliphatic azo compounds (–C–N=N–C–);

.2 organic azides (–C–N_3);

.3 diazonium salts (–CN_2^+ Z^-);

.4 *N*-nitroso compounds (–N–N=O); and

.5 aromatic sulphonylhydrazides (–SO_2–NH–NH_2).

This list is not exhaustive and substances with other reactive groups and some mixtures of substances may have similar properties.

2.4.2.3.2 *Classification of self-reactive substances*

2.4.2.3.2.1 Self-reactive substances are classified into seven types according to the degree of danger they present. The types of self-reactive substance range from type A, which may not be accepted for transport in the packaging in which it is tested, to type G, which is not subject to the provisions for self-reactive substances of class 4.1. The classification of types B to F is directly related to the maximum quantity allowed in one packaging.

2.4.2.3.2.2 Self-reactive substances permitted for transport in packagings are listed in 2.4.2.3.2.3, those permitted for transport in IBCs are listed in packing instruction IBC520 and those permitted for transport in portable tanks are listed in portable tank instruction T23. For each permitted substance listed, the appropriate generic entry of the Dangerous Goods List (UN 3221 to UN 3240) is assigned, and appropriate subsidiary hazards and remarks providing relevant transport information are given. The generic entries specify:

.1 self-reactive substance type (B to F);

.2 physical state (liquid or solid); and

.3 temperature control, when required (2.4.2.3.4).

2.4.2.3.2.3 *List of currently assigned self-reactive substances in packagings*

△ In the column “Packing Method” codes “OP1” to “OP8” refer to packing methods in packing instruction P520. Self-reactive substances to be transported shall fulfil the classification and the control and emergency temperatures (derived from the SADT) as listed. For substances permitted in IBCs, see packing instruction IBC520, and for those permitted in tanks, see portable tank instruction T23. The formulations not listed in this provision but listed in packing instruction IBC520 of 4.1.4.2 and in portable tank instruction T23 of 4.2.5.2.6 may also be transported packed in accordance with packing method OP8 of packing instruction P520 of 4.1.4.1, with the same control and emergency temperatures, if applicable.

Note: The classification given in this table is based on the technically pure substance (except where a concentration of less than 100% is specified). For other concentrations, the substances may be classified differently following the procedures in 2.4.2.3.3 and 2.4.2.3.4.

UN generic entry	Self-reactive substance	Concentration (%)	Packing method	Control temperature (°C)	Emergency temperature (°C)	Remarks
3222	2-DIAZO-1-NAPHTHOL-4-SULPHONYL CHLORIDE	100	OP5			(2)
	2-DIAZO-1-NAPHTHOL-5-SULPHONYL CHLORIDE	100	OP5			(2)
3223	SELF-REACTIVE LIQUID, SAMPLE		OP2			(8)
3224	AZODICARBONAMIDE FORMULATION TYPE C	< 100	OP6			(3)
	2,2′-AZODI(ISOBUTYRONITRILE) as a water-based paste	≤ 50	OP6			
	N,N′-DINITROSO-*N,N′*-DIMETHYL-TEREPHTHALAMIDE, as a paste	72	OP6			
	N,N′-DINITROSOPENTAMETHYLENETETRAMINE	82	OP6			(7)
	SELF-REACTIVE SOLID, SAMPLE		OP2			(8)
3226	AZODICARBONAMIDE FORMULATION TYPE D	< 100	OP7			(5)
	1,1′-AZODI(HEXAHYDROBENZONITRILE)	100	OP7			
	BENZENE-1,3-DISULPHONYL HYDRAZIDE as a paste	52	OP7			
	BENZENESULPHONYL HYDRAZIDE	100	OP7			
	4-(BENZYL(ETHYL)AMINO)-3-ETHOXY-BENZENEDIAZONIUM ZINC CHLORIDE	100	OP7			
	3-CHLORO-4-DIETHYLAMINOBENZENE-DIAZONIUM ZINC CHLORIDE	100	OP7			
	2-DIAZO-1-NAPHTHOLSULPHONIC ACID ESTER MIXTURE TYPE D	< 100	OP7			(9)
	2,5-DIETHOXY-4-(4-MORPHOLINYL)-BENZENEDIAZONIUM SULPHATE	100	OP7			
	DIPHENYLOXIDE-4,4′-DISULPHONYL HYDRAZIDE	100	OP7			
	4-DIPROPYLAMINOBENZENEDIAZONIUM ZINC CHLORIDE	100	OP7			
	4-METHYLBENZENESULPHONYLHYDRAZIDE	100	OP7			
	SODIUM 2-DIAZO-1-NAPHTHOL-4-SULPHONATE	100	OP7			
	SODIUM 2-DIAZO-1-NAPHTHOL-5-SULPHONATE	100	OP7			
3227	PHOSPHOROTHIOIC ACID, O-[(CYANOPHENYL METHYLENE) AZANYL] O,O-DIETHYL ESTER	82-91 (Z isomer)	OP8			(10)
3228	ACETONE–PYROGALLOL COPOLYMER 2-DIAZO-1-NAPHTHOL-5-SULPHONATE	100	OP8			
	4-(DIMETHYLAMINO)BENZENEDIAZONIUM TRICHLOROZINCATE(–1)	100	OP8			
	2,5-DIBUTOXY-4-(4-MORPHOLINYL)-BENZENEDIAZONIUM TETRACHLOROZINCATE(2:1)	100	OP8			
■ 3230	(7-METHOXY-5-METHYL-BENZOTHIOPHEN-2-YL) BORONIC ACID	88-100	OP7			(11)
3232	AZODICARBONAMIDE FORMULATION TYPE B, TEMPERATURE CONTROLLED	< 100	OP5			(1) (2)
3233	SELF-REACTIVE LIQUID, SAMPLE, TEMPERATURE CONTROLLED		OP2			(8)
3234	AZODICARBONAMIDE FORMULATION TYPE C, TEMPERATURE CONTROLLED	< 100	OP6			(4)
	2,2′-AZODI(ISOBUTYRONITRILE)	100	OP6	+40	+45	
	3-METHYL-4-(PYRROLIDIN-1-YL)BENZENE-DIAZONIUM TETRAFLUOROBORATE	95	OP6	+45	+50	
	SELF-REACTIVE SOLID, SAMPLE, TEMPERATURE CONTROLLED		OP2			(8)
	TETRAMINEPALLADIUM(II) NITRATE	100	OP6	+30	+35	
3235	2,2′-AZODI(ETHYL-2-METHYLPROPIONATE)	100	OP7	+20	+25	

UN generic entry	Self-reactive substance	Concentration (%)	Packing method	Control temperature (°C)	Emergency temperature (°C)	Remarks
3236	AZODICARBONAMIDE FORMULATION TYPE D, TEMPERATURE CONTROLLED	< 100	OP7			(6)
	2,2′-AZODI(2,4-DIMETHYL-4-METHOXY-VALERONITRILE)	100	OP7	−5	+5	
	2,2′-AZODI(2,4-DIMETHYLVALERONITRILE)	100	OP7	+10	+15	
	2,2′-AZODI(2-METHYLBUTYRONITRILE)	100	OP7	+35	+40	
	4-(BENZYL(METHYL)AMINO)-3-ETHOXY-BENZENEDIAZONIUM ZINC CHLORIDE	100	OP7	+40	+45	
	2,5-DIETHOXY-4-MORPHOLINO-BENZENEDIAZONIUM ZINC CHLORIDE	67–100	OP7	+35	+40	
	2,5-DIETHOXY-4-MORPHOLINO-BENZENEDIAZONIUM ZINC CHLORIDE	66	OP7	+40	+45	
	2,5-DIETHOXY-4-MORPHOLINOBENZENE-DIAZONIUM TETRAFLUOROBORATE	100	OP7	+30	+35	
	2,5-DIETHOXY-4-(PHENYLSULPHONYL)-BENZENEDIAZONIUM ZINC CHLORIDE	67	OP7	+40	+45	
	2,5-DIMETHOXY-4-(4-METHYLPHENYL-SULPHONYL)BENZENEDIAZONIUM ZINC CHLORIDE	79	OP7	+40	+45	
	4-DIMETHYLAMINO-6-(2-DIMETHYLAMINO-ETHOXY)TOLUENE-2-DIAZONIUM ZINC CHLORIDE	100	OP7	+40	+45	
	2-(N,N-ETHOXYCARBONYLPHENYLAMINO)-3-METHOXY-4-(N-METHYL-N-CYCLOHEXYLAMINO)-BENZENEDIAZONIUM ZINC CHLORIDE	63–92	OP7	+40	+45	
	2-(N,N-ETHOXYCARBONYLPHENYLAMINO)-3-METHOXY-4-(N-METHYL-N-CYCLOHEXYLAMINO)-BENZENEDIAZONIUM ZINC CHLORIDE	62	OP7	+35	+40	
	N-FORMYL-2-(NITROMETHYLENE)-1,3-PERHYDROTHIAZINE	100	OP7	+45	+50	
	2-(2-HYDROXYETHOXY)-1-(PYRROLIDIN-1-YL)-BENZENE-4-DIAZONIUM ZINC CHLORIDE	100	OP7	+45	+50	
	3-(2-HYDROXYETHOXY)-4-(PYRROLIDIN-1-YL)-BENZENEDIAZONIUM ZINC CHLORIDE	100	OP7	+40	+45	
	2-(N,N-METHYLAMINOETHYLCARBONYL)-4-(3,4-DIMETHYLPHENYLSULPHONYL)-BENZENEDIAZONIUM HYDROGEN SULPHATE	96	OP7	+45	+50	
	4-NITROSOPHENOL	100	OP7	+35	+40	
3237	DIETHYLENEGLYCOL BIS(ALLYLCARBONATE) + DI-ISOPROPYL PEROXYDICARBONATE	≥ 88 + ≤ 12	OP8	−10	0	

Remarks

(1) Azodicarbonamide formulations which fulfil the criteria of 2.4.2.3.3.2.2. The control and emergency temperatures shall be determined by the procedure given in 7.3.7.2.

(2) "EXPLOSIVE" subsidiary hazard label (Model No 1, see 5.2.2.2.2) required.

(3) Azodicarbonamide formulations which fulfil the criteria of 2.4.2.3.3.2.3.

(4) Azodicarbonamide formulations which fulfil the criteria of 2.4.2.3.3.2.3. The control and emergency temperatures shall be determined by the procedure given in 7.3.7.2.

(5) Azodicarbonamide formulations which fulfil the criteria of 2.4.2.3.3.2.4.

(6) Azodicarbonamide formulations which fulfil the criteria of 2.4.2.3.3.2.4. The control and emergency temperatures shall be determined by the procedure given in 7.3.7.2.

(7) With a compatible diluent having a boiling point of not less than 150°C.

(8) See 2.4.2.3.2.4.2.

(9) This entry applies to mixtures of esters of 2-diazo-1-naphthol-4-sulphonic acid and 2-diazo-1-naphthol-5-sulphonic acid meeting the criteria of 2.4.2.3.3.2.4.

(10) This entry applies to the technical mixture in n-butanol within the specified concentration limits of the (Z) isomer.

■ (11) The technical compound with the specified concentration limits may contain up to 12% water and up to 1% organic impurities.

2.4.2.3.2.4 Classification of self-reactive substances not listed in 2.4.2.3.2.3, packing instruction IBC520 or portable tank instruction T23 and assignment to a generic entry shall be made by the competent authority of the country of origin on the basis of a test report. Principles applying to the classification of such substances are provided in 2.4.2.3.3. The applicable classification procedures, test methods and criteria, and an example of a suitable test report, are given in the *Manual of Tests and Criteria*, part II. The statement of approval shall contain the classification and the relevant transport conditions.

.1 Activators, such as zinc compounds, may be added to some self-reactive substances to change their reactivity. Depending on both the type and the concentration of the activator, this may result in a decrease in thermal stability and a change in explosive properties. If either of these properties is altered, the new formulation shall be assessed in accordance with this classification procedure.

.2 Samples of self-reactive substances or formulations of self-reactive substances not listed in 2.4.2.3.2.3, for which a complete set of test results is not available and which are to be transported for further testing or evaluation, may be assigned to one of the appropriate entries for self-reactive substances type C provided the following conditions are met:

.1 the available data indicate that the sample would be no more dangerous than self-reactive substances type B;

.2 the sample is packaged in accordance with packing method OP2 (see applicable packing instruction) and the quantity per cargo transport unit is limited to 10 kg; and

.3 the available data indicate that the control temperature, if any, is sufficiently low to prevent any dangerous decomposition and sufficiently high to prevent any dangerous phase separation.

2.4.2.3.3 *Principles for classification of self-reactive substances*

Note: This section refers only to those properties of self-reactive substances which are decisive for their classification. A flow chart, presenting the classification principles in the form of a graphically arranged scheme of questions concerning the decisive properties together with the possible answers, is given in Figure 2.4.1 in chapter 2.4 of the United Nations *Recommendations on the Transport of Dangerous Goods*. These properties shall be determined experimentally. Suitable test methods with pertinent evaluation criteria are given in the *Manual of Tests and Criteria*, part II.

2.4.2.3.3.1 A self-reactive substance is regarded as possessing explosive properties when, in laboratory testing, the formulation is liable to detonate, to deflagrate rapidly or to show a violent effect when heated under confinement.

2.4.2.3.3.2 The following principles apply to the classification of self-reactive substances not listed in 2.4.2.3.2.3:

.1 Any substance which can detonate or deflagrate rapidly, as packaged for transport, is prohibited from transport under the provisions for self-reactive substances of class 4.1 in that packaging (defined as SELF-REACTIVE SUBSTANCE TYPE A);

.2 Any substance possessing explosive properties and which, as packaged for transport, neither detonates nor deflagrates rapidly, but is liable to undergo a thermal explosion in that package, shall also bear an "EXPLOSIVE" subsidiary hazard label (Model No. 1, see 5.2.2.2.2). Such a substance may be packaged in amounts of up to 25 kg unless the maximum quantity has to be limited to a lower amount to preclude detonation or rapid deflagration in the package (defined as SELF-REACTIVE SUBSTANCE TYPE B);

.3 Any substance possessing explosive properties may be transported without an "EXPLOSIVE" subsidiary hazard label when the substance as packaged (maximum 50 kg) for transport cannot detonate or deflagrate rapidly or undergo a thermal explosion (defined as SELF-REACTIVE SUBSTANCE TYPE C);

.4 Any substance which, in laboratory testing:

.1 detonates partially, does not deflagrate rapidly and shows no violent effect when heated under confinement; or

.2 does not detonate at all, deflagrates slowly and shows no violent effect when heated under confinement; or

.3 does not detonate or deflagrate at all and shows a medium effect when heated under confinement

may be accepted for transport in packages of not more than 50 kg net mass (defined as SELF-REACTIVE SUBSTANCE TYPE D);

.5 Any substance which, in laboratory testing, neither detonates nor deflagrates at all and shows low or no effect when heated under confinement may be accepted for transport in packages of not more than 400 kg/450 L (defined as SELF-REACTIVE SUBSTANCE TYPE E);

.6 Any substance which, in laboratory testing, neither detonates in the cavitated state nor deflagrates at all and shows only a low or no effect when heated under confinement as well as low or no explosive power may be considered for transport in IBCs (defined as SELF-REACTIVE SUBSTANCE TYPE F); (for additional provisions see 4.1.7.2.2);

.7 Any substance which, in laboratory testing, neither detonates in the cavitated state nor deflagrates at all and shows no effect when heated under confinement nor any explosive power shall be exempted from classification as a self-reactive substance of class 4.1 provided that the formulation is thermally stable (self-accelerating decomposition temperature 60°C to 75°C for a 50 kg package) and any diluent meets the provisions of 2.4.2.3.5 (defined as SELF-REACTIVE SUBSTANCE TYPE G). If the formulation is not thermally stable or a compatible diluent having a boiling point less than 150°C is used for desensitization, the formulation shall be defined as SELF-REACTIVE LIQUID/SOLID TYPE F.

2.4.2.3.4 *Temperature control provisions*

2.4.2.3.4.1 Self-reactive substances are subject to temperature control in transport if their self-accelerating decomposition temperature (SADT) is less than or equal to 55°C. For currently assigned self-reactive substances, the control and emergency temperatures are shown in 2.4.2.3.2.3. Test methods for determining the SADT are given in the *Manual of Tests and Criteria*, part II, section 28. The test selected shall be conducted in a manner which is representative, both in size and material, of the package to be transported. The temperature control provisions are given in 7.3.7.

2.4.2.3.5 *Desensitization of self-reactive substances*

2.4.2.3.5.1 In order to ensure safety during transport, self-reactive substances may be desensitized through the use of a diluent. If a diluent is used, the self-reactive substance shall be tested with the diluent present in the concentration and form used in transport.

2.4.2.3.5.2 Diluents which may allow a self-reactive substance to concentrate to a dangerous extent in the event of leakage from a package shall not be used.

2.4.2.3.5.3 The diluent shall be compatible with the self-reactive substance. In this regard, compatible diluents are those solids or liquids which have no detrimental influence on the thermal stability and hazard type of the self-reactive substance.

2.4.2.3.5.4 Liquid diluents in liquid formulations requiring temperature control shall have a boiling point of at least 60°C and a flashpoint not less than 5°C. The boiling point of the liquid shall be at least 50°C higher than the control temperature of the self-reactive substance (see 7.3.7.2).

2.4.2.4 Class 4.1 Solid desensitized explosives

2.4.2.4.1 *Definitions and properties*

2.4.2.4.1.1 Solid desensitized explosives are explosive substances which are wetted with water or alcohols or are diluted with other substances to form a homogeneous solid mixture to suppress their explosive properties. The desensitizing agent shall be distributed uniformly throughout the substance in the state in which it is to be transported. Where transport under conditions of low temperature is anticipated for substances containing or wetted with water, a suitable and compatible solvent, such as alcohol, may have to be added to lower the freezing point of the liquid. Some of these substances, when in a dry state, are classified as explosives. Where reference is made to a substance which is wetted with water, or some other liquid, it shall be permitted for transport as a class 4.1 substance only when in the wetted condition specified. Entries in the Dangerous Goods List in chapter 3.2 for solid desensitized explosives are UN 1310, UN 1320, UN 1321, UN 1322, UN 1336, UN 1337, UN 1344, UN 1347, UN 1348, UN 1349, UN 1354, UN 1355, UN 1356, UN 1357, UN 1517, UN 1571, UN 2555, UN 2556, UN 2557, UN 2852, UN 2907, UN 3317, UN 3319, UN 3344, UN 3364, UN 3365, UN 3366, UN 3367, UN 3368, UN 3369, UN 3370, UN 3376, UN 3380 and UN 3474.

2.4.2.4.2 Substances that:

.1 have been provisionally accepted into class 1 according to Test Series 1 and 2 but exempted from class 1 by Test Series 6;

.2 are not self-reactive substances of class 4.1;

.3 are not substances of class 5

are also assigned to class 4.1. UN 2956, UN 3241, UN 3242 and UN 3251 are such entries.

2

2.4.2.5 Class 4.1 Polymerizing substances and mixtures (stabilized)

2.4.2.5.1 *Definitions and properties*

Polymerizing substances are substances which, without stabilization, are liable to undergo a strongly exothermic reaction resulting in the formation of larger molecules or resulting in the formation of polymers under conditions normally encountered in transport. Such substances are considered to be polymerizing substances of class 4.1 when:

.1 their self-accelerating polymerization temperature (SAPT) is 75°C or less under the conditions (with or without chemical stabilization as offered for transport) and in the packaging, IBC or portable tank in which the substance or mixture is to be transported;

.2 they exhibit a heat of reaction of more than 300 J/g; and

.3 they do not meet any other criteria for inclusion in classes 1 to 8.

A mixture meeting the criteria of a polymerizing substance shall be classified as a polymerizing substance of Class 4.1.

2.4.2.5.2 Polymerizing substances are subject to temperature control in transport if their self-accelerating polymerization temperature (SAPT) is:

.1 when offered for transport in a packaging or IBC, 50°C or less in the packaging or IBC in which the substance is to be transported; or

.2 when offered for transport in a portable tank, 45°C or less in the portable tank in which the substance is to be transported.

Note: Substances meeting the criteria of a polymerizing substance and also for inclusion in classes 1 to 8 are subject to the requirements of special provision 386 of chapter 3.3.

2.4.3 Class 4.2 – Substances liable to spontaneous combustion

2.4.3.1 Definitions and properties

2.4.3.1.1 Class 4.2 comprises:

.1 *Pyrophoric substances*, which are substances, including mixtures and solutions (liquid or solid), which, even in small quantities, ignite within 5 minutes of coming into contact with air. These substances are the most liable to spontaneous combustion; and

.2 *Self-heating substances*, which are substances, other than pyrophoric substances, which, in contact with air without energy supply, are liable to self-heating. These substances will ignite only when in large amounts (kilograms) and after long periods of time (hours or days).

2.4.3.1.2 Self-heating of a substance is a process where the gradual reaction of that substance with oxygen (in air) generates heat. If the rate of heat production exceeds the rate of heat loss, then the temperature of the substance will rise which, after an induction time, may lead to self-ignition and combustion.

2.4.3.1.3 Some substances may also give off toxic gases if involved in a fire.

2.4.3.2 Classification of class 4.2 substances

2.4.3.2.1 Solids are considered pyrophoric solids which shall be classified in class 4.2 if, in tests performed in accordance with the test method given in the *Manual of Tests and Criteria*, part III, subsection 33.4.4, the sample ignites in one of the tests.

2.4.3.2.2 Liquids are considered pyrophoric liquids which shall be classified in class 4.2 if, in tests performed in accordance with the test method given in the *Manual of Tests and Criteria*, part III, subsection 33.4.5, the liquid ignites in the first part of the test, or if it ignites or chars the filter paper.

2.4.3.2.3 *Self-heating substances*

2.4.3.2.3.1 A substance shall be classified as a self-heating substance of class 4.2 if, in tests performed in accordance with the test method given in the *Manual of Tests and Criteria*, part III, subsection 33.4.6:

.1 a positive result is obtained using a 25 mm cube sample at 140°C;

.2 a positive result is obtained in a test using a 100 mm cube sample at 140°C and a negative result is obtained in a test using a 100 mm cube sample at 120°C and the substance is to be transported in packages with a volume of more than 3 m^3;

.3 a positive result is obtained in a test using a 100 mm cube sample at 140°C and a negative result is obtained in a test using a 100 mm cube sample at 100°C and the substance is to be transported in packages with a volume of more than 450 L;

.4 a positive result is obtained in a test using a 100 mm cube sample at 140°C and a positive result is obtained using a 100 mm cube sample at 100°C.

Note: Self-reactive substances, giving also a positive result with this test method shall not be classified in class 4.2 but in class 4.1 (see 2.4.2.3.1.1).

2.4.3.2.3.2 A substance shall not be classified in class 4.2 if:

.1 a negative result is obtained in a test using a 100 mm cube sample at 140°C;

.2 a positive result is obtained in a test using a 100 mm cube sample at 140°C and a negative result is obtained in a test using a 25 mm cube sample at 140°C, a negative result is obtained in a test using a 100 mm cube sample at 120°C and the substance is to be transported in packages with a volume not more than 3 m^3;

.3 a positive result is obtained in a test using a 100 mm cube sample at 140°C and a negative result is obtained in a test using a 25 mm cube sample at 140°C, a negative result is obtained in a test using a 100 mm cube sample at 100°C and the substance is to be transported in packages with a volume not more than 450 L.

2.4.3.3 Assignment of packing groups

2.4.3.3.1 Packing group I shall be assigned to all pyrophoric solids and liquids.

2.4.3.3.2 Packing group II shall be assigned to self-heating substances which give a positive result in a test using a 25 mm cube sample at 140°C.

2.4.3.3.3 Packing group III shall be assigned to self-heating substances if:

.1 a positive result is obtained in a test using a 100 mm cube sample at 140°C and a negative result is obtained in a test using a 25 mm cube sample at 140°C and the substance is to be transported in packages with a volume of more than 3 m^3;

.2 a positive result is obtained in a test using a 100 mm cube sample at 140°C and a negative result is obtained in a test using a 25 mm cube sample at 140°C, a positive result is obtained in a test using a 100 mm cube sample at 120°C and the substance is to be transported in packages with a volume of more than 450 L;

.3 a positive result is obtained in a test using a 100 mm cube sample at 140°C and a negative result is obtained in a test using a 25 mm cube sample at 140°C and a positive result is obtained in a test using a 100 mm cube sample at 100°C.

2.4.4 Class 4.3 – Substances which, in contact with water, emit flammable gases

2.4.4.1 Definitions and properties

2.4.4.1.1 For the purpose of this Code, the substances in this class are either liquids or solids which, by interaction with water, are liable to become spontaneously flammable or to give off flammable gases in dangerous quantities.

2.4.4.1.2 Certain substances, in contact with water, may emit flammable gases that can form explosive mixtures with air. Such mixtures are easily ignited by all ordinary sources of ignition, for example naked lights, sparking handtools or unprotected lamps. The resulting blast wave and flames may endanger people and the environment. The test method referred to in 2.4.4.2 is used to determine whether the reaction of a substance with water leads to the development of a dangerous amount of gases which may be flammable. This test method shall not be applied to pyrophoric substances.

2.4.4.2 Classification of class 4.3 substances

2.4.4.2.1 Substances which, in contact with water, emit flammable gases shall be classified in class 4.3 if, in tests performed in accordance with the test method given in the *Manual of Tests and Criteria*, part III, 33.5:

.1 spontaneous ignition takes place in any step of the test procedure; or

.2 there is an evolution of a flammable gas at a rate greater than 1 L per kilogram of the substance per hour.

2.4.4.3 Assignment of packing groups

2.4.4.3.1 Packing group I shall be assigned to any substance which reacts vigorously with water at ambient temperatures and demonstrates generally a tendency for the gas produced to ignite spontaneously, or which reacts readily with water at ambient temperatures such that the rate of evolution of flammable gas is equal to or greater than 10 L per kilogram of substance over any one minute.

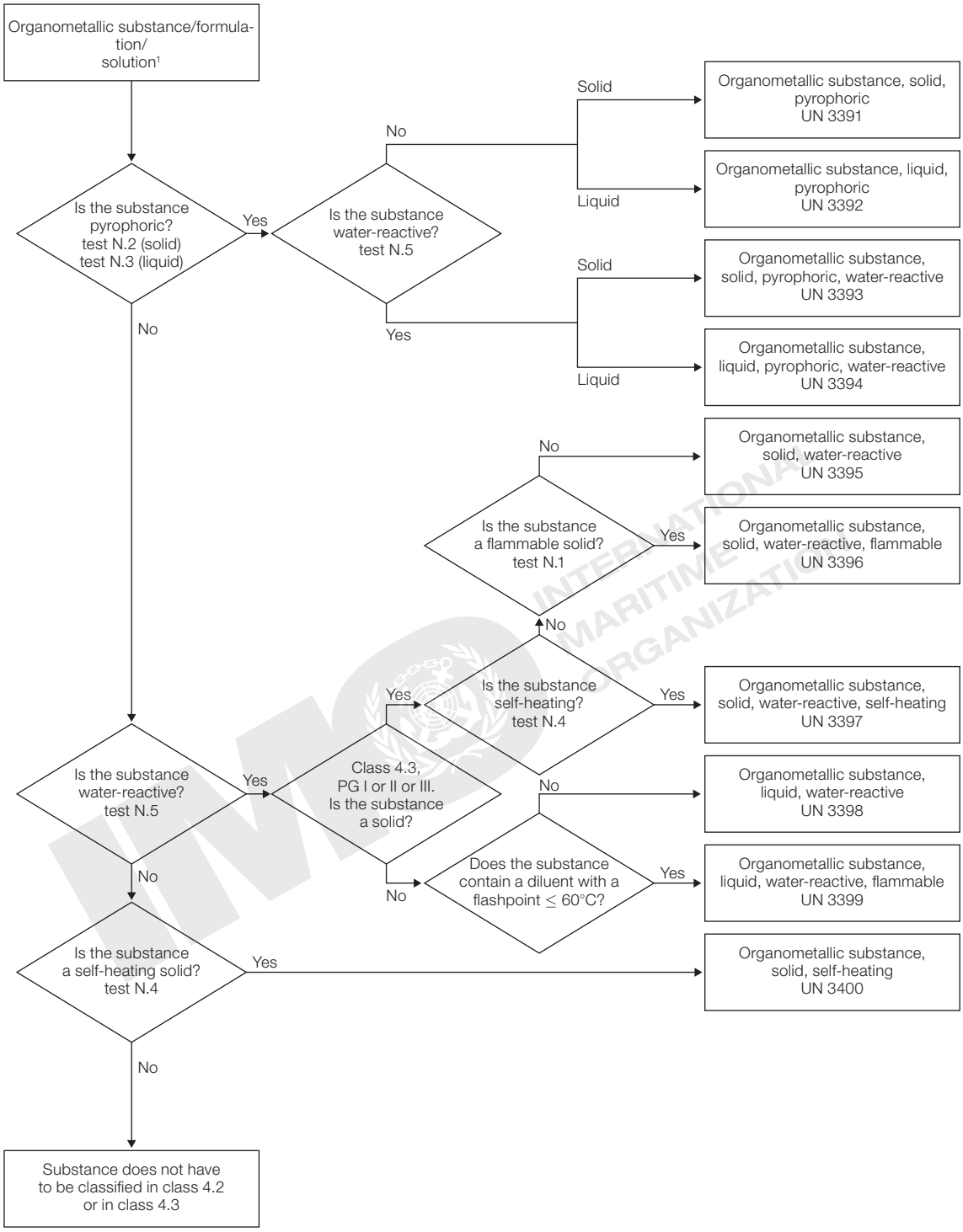
2.4.4.3.2 Packing group II shall be assigned to any substance which reacts readily with water at ambient temperatures such that the maximum rate of evolution of flammable gas is equal to or greater than 20 litres per kilogram of substance per hour, and which does not meet the criteria for packing group I.

2.4.4.3.3 Packing group III shall be assigned to any substance which reacts slowly with water at ambient temperatures such that the maximum rate of evolution of flammable gas is greater than 1 litre per kilogram of substance per hour, and which does not meet the criteria for packing groups I or II.

2.4.5 Classification of organometallic substances

Depending on their properties, organometallic substances may be classified in classes 4.2 or 4.3, as appropriate, in accordance with the following flowchart:

Flowchart scheme for organometallic substances[1,2]



[1] If applicable and testing is relevant, taking into account reactivity properties, class 6.1 and class 8 properties shall be considered according to the Precedence of hazards in table 2.0.3.6.

[2] Test methods N.1 to N.5 can be found in the *Manual of Tests and Criteria*, part III, section 33.

Chapter 2.5

Class 5 – Oxidizing substances and organic peroxides

2.5.0 Introductory note

Because of the differing properties exhibited by dangerous goods within classes 5.1 and 5.2, it is impracticable to establish a single criterion for classification in either class. Tests and criteria for assignment to the two classes are addressed in this chapter.

2.5.1 Definitions and general provisions

In this Code, class 5 is divided into two classes as follows:

Class 5.1 – Oxidizing substances

Substances which, while in themselves not necessarily combustible, may, generally by yielding oxygen, cause, or contribute to, the combustion of other material. Such substances may be contained in an article;

Class 5.2 – Organic peroxides

Organic substances which contain the bivalent –O–O– structure and may be considered derivatives of hydrogen peroxide, where one or both of the hydrogen atoms have been replaced by organic radicals. Organic peroxides are thermally unstable substances which may undergo exothermic self-accelerating decomposition. In addition, they may have one or more of the following properties:

- be liable to explosive decomposition;
- burn rapidly;
- be sensitive to impact or friction;
- react dangerously with other substances;
- cause damage to the eyes.

2.5.2 Class 5.1 – Oxidizing substances

Note 1: For the classification of oxidizing substances to class 5.1, in the event of divergence between test results and known experience, judgement based on known experience shall take precedence over test results.

Note 2: By exception, solid ammonium nitrate based fertilizers shall be classified in accordance with the procedure as set out in the *Manual of Tests and Criteria*, part III, section 39.

2.5.2.1 Properties

2.5.2.1.1 Substances of class 5.1 in certain circumstances directly or indirectly evolve oxygen. For this reason, oxidizing substances increase the risk and intensity of fire in combustible material with which they come into contact.

2.5.2.1.2 Mixtures of oxidizing substances with combustible material and even with material such as sugar, flour, edible oils, mineral oils, etc., are dangerous. These mixtures are readily ignited, in some cases by friction or impact. They may burn violently and may lead to explosion.

2.5.2.1.3 There will be a violent reaction between most oxidizing substances and liquid acids, evolving toxic gases. Toxic gases may also be evolved when certain oxidizing substances are involved in a fire.

2.5.2.1.4 The above-mentioned properties are, in general, common to all substances in this class. Additionally, some substances possess specific properties, which shall be taken into account in transport. These properties are shown in the Dangerous Goods List in chapter 3.2.

2.5.2.2 Oxidizing solids

2.5.2.2.1 *Classification of solid substances of class 5.1*

2.5.2.2.1.1 Tests are performed to measure the potential for the solid substance to increase the burning rate or burning intensity of a combustible substance when the two are thoroughly mixed. The procedure is given in the *Manual of Tests and Criteria*, part III, subsection 34.4.1 (test O.1) or alternatively, in subsection 34.4.3 (test O.3). Tests are conducted on the substance to be evaluated mixed with dry fibrous cellulose in mixing ratios of 1:1 and 4:1, by mass, of sample to cellulose. The burning characteristics of the mixtures are compared:

.1 in the test O.1, with the standard 3:7 mixture, by mass, of potassium bromate to cellulose. If the burning time is equal to or less than this standard mixture, the burning times shall be compared with those from the packing group I or II reference standards, 3:2 and 2:3 ratios, by mass, of potassium bromate to cellulose, respectively; or

.2 in the test O.3, with the standard 1:2 mixture, by mass, of calcium peroxide to cellulose. If the burning rate is equal to or greater than this standard mixture, the burning rates shall be compared with those from the packing group I or II reference standards, 3:1 and 1:1 ratios, by mass, of calcium peroxide to cellulose, respectively.

2.5.2.2.1.2 The classification test results are assessed on the basis of:

.1 the comparison of the mean burning time (for the test O.1) or burning rate (for the test O.3) with those of the reference mixtures; and

.2 whether the mixture of substance and cellulose ignites and burns.

2.5.2.2.1.3 A solid substance is classified in class 5.1 if the 4:1 or 1:1 sample-to-cellulose ratio (by mass) tested, exhibits:

.1 in the test O.1, a mean burning time equal to or less than the mean burning time of a 3:7 mixture (by mass) of potassium bromate and cellulose; or

.2 in the test O.3, a mean burning rate equal to or greater than the mean burning rate of a 1:2 mixture (by mass) of calcium peroxide and cellulose.

2.5.2.2.2 *Assignment of packing groups*

Solid oxidizing substances are assigned to a packing group according to one of the test procedures in the *Manual of Tests and Criteria*, part III, subsection 34.4.1 (test O.1) or subsection 34.4.3 (test O.3), in accordance with the following criteria:

.1 Test O.1:

.1 Packing group I: any substance which, in the 4:1 or 1:1 sample-to-cellulose ratio (by mass) tested, exhibits a mean burning time less than the mean burning time of a 3:2 mixture, by mass, of potassium bromate and cellulose;

.2 Packing group II: any substance which, in the 4:1 or 1:1 sample-to-cellulose ratio (by mass) tested, exhibits a mean burning time equal to or less than the mean burning time of a 2:3 mixture (by mass) of potassium bromate and cellulose, and the criteria for packing group I are not met;

.3 Packing group III: any substance which, in the 4:1 or 1:1 sample-to-cellulose ratio (by mass) tested, exhibits a mean burning time equal to or less than the mean burning time of a 3:7 mixture (by mass) of potassium bromate and cellulose, and the criteria for packing groups I and II are not met;

.4 Not class 5.1: any substance which, in both the 4:1 and 1:1 sample-to-cellulose ratio (by mass) tested, does not ignite and burn, or exhibits mean burning times greater than that of a 3:7 mixture (by mass) of potassium bromate and cellulose.

.2 Test O.3:

.1 Packing group I: any substance which, in the 4:1 or 1:1 sample-to-cellulose ratio (by mass) tested, exhibits a mean burning rate greater than the mean burning rate of a 3:1 mixture (by mass) of calcium peroxide and cellulose;

.2 Packing group II: any substance which, in the 4:1 or 1:1 sample-to-cellulose ratio (by mass) tested, exhibits a mean burning rate equal to or greater than the mean burning rate of a 1:1 mixture (by mass) of calcium peroxide and cellulose, and the criteria for packing group I are not met;

.3 Packing group III: any substance which, in the 4:1 or 1:1 sample-to-cellulose ratio (by mass) tested, exhibits a mean burning rate equal to or greater than the mean burning rate of a 1:2 mixture (by mass) of calcium peroxide and cellulose, and the criteria for packing groups I and II are not met;

.4 Not class 5.1: any substance which, in both the 4:1 and 1:1 sample-to-cellulose ratio (by mass) tested, does not ignite and burn, or exhibits a mean burning rate less than the mean burning rate of a 1:2 mixture (by mass) of calcium peroxide and cellulose.

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2.5.2.3 Oxidizing liquids

2.5.2.3.1 *Classification of liquid substances of class 5.1*

2.5.2.3.1.1 A test is performed to determine the potential for a liquid substance to increase the burning rate or burning intensity of a combustible substance or for spontaneous ignition to occur when the two are thoroughly mixed. The procedure is given in the *Manual of Tests and Criteria*, part III, 34.4.2 (test O.2). It measures the pressure rise time during combustion. Whether a liquid is an oxidizing substance of class 5.1 and, if so, whether packing group I, II or III shall be assigned, is decided on the basis of the test result (see also Precedence of hazard characteristics in 2.0.3).

2.5.2.3.1.2 The classification test results are assessed on the basis of:

.1 whether the mixture of substance and cellulose spontaneously ignites;

.2 the comparison of the mean time taken for the pressure to rise from 690 kPa to 2070 kPa gauge with those of the reference substances.

2.5.2.3.1.3 A liquid substance is classified in class 5.1 if the 1:1 mixture, by mass, of substance and cellulose tested exhibits a mean pressure rise time less than or equal to the mean pressure rise time of a 1:1 mixture, by mass, of 65% aqueous nitric acid and cellulose.

2.5.2.3.2 *Assignment of packing groups*

2.5.2.3.2.1 Liquid oxidizing substances are assigned to a packing group according to the test procedure in the *Manual of Tests and Criteria*, part III, 34.4.2, in accordance with the following criteria:

.1 Packing group I: any substance which, in the 1:1 mixture (by mass) of substance and cellulose tested, spontaneously ignites; or the mean pressure rise time of a 1:1 mixture (by mass) of substance and cellulose is less than that of a 1:1 mixture (by mass) of 50% perchloric acid and cellulose;

.2 Packing group II: any substance which, in the 1:1 mixture (by mass) of substance and cellulose tested, exhibits a mean pressure rise time less than or equal to the mean pressure rise time of a 1:1 mixture (by mass) of 40% aqueous sodium chlorate solution and cellulose; and the criteria for packing group I are not met;

.3 Packing group III: any substance which, in the 1:1 mixture (by mass) of substance and cellulose tested, exhibits a mean pressure rise time less than or equal to the mean pressure rise time of a 1:1 mixture (by mass) of 65% aqueous nitric acid and cellulose; and the criteria for packing groups I and II are not met;

.4 Not classified as class 5.1: any substance which, in the 1:1 mixture (by mass) of substance and cellulose tested, exhibits a pressure rise of less than 2070 kPa gauge; or exhibits a mean pressure rise time greater than the mean pressure rise time of a 1:1 mixture (by mass) of 65% aqueous nitric acid and cellulose.

2.5.3 Class 5.2 – Organic peroxides

2.5.3.1 Properties

2.5.3.1.1 Organic peroxides are liable to exothermic decomposition at normal or elevated temperatures. The decomposition can be initiated by heat, contact with impurities (such as acids, heavy-metal compounds, amines), friction or impact. The rate of decomposition increases with temperature and varies with the organic peroxide formulation. Decomposition may result in the evolution of harmful, or flammable, gases or vapours. For certain organic peroxides the temperature shall be controlled during transport. Some organic peroxides may decompose explosively, particularly if confined. This characteristic may be modified by the addition of diluents or by the use of appropriate packagings. Many organic peroxides burn vigorously.

2.5.3.1.2 Contact of organic peroxides with the eyes is to be avoided. Some organic peroxides will cause serious injury to the cornea, even after brief contact, or will be corrosive to the skin.

2.5.3.2 Classification of organic peroxides

2.5.3.2.1 Any organic peroxide shall be considered for classification in class 5.2, unless the organic peroxide formulation contains:

.1 not more than 1.0% available oxygen from the organic peroxides when containing not more than 1.0% hydrogen peroxide; or

.2 not more than 0.5% available oxygen from the organic peroxides when containing more than 1.0% but not more than 7.0% hydrogen peroxide.

Note: The available oxygen content (%) of an organic peroxide formulation is given by the formula:

$16 \times \Sigma(n_i \times c_i/m_i)$

where:

n_i = number of peroxygen groups per molecule of organic peroxide *i*;

c_i = concentration (mass %) of organic peroxide *i*;

m_i = molecular mass of organic peroxide *i*.

2.5.3.2.2 Organic peroxides are classified into seven types according to the degree of danger they present. The types of organic peroxide range from type A, which may not be accepted for transport in the packaging in which it is tested, to type G, which is not subject to the provisions for organic peroxides of class 5.2. The classification of types B to F is directly related to the maximum quantity allowed in one packaging.

2.5.3.2.3 Organic peroxides permitted for transport in packagings are listed in 2.5.3.2.4, those permitted for transport in IBCs are listed in packing instruction IBC520 and those permitted for transport in portable tanks are listed in portable tank instruction T23. For each permitted substance listed, the generic entry of the Dangerous Goods List (UN 3101 to UN 3120) is assigned, appropriate subsidiary hazards and remarks providing relevant transport information are given. The generic entries specify:

.1 organic peroxide type (B to F);

.2 physical state (liquid or solid); and

.3 temperature control, when required (see 2.5.3.4).

2.5.3.2.3.1 Mixtures of the listed formulations may be classified as the same type of organic peroxide as that of the most dangerous component and be transported under the conditions of transport given for this type. However, as two stable components can form a thermally less stable mixture, the self-accelerating decomposition temperature (SADT) of the mixture shall be determined and, if necessary, temperature control applied as required by 2.5.3.4.

2.5.3.2.4 List of currently assigned organic peroxides in packagings

△ **Note:** Packing Method codes “OP1” to “OP8” refer to packing methods in packing instruction P520. Peroxides to be transported shall fulfil the classification and the control and emergency temperatures (derived from the SADT) as listed. For substances permitted in IBCs, see packing instruction IBC520, and for those permitted in tanks, see portable tank instruction T23. The formulations not listed in this provision but listed in packing instruction IBC520 of 4.1.4.2 and in portable tank instruction T23 of 4.2.5.2.6 may also be transported packed in accordance with packing method OP8 of packing instruction P520 of 4.1.4.1, with the same control and emergency temperatures, if applicable.

Number (generic entry)	ORGANIC PEROXIDE	Concentration (%)	Diluent type A (%)	Diluent type B (%)(1)	Inert solid (%)	Water (%)	Packing method	Control temperature (°C)	Emergency temperature (°C)	Subsidiary hazards and remarks
3101	*tert*-BUTYL PEROXYACETATE	> 52 – 77	≥ 23				OP5			(3)
	1,1-DI-(*tert*-BUTYLPEROXY)CYCLOHEXANE	> 80 – 100					OP5			(3)
	1,1-DI-(*tert*-BUTYLPEROXY)-3,3,5-TRIMETHYL-CYCLOHEXANE	> 90 – 100					OP5			(3)
	METHYL ETHYL KETONE PEROXIDE(S)	see remark (8)	≥ 48				OP5			(3) (8) (13)
	2,5-DIMETHYL-2,5-DI-(*tert*-BUTYLPEROXY)-HEXYNE-3	> 86 – 100					OP5			(3)
3102	*tert*-BUTYL MONOPEROXYMALEATE	> 52 – 100					OP5			(3)
	3-CHLOROPEROXYBENZOIC ACID	> 57 – 86			≥ 14		OP1			(3)
	DIBENZOYL PEROXIDE	> 52 – 100			≤ 48		OP2			(3)
	DIBENZOYL PEROXIDE	> 77 – 94				≥ 6	OP4			(3)
	DI-4-CHLOROBENZOYL PEROXIDE	≤ 77				≥ 23	OP5			(3)
	DI-2,4-DICHLOROBENZOYL PEROXIDE	≤ 77				≥ 23	OP5			(3)
	2,2-DIHYDROPEROXYPROPANE	≤ 27			≥ 73		OP5			(3)
	2,5-DIMETHYL-2,5-DI-(BENZOYLPEROXY)HEXANE	> 82 – 100					OP5			(3)
	DI-(2-PHENOXYETHYL) PEROXYDICARBONATE	> 85 – 100					OP5			(3)
	DISUCCINIC ACID PEROXIDE	> 72 – 100					OP4			(3) (17)
3103	*tert*-AMYL PEROXYBENZOATE	≤ 100					OP5			
	tert-AMYLPEROXY ISOPROPYL CARBONATE	≤ 77	≥ 23				OP5			
	n-BUTYL 4,4-DI-(*tert*-BUTYLPEROXY)VALERATE	> 52 – 100					OP5			
	tert-BUTYL HYDROPEROXIDE	> 79 – 90				≥ 10	OP5			(13)
	tert-BUTYL HYDROPEROXIDE + DI-*tert*-BUTYL PEROXIDE	< 82 + > 9				≥ 7	OP5			(13)
	tert-BUTYL MONOPEROXYMALEATE	≤ 52	≥ 48				OP6			
	tert-BUTYL PEROXYACETATE	> 32 – 52	≥ 48				OP6			
	tert-BUTYL PEROXYBENZOATE	> 77 – 100					OP5			
	tert-BUTYLPEROXY ISOPROPYLCARBONATE	≤ 77	≥ 23				OP5			
	tert-BUTYLPEROXY-2-METHYLBENZOATE	≤ 100					OP5			

Number (generic entry)	ORGANIC PEROXIDE	Concentration (%)	Diluent type A (%)	Diluent type B (%)[1]	Inert solid (%)	Water (%)	Packing method	Control temperature (°C)	Emergency temperature (°C)	Subsidiary hazards and remarks
3103 *(cont.)*	1,1-DI-(*tert*-AMYLPEROXY)CYCLOHEXANE	≤ 82	≥ 18				OP6			
	2,2-DI-(*tert*-BUTYLPEROXY)BUTANE	≤ 52	≥ 48				OP6			
	1,6-DI-(*tert*-BUTYLPEROXYCARBONYLOXY)-HEXANE	≤ 72	≥ 28				OP5			
	1,1-DI-(*tert*-BUTYLPEROXY)CYCLOHEXANE	> 52 – 80	≥ 20				OP5			
	1,1-DI-(*tert*-BUTYLPEROXY)CYCLOHEXANE	≤ 72		≥ 28			OP5			(30)
	1,1-DI-(*tert*-BUTYLPEROXY)-3,3,5-TRIMETHYL-CYCLOHEXANE	> 57 – 90	≥ 10				OP5			
	1,1-DI-(*tert*-BUTYLPEROXY)-3,3,5-TRIMETHYL-CYCLOHEXANE	≤ 77		≥ 23			OP5			
	1,1-DI-(*tert*-BUTYLPEROXY)-3,3,5-TRIMETHYL-CYCLOHEXANE	≤ 90		≥ 10			OP5			(30)
	2,5-DIMETHYL-2,5-DI-(*tert*-BUTYLPEROXY)HEXANE	> 90 – 100					OP5			
	2,5-DIMETHYL-2,5-DI-(*tert*-BUTYLPEROXY)-HEXYNE-3	> 52 – 86	≥ 14				OP5			(26)
	ETHYL 3,3-DI-(*tert*-BUTYLPEROXY)BUTYRATE	> 77 – 100					OP5			
	ORGANIC PEROXIDE, LIQUID, SAMPLE						OP2			(11)
3104	CYCLOHEXANONE PEROXIDE(S)	≤ 91				≥ 9	OP6			(13)
	DIBENZOYL PEROXIDE	≤ 77				≥ 23	OP6			
	2,5-DIMETHYL-2,5-DI(BENZOYLPEROXY)HEXANE	≤ 82				≥ 18	OP5			
	2,5-DIMETHYL-2,5-DIHYDROPEROXYHEXANE	≤ 82				≥ 18	OP6			
	ORGANIC PEROXIDE, SOLID, SAMPLE						OP2			(11)
3105	ACETYL ACETONE PEROXIDE	≤ 42	≥ 48			≥ 8	OP7			(2)
	tert-AMYL PEROXYACETATE	≤ 62	≥ 38				OP7			
	tert-AMYL PEROXY-2-ETHYLHEXYL CARBONATE	≤ 100					OP7			
	tert-AMYL PEROXY-3,5,5-TRIMETHYLHEXANOATE	≤ 100					OP7			
	tert-BUTYL HYDROPEROXIDE	≤ 80	≥ 20				OP7			(4) (13)
	tert-BUTYL PEROXYBENZOATE	> 52 – 77	≥ 23				OP7			
	tert-BUTYL PEROXYBUTYL FUMARATE	≤ 52	≥ 48				OP7			
	tert-BUTYL PEROXYCROTONATE	≤ 77	≥ 23				OP7			
	tert-BUTYL PEROXY-2-ETHYLHEXYLCARBONATE	≤ 100					OP7			
■	*tert*-BUTYLPEROXY ISOPROPYLCARBONATE	≤ 62		≥ 38			OP7			
	1-(2-*tert*-BUTYLPEROXY ISOPROPYL)-3-ISOPROPENYLBENZENE	≤ 77	≥ 23				OP7			
	tert-BUTYL PEROXY-3,5,5-TRIMETHYLHEXANOATE	> 37 – 100					OP7			

Number (generic entry)	ORGANIC PEROXIDE	Concentration (%)	Diluent type A (%)	Diluent type B (%)(1)	Inert solid (%)	Water (%)	Packing method	Control temperature (°C)	Emergency temperature (°C)	Subsidiary hazards and remarks
3105 *(cont.)*	CYCLOHEXANONE PEROXIDE(S)	≤ 72	≥ 28				OP7			(5)
	2,2-DI-(*tert*-AMYLPEROXY)BUTANE	≤ 57	≥ 43				OP7			
	DI-*tert*-BUTYL PEROXYAZELATE	≤ 52	≥ 48				OP7			
	1,1-DI-(*tert*-BUTYLPEROXY)CYCLOHEXANE	> 42 – 52	≥ 48				OP7			
	1,1-DI-(*tert*-BUTYLPEROXY)CYCLOHEXANE + *tert*-BUTYL PEROXY-2-ETHYLHEXANOATE	≤ 43 + ≤ 16	≥ 41				OP7			
	DI-(*tert*-BUTYLPEROXY)PHTHALATE	> 42 – 52	≥ 48				OP7			
	2,2-DI-(*tert*-BUTYLPEROXY)PROPANE	≤ 52	≥ 48				OP7			
	2,5-DIMETHYL-2,5-DI-(*tert*-BUTYLPEROXY)HEXANE	> 52 – 90	≥ 10				OP7			
	2,5-DIMETHYL-2,5-DI-(3,5,5-TRIMETHYL-HEXANOYLPEROXY)HEXANE	≤ 77	≥ 23				OP7			
	ETHYL 3,3-DI-(*tert*-AMYLPEROXY)BUTYRATE	≤ 67	≥ 33				OP7			
	ETHYL 3,3-DI-(*tert*-BUTYLPEROXY)BUTYRATE	≤ 77	≥ 23				OP7			
	p-MENTHYL HYDROPEROXIDE	> 72 – 100					OP7			(13)
	METHYL ETHYL KETONE PEROXIDE(S)	see remark (9)	≥ 55				OP7			(9)
	METHYL ISOBUTYL KETONE PEROXIDE(S)	≤ 62	≥ 19				OP7			(22)
	PEROXYACETIC ACID, TYPE D, stabilized	≤ 43					OP7			(13) (14) (19)
	PINANYL HYDROPEROXIDE	> 56 – 100					OP7			(13)
	1,1,3,3-TETRAMETHYLBUTYL HYDROPEROXIDE	≤ 100					OP7			
	3,6,9-TRIETHYL-3,6,9-TRIMETHYL-1,4,7-TRIPEROXONANE	≤ 42	≥ 58				OP7			(28)
3106	ACETYL ACETONE PEROXIDE	≤ 32 as a paste					OP7			(20)
	tert-BUTYL PEROXYBENZOATE	≤ 52			≥ 48		OP7			
	tert-BUTYL PEROXY-2-ETHYLHEXANOATE + 2,2-DI-(*tert*-BUTYLPEROXY)BUTANE	≤ 12 + ≤ 14	≥ 14		≥ 60		OP7			
	tert-BUTYLPEROXY STEARYLCARBONATE	≤ 100					OP7			
	tert-BUTYL PEROXY-3,5,5-TRIMETHYLHEXANOATE	≤ 42			≥ 58		OP7			
	3-CHLOROPEROXYBENZOIC ACID	≤ 57			≥ 3	≥ 40	OP7			
	3-CHLOROPEROXYBENZOIC ACID	≤ 77			≥ 6	≥ 17	OP7			
	CYCLOHEXANONE PEROXIDE(S)	≤ 72 as a paste					OP7			(5) (20)
	DIBENZOYL PEROXIDE	≤ 62			≥ 28	≥ 10	OP7			
	DIBENZOYL PEROXIDE	> 52 – 62 as a paste					OP7			(20)
	DIBENZOYL PEROXIDE	> 35 – 52			≥ 48		OP7			
	1,1-DI-(*tert*-BUTYLPEROXY)CYCLOHEXANE	≤ 42	≥ 13		≥ 45		OP7			
	DI-(*tert*-BUTYLPEROXYISOPROPYL)BENZENE(S)	> 42 – 100			≤ 57		OP7			

Number (generic entry)	ORGANIC PEROXIDE	Concentration (%)	Diluent type A (%)	Diluent type B (%)[1]	Inert solid (%)	Water (%)	Packing method	Control temperature (°C)	Emergency temperature (°C)	Subsidiary hazards and remarks
3106 *(cont.)*	DI-(*tert*-BUTYLPEROXY)PHTHALATE	≤ 52 as a paste					OP7			(20)
	2,2-DI-(*tert*-BUTYLPEROXY)PROPANE	≤ 42	≥ 13		≥ 45		OP7			
	DI-4-CHLOROBENZOYL PEROXIDE	≤ 52 as a paste					OP7			(20)
	2,2-DI-(4,4-DI-(*tert*-BUTYLPEROXY) CYCLOHEXYL)-PROPANE	≤ 42			≥ 58		OP7			
	DI-2,4-DICHLOROBENZOYL PEROXIDE	≤ 52 as a paste with silicon oil					OP7			
	DI-(1-HYDROXYCYCLOHEXYL)PEROXIDE	≤ 100					OP7			
	DIISOPROPYLBENZENE DIHYDROPEROXIDE	≤ 82	≥ 5			≥ 5	OP7			(24)
	DILAUROYL PEROXIDE	≤ 100					OP7			
	DI-(4-METHYLBENZOYL) PEROXIDE	≤ 52 as paste with silicon oil					OP7			
	2,5-DIMETHYL-2,5-DI-(BENZOYLPEROXY)HEXANE	≤ 82			≥ 18		OP7			
	2,5-DIMETHYL-2,5-DI-(*tert*-BUTYLPEROXY)-HEXYNE-3	≤ 52			≥ 48		OP7			
	DI-(2-PHENOXYETHYL)PEROXYDICARBONATE	≤ 85				≥ 15	OP7			
	ETHYL 3,3-DI-(*tert*-BUTYLPEROXY)BUTYRATE	≤ 52			≥ 48		OP7			
	([3R-(3R,5aS,6S,8aS,9R,10R,12S,12aR**)]-DECAHYDRO-10-METHOXY-3,6,9-TRIMETHYL-3,12-EPOXY-12H-PYRANO[4,3-j]-1,2-BENZODIOXEPIN)	≤ 100					OP7			
■ 3107	ACETYL ACETONE PEROXIDE	≤ 35	≥ 57			≥ 8	OP8			(32)
	tert-AMYL HYDROPEROXIDE	≤ 88	≥ 6			≥ 6	OP8			
	tert-BUTYL HYDROPEROXIDE	≤ 79				> 14	OP8			(13) (23)
	CUMYL HYDROPEROXIDE	> 90 – 98	≤ 10				OP8			(13)
	DI-*tert*-AMYL PEROXIDE	≤ 100					OP8			
	DIBENZOYL PEROXIDE	> 36 – 42	≥ 18			≤ 40	OP8			
	DI-*tert*-BUTYL PEROXIDE	> 52 – 100					OP8			
	1,1-DI-(*tert*-BUTYLPEROXY)CYCLOHEXANE	≤ 27	≥ 25				OP8			(21)
	DI-(*tert*-BUTYLPEROXY)PHTHALATE	≤ 42	≥ 58				OP8			
	1,1-DI-(*tert*-BUTYLPEROXY)-3,3,5-TRIMETHYL-CYCLOHEXANE	≤ 57	≥ 43				OP8			
	1,1-DI-(*tert*-BUTYLPEROXY)-3,3,5-TRIMETHYL-CYCLOHEXANE	≤ 32	≥ 26	≥ 42			OP8			
	2,2-DI-(4,4-DI-(*tert*-BUTYLPEROXY) CYCLOHEXYL)-PROPANE	≤ 22		≥ 78			OP8			

Number (generic entry)	ORGANIC PEROXIDE	Concentration (%)	Diluent type A (%)	Diluent type B (%)[1]	Inert solid (%)	Water (%)	Packing method	Control temperature (°C)	Emergency temperature (°C)	Subsidiary hazards and remarks
3107 *(cont.)*	METHYL ETHYL KETONE PEROXIDE(S)	see remark (10)	≥ 60				OP8			(10)
	3,3,5,7,7-PENTAMETHYL-1,2,4-TRIOXEPANE	≤ 100					OP8			
	PEROXYACETIC ACID, TYPE E, stabilized	≤ 43					OP8			(13) (15) (19)
	POLYETHER POLY-*tert*-BUTYLPEROXY-CARBONATE	≤ 52		≥ 48			OP8			
3108	*tert*-BUTYL CUMYL PEROXIDE	≤ 52			≥ 48		OP8			
	n-BUTYL 4,4-DI-(*tert*-BUTYLPEROXY)VALERATE	≤ 52			≥ 48		OP8			
	tert-BUTYL MONOPEROXYMALEATE	≤ 52			≥ 48		OP8			
	tert-BUTYL MONOPEROXYMALEATE	≤ 52 as a paste					OP8			
	1-(2-*tert*-BUTYLPEROXYISOPROPYL)-3-ISOPROPENYLBENZENE	≤ 42			≥ 58		OP8			
	DIBENZOYL PEROXIDE	≤ 56.5 as a paste				≥ 15	OP8			
	DIBENZOYL PEROXIDE	≤ 52 as a paste					OP8			(20)
	2,5-DIMETHYL-2,5-DI-(*tert*-BUTYLPEROXY)HEXANE	≤ 47 as a paste					OP8			
	2,5-DIMETHYL-2,5-DI-(*tert*-BUTYLPEROXY)HEXANE	≤ 77			≥ 23		OP8			
3109	*tert*-BUTYL CUMYL PEROXIDE	> 42 – 100					OP8			
	tert-BUTYL HYDROPEROXIDE	≤ 72				≥ 28	OP8			(13)
	tert-BUTYL PEROXYACETATE	≤ 32		≥ 68			OP8			
	tert-BUTYL PEROXY-3,5,5-TRIMETHYL-HEXANOATE	≤ 37		≥ 63			OP8			
	CUMYL HYDROPEROXIDE	≤ 90	≥ 10				OP8			(13) (18)
	DIBENZOYL PEROXIDE	≤ 42 as a stable dispersion in water					OP8			
	DI-*tert*-BUTYL PEROXIDE	≤ 52		≥ 48			OP8			(25)
	1,1-DI-(*tert*-BUTYLPEROXY)CYCLOHEXANE	≤ 42	≥ 58				OP8			
	1,1-DI-(*tert*-BUTYLPEROXY)CYCLOHEXANE	≤ 13	≥ 13	≥ 74			OP8			
	DILAUROYL PEROXIDE	≤ 42 as a stable dispersion in water					OP8			
	2,5-DIMETHYL-2,5-DI-(*tert*-BUTYLPEROXY)HEXANE	≤ 52	≥ 48				OP8			
	ISOPROPYLCUMYL HYDROPEROXIDE	≤ 72	≥ 28				OP8			(13)
	p-MENTHYL HYDROPEROXIDE	≤ 72	≥ 28				OP8			(27)
	METHYL ISOPROPYL KETONE PEROXIDE(S)	See remark (31)	≥ 70				OP8			(31)
	PEROXYACETIC ACID, TYPE F, stabilized	≤ 43					OP8			(13) (16) (19)
	1-PHENYLETHYL HYDROPEROXIDE	≤ 38		≥ 62			OP8			
	PINANYL HYDROPEROXIDE	≤ 56	≥ 44				OP8			

Number (generic entry)	ORGANIC PEROXIDE	Concentration (%)	Diluent type A (%)	Diluent type B (%)(1)	Inert solid (%)	Water (%)	Packing method	Control temperature (°C)	Emergency temperature (°C)	Subsidiary hazards and remarks
3110	DICUMYL PEROXIDE	> 52 – 100					OP8			(12)
	1,1-DI-(*tert*-BUTYLPEROXY)-3,3,5-TRIMETHYL-CYCLOHEXANE	≤ 57			≥ 43		OP8			
	3,6,9-TRIETHYL-3,6,9-TRIMETHYL-1,4,7-TRIPEROXONANE	≤ 17	≥ 18		≥ 65		OP8			
3111	*tert*-BUTYL PEROXYISOBUTYRATE	> 52 – 77		≥ 23			OP5	+15	+20	(3)
	DIISOBUTYRYL PEROXIDE	> 32 – 52		≥ 48			OP5	–20	–10	(3)
	ISOPROPYL *sec*-BUTYL PEROXYDICARBONATE + DI-*sec*-BUTYL PEROXYDICARBONATE + DIISOPROPYL PEROXYDICARBONATE	≤ 52 + ≤ 28 + ≤ 22					OP5	–20	–10	(3)
3112	ACETYL CYCLOHEXANESULPHONYL PEROXIDE	≤ 82				≥ 12	OP4	–10	0	(3)
	DICYCLOHEXYL PEROXYDICARBONATE	> 91 – 100					OP3	+10	+15	(3)
	DIISOPROPYL PEROXYDICARBONATE	> 52 – 100					OP2	–15	–5	(3)
	DI-(2-METHYLBENZOYL) PEROXIDE	≤ 87				≥ 13	OP5	+30	+35	(3)
3113	*tert*-AMYL PEROXYPIVALATE	≤ 77		≥ 23			OP5	+10	+15	
	tert-BUTYL PEROXYDIETHYLACETATE	≤ 100					OP5	+20	+25	
	tert-BUTYL PEROXY-2-ETHYLHEXANOATE	> 52 – 100					OP6	+20	+25	
	tert-BUTYL PEROXYPIVALATE	> 67 – 77	≥ 23				OP5	0	+10	
	DI-*sec*-BUTYL PEROXYDICARBONATE	> 52 – 100					OP4	–20	–10	
	DI-(2-ETHYLHEXYL)PEROXYDICARBONATE	> 77 – 100					OP5	–20	–10	
	2,5-DIMETHYL-2,5-DI-(2-ETHYLHEXANOYLPEROXY)-HEXANE	≤ 100					OP5	+20	+25	
	DI-*n*-PROPYL PEROXYDICARBONATE	≤ 100					OP3	–25	–15	
	DI-*n*-PROPYL PEROXYDICARBONATE	≤ 77		≥ 23			OP5	–20	–10	
	ORGANIC PEROXIDE, LIQUID, SAMPLE, TEMPERATURE CONTROLLED						OP2			(11)
3114	DI-(4-*tert*-BUTYLCYCLOHEXYL)-PEROXYDICARBONATE	≤ 100					OP6	+30	+35	
	DICYCLOHEXYL PEROXYDICARBONATE	≤ 91				≥ 9	OP5	+10	+15	
	DIDECANOYL PEROXIDE	≤ 100					OP6	+30	+35	
	DI-*n*-OCTANOYL PEROXIDE	≤ 100					OP5	+10	+15	
	ORGANIC PEROXIDE, SOLID, SAMPLE, TEMPERATURE CONTROLLED						OP2			(11)

Number (generic entry)	ORGANIC PEROXIDE	Concentration (%)	Diluent type A (%)	Diluent type B (%)(1)	Inert solid (%)	Water (%)	Packing method	Control temperature (°C)	Emergency temperature (°C)	Subsidiary hazards and remarks
3115	ACETYL CYCLOHEXANESULPHONYL PEROXIDE	≤ 32		≥ 68			OP7	–10	0	
	tert-AMYL PEROXY-2-ETHYLHEXANOATE	≤ 100					OP7	+20	+25	
	tert-AMYL PEROXYNEODECANOATE	≤ 77		≥ 23			OP7	0	+10	
	tert-BUTYL PEROXY-2-ETHYLHEXANOATE + 2,2-DI-(*tert*-BUTYLPEROXY)BUTANE	≤ 31 + ≤ 36		≥ 33			OP7	+35	+40	
	tert-BUTYL PEROXYISOBUTYRATE	≤ 52		≥ 48			OP7	+15	+20	
	tert-BUTYL PEROXYNEODECANOATE	> 77 – 100					OP7	–5	+5	
	tert-BUTYL PEROXYNEODECANOATE	≤ 77		≥ 23			OP7	0	+10	
	tert-BUTYL PEROXYNEOHEPTANOATE	≤ 77	≥ 23				OP7	0	+10	
	tert-BUTYL PEROXYPIVALATE	> 27 – 67		≥ 33			OP7	0	+10	
	CUMYL PEROXYNEODECANOATE	≤ 77		≥ 23			OP7	–10	0	
	CUMYL PEROXYNEODECANOATE	≤ 87	≥ 13				OP7	–10	0	
	CUMYL PEROXYNEOHEPTANOATE	≤ 77	≥ 23				OP7	–10	0	
	CUMYL PEROXYPIVALATE	≤ 77		≥ 23			OP7	–5	+5	
	DIACETONE ALCOHOL PEROXIDES	≤ 57		≥ 26		≥ 8	OP7	+40	+45	(6)
	DIACETYL PEROXIDE	≤ 27		≥ 73			OP7	+20	+25	(7) (13)
	DI-*n*-BUTYL PEROXYDICARBONATE	> 27 – 52		≥ 48			OP7	–15	–5	
	DI-*sec*-BUTYL PEROXYDICARBONATE	≤ 52		≥ 48			OP7	–15	–5	
	DI-(2-ETHOXYETHYL)PEROXYDICARBONATE	≤ 52		≥ 48			OP7	–10	0	
	DI-(2-ETHYLHEXYL)PEROXYDICARBONATE	≤ 77		≥ 23			OP7	–15	–5	
	DIISOBUTYRYL PEROXIDE	≤ 32		≥ 68			OP7	–20	–10	
	DIISOPROPYL PEROXYDICARBONATE	≤ 52		≥ 48			OP7	–20	–10	
	DIISOPROPYL PEROXYDICARBONATE	≤ 32	≥ 68				OP7	–15	–5	
	DI-(3-METHOXYBUTYL) PEROXYDICARBONATE	≤ 52		≥ 48			OP7	–5	+5	
	DI-(3-METHYLBENZOYL) PEROXIDE + BENZOYL (3-METHYLBENZOYL) PEROXIDE + DIBENZOYL PEROXIDE	≤ 20 + ≤ 18 + ≤ 4		≥ 58			OP7	+35	+40	
	DI-(2-NEODECANOYLPEROXYISOPROPYL)-BENZENE	≤ 52	≥ 48				OP7	–10	0	
	DI-(3,5,5-TRIMETHYLHEXANOYL) PEROXIDE	> 52 – 82	≥ 18				OP7	0	+10	
	1-(2-ETHYLHEXANOYLPEROXY)-1,3-DIMETHYLBUTYL PEROXYPIVALATE	≤ 52	≥ 45	≥ 10			OP7	–20	–10	
	tert-HEXYL PEROXYNEODECANOATE	≤ 71	≥ 29				OP7	0	+10	
	tert-HEXYL PEROXYPIVALATE	≤ 72		≥ 28			OP7	+10	+15	

Number (generic entry)	ORGANIC PEROXIDE	Concentration (%)	Diluent type A (%)	Diluent type B (%)[1]	Inert solid (%)	Water (%)	Packing method	Control temperature (°C)	Emergency temperature (°C)	Subsidiary hazards and remarks
3115 *(cont.)*	3-HYDROXY-1,1-DIMETHYLBUTYL PEROXYNEODECANOATE	≤ 77	≥ 23				OP7	−5	+ 5	
	ISOPROPYL *sec*-BUTYL PEROXYDICARBONATE + DI-*sec*-BUTYL PEROXYDICARBONATE + DI-ISOPROPYL PEROXYDICARBONATE	≤ 32 + ≤ 15 – 18 + ≤ 12 – 15	≥ 38				OP7	−20	−10	
	METHYLCYCLOHEXANONE PEROXIDE(S)	≤ 67		≥ 33			OP7	+35	+40	
	1,1,3,3-TETRAMETHYLBUTYL PEROXY-2-ETHYLHEXANOATE	≤ 100					OP7	+15	+20	
	1,1,3,3-TETRAMETHYLBUTYL PEROXY-NEODECANOATE	≤ 72		≥ 28			OP7	−5	+5	
	1,1,3,3-TETRAMETHYLBUTYL PEROXYPIVALATE	≤ 77	≥ 23				OP7	0	+10	
3116										
	DIMYRISTYL PEROXYDICARBONATE	≤ 100					OP7	+20	+25	
	DI-*n*-NONANOYL PEROXIDE	≤ 100					OP7	0	+10	
	DISUCCINIC ACID PEROXIDE	≤ 72				≥ 28	OP7	+10	+15	
3117	*tert*-BUTYL PEROXY-2-ETHYLHEXANOATE	> 32 – 52		≥ 48			OP8	+30	+35	
	DI-*n*-BUTYL PEROXYDICARBONATE	≤ 27		≥ 73			OP8	−10	0	
	tert-BUTYL PEROXYNEOHEPTANOATE	≤ 42 as a stable dispersion in water					OP8	0	+10	
	1,1-DIMETHYL-3-HYDROXYBUTYL PEROXY-NEOHEPTANOATE	≤ 52	≥ 48				OP8	0	+10	
	DIPROPIONYL PEROXIDE	≤ 27		≥ 73			OP8	+15	+20	
■	*tert*-HEXYL PEROXYPIVALATE	≤ 52 as a stable dispersion in water					OP8	+15	+20	
	3-HYDROXY-1,1-DIMETHYLBUTYL PEROXY-NEODECANOATE	≤ 52	≥ 48				OP8	−5	+5	
3118	*tert*-BUTYL PEROXY-2-ETHYLHEXANOATE	≤ 52			≥ 48		OP8	+20	+25	
	tert-BUTYL PEROXYNEODECANOATE	≤ 42 as a stable dispersion in water (frozen)					OP8	0	+10	
	DI-(4-*tert*-BUTYLCYCLOHEXYL) PEROXYDICARBONATE	≤ 42 as a paste					OP8	+35	+40	
	DI-*n*-BUTYL PEROXYDICARBONATE	≤ 42 as a stable dispersion in water (frozen)					OP8	−15	−5	
	DI-2,4-DICHLOROBENZOYL PEROXIDE	≤ 52 as a paste					OP8	+ 20	+ 25	
	PEROXYLAURIC ACID	≤ 100					OP8	+35	+40	

Number (generic entry)	ORGANIC PEROXIDE	Concentration (%)	Diluent type A (%)	Diluent type B (%)[1]	Inert solid (%)	Water (%)	Packing method	Control temperature (°C)	Emergency temperature (°C)	Subsidiary hazards and remarks
3119	*tert*-AMYL PEROXYNEODECANOATE	≤ 47	≥ 53				OP8	0	+ 10	
	tert-BUTYL PEROXY-2-ETHYLHEXANOATE	≤ 32		≥ 68			OP8	+40	+45	
	tert-BUTYL PEROXYNEODECANOATE	≤ 52 as a stable dispersion in water					OP8	0	+10	
	tert-BUTYL PEROXYNEODECANOATE	≤ 32	≥ 68				OP8	0	+10	
	tert-BUTYL PEROXYPIVALATE	≤ 27		≥ 73			OP8	+30	+35	
	CUMYL PEROXYNEODECANOATE	≤ 52 as a stable dispersion in water					OP8	−10	0	
	DI-(4-*tert*-BUTYLCYCLOHEXYL) PEROXYDICARBONATE	≤ 42 as a stable dispersion in water					OP8	+30	+35	
	DICETYL PEROXYDICARBONATE	≤ 42 as a stable dispersion in water					OP8	+30	+35	
	DICYCLOHEXYL PEROXYDICARBONATE	≤ 42 as a stable dispersion in water					OP8	+15	+20	
	DI-(2-ETHYLHEXYL) PEROXYDICARBONATE	≤ 62 as a stable dispersion in water					OP8	−15	−5	
	DIISOBUTYRYL PEROXIDE	≤ 42 as a stable dispersion in water					OP8	−20	−10	
	DIMYRISTYL PEROXYDICARBONATE	≤ 42 as a stable dispersion in water					OP8	+20	+25	
	DI-(3,5,5-TRIMETHYLHEXANOYL) PEROXIDE	≤ 52 as a stable dispersion in water					OP8	+10	+15	
	DI-(3,5,5-TRIMETHYLHEXANOYL) PEROXIDE	≤ 38	≥ 62				OP8	+20	+25	
	DI-(3,5,5-TRIMETHYLHEXANOYL) PEROXIDE	> 38 – 52	≥ 48				OP8	+10	+15	
	3-HYDROXY-1,1-DIMETHYLBUTYL PEROXYNEODECANOATE	≤ 52 as a stable dispersion in water					OP 8	−5	+ 5	
	1,1,3,3-TETRAMETHYLBUTYL PEROXYNEODECANOATE	≤ 52 as a stable dispersion in water					OP8	−5	+5	
3120	DI-(2-ETHYLHEXYL)PEROXYDICARBONATE	≤ 52 as a stable dispersion in water (frozen)					OP8	−15	−5	
	DICETYL PEROXYDICARBONATE	≤ 100					OP8	+30	+35	
Exempt	CYCLOHEXANONE PEROXIDE(S)	≤ 32			≥ 68					(29)
Exempt	DIBENZOYL PEROXIDE	≤ 35			≥ 65					(29)
Exempt	DI-(*tert*-BUTYLPEROXYISOPROPYL)BENZENE(S)	≤ 42			≥ 58					(29)
Exempt	DI-4-CHLOROBENZOYL PEROXIDE	≤ 32			≥ 68					(29)
Exempt	DICUMYL PEROXIDE	≤ 52			≥ 48					(29)

Remarks

(1) Diluent type B may always be replaced by diluent type A. The boiling point of diluent type B shall be at least 60°C higher than the SADT of the organic peroxide
(2) Available oxygen ≤ 4.7%
(3) "EXPLOSIVE" subsidiary hazard label required. (Model No. 1, see 5.2.2.2.2)
(4) Diluent may be replaced by di-*tert*-butyl peroxide
(5) Available oxygen ≤ 9%
(6) With ≤ 9% hydrogen peroxide; available oxygen ≤ 10%
(7) Only non-metallic packagings are allowed
(8) Available oxygen > 10% and ≤ 10.7%, with or without water
(9) Available oxygen ≤ 10%, with or without water
(10) Available oxygen ≤ 8.2%, with or without water
(11) See 2.5.3.2.5.1
(12) Up to 2,000 kg per receptacle assigned to ORGANIC PEROXIDE TYPE F on the basis of large-scale trials
(13) "CORROSIVE" subsidiary hazard label required (Model No. 8, see 5.2.2.2.2)
(14) Peroxyacetic acid formulations which fulfil the criteria of 2.5.3.3.2.4
(15) Peroxyacetic acid formulations which fulfil the criteria of 2.5.3.3.2.5
(16) Peroxyacetic acid formulations which fulfil the criteria of 2.5.3.3.2.6
(17) Addition of water to this organic peroxide will decrease its thermal stability
(18) No "CORROSIVE" subsidiary hazard label required for concentrations below 80%
(19) Mixtures with hydrogen peroxide, water and acid(s)
(20) With diluent type A, with or without water
(21) With ≥ 25% diluent type A by mass, and in addition ethylbenzene
(22) With ≥ 19% diluent type A by mass, and in addition methyl isobutyl ketone
(23) With < 6% di-*tert*-butyl peroxide
(24) With ≤ 8% 1-isopropylhydroperoxy-4-isopropylhydroxybenzene
(25) Diluent type B with boiling point > 110°C
(26) With < 0.5% hydroperoxides content
(27) For concentrations more than 56%, "CORROSIVE" subsidiary hazard label required (Model No. 8, see 5.2.2.2.2)
(28) Available active oxygen ≤ 7.6% in diluent type A having a 95% boil-off point in the range 200–260°C
(29) Not subject to the provisions for peroxide, class 5.2
(30) Diluent type B with boiling point > 130°C
(31) Active oxygen ≤ 6.7%
■ (32) Active oxygen ≤ 4.15%

2.5.3.2.5 Classification of organic peroxides not listed in 2.5.3.2.4, packing instruction IBC520 or portable tank instruction T23 and assignment to a generic entry shall be made by the competent authority of the country of origin on the basis of a test report. Principles applying to the classification of such substances are provided in 2.5.3.3. Test methods and criteria and an example of a report are given in the current edition of the *Manual of Tests and Criteria*, part II. The statement of approval shall contain the classification and the relevant transport conditions (see 5.4.4.1.3).

2.5.3.2.5.1 Samples of new organic peroxides or new formulations of currently assigned organic peroxides for which complete test data are not available and which are to be transported for further testing or evaluation may be assigned to one of the appropriate entries for ORGANIC PEROXIDE TYPE C provided the following conditions are met:

.1 the available data indicate that the sample would be no more dangerous than ORGANIC PEROXIDE TYPE B;

.2 the sample is packaged in accordance with packing method OP2 and the quantity per cargo transport unit is limited to 10 kg; and

.3 the available data indicate that the control temperature, if any, is sufficiently low to prevent any dangerous decomposition and sufficiently high to prevent any dangerous phase separation.

2.5.3.3 Principles for classification of organic peroxides

Note: This section refers only to those properties of organic peroxides which are decisive for their classification. A flow chart, presenting the classification principles in the form of a graphically arranged scheme of questions concerning the decisive properties together with the possible answers, is given in figure 2.5.1 in chapter 2.5 of the United Nations *Recommendations on the Transport of Dangerous Goods*. These properties shall be determined experimentally. Suitable test methods with pertinent evaluation criteria are given in the *Manual of Tests and Criteria*, part II.

2.5.3.3.1 Any organic peroxide formulation shall be regarded as possessing explosive properties when, in laboratory testing, the formulation is liable to detonate, to deflagrate rapidly or to show a violent effect when heated under confinement.

2.5.3.3.2 The following principles apply to the classification of organic peroxide formulations not listed in 2.5.3.2.4:

.1 Any organic peroxide formulation which can detonate or deflagrate rapidly, as packaged for transport, is prohibited from transport in that packaging under class 5.2 (defined as ORGANIC PEROXIDE TYPE A);

.2 Any organic peroxide formulation possessing explosive properties and which, as packaged for transport, neither detonates nor deflagrates rapidly, but is liable to undergo a thermal explosion in that package, shall bear an "EXPLOSIVE" subsidiary hazard label (Model No. 1, see 5.2.2.2.2). Such an organic peroxide may be packaged in amounts of up to 25 kg unless the maximum quantity has to be limited to a lower amount to preclude detonation or rapid deflagration in the package (defined as ORGANIC PEROXIDE TYPE B);

.3 Any organic peroxide formulation possessing explosive properties may be transported without an "EXPLOSIVE" subsidiary hazard label when the substance as packaged (maximum 50 kg) for transport cannot detonate or deflagrate rapidly or undergo a thermal explosion (defined as ORGANIC PEROXIDE TYPE C);

.4 Any organic peroxide formulation which, in laboratory testing:

.1 detonates partially, does not deflagrate rapidly and shows no violent effect when heated under confinement; or

.2 does not detonate at all, deflagrates slowly and shows no violent effect when heated under confinement; or

.3 does not detonate or deflagrate at all and shows a medium effect when heated under confinement

is acceptable for transport in packages of not more than 50 kg net mass (defined as ORGANIC PEROXIDE TYPE D);

.5 Any organic peroxide formulation which, in laboratory testing, neither detonates nor deflagrates at all and shows low or no effect when heated under confinement is acceptable for transport in packages of not more than 400 kg/450 L (defined as ORGANIC PEROXIDE TYPE E);

.6 Any organic peroxide formulation which, in laboratory testing, neither detonates in the cavitated state nor deflagrates at all and shows only a low or no effect when heated under confinement as well as low or no explosive power may be considered for transport in IBCs or tanks (defined as ORGANIC PEROXIDE TYPE F); for additional provisions see 4.1.7 and 4.2.1.13;

.7 Any organic peroxide formulation which, in laboratory testing, neither detonates in the cavitated state nor deflagrates at all and shows no effect when heated under confinement nor any explosive power shall be exempted from class 5.2, provided that the formulation is thermally stable (self-accelerating decomposition temperature is 60°C or higher for a 50 kg package) and for liquid formulations diluent type A is used for desensitization (defined as ORGANIC PEROXIDE TYPE G). If the formulation is not thermally stable or a diluent other than type A is used for desensitization, the formulation shall be defined as ORGANIC PEROXIDE TYPE F.

2.5.3.4 Temperature control provisions

2.5.3.4.0 The properties of some organic peroxides require that they be transported under temperature control. Control and emergency temperatures for currently assigned organic peroxides are shown in the list 2.5.3.2.4. The controlled temperature provisions are given in chapter 7.3.7.

2.5.3.4.1 The following organic peroxides shall be subjected to temperature control during transport:

.1 organic peroxides type B and C with a SADT $\leq$ 50°C;

.2 organic peroxides type D showing a medium effect when heated under confinement* with a SADT $\leq$ 50°C or showing a low or no effect when heated under confinement with a SADT $\leq$ 45°C; and

.3 organic peroxides types E and F with a SADT $\leq$ 45°C.

2.5.3.4.2 Test methods for determining the SADT are given in the *Manual of Tests and Criteria*, part II, section 28. The test selected shall be conducted in a manner which is representative, both in size and material, of the package to be transported.

2.5.3.4.3 Test methods for determining the flammability are given in the *Manual of Tests and Criteria*, part III, subsection 32.4. Because organic peroxides may react vigorously when heated, it is recommended to determine their flashpoint using small sample sizes such as described in ISO 3679.

2.5.3.5 Desensitization of organic peroxides

2.5.3.5.1 In order to ensure safety during transport, organic peroxides are in many cases desensitized by organic liquids or solids, inorganic solids or water. Where a percentage of a substance is stipulated, this refers to the percentage by mass, rounded to the nearest whole number. In general, desensitization shall be such that, in case of spillage or fire, the organic peroxide will not concentrate to a dangerous extent.

* As determined by test series E as prescribed in the *Manual of Tests and Criteria*, part II.

2.5.3.5.2 Unless otherwise stated for the individual organic peroxide formulation, the following definitions apply for diluents used for desensitization:

.1 Diluents type A are organic liquids which are compatible with the organic peroxide and which have a boiling point of not less than 150°C. Type A diluents may be used for desensitizing all organic peroxides.

.2 Diluents type B are organic liquids which are compatible with the organic peroxide and which have a boiling point of less than 150°C but not less than 60°C and a flashpoint of not less than 5°C. Type B diluents may be used for desensitization of all organic peroxides provided that the boiling point is at least 60°C higher than the SADT in a 50 kg package.

2.5.3.5.3 Diluents, other than type A or type B, may be added to organic peroxide formulations as listed in 2.5.3.2.4 provided that they are compatible. However, replacement of all or part of a type A or type B diluent by another diluent with differing properties requires that the organic peroxide formulation be re-assessed in accordance with the normal acceptance procedure for class 5.2.

2.5.3.5.4 Water may only be used for the desensitization of organic peroxides which are shown in 2.5.3.2.4 or in the statement of approval according to 2.5.3.2.5 as being with water or as a stable dispersion in water.

2.5.3.5.5 Organic and inorganic solids may be used for desensitization of organic peroxides provided that they are compatible.

2.5.3.5.6 Compatible liquids and solids are those which have no detrimental influence on the thermal stability and hazard type of the organic peroxide formulation.

2

Chapter 2.6

Class 6 – Toxic and infectious substances

2.6.0 Introductory notes

Note 1: The word "toxic" has the same meaning as "poisonous".

Note 2: Genetically modified microorganisms which do not meet the definition of a toxic or an infectious substance shall be considered for classification in class 9 and assigned to UN 3245.

△ **Note 3:** Toxins from plant, animal or bacterial sources which do not contain any infectious substances, or toxins that are contained in substances which are not infectious substances, shall be considered for classification in class 6.1 and assigned to UN 3172 or UN 3462.

2.6.1 Definitions

Class 6 is subdivided into two classes as follows:

Class 6.1 – Toxic substances
These are substances liable either to cause death or serious injury or to harm human health if swallowed or inhaled, or by skin contact.

Class 6.2 – Infectious substances
These are substances known or reasonably expected to contain pathogens. Pathogens are defined as micro-organisms (including bacteria, viruses, parasites, fungi) and other agents such as prions, which can cause disease in humans or animals.

2.6.2 Class 6.1 – Toxic substances

2.6.2.1 Definitions and properties

2.6.2.1.1 *LD_{50} (median lethal dose) for acute oral toxicity* is the statistically derived single dose of a substance that can be expected to cause death within 14 days in 50 per cent of young adult albino rats when administered by the oral route. The LD_{50} value is expressed in terms of mass of test substance per mass of test animal (mg/kg).

2.6.2.1.2 *LD_{50} for acute dermal toxicity* is that dose of the substance which, administered by continuous contact for 24 hours with the bare skin of the albino rabbit, is most likely to cause death within 14 days in one half of the animals tested. The number of animals tested shall be sufficient to give a statistically significant result and be in conformity with good pharmacological practices. The result is expressed in milligrams per kilogram body mass.

2.6.2.1.3 *LC_{50} for acute toxicity on inhalation* is that concentration of vapour, mist or dust which, administered by continuous inhalation to both male and female young adult albino rats for one hour, is most likely to cause death within 14 days in one half of the animals tested. A solid substance shall be tested if at least 10% (by mass) of its total mass is likely to be dust in the respirable range, such as the aerodynamic diameter of that particle fraction is 10 microns or less. A liquid substance shall be tested if a mist is likely to be generated in a leakage of the transport containment. For both solid and liquid substances, more than 90% (by mass) of a specimen prepared for inhalation toxicity testing shall be in the respirable range as defined above. The result is expressed in milligrams per litre of air for dusts and mists or in millilitres per cubic metre of air (parts per million) for vapours.

2.6.2.1.4 *Properties*

.1 The dangers of poisoning which are inherent in these substances depend upon contact with the human body, that is by inhalation of vapours by unsuspecting persons at some distance from the cargo or the immediate dangers of physical contact with the substance. These have been considered in the context of the probability of accident occurring during transport by sea.

.2 Nearly all toxic substances evolve toxic gases when involved in a fire or when heated to decomposition.

.3 A substance specified as "stabilized" shall not be transported in an unstabilized condition.

2.6.2.2 Assignment of packing groups to toxic substances

2.6.2.2.1 Toxic substances have for packing purposes been apportioned among packing groups according to the degree of their toxic hazards in transport:

.1 Packing group I: substances and preparations presenting a high toxicity hazard;

.2 Packing group II: substances and preparations presenting a medium toxicity hazard;

.3 Packing group III: substances and preparations presenting a low toxicity hazard.

2.6.2.2.2 In making this grouping, account has been taken of human experience in instances of accidental poisoning, and of special properties possessed by any individual substance, such as liquid state, high volatility, any special likelihood of penetration, and special biological effects.

2.6.2.2.3 In the absence of human experience, the grouping has been based on data obtained from animal experiments. Three possible routes of administration have been examined. These routes are exposure through:

– oral ingestion;
– dermal contact; and
– inhalation of dusts, mists or vapours.

2.6.2.2.3.1 For appropriate animal test data for the various routes of exposure, see 2.6.2.1. When a substance exhibits a different order of toxicity by two or more routes of administration, the highest degree of danger indicated by the tests has been used in assigning the packing group.

2.6.2.2.4 The criteria to be applied for grouping a substance according to the toxicity it exhibits by all three routes of administration are presented in the following paragraphs.

2.6.2.2.4.1 The grouping criteria for the oral and dermal routes as well as for inhalation of dusts and mists are shown in the following table:

Grouping criteria for administration through oral ingestion, dermal contact and inhalation of dusts and mists

Packing group	Oral toxicity LD_{50} (mg/kg)	Dermal toxicity LD_{50} (mg/kg)	Inhalation toxicity by dusts and mists LC_{50} (mg/L)
I	≤ 5.0	≤ 50	≤ 0.2
II	> 5.0 and ≤ 50	> 50 and ≤ 200	> 0.2 and ≤ 2.0
III*	> 50 and ≤ 300	> 200 and $\leq 1{,}000$	> 2.0 and ≤ 4.0

* Tear gas substances shall be included in packing group II even if their toxicity data correspond to packing group III values.

Note: Substances meeting the criteria of class 8 and with an inhalation toxicity of dusts and mists (LC_{50}) leading to packing group I are only accepted for an allocation to class 6.1 if the toxicity through oral ingestion or dermal contact is at least in the range of packing group I or II. Otherwise an allocation to class 8 is made when appropriate (see 2.8.2.4).

2.6.2.2.4.2 The criteria for inhalation toxicity of dusts and mists in 2.6.2.2.4.1 are based on LC_{50} data relating to one hour exposures, and where such information is available it shall be used. However, where only LC_{50} data relating to 4-hour exposures to dusts and mists are available, such figures can be multiplied by four and the product substituted in the above criteria, i.e. LC_{50} (4 hours) $\times$ 4 is considered the equivalent of LC_{50} (1 hour).

2.6.2.2.4.3 Liquids having toxic vapours shall be assigned to the following packing groups, where "V" is the saturated vapour concentration in mL/m^3 air at 20°C and standard atmospheric pressure:

Packing group I: if $V \geq 10\ LC_{50}$ and $LC_{50} \leq 1{,}000$ mL/m^3.

Packing group II: if $V \geq LC_{50}$ and $LC_{50} \leq 3{,}000$ mL/m^3, and do not meet the criteria for packing group I.

Packing group III: if $V \geq \frac{1}{5}\ LC_{50}$ and $LC_{50} \leq 5{,}000$ mL/m^3, and do not meet the criteria for packing groups I or II.

Note: Tear gas substances shall be included in packing group II even if their toxicity data correspond to packing group III values.

2.6.2.2.4.4 In figure 2-3 the criteria according to 2.6.2.2.4.3 are expressed in graphical form, as an aid to easy classification. Because of approximations inherent in the use of graphs, substances falling on or near packing group borderlines shall be checked using numerical criteria.

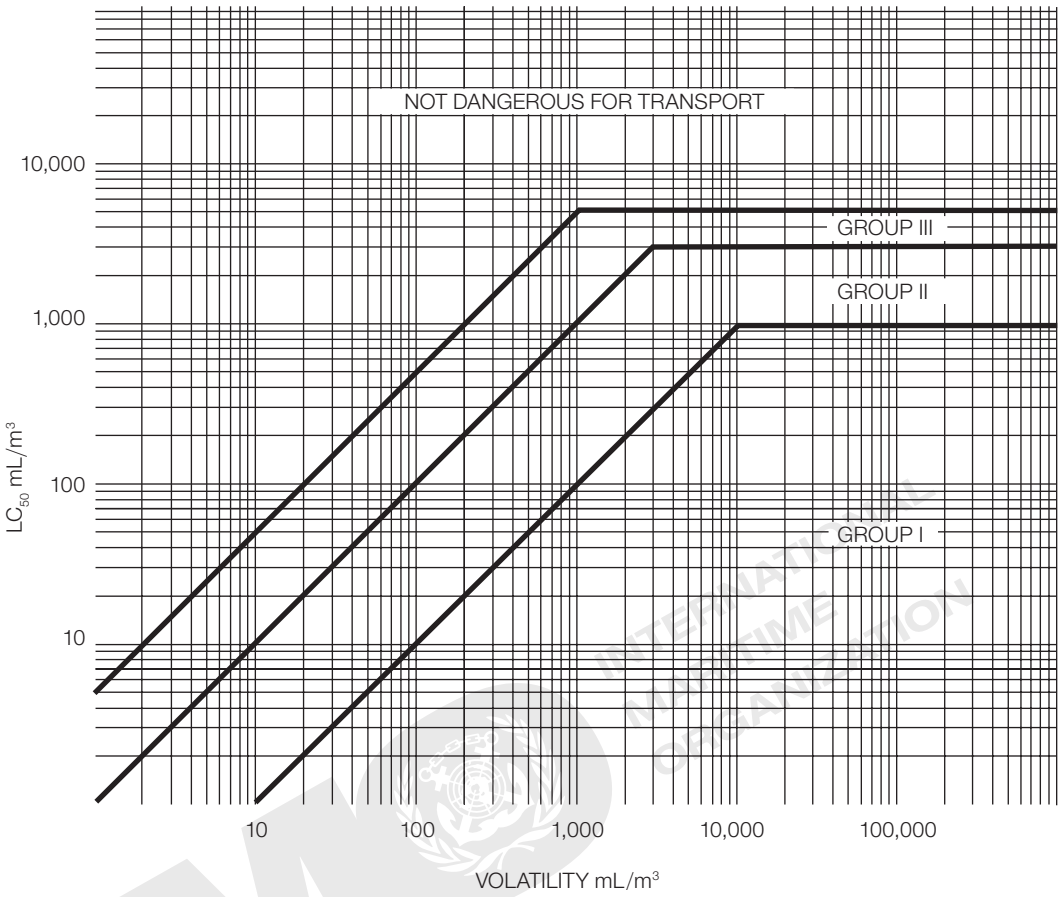

Figure 2-3 – *Inhalation toxicity: packing group borderlines*

2.6.2.2.4.5 The criteria for inhalation toxicity of vapours in 2.6.2.2.4.3 are based on LC_{50} data relating to one hour exposures, and where such information is available it shall be used. However, where only LC_{50} data relating to 4-hour exposures to the vapours are available, such figures can be multiplied by two and the product substituted in the above criteria, i.e. LC_{50} (4 hours) $\times$ 2 is considered the equivalent of LC_{50} (1 hour).

2.6.2.2.4.6 Mixtures of liquids that are toxic by inhalation shall be assigned to packing groups according to 2.6.2.2.4.7 or 2.6.2.2.4.8.

2.6.2.2.4.7 If LC_{50} data are available for each of the toxic substances comprising a mixture, the packing group may be determined as follows:

.1 Estimate the LC_{50} of the mixture using the formula:

$$LC_{50}\ (\text{mixture}) = \frac{1}{\sum_{i=1}^{n}\left(\frac{f_i}{LC_{50i}}\right)}$$

where: f_i = mole fraction of the i^{th} component substance of the mixture

LC_{50i} = mean lethal concentration of the i^{th} component substance in mL/m^3.

.2 Estimate the volatility of each component substance comprising the mixture using the formula:

$$V_i = \left(\frac{P_i \times 10^6}{101.3}\right) mL/m^3$$

where: P_i = the partial pressure of the i^{th} component substance in kPa at 20°C and one atmosphere pressure.

.3 Calculate the ratio of the volatility to the LC_{50} using the formula:

$$R = \sum_{i=1}^{n}\left(\frac{V_i}{LC_{50i}}\right)$$

.4 Using the calculated values of LC_{50} (mixture) and R, the packing group for the mixture is determined:

Packing group I: $R \geq 10$ and LC_{50} (mixture) $\leq$ 1,000 mL/m^3.

Packing group II: $R \geq 1$ and LC_{50} (mixture) $\leq$ 3,000 mL/m^3 and not meeting criteria for packing group I.

Packing group III: $R \geq \frac{1}{5}$ and LC_{50} (mixture) $\leq$ 5,000 mL/m^3 and not meeting criteria for packing groups I or II.

2.6.2.2.4.8 In the absence of LC_{50} data on the toxic constituent substances, the mixture may be assigned a packing group based on the following simplified threshold toxicity tests. When these threshold tests are used, the most restrictive packing group shall be determined and used for transporting the mixture.

.1 A mixture is assigned to packing group I only if it meets both of the following criteria:

– A sample of the liquid mixture is vaporized and diluted with air to create a test atmosphere of 1,000 mL/m^3 vaporized mixture in air. Ten albino rats (five male and five female) are exposed to the test atmosphere for one hour and observed for 14 days. If five or more of the animals die within the 14-day observation period, the mixture is presumed to have an LC_{50} equal to or less than 1,000 mL/m^3.

– A sample of the vapour in equilibrium with the liquid mixture at 20°C is diluted with 9 equal volumes of air to form a test atmosphere. Ten albino rats (five male and five female) are exposed to the test atmosphere for one hour and observed for 14 days. If five or more of the animals die within the 14-day observation period, the mixture is presumed to have a volatility equal to or greater than 10 times the mixture LC_{50}.

.2 A mixture is assigned to packing group II only if it meets both of the following criteria, and the mixture does not meet the criteria for packing group I:

– A sample of the liquid mixture is vaporized and diluted with air to create a test atmosphere of 3,000 mL/m^3 vaporized mixture in air. Ten albino rats (five male and five female) are exposed to the test atmosphere for one hour and observed for 14 days. If five or more of the animals die within the 14-day observation period, the mixture is presumed to have an LC_{50} equal to or less than 3,000 mL/m^3.

– A sample of the vapour in equilibrium with the liquid mixture at 20°C is used to form a test atmosphere. Ten albino rats (five male and five female) are exposed to the test atmosphere for one hour and observed for 14 days. If five or more of the animals die within the 14-day observation period, the mixture is presumed to have a volatility equal to or greater than the mixture LC_{50}.

.3 A mixture is assigned to packing group III only if it meets both of the following criteria, and the mixture does not meet the criteria for packing groups I or II:

– A sample of the liquid mixture is vaporized and diluted with air to create a test atmosphere of 5,000 mL/m^3 vaporized mixture in air. Ten albino rats (five male and five female) are exposed to the test atmosphere for one hour and observed for 14 days. If five or more of the animals die within the 14-day observation period, the mixture is presumed to have an LC_{50} equal to or less than 5,000 mL/m^3.

– The vapour pressure of the liquid mixture is measured and if the vapour concentration is equal to or greater than 1,000 mL/m^3, the mixture is presumed to have a volatility equal to or greater than $\frac{1}{5}$ the mixture LC_{50}.

2.6.2.3 Methods for determining oral and dermal toxicity of mixtures

2.6.2.3.1 When classifying and assigning the appropriate packing group to mixtures in class 6.1, in accordance with the oral and dermal toxicity criteria in 2.6.2.2, it is necessary to determine the acute LD_{50} of the mixture.

2.6.2.3.2 If a mixture contains only one active substance, and the LD_{50} of that constituent is known, in the absence of reliable acute oral and dermal toxicity data on the actual mixture to be transported, the oral or dermal LD_{50} may be obtained by the following method:

$$LD_{50} \text{ value of preparation} = \frac{LD_{50} \text{ value of active substance} \times 100}{\text{percentage of active substance by mass}}$$

2.6.2.3.3 If a mixture contains more than one active constituent, there are three possible approaches that may be used to determine the oral or dermal LD_{50} of the mixture. The preferred method is to obtain reliable acute oral and dermal toxicity data on the actual mixture to be transported. If reliable, accurate data are not available, then either of the following methods may be performed:

.1 Classify the formulation according to the most hazardous constituent of the mixture as if that constituent were present in the same concentration as the total concentration of all active constituents; or

2

.2 Apply the formula:

$$\frac{C_A}{T_A} + \frac{C_B}{T_B} + \cdots \frac{C_Z}{T_Z} = \frac{100}{T_M}$$

where:

C = the % concentration of constituent A, B … Z in the mixture;

T = the oral LD_{50} value of constituent A, B … Z;

T_M = the oral LD_{50} value of the mixture.

Note: This formula can also be used for dermal toxicities provided that this information is available on the same species for all constituents. The use of this formula does not take into account any potentiation or protective phenomena.

2.6.2.4 Classification of pesticides

2.6.2.4.1 All active pesticide substances and their preparations for which the LC_{50} and/or LD_{50} values are known and which are classified in class 6.1 shall be classified under appropriate packing groups in accordance with the criteria given in 2.6.2.2. Substances and preparations which are characterized by subsidiary hazards shall be classified according to the precedence of hazard table in 2.0.3 with the assignment of appropriate packing groups.

2.6.2.4.2 If the oral or dermal LD_{50} value for a pesticide preparation is not known, but the LD_{50} value of its active substance(s) is known, the LD_{50} value for the preparation may be obtained by applying the procedures in 2.6.2.3.

Note: LD_{50} toxicity data for a number of common pesticides may be obtained from the most current edition of *The WHO Recommended Classification of Pesticides by Hazard and Guidelines to Classification*, available from the International Programme on Chemical Safety, World Health Organization (WHO), 1211 Geneva 27, Switzerland. While that publication may be used as a source of LD_{50} data for pesticides, its classification system shall not be used for purposes of transport classification of, or assignment of packing groups to, pesticides, which shall be in accordance with the provisions of this Code.

2.6.2.4.3 The proper shipping name used in the transport of the pesticide shall be selected from those referenced on the basis of the active ingredient, of the physical state of the pesticide and any subsidiary hazards which it may exhibit.

2.6.2.5 Substances not accepted for transport

Chemically unstable substances of class 6.1 shall not be accepted for transport unless the necessary precautions have been taken to prevent the possibility of a dangerous decomposition or polymerization under normal conditions of transport. For the precautions necessary to prevent polymerization, see special provision 386 of chapter 3.3. To this end particular care shall be taken to ensure that receptacles and tanks do not contain any substances liable to promote these reactions.

2.6.3 Class 6.2 – Infectious substances

2.6.3.1 Definitions

For the purposes of this Code:

2.6.3.1.1 *Infectious substances* are substances which are known or are reasonably expected to contain pathogens. Pathogens are defined as micro-organisms (including bacteria, viruses, parasites, fungi) and other agents such as prions, which can cause disease in humans or animals.

2.6.3.1.2 *Biological products* are those products derived from living organisms which are manufactured and distributed in accordance with the requirements of appropriate national authorities, which may have special licensing requirements, and are used either for prevention, treatment, or diagnosis of disease in humans or animals, or for development, experimental or investigation purposes related thereto. They include, but are not limited to, finished or unfinished products such as vaccines.

2.6.3.1.3 *Cultures* are the result of a process by which pathogens are intentionally propagated. This definition does not include human or animal patient specimens as defined in 2.6.3.1.4.

2.6.3.1.4 *Patient specimens* are those collected directly from humans or animals, including, but not limited to, excreta, secreta, blood and its components, tissue and tissue fluid swabs, and body parts being transported for purposes such as research, diagnosis, investigational activities, disease treatment and prevention.

2.6.3.1.5 [Reserved]

2.6.3.1.6 *Medical or clinical wastes* are wastes derived from the veterinary treatment of animals, the medical treatment of humans or from bio-research.

2.6.3.2 Classification of infectious substances

2.6.3.2.1 Infectious substances shall be classified in class 6.2 and assigned to UN 2814, UN 2900, UN 3291, UN 3373 or UN 3549, as appropriate.

2.6.3.2.2 Infectious substances are divided into the following categories:

2.6.3.2.2.1 *Category A:* An infectious substance which is transported in a form that, when exposure to it occurs, is capable of causing permanent disability, life-threatening or fatal disease in otherwise healthy humans or animals. Indicative examples of substances that meet these criteria are given in the table in this paragraph.

Note: An exposure occurs when an infectious substance is released outside the protective packaging, resulting in physical contact with humans or animals.

.1 Infectious substances meeting these criteria which cause disease in humans or in both humans and animals shall be assigned to UN 2814. Infectious substances which cause disease only in animals shall be assigned to UN 2900.

.2 Assignment to UN 2814 or UN 2900 shall be based on the known medical history and symptoms of the source, human or animal, endemic local conditions, or professional judgement concerning individual circumstances of the human or animal source.

Note 1: The proper shipping name for UN 2814 is INFECTIOUS SUBSTANCE, AFFECTING HUMANS. The proper shipping name for UN 2900 is INFECTIOUS SUBSTANCE, AFFECTING ANIMALS only.

Note 2: The following table is not exhaustive. Infectious substances, including new or emerging pathogens, which do not appear in the table but which meet the same criteria shall be assigned to category A. In addition, if there is doubt as to whether or not a substance meets the criteria it shall be included in category A.

Note 3: In the following table, the microorganism names written in italics are bacteria or fungi.

Indicative examples of infectious substances included in category A in any form unless otherwise indicated (2.6.3.2.2.1.1)

UN number and proper shipping name	Microorganism
UN 2814 Infectious substance, affecting humans	*Bacillus anthracis* (cultures only) *Brucella abortus* (cultures only) *Brucella melitensis* (cultures only) *Brucella suis* (cultures only) *Burkholderia mallei – Pseudomonas mallei* – Glanders (cultures only) *Burkholderia pseudomallei – Pseudomonas pseudomallei* (cultures only) *Chlamydia psittaci* – avian strains (cultures only) *Clostridium botulinum* (cultures only) *Coccidioides immitis* (cultures only) *Coxiella burnetii* (cultures only) Crimean-Congo hemorrhagic fever virus Dengue virus (cultures only) Eastern equine encephalitis virus (cultures only) *Escherichia coli*, verotoxigenic (cultures only) Ebola virus Flexal virus *Francisella tularensis* (cultures only) Guanarito virus Hantaan virus

UN number and proper shipping name	Microorganism
UN 2814 Infectious substance, affecting humans *(cont.)*	Hantavirus causing hemorragic fever with renal syndrome Hendra virus Hepatitis B virus (cultures only) Herpes B virus (cultures only) Human immunodeficiency virus (cultures only) Highly pathogenic avian influenza virus (cultures only) Japanese Encephalitis virus (cultures only) Junin virus Kyasanur Forest disease virus Lassa virus Machupo virus Marburg virus Monkeypox virus *Mycobacterium tuberculosis* (cultures only) Nipah virus Omsk hemorrhagic fever virus Poliovirus (cultures only) Rabies virus (cultures only) *Rickettsia prowazekii* (cultures only) *Rickettsia rickettsii* (cultures only) Rift Valley fever virus (cultures only) Russian spring–summer encephalitis virus (cultures only) Sabia virus *Shigella dysenteriae* type 1 (cultures only) Tick-borne encephalitis virus (cultures only) Variola virus Venezuelan equine encephalitis virus (cultures only) West Nile virus (cultures only) Yellow fever virus (cultures only) *Yersinia pestis* (cultures only)
UN 2900 Infectious substance, affecting animals only	African swine fever virus (cultures only) Avian paramyxovirus Type 1 – Velogenic Newcastle disease virus (cultures only) Classical swine fever virus (cultures only) Foot and mouth disease virus (cultures only) Lumpy skin disease virus (cultures only) *Mycoplasma mycoides* – Contagious bovine pleuropneumonia (cultures only) Peste des petits ruminants virus (cultures only) Rinderpest virus (cultures only) Sheep-pox virus (cultures only) Goatpox virus (cultures only) Swine vesicular disease virus (cultures only) Vesicular stomatitis virus (cultures only)

2.6.3.2.2.2 *Category B:* An infectious substance which does not meet the criteria for inclusion in category A. Infectious substances in category B shall be assigned to UN 3373.

Note: The proper shipping name for UN 3373 is BIOLOGICAL SUBSTANCE, CATEGORY B.

2.6.3.2.3 *Exemptions*

2.6.3.2.3.1 Substances which do not contain infectious substances or substances which are unlikely to cause disease in humans or animals are not subject to the provisions of this Code, unless they meet the criteria for inclusion in another class.

2.6.3.2.3.2 Substances containing microorganisms which are non-pathogenic to humans or animals are not subject to the provisions of this Code unless they meet the criteria for inclusion in another class.

2.6.3.2.3.3 Substances in a form that any present pathogens have been neutralized or inactivated such that they no longer pose a health risk are not subject to the provisions of this Code unless they meet the criteria for inclusion in another class.

Note: Medical equipment which has been drained of free liquid is deemed to meet the requirements of this paragraph and is not subject to the provisions of this Code.

2.6.3.2.3.4 Environmental samples (including food and water samples) which are not considered to pose a significant risk of infection are not subject to the provisions of this Code unless they meet the criteria for inclusion in another class.

2.6.3.2.3.5 Dried blood spots, collected by applying a drop of blood onto absorbent material, are not subject to the provisions of this Code.

2.6.3.2.3.6 Faecal occult blood screening samples are not subject to the provisions of this Code.

2.6.3.2.3.7 Blood or blood components which have been collected for the purposes of transfusion or for the preparation of blood products to be used for transfusion or transplantation and any tissues or organs intended for use in transplantation as well as samples drawn in connection with such purposes are not subject to the provisions of this Code.

2.6.3.2.3.8 Human or animal specimens for which there is minimal likelihood that pathogens are present are not subject to the provisions of this Code if the specimen is transported in a packaging which will prevent any leakage and which is marked with the words “EXEMPT HUMAN SPECIMEN” or “EXEMPT ANIMAL SPECIMEN”, as appropriate. The packaging should meet the following conditions:

.1 The packaging should consist of three components:

.1 a leak-proof primary receptacle(s);

.2 a leak-proof secondary packaging; and

.3 an outer packaging of adequate strength for its capacity, mass and intended use, and with at least one surface having minimum dimensions of 100 mm × 100 mm.

.2 For liquids, absorbent material in sufficient quantity to absorb the entire contents should be placed between the primary receptacle(s) and the secondary packaging so that, during transport, any release or leak of a liquid substance will not reach the outer packaging and will not compromise the integrity of the cushioning material.

.3 When multiple fragile primary receptacles are placed in a single secondary packaging, they should be either individually wrapped or separated to prevent contact between them.

Note: An element of professional judgement is required to determine if a substance is exempt under this paragraph. That judgement should be based on the known medical history, symptoms and individual circumstances of the source, human or animal, and endemic local conditions. Examples of specimens which may be transported under this paragraph include the blood or urine tests to monitor cholesterol levels, blood glucose levels, hormone levels, or prostate specific antibodies (PSA); those required to monitor organ function such as heart, liver or kidney function for humans or animals with non-infectious diseases, or therapeutic drug monitoring; those conducted for insurance or employment purposes and are intended to determine the presence of drugs or alcohol; pregnancy test; biopsies to detect cancer; and antibody detection in humans or animals in the absence of any concern for infection (e.g. evaluation of vaccine-induced immunity, diagnosis of autoimmune disease, etc.).

2.6.3.2.3.9 Except for:

.1 medical waste (UN 3291 and UN 3549);

.2 medical devices or equipment contaminated with or containing infectious substances in category A (UN 2814 or UN 2900); and

.3 medical devices or equipment contaminated with or containing other dangerous goods that meet the definition of another hazard class,

medical devices or equipment potentially contaminated with or containing infectious substances which are being transported for disinfection, cleaning, sterilization, repair, or equipment evaluation are not subject to the provisions of this Code if packed in packagings designed and constructed in such a way that, under normal conditions of transport, they cannot break, be punctured or leak their contents. Packagings shall be designed to meet the construction requirements listed in 6.1.4 or 6.6.4.

These packagings shall meet the general packing requirements of 4.1.1.1 and 4.1.1.2 and be capable of retaining the medical devices and equipment when dropped from a height of 1.2 m.

The packagings shall be marked “USED MEDICAL DEVICE” or “USED MEDICAL EQUIPMENT”. When using overpacks or unit loads these shall be marked in the same way, except when the inscription remains visible.

2.6.3.3 Biological products

2.6.3.3.1 For the purposes of this Code, biological products are divided into the following groups:

.1 those which are manufactured and packaged in accordance with the requirements of appropriate national authorities and transported for the purposes of final packaging or distribution, and use for personal health care by medical professionals or individuals. Substances in this group are not subject to the provisions of this Code;

.2 those which do not fall under .1 and are known or reasonably believed to contain infectious substances and which meet the criteria for inclusion in category A or category B. Substances in this group shall be assigned to UN 2814, UN 2900 or UN 3373, as appropriate.

Note: Some licensed biological products may present a biohazard only in certain parts of the world. Competent authorities may require that such biological products comply with local requirements for infectious substances or may impose other restrictions.

2.6.3.4 Genetically modified microorganisms and organisms

2.6.3.4.1 Genetically modified microorganisms not meeting the definition of infectious substance shall be classified in accordance with chapter 2.9.

2.6.3.5 Medical or clinical wastes

2.6.3.5.1 Medical or clinical waste containing:

.1 Category A infectious substances shall be assigned to UN 2814, UN 2900 or UN 3549 as appropriate. Solid medical waste containing Category A infectious substances generated from the medical treatment of humans or veterinary treatment of animals may be assigned to UN 3549. The UN 3549 entry shall not be used for waste from bio-research or liquid waste;

.2 Category B infectious substances shall be assigned to UN 3291.

2.6.3.5.2 Medical or clinical wastes which are reasonably believed to have a low probability of containing infectious substances shall be assigned to UN 3291. For the assignment, international, regional or national waste catalogues may be taken into account.

Note: The proper shipping name for UN 3291 is CLINICAL WASTE, UNSPECIFIED, N.O.S. or (BIO) MEDICAL WASTE, N.O.S. or REGULATED MEDICAL WASTE, N.O.S.

2.6.3.5.3 Decontaminated medical or clinical wastes which previously contained infectious substances are not subject to the provisions of this Code unless they meet the criteria for inclusion in another class.

2.6.3.6 Infected animals

2.6.3.6.1 Unless an infectious substance cannot be consigned by any other means, live animals shall not be used to consign such a substance. A live animal which has been intentionally infected and is known or suspected to contain an infectious substance shall only be transported under terms and conditions approved by the competent authority.

Chapter 2.7

Class 7 – Radioactive material

Note: For class 7, the type of packaging may have a decisive effect on classification.

2.7.1 Definitions

2.7.1.1 *Radioactive material* means any material containing radionuclides where both the activity concentration and the total activity in the consignment exceed the values specified in 2.7.2.2.1 to 2.7.2.2.6.

2.7.1.2 Contamination

Contamination means the presence of a radioactive substance on a surface in quantities in excess of 0.4 Bq/cm^2 for beta and gamma emitters and low-toxicity alpha emitters, or 0.04 Bq/cm^2 for all other alpha emitters.

Non-fixed contamination means contamination that can be removed from a surface during routine conditions of transport.

Fixed contamination means contamination other than non-fixed contamination.

2.7.1.3 Definitions of specific terms

A_1 and A_2

A_1 means the activity value of special form radioactive material which is listed in the table in 2.7.2.2.1 or derived in 2.7.2.2.2 and is used to determine the activity limits for the provisions of this Code.

A_2 means the activity value of radioactive material, other than special form radioactive material, which is listed in the table in 2.7.2.2.1 or derived in 2.7.2.2.2 and is used to determine the activity limits for the provisions of this Code.

Fissile nuclides means uranium-233, uranium-235, plutonium-239 and plutonium-241. *Fissile material* means a material containing any of the fissile nuclides. Excluded from the definition of fissile material are the following:

.1 natural uranium or depleted uranium which is unirradiated;

.2 natural uranium or depleted uranium which has been irradiated in thermal reactors only;

.3 material with fissile nuclides less than a total of 0.25 g;

.4 any combination of .1, .2 and/or .3.

These exclusions are only valid if there is no other material with fissile nuclides in the package or in the consignment if shipped unpackaged.

Low dispersible radioactive material means either a solid radioactive material or a solid radioactive material in a sealed capsule, that has limited dispersibility and is not in powder form.

Low specific activity (LSA) material means radioactive material which by its nature has a limited specific activity, or radioactive material for which limits of estimated average specific activity apply. External shielding materials surrounding the LSA material shall not be considered in determining the estimated average specific activity.

Low toxicity alpha emitters are: natural uranium; depleted uranium; natural thorium; uranium-235 or uranium-238; thorium-232; thorium-228 and thorium-230 when contained in ores or physical and chemical concentrates; or alpha emitters with a half-life of less than 10 days.

Specific activity of a radionuclide means the activity per unit mass of that nuclide. The specific activity of a material shall mean the activity per unit mass of the material in which the radionuclides are essentially uniformly distributed.

Special form radioactive material means either:

.1 an indispersible solid radioactive material; or

.2 a sealed capsule containing radioactive material.

Surface contaminated object (SCO) means a solid object which is not itself radioactive but which has radioactive material distributed on its surface.

Unirradiated thorium means thorium containing not more than 10^{-7} g of uranium-233 per gram of thorium-232.

Unirradiated uranium means uranium containing not more than 2×10^3 Bq of plutonium per gram of uranium-235, not more than 9×10^6 Bq of fission products per gram of uranium-235 and not more than 5×10^{-3} g of uranium-236 per gram of uranium-235.

Uranium – natural, depleted, enriched means the following:

Natural uranium means uranium (which may be chemically separated) containing the naturally occurring distribution of uranium isotopes (approximately 99.28% uranium-238, and 0.72% uranium-235 by mass).

Depleted uranium means uranium containing a lesser mass percentage of uranium-235 than in natural uranium.

Enriched uranium means uranium containing a greater mass percentage of uranium-235 than 0.72%.

In all cases, a very small mass percentage of uranium-234 is present.

2.7.2 Classification

2.7.2.1 General provisions

2.7.2.1.1 Radioactive material shall be assigned to one of the UN numbers specified in table 2.7.2.1.1, in accordance with 2.7.2.4 and 2.7.2.5, taking into account the material characteristics determined in 2.7.2.3.

Table 2.7.2.1.1 – *Assignment of UN numbers*

UN numbers	Proper shipping name[a] and description
Excepted packages (1.5.1.5)	
2908	RADIOACTIVE MATERIAL, EXCEPTED PACKAGE – EMPTY PACKAGING
2909	RADIOACTIVE MATERIAL, EXCEPTED PACKAGE – ARTICLES MANUFACTURED FROM NATURAL URANIUM or DEPLETED URANIUM or NATURAL THORIUM
2910	RADIOACTIVE MATERIAL, EXCEPTED PACKAGE – LIMITED QUANTITY OF MATERIAL
2911	RADIOACTIVE MATERIAL, EXCEPTED PACKAGE – INSTRUMENTS or ARTICLES
3507	URANIUM HEXAFLUORIDE, RADIOACTIVE MATERIAL, EXCEPTED PACKAGE less than 0.1 kg per package, non-fissile or fissile-excepted[b, c]
Low specific activity radioactive material (2.7.2.3.1)	
2912	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-I), non-fissile or fissile-excepted[b]
3321	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-II), non-fissile or fissile-excepted[b]
3322	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-III), non-fissile or fissile-excepted[b]
3324	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-II), FISSILE
3325	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-III), FISSILE
Surface contaminated objects (2.7.2.3.2)	
2913	RADIOACTIVE MATERIAL, SURFACE CONTAMINATED OBJECTS (SCO-I, SCO-II or SCO-III), non-fissile or fissile-excepted[b]
3326	RADIOACTIVE MATERIAL, SURFACE CONTAMINATED OBJECTS (SCO-I or SCO-II), FISSILE
Type A packages (2.7.2.4.4)	
2915	RADIOACTIVE MATERIAL, TYPE A PACKAGE, non-special form, non-fissile or fissile-excepted[b]
3327	RADIOACTIVE MATERIAL, TYPE A PACKAGE, FISSILE, non-special form
3332	RADIOACTIVE MATERIAL, TYPE A PACKAGE, SPECIAL FORM, non-fissile or fissile-excepted[b]
3333	RADIOACTIVE MATERIAL, TYPE A PACKAGE, SPECIAL FORM, FISSILE
Type B(U) package (2.7.2.4.6)	
2916	RADIOACTIVE MATERIAL, TYPE B(U) PACKAGE, non-fissile or fissile-excepted[b]
3328	RADIOACTIVE MATERIAL, TYPE B(U) PACKAGE, FISSILE

UN numbers	Proper shipping name[a] and description
Type B(M) package (2.7.2.4.6)	
2917	RADIOACTIVE MATERIAL, TYPE B(M) PACKAGE, non-fissile or fissile-excepted[b]
3329	RADIOACTIVE MATERIAL, TYPE B(M) PACKAGE, FISSILE
Type C package (2.7.2.4.6)	
3323	RADIOACTIVE MATERIAL, TYPE C PACKAGE, non-fissile or fissile-excepted[b]
3330	RADIOACTIVE MATERIAL, TYPE C PACKAGE, FISSILE
Special arrangement (2.7.2.5)	
2919	RADIOACTIVE MATERIAL, TRANSPORTED UNDER SPECIAL ARRANGEMENT, non-fissile or fissile-excepted[b]
3331	RADIOACTIVE MATERIAL, TRANSPORTED UNDER SPECIAL ARRANGEMENT, FISSILE
Uranium hexafluoride (2.7.2.4.5)	
2977	RADIOACTIVE MATERIAL, URANIUM HEXAFLUORIDE, FISSILE
2978	RADIOACTIVE MATERIAL, URANIUM HEXAFLUORIDE, non-fissile or fissile-excepted[b]
3507	URANIUM HEXAFLUORIDE, RADIOACTIVE MATERIAL, EXCEPTED PACKAGE less than 0.1 kg per package, non-fissile or fissile-excepted[b, c]

[a] The proper shipping name is found in the column "Proper shipping name and description" and is restricted to that part shown in capital letters. In the cases of UN Nos. 2909, 2911, 2913 and 3326, where alternative proper shipping names are separated by the word "or", only the relevant proper shipping name shall be used.

[b] The term "fissile-excepted" refers only to material excepted under 2.7.2.3.5.

[c] For UN 3507, see also special provision 369 in chapter 3.3.

2.7.2.2 Determination of activity level

2.7.2.2.1 The following basic values for individual radionuclides are given in table 2.7.2.2.1:

.1 A_1 and A_2 in TBq;

.2 Activity concentration limits for exempt material in Bq/g; and

.3 Activity limits for exempt consignments in Bq.

Table 2.7.2.2.1 – *Basic radionuclides values for individual radionuclides*

Radionuclide (atomic number)	A_1 (TBq)	A_2 (TBq)	Activity concentration limit for exempt material (Bq/g)	Activity limit for an exempt consignment (Bq)
Actinium (89)				
Ac-225 *(a)*	8×10^{-1}	6×10^{-3}	1×10^{1}	1×10^{4}
Ac-227 *(a)*	9×10^{-1}	9×10^{-5}	1×10^{-1}	1×10^{3}
Ac-228	6×10^{-1}	5×10^{-1}	1×10^{1}	1×10^{6}
Silver (47)				
Ag-105	2×10^{0}	2×10^{0}	1×10^{2}	1×10^{6}
Ag-108m *(a)*	7×10^{-1}	7×10^{-1}	1×10^{1} *(b)*	1×10^{6} *(b)*
Ag-110m *(a)*	4×10^{-1}	4×10^{-1}	1×10^{1}	1×10^{6}
Ag-111	2×10^{0}	6×10^{-1}	1×10^{3}	1×10^{6}
Aluminium (13)				
Al-26	1×10^{-1}	1×10^{-1}	1×10^{1}	1×10^{5}
Americium (95)				
Am-241	1×10^{1}	1×10^{-3}	1×10^{0}	1×10^{4}
Am-242m *(a)*	1×10^{1}	1×10^{-3}	1×10^{0} *(b)*	1×10^{4} *(b)*
Am-243 *(a)*	5×10^{0}	1×10^{-3}	1×10^{0} *(b)*	1×10^{3} *(b)*
Argon (18)				
Ar-37	4×10^{1}	4×10^{1}	1×10^{6}	1×10^{8}
Ar-39	4×10^{1}	2×10^{1}	1×10^{7}	1×10^{4}
Ar-41	3×10^{-1}	3×10^{-1}	1×10^{2}	1×10^{9}

Radionuclide (atomic number)	A_1 (TBq)	A_2 (TBq)	Activity concentration limit for exempt material (Bq/g)	Activity limit for an exempt consignment (Bq)
Arsenic (33)				
As-72	3×10^{-1}	3×10^{-1}	1×10^{1}	1×10^{5}
As-73	4×10^{1}	4×10^{1}	1×10^{3}	1×10^{7}
As-74	1×10^{0}	9×10^{-1}	1×10^{1}	1×10^{6}
As-76	3×10^{-1}	3×10^{-1}	1×10^{2}	1×10^{5}
As-77	2×10^{1}	7×10^{-1}	1×10^{3}	1×10^{6}
Astatine (85)				
At-211 *(a)*	2×10^{1}	5×10^{-1}	1×10^{3}	1×10^{7}
Gold (79)				
Au-193	7×10^{0}	2×10^{0}	1×10^{2}	1×10^{7}
Au-194	1×10^{0}	1×10^{0}	1×10^{1}	1×10^{6}
Au-195	1×10^{1}	6×10^{0}	1×10^{2}	1×10^{7}
Au-198	1×10^{0}	6×10^{-1}	1×10^{2}	1×10^{6}
Au-199	1×10^{1}	6×10^{-1}	1×10^{2}	1×10^{6}
Barium (56)				
Ba-131 *(a)*	2×10^{0}	2×10^{0}	1×10^{2}	1×10^{6}
Ba-133	3×10^{0}	3×10^{0}	1×10^{2}	1×10^{6}
Ba-133m	2×10^{1}	6×10^{-1}	1×10^{2}	1×10^{6}
Ba-135m	2×10^{1}	6×10^{-1}	1×10^{2}	1×10^{6}
Ba-140 *(a)*	5×10^{-1}	3×10^{-1}	1×10^{1} *(b)*	1×10^{5} *(b)*
Beryllium (4)				
Be–7	2×10^{1}	2×10^{1}	1×10^{3}	1×10^{7}
Be-10	4×10^{1}	6×10^{-1}	1×10^{4}	1×10^{6}
Bismuth (83)				
Bi-205	7×10^{-1}	7×10^{-1}	1×10^{1}	1×10^{6}
Bi-206	3×10^{-1}	3×10^{-1}	1×10^{1}	1×10^{5}
Bi-207	7×10^{-1}	7×10^{-1}	1×10^{1}	1×10^{6}
Bi-210	1×10^{0}	6×10^{-1}	1×10^{3}	1×10^{6}
Bi-210m *(a)*	6×10^{-1}	2×10^{-2}	1×10^{1}	1×10^{5}
Bi-212 *(a)*	7×10^{-1}	6×10^{-1}	1×10^{1} *(b)*	1×10^{5} *(b)*
Berkelium (97)				
Bk-247	8×10^{0}	8×10^{-4}	1×10^{0}	1×10^{4}
Bk-249 *(a)*	4×10^{1}	3×10^{-1}	1×10^{3}	1×10^{6}
Bromine (35)				
Br-76	4×10^{-1}	4×10^{-1}	1×10^{1}	1×10^{5}
Br-77	3×10^{0}	3×10^{0}	1×10^{2}	1×10^{6}
Br-82	4×10^{-1}	4×10^{-1}	1×10^{1}	1×10^{6}
Carbon (6)				
C-11	1×10^{0}	6×10^{-1}	1×10^{1}	1×10^{6}
C-14	4×10^{1}	3×10^{0}	1×10^{4}	1×10^{7}
Calcium (20)				
Ca-41	Unlimited	Unlimited	1×10^{5}	1×10^{7}
Ca-45	4×10^{1}	1×10^{0}	1×10^{4}	1×10^{7}
Ca-47 *(a)*	3×10^{0}	3×10^{-1}	1×10^{1}	1×10^{6}
Cadmium (48)				
Cd-109	3×10^{1}	2×10^{0}	1×10^{4}	1×10^{6}
Cd-113m	4×10^{1}	5×10^{-1}	1×10^{3}	1×10^{6}
Cd-115 *(a)*	3×10^{0}	4×10^{-1}	1×10^{2}	1×10^{6}
Cd-115m	5×10^{-1}	5×10^{-1}	1×10^{3}	1×10^{6}
Cerium (58)				
Ce-139	7×10^{0}	2×10^{0}	1×10^{2}	1×10^{6}
Ce-141	2×10^{1}	6×10^{-1}	1×10^{2}	1×10^{7}
Ce-143	9×10^{-1}	6×10^{-1}	1×10^{2}	1×10^{6}
Ce-144 *(a)*	2×10^{-1}	2×10^{-1}	1×10^{2} *(b)*	1×10^{5} *(b)*
Californium (98)				
Cf-248	4×10^{1}	6×10^{-3}	1×10^{1}	1×10^{4}
Cf-249	3×10^{0}	8×10^{-4}	1×10^{0}	1×10^{3}
Cf-250	2×10^{1}	2×10^{-3}	1×10^{1}	1×10^{4}

Radionuclide (atomic number)	A_1 (TBq)	A_2 (TBq)	Activity concentration limit for exempt material (Bq/g)	Activity limit for an exempt consignment (Bq)
Cf-251	7×10^{0}	7×10^{-4}	1×10^{0}	1×10^{3}
Cf-252	1×10^{-1}	3×10^{-3}	1×10^{1}	1×10^{4}
Cf-253 *(a)*	4×10^{1}	4×10^{-2}	1×10^{2}	1×10^{5}
Cf-254	1×10^{-3}	1×10^{-3}	1×10^{0}	1×10^{3}
Chlorine (17)				
Cl-36	1×10^{1}	6×10^{-1}	1×10^{4}	1×10^{6}
Cl-38	2×10^{-1}	2×10^{-1}	1×10^{1}	1×10^{5}
Curium (96)				
Cm-240	4×10^{1}	2×10^{-2}	1×10^{2}	1×10^{5}
Cm-241	2×10^{0}	1×10^{0}	1×10^{2}	1×10^{6}
Cm-242	4×10^{1}	1×10^{-2}	1×10^{2}	1×10^{5}
Cm-243	9×10^{0}	1×10^{-3}	1×10^{0}	1×10^{4}
Cm-244	2×10^{1}	2×10^{-3}	1×10^{1}	1×10^{4}
Cm-245	9×10^{0}	9×10^{-4}	1×10^{0}	1×10^{3}
Cm-246	9×10^{0}	9×10^{-4}	1×10^{0}	1×10^{3}
Cm-247 *(a)*	3×10^{0}	1×10^{-3}	1×10^{0}	1×10^{4}
Cm-248	2×10^{-2}	3×10^{-4}	1×10^{0}	1×10^{3}
Cobalt (27)				
Co-55	5×10^{-1}	5×10^{-1}	1×10^{1}	1×10^{6}
Co-56	3×10^{-1}	3×10^{-1}	1×10^{1}	1×10^{5}
Co-57	1×10^{1}	1×10^{1}	1×10^{2}	1×10^{6}
Co-58	1×10^{0}	1×10^{0}	1×10^{1}	1×10^{6}
Co-58m	4×10^{1}	4×10^{1}	1×10^{4}	1×10^{7}
Co-60	4×10^{-1}	4×10^{-1}	1×10^{1}	1×10^{5}
Chromium (24)				
Cr-51	3×10^{1}	3×10^{1}	1×10^{3}	1×10^{7}
Caesium (55)				
Cs-129	4×10^{0}	4×10^{0}	1×10^{2}	1×10^{5}
Cs-131	3×10^{1}	3×10^{1}	1×10^{3}	1×10^{6}
Cs-132	1×10^{0}	1×10^{0}	1×10^{1}	1×10^{5}
Cs-134	7×10^{-1}	7×10^{-1}	1×10^{1}	1×10^{4}
Cs-134m	4×10^{1}	6×10^{-1}	1×10^{3}	1×10^{5}
Cs-135	4×10^{1}	1×10^{0}	1×10^{4}	1×10^{7}
Cs-136	5×10^{-1}	5×10^{-1}	1×10^{1}	1×10^{5}
Cs-137 *(a)*	2×10^{0}	6×10^{-1}	1×10^{1} *(b)*	1×10^{4} *(b)*
Copper (29)				
Cu-64	6×10^{0}	1×10^{0}	1×10^{2}	1×10^{6}
Cu-67	1×10^{1}	7×10^{-1}	1×10^{2}	1×10^{6}
Dysprosium (66)				
Dy-159	2×10^{1}	2×10^{1}	1×10^{3}	1×10^{7}
Dy-165	9×10^{-1}	6×10^{-1}	1×10^{3}	1×10^{6}
Dy-166 *(a)*	9×10^{-1}	3×10^{-1}	1×10^{3}	1×10^{6}
Erbium (68)				
Er-169	4×10^{1}	1×10^{0}	1×10^{4}	1×10^{7}
Er-171	8×10^{-1}	5×10^{-1}	1×10^{2}	1×10^{6}
Europium (63)				
Eu-147	2×10^{0}	2×10^{0}	1×10^{2}	1×10^{6}
Eu-148	5×10^{-1}	5×10^{-1}	1×10^{1}	1×10^{6}
Eu-149	2×10^{1}	2×10^{1}	1×10^{2}	1×10^{7}
Eu-150 (short-lived)	2×10^{0}	7×10^{-1}	1×10^{3}	1×10^{6}
Eu-150 (long-lived)	7×10^{-1}	7×10^{-1}	1×10^{1}	1×10^{6}
Eu-152	1×10^{0}	1×10^{0}	1×10^{1}	1×10^{6}
Eu-152m	8×10^{-1}	8×10^{-1}	1×10^{2}	1×10^{6}
Eu-154	9×10^{-1}	6×10^{-1}	1×10^{1}	1×10^{6}
Eu-155	2×10^{1}	3×10^{0}	1×10^{2}	1×10^{7}
Eu-156	7×10^{-1}	7×10^{-1}	1×10^{1}	1×10^{6}
Fluorine (9)				
F-18	1×10^{0}	6×10^{-1}	1×10^{1}	1×10^{6}

Radionuclide (atomic number)	A_1 (TBq)	A_2 (TBq)	Activity concentration limit for exempt material (Bq/g)	Activity limit for an exempt consignment (Bq)
Iron (26)				
Fe-52 *(a)*	3×10^{-1}	3×10^{-1}	1×10^{1}	1×10^{6}
Fe-55	4×10^{1}	4×10^{1}	1×10^{4}	1×10^{6}
Fe-59	9×10^{-1}	9×10^{-1}	1×10^{1}	1×10^{6}
Fe-60 *(a)*	4×10^{1}	2×10^{-1}	1×10^{2}	1×10^{5}
Gallium (31)				
Ga-67	7×10^{0}	3×10^{0}	1×10^{2}	1×10^{6}
Ga-68	5×10^{-1}	5×10^{-1}	1×10^{1}	1×10^{5}
Ga-72	4×10^{-1}	4×10^{-1}	1×10^{1}	1×10^{5}
Gadolinium (64)				
Gd-146 *(a)*	5×10^{-1}	5×10^{-1}	1×10^{1}	1×10^{6}
Gd-148	2×10^{1}	2×10^{-3}	1×10^{1}	1×10^{4}
Gd-153	1×10^{1}	9×10^{0}	1×10^{2}	1×10^{7}
Gd-159	3×10^{0}	6×10^{-1}	1×10^{3}	1×10^{6}
Germanium (32)				
Ge-68 *(a)*	5×10^{-1}	5×10^{-1}	1×10^{1}	1×10^{5}
Ge-69	1×10^{0}	1×10^{0}	1×10^{1}	1×10^{6}
Ge-71	4×10^{1}	4×10^{1}	1×10^{4}	1×10^{8}
Ge-77	3×10^{-1}	3×10^{-1}	1×10^{1}	1×10^{5}
Hafnium (72)				
Hf-172 *(a)*	6×10^{-1}	6×10^{-1}	1×10^{1}	1×10^{6}
Hf-175	3×10^{0}	3×10^{0}	1×10^{2}	1×10^{6}
Hf-181	2×10^{0}	5×10^{-1}	1×10^{1}	1×10^{6}
Hf-182	Unlimited	Unlimited	1×10^{2}	1×10^{6}
Mercury (80)				
Hg-194 *(a)*	1×10^{0}	1×10^{0}	1×10^{1}	1×10^{6}
Hg-195m *(a)*	3×10^{0}	7×10^{-1}	1×10^{2}	1×10^{6}
Hg-197	2×10^{1}	1×10^{1}	1×10^{2}	1×10^{7}
Hg-197m	1×10^{1}	4×10^{-1}	1×10^{2}	1×10^{6}
Hg-203	5×10^{0}	1×10^{0}	1×10^{2}	1×10^{5}
Holmium (67)				
Ho-166	4×10^{-1}	4×10^{-1}	1×10^{3}	1×10^{5}
Ho-166m	6×10^{-1}	5×10^{-1}	1×10^{1}	1×10^{6}
Iodine (53)				
I-123	6×10^{0}	3×10^{0}	1×10^{2}	1×10^{7}
I-124	1×10^{0}	1×10^{0}	1×10^{1}	1×10^{6}
I-125	2×10^{1}	3×10^{0}	1×10^{3}	1×10^{6}
I-126	2×10^{0}	1×10^{0}	1×10^{2}	1×10^{6}
I-129	Unlimited	Unlimited	1×10^{2}	1×10^{5}
I-131	3×10^{0}	7×10^{-1}	1×10^{2}	1×10^{6}
I-132	4×10^{-1}	4×10^{-1}	1×10^{1}	1×10^{5}
I-133	7×10^{-1}	6×10^{-1}	1×10^{1}	1×10^{6}
I-134	3×10^{-1}	3×10^{-1}	1×10^{1}	1×10^{5}
I-135 *(a)*	6×10^{-1}	6×10^{-1}	1×10^{1}	1×10^{6}
Indium (49)				
In-111	3×10^{0}	3×10^{0}	1×10^{2}	1×10^{6}
In-113m	4×10^{0}	2×10^{0}	1×10^{2}	1×10^{6}
In-114m *(a)*	1×10^{1}	5×10^{-1}	1×10^{2}	1×10^{6}
In-115m	7×10^{0}	1×10^{0}	1×10^{2}	1×10^{6}
Iridium (77)				
Ir-189 *(a)*	1×10^{1}	1×10^{1}	1×10^{2}	1×10^{7}
Ir-190	7×10^{-1}	7×10^{-1}	1×10^{1}	1×10^{6}
Ir-192	1×10^{0} *(c)*	6×10^{-1}	1×10^{1}	1×10^{4}
Ir-193m	4×10^{1}	4×10^{0}	1×10^{4}	1×10^{7}
Ir-194	3×10^{-1}	3×10^{-1}	1×10^{2}	1×10^{5}
Potassium (19)				
K-40	9×10^{-1}	9×10^{-1}	1×10^{2}	1×10^{6}
K-42	2×10^{-1}	2×10^{-1}	1×10^{2}	1×10^{6}
K-43	7×10^{-1}	6×10^{-1}	1×10^{1}	1×10^{6}

Radionuclide (atomic number)	A_1 (TBq)	A_2 (TBq)	Activity concentration limit for exempt material (Bq/g)	Activity limit for an exempt consignment (Bq)
Krypton (36)				
Kr-79	4×10^{0}	2×10^{0}	1×10^{3}	1×10^{5}
Kr-81	4×10^{1}	4×10^{1}	1×10^{4}	1×10^{7}
Kr-85	1×10^{1}	1×10^{1}	1×10^{5}	1×10^{4}
Kr-85m	8×10^{0}	3×10^{0}	1×10^{3}	1×10^{10}
Kr-87	2×10^{-1}	2×10^{-1}	1×10^{2}	1×10^{9}
Lanthanum (57)				
La-137	3×10^{1}	6×10^{0}	1×10^{3}	1×10^{7}
La-140	4×10^{-1}	4×10^{-1}	1×10^{1}	1×10^{5}
Lutetium (71)				
Lu-172	6×10^{-1}	6×10^{-1}	1×10^{1}	1×10^{6}
Lu-173	8×10^{0}	8×10^{0}	1×10^{2}	1×10^{7}
Lu-174	9×10^{0}	9×10^{0}	1×10^{2}	1×10^{7}
Lu-174m	2×10^{1}	1×10^{1}	1×10^{2}	1×10^{7}
Lu-177	3×10^{1}	7×10^{-1}	1×10^{3}	1×10^{7}
Magnesium (12)				
Mg-28 *(a)*	3×10^{-1}	3×10^{-1}	1×10^{1}	1×10^{5}
Manganese (25)				
Mn-52	3×10^{-1}	3×10^{-1}	1×10^{1}	1×10^{5}
Mn-53	Unlimited	Unlimited	1×10^{4}	1×10^{9}
Mn-54	1×10^{0}	1×10^{0}	1×10^{1}	1×10^{6}
Mn-56	3×10^{-1}	3×10^{-1}	1×10^{1}	1×10^{5}
Molybdenum (42)				
Mo-93	4×10^{1}	2×10^{1}	1×10^{3}	1×10^{8}
Mo-99 *(a)*	1×10^{0}	6×10^{-1}	1×10^{2}	1×10^{6}
Nitrogen (7)				
N-13	9×10^{-1}	6×10^{-1}	1×10^{2}	1×10^{9}
Sodium (11)				
Na-22	5×10^{-1}	5×10^{-1}	1×10^{1}	1×10^{6}
Na-24	2×10^{-1}	2×10^{-1}	1×10^{1}	1×10^{5}
Niobium (41)				
Nb-93m	4×10^{1}	3×10^{1}	1×10^{4}	1×10^{7}
Nb-94	7×10^{-1}	7×10^{-1}	1×10^{1}	1×10^{6}
Nb-95	1×10^{0}	1×10^{0}	1×10^{1}	1×10^{6}
Nb-97	9×10^{-1}	6×10^{-1}	1×10^{1}	1×10^{6}
Neodymium (60)				
Nd-147	6×10^{0}	6×10^{-1}	1×10^{2}	1×10^{6}
Nd-149	6×10^{-1}	5×10^{-1}	1×10^{2}	1×10^{6}
Nickel (28)				
Ni-57	6×10^{-1}	6×10^{-1}	1×10^{1}	1×10^{6}
Ni-59	Unlimited	Unlimited	1×10^{4}	1×10^{8}
Ni-63	4×10^{1}	3×10^{1}	1×10^{5}	1×10^{8}
Ni-65	4×10^{-1}	4×10^{-1}	1×10^{1}	1×10^{6}
Neptunium (93)				
Np-235	4×10^{1}	4×10^{1}	1×10^{3}	1×10^{7}
Np-236 (short-lived)	2×10^{1}	2×10^{0}	1×10^{3}	1×10^{7}
Np-236 (long-lived)	9×10^{0}	2×10^{-2}	1×10^{2}	1×10^{5}
Np-237	2×10^{1}	2×10^{-3}	1×10^{0} *(b)*	1×10^{3} *(b)*
Np-239	7×10^{0}	4×10^{-1}	1×10^{2}	1×10^{7}
Osmium (76)				
Os-185	1×10^{0}	1×10^{0}	1×10^{1}	1×10^{6}
Os-191	1×10^{1}	2×10^{0}	1×10^{2}	1×10^{7}
Os-191m	4×10^{1}	3×10^{1}	1×10^{3}	1×10^{7}
Os-193	2×10^{0}	6×10^{-1}	1×10^{2}	1×10^{6}
Os-194 *(a)*	3×10^{-1}	3×10^{-1}	1×10^{2}	1×10^{5}
Phosphorus (15)				
P-32	5×10^{-1}	5×10^{-1}	1×10^{3}	1×10^{5}
P-33	4×10^{1}	1×10^{0}	1×10^{5}	1×10^{8}

Radionuclide (atomic number)	A_1 (TBq)	A_2 (TBq)	Activity concentration limit for exempt material (Bq/g)	Activity limit for an exempt consignment (Bq)
Protactinium (91)				
Pa-230 *(a)*	2×10^{0}	7×10^{-2}	1×10^{1}	1×10^{6}
Pa-231	4×10^{0}	4×10^{-4}	1×10^{0}	1×10^{3}
Pa-233	5×10^{0}	7×10^{-1}	1×10^{2}	1×10^{7}
Lead (82)				
Pb-201	1×10^{0}	1×10^{0}	1×10^{1}	1×10^{6}
Pb-202	4×10^{1}	2×10^{1}	1×10^{3}	1×10^{6}
Pb-203	4×10^{0}	3×10^{0}	1×10^{2}	1×10^{6}
Pb-205	Unlimited	Unlimited	1×10^{4}	1×10^{7}
Pb-210 *(a)*	1×10^{0}	5×10^{-2}	1×10^{1} *(b)*	1×10^{4} *(b)*
Pb-212 *(a)*	7×10^{-1}	2×10^{-1}	1×10^{1} *(b)*	1×10^{5} *(b)*
Palladium (46)				
Pd-103 *(a)*	4×10^{1}	4×10^{1}	1×10^{3}	1×10^{8}
Pd-107	Unlimited	Unlimited	1×10^{5}	1×10^{8}
Pd-109	2×10^{0}	5×10^{-1}	1×10^{3}	1×10^{6}
Promethium (61)				
Pm-143	3×10^{0}	3×10^{0}	1×10^{2}	1×10^{6}
Pm-144	7×10^{-1}	7×10^{-1}	1×10^{1}	1×10^{6}
Pm-145	3×10^{1}	1×10^{1}	1×10^{3}	1×10^{7}
Pm-147	4×10^{1}	2×10^{0}	1×10^{4}	1×10^{7}
Pm-148m *(a)*	8×10^{-1}	7×10^{-1}	1×10^{1}	1×10^{6}
Pm-149	2×10^{0}	6×10^{-1}	1×10^{3}	1×10^{6}
Pm-151	2×10^{0}	6×10^{-1}	1×10^{2}	1×10^{6}
Polonium (84)				
Po-210	4×10^{1}	2×10^{-2}	1×10^{1}	1×10^{4}
Praseodymium (59)				
Pr-142	4×10^{-1}	4×10^{-1}	1×10^{2}	1×10^{5}
Pr-143	3×10^{0}	6×10^{-1}	1×10^{4}	1×10^{6}
Platinum (78)				
Pt-188 *(a)*	1×10^{0}	8×10^{-1}	1×10^{1}	1×10^{6}
Pt-191	4×10^{0}	3×10^{0}	1×10^{2}	1×10^{6}
Pt-193	4×10^{1}	4×10^{1}	1×10^{4}	1×10^{7}
Pt-193m	4×10^{1}	5×10^{-1}	1×10^{3}	1×10^{7}
Pt-195m	1×10^{1}	5×10^{-1}	1×10^{2}	1×10^{6}
Pt-197	2×10^{1}	6×10^{-1}	1×10^{3}	1×10^{6}
Pt-197m	1×10^{1}	6×10^{-1}	1×10^{2}	1×10^{6}
Plutonium (94)				
Pu-236	3×10^{1}	3×10^{-3}	1×10^{1}	1×10^{4}
Pu-237	2×10^{1}	2×10^{1}	1×10^{3}	1×10^{7}
Pu-238	1×10^{1}	1×10^{-3}	1×10^{0}	1×10^{4}
Pu-239	1×10^{1}	1×10^{-3}	1×10^{0}	1×10^{4}
Pu-240	1×10^{1}	1×10^{-3}	1×10^{0}	1×10^{3}
Pu-241 *(a)*	4×10^{1}	6×10^{-2}	1×10^{2}	1×10^{5}
Pu-242	1×10^{1}	1×10^{-3}	1×10^{0}	1×10^{4}
Pu-244 *(a)*	4×10^{-1}	1×10^{-3}	1×10^{0}	1×10^{4}
Radium (88)				
Ra-223 *(a)*	4×10^{-1}	7×10^{-3}	1×10^{2} *(b)*	1×10^{5} *(b)*
Ra-224 *(a)*	4×10^{-1}	2×10^{-2}	1×10^{1} *(b)*	1×10^{5} *(b)*
Ra-225 *(a)*	2×10^{-1}	4×10^{-3}	1×10^{2}	1×10^{5}
Ra-226 *(a)*	2×10^{-1}	3×10^{-3}	1×10^{1} *(b)*	1×10^{4} *(b)*
Ra-228 *(a)*	6×10^{-1}	2×10^{-2}	1×10^{1} *(b)*	1×10^{5} *(b)*
Rubidium (37)				
Rb-81	2×10^{0}	8×10^{-1}	1×10^{1}	1×10^{6}
Rb-83 *(a)*	2×10^{0}	2×10^{0}	1×10^{2}	1×10^{6}
Rb-84	1×10^{0}	1×10^{0}	1×10^{1}	1×10^{6}
Rb-86	5×10^{-1}	5×10^{-1}	1×10^{2}	1×10^{5}
Rb-87	Unlimited	Unlimited	1×10^{4}	1×10^{7}
Rb (nat)	Unlimited	Unlimited	1×10^{4}	1×10^{7}

Radionuclide (atomic number)	A_1 (TBq)	A_2 (TBq)	Activity concentration limit for exempt material (Bq/g)	Activity limit for an exempt consignment (Bq)
Rhenium (75)				
Re-184	1×10^{0}	1×10^{0}	1×10^{1}	1×10^{6}
Re-184m	3×10^{0}	1×10^{0}	1×10^{2}	1×10^{6}
Re-186	2×10^{0}	6×10^{-1}	1×10^{3}	1×10^{6}
Re-187	Unlimited	Unlimited	1×10^{6}	1×10^{9}
Re-188	4×10^{-1}	4×10^{-1}	1×10^{2}	1×10^{5}
Re-189 *(a)*	3×10^{0}	6×10^{-1}	1×10^{2}	1×10^{6}
Re (nat)	Unlimited	Unlimited	1×10^{6}	1×10^{9}
Rhodium (45)				
Rh-99	2×10^{0}	2×10^{0}	1×10^{1}	1×10^{6}
Rh-101	4×10^{0}	3×10^{0}	1×10^{2}	1×10^{7}
Rh-102	5×10^{-1}	5×10^{-1}	1×10^{1}	1×10^{6}
Rh-102m	2×10^{0}	2×10^{0}	1×10^{2}	1×10^{6}
Rh-103m	4×10^{1}	4×10^{1}	1×10^{4}	1×10^{8}
Rh-105	1×10^{1}	8×10^{-1}	1×10^{2}	1×10^{7}
Radon (86)				
Rn-222 *(a)*	3×10^{-1}	4×10^{-3}	1×10^{1} *(b)*	1×10^{8} *(b)*
Ruthenium (44)				
Ru-97	5×10^{0}	5×10^{0}	1×10^{2}	1×10^{7}
Ru-103 *(a)*	2×10^{0}	2×10^{0}	1×10^{2}	1×10^{6}
Ru-105	1×10^{0}	6×10^{-1}	1×10^{1}	1×10^{6}
Ru-106 *(a)*	2×10^{-1}	2×10^{-1}	1×10^{2} *(b)*	1×10^{5} *(b)*
Sulphur (16)				
S-35	4×10^{1}	3×10^{0}	1×10^{5}	1×10^{8}
Antimony (51)				
Sb-122	4×10^{-1}	4×10^{-1}	1×10^{2}	1×10^{4}
Sb-124	6×10^{-1}	6×10^{-1}	1×10^{1}	1×10^{6}
Sb-125	2×10^{0}	1×10^{0}	1×10^{2}	1×10^{6}
Sb-126	4×10^{-1}	4×10^{-1}	1×10^{1}	1×10^{5}
Scandium (21)				
Sc-44	5×10^{-1}	5×10^{-1}	1×10^{1}	1×10^{5}
Sc-46	5×10^{-1}	5×10^{-1}	1×10^{1}	1×10^{6}
Sc-47	1×10^{1}	7×10^{-1}	1×10^{2}	1×10^{6}
Sc-48	3×10^{-1}	3×10^{-1}	1×10^{1}	1×10^{5}
Selenium (34)				
Se-75	3×10^{0}	3×10^{0}	1×10^{2}	1×10^{6}
Se-79	4×10^{1}	2×10^{0}	1×10^{4}	1×10^{7}
Silicon (14)				
Si-31	6×10^{-1}	6×10^{-1}	1×10^{3}	1×10^{6}
Si-32	4×10^{1}	5×10^{-1}	1×10^{3}	1×10^{6}
Samarium (62)				
Sm-145	1×10^{1}	1×10^{1}	1×10^{2}	1×10^{7}
Sm-147	Unlimited	Unlimited	1×10^{1}	1×10^{4}
Sm-151	4×10^{1}	1×10^{1}	1×10^{4}	1×10^{8}
Sm-153	9×10^{0}	6×10^{-1}	1×10^{2}	1×10^{6}
Tin (50)				
Sn-113 *(a)*	4×10^{0}	2×10^{0}	1×10^{3}	1×10^{7}
Sn-117m	7×10^{0}	4×10^{-1}	1×10^{2}	1×10^{6}
Sn-119m	4×10^{1}	3×10^{1}	1×10^{3}	1×10^{7}
Sn-121m *(a)*	4×10^{1}	9×10^{-1}	1×10^{3}	1×10^{7}
Sn-123	8×10^{-1}	6×10^{-1}	1×10^{3}	1×10^{6}
Sn-125	4×10^{-1}	4×10^{-1}	1×10^{2}	1×10^{5}
Sn-126 *(a)*	6×10^{-1}	4×10^{-1}	1×10^{1}	1×10^{5}
Strontium (38)				
Sr-82 *(a)*	2×10^{-1}	2×10^{-1}	1×10^{1}	1×10^{5}
Sr-83	1×10^{0}	1×10^{0}	1×10^{1}	1×10^{6}
Sr-85	2×10^{0}	2×10^{0}	1×10^{2}	1×10^{6}
Sr-85m	5×10^{0}	5×10^{0}	1×10^{2}	1×10^{7}

Radionuclide (atomic number)	A_1 (TBq)	A_2 (TBq)	Activity concentration limit for exempt material (Bq/g)	Activity limit for an exempt consignment (Bq)
Sr-87m	3×10^{0}	3×10^{0}	1×10^{2}	1×10^{6}
Sr-89	6×10^{-1}	6×10^{-1}	1×10^{3}	1×10^{6}
Sr-90 *(a)*	3×10^{-1}	3×10^{-1}	1×10^{2} *(b)*	1×10^{4} *(b)*
Sr-91 *(a)*	3×10^{-1}	3×10^{-1}	1×10^{1}	1×10^{5}
Sr-92 *(a)*	1×10^{0}	3×10^{-1}	1×10^{1}	1×10^{6}
Tritium (1)				
T (H-3)	4×10^{1}	4×10^{1}	1×10^{6}	1×10^{9}
Tantalum (73)				
Ta-178 (long-lived)	1×10^{0}	8×10^{-1}	1×10^{1}	1×10^{6}
Ta-179	3×10^{1}	3×10^{1}	1×10^{3}	1×10^{7}
Ta-182	9×10^{-1}	5×10^{-1}	1×10^{1}	1×10^{4}
Terbium (65)				
Tb-149	8×10^{-1}	8×10^{-1}	1×10^{1}	1×10^{6}
Tb-157	4×10^{1}	4×10^{1}	1×10^{4}	1×10^{7}
Tb-158	1×10^{0}	1×10^{0}	1×10^{1}	1×10^{6}
Tb-160	1×10^{0}	6×10^{-1}	1×10^{1}	1×10^{6}
Tb-161	3×10^{1}	7×10^{-1}	1×10^{3}	1×10^{6}
Technetium (43)				
Tc-95m *(a)*	2×10^{0}	2×10^{0}	1×10^{1}	1×10^{6}
Tc-96	4×10^{-1}	4×10^{-1}	1×10^{1}	1×10^{6}
Tc-96m *(a)*	4×10^{-1}	4×10^{-1}	1×10^{3}	1×10^{7}
Tc-97	Unlimited	Unlimited	1×10^{3}	1×10^{8}
Tc-97m	4×10^{1}	1×10^{0}	1×10^{3}	1×10^{7}
Tc-98	8×10^{-1}	7×10^{-1}	1×10^{1}	1×10^{6}
Tc-99	4×10^{1}	9×10^{-1}	1×10^{4}	1×10^{7}
Tc-99m	1×10^{1}	4×10^{0}	1×10^{2}	1×10^{7}
Tellurium (52)				
Te-121	2×10^{0}	2×10^{0}	1×10^{1}	1×10^{6}
Te-121m	5×10^{0}	3×10^{0}	1×10^{2}	1×10^{6}
Te-123m	8×10^{0}	1×10^{0}	1×10^{2}	1×10^{7}
Te-125m	2×10^{1}	9×10^{-1}	1×10^{3}	1×10^{7}
Te-127	2×10^{1}	7×10^{-1}	1×10^{3}	1×10^{6}
Te-127m *(a)*	2×10^{1}	5×10^{-1}	1×10^{3}	1×10^{7}
Te-129	7×10^{-1}	6×10^{-1}	1×10^{2}	1×10^{6}
Te-129m *(a)*	8×10^{-1}	4×10^{-1}	1×10^{3}	1×10^{6}
Te-131m *(a)*	7×10^{-1}	5×10^{-1}	1×10^{1}	1×10^{6}
Te-132 *(a)*	5×10^{-1}	4×10^{-1}	1×10^{2}	1×10^{7}
Thorium (90)				
Th-227	1×10^{1}	5×10^{-3}	1×10^{1}	1×10^{4}
Th-228 *(a)*	5×10^{-1}	1×10^{-3}	1×10^{0} *(b)*	1×10^{4} *(b)*
Th-229	5×10^{0}	5×10^{-4}	1×10^{0} *(b)*	1×10^{3} *(b)*
Th-230	1×10^{1}	1×10^{-3}	1×10^{0}	1×10^{4}
Th-231	4×10^{1}	2×10^{-2}	1×10^{3}	1×10^{7}
Th-232	Unlimited	Unlimited	1×10^{1}	1×10^{4}
Th-234 *(a)*	3×10^{-1}	3×10^{-1}	1×10^{3} *(b)*	1×10^{5} *(b)*
Th (nat)	Unlimited	Unlimited	1×10^{0} *(b)*	1×10^{3} *(b)*
Titanium (22)				
Ti-44 *(a)*	5×10^{-1}	4×10^{-1}	1×10^{1}	1×10^{5}
Thallium (81)				
Tl-200	9×10^{-1}	9×10^{-1}	1×10^{1}	1×10^{6}
Tl-201	1×10^{1}	4×10^{0}	1×10^{2}	1×10^{6}
Tl-202	2×10^{0}	2×10^{0}	1×10^{2}	1×10^{6}
Tl-204	1×10^{1}	7×10^{-1}	1×10^{4}	1×10^{4}
Thulium (69)				
Tm-167	7×10^{0}	8×10^{-1}	1×10^{2}	1×10^{6}
Tm-170	3×10^{0}	6×10^{-1}	1×10^{3}	1×10^{6}
Tm-171	4×10^{1}	4×10^{1}	1×10^{4}	1×10^{8}

Radionuclide (atomic number)	A_1 (TBq)	A_2 (TBq)	Activity concentration limit for exempt material (Bq/g)	Activity limit for an exempt consignment (Bq)
Uranium (92)				
U-230 (fast lung absorption) *(a) (d)*	4×10^{1}	1×10^{-1}	1×10^{1} *(b)*	1×10^{5} *(b)*
U-230 (medium lung absorption) *(a) (e)*	4×10^{1}	4×10^{-3}	1×10^{1}	1×10^{4}
U-230 (slow lung absorption) *(a) (f)*	3×10^{1}	3×10^{-3}	1×10^{1}	1×10^{4}
U-232 (fast lung absorption) *(d)*	4×10^{1}	1×10^{-2}	1×10^{0} *(b)*	1×10^{3} *(b)*
U-232 (medium lung absorption) *(e)*	4×10^{1}	7×10^{-3}	1×10^{1}	1×10^{4}
U-232 (slow lung absorption) *(f)*	1×10^{1}	1×10^{-3}	1×10^{1}	1×10^{4}
U-233 (fast lung absorption) *(d)*	4×10^{1}	9×10^{-2}	1×10^{1}	1×10^{4}
U-233 (medium lung absorption) *(e)*	4×10^{1}	2×10^{-2}	1×10^{2}	1×10^{5}
U-233 (slow lung absorption) *(f)*	4×10^{1}	6×10^{-3}	1×10^{1}	1×10^{5}
U-234 (fast lung absorption) *(d)*	4×10^{1}	9×10^{-2}	1×10^{1}	1×10^{4}
U-234 (medium lung absorption) *(e)*	4×10^{1}	2×10^{-2}	1×10^{2}	1×10^{5}
U-234 (slow lung absorption) *(f)*	4×10^{1}	6×10^{-3}	1×10^{1}	1×10^{5}
U-235 (all lung absorption types) *(a) (d) (e) (f)*	Unlimited	Unlimited	1×10^{1} *(b)*	1×10^{4} *(b)*
U-236 (fast lung absorption) *(d)*	Unlimited	Unlimited	1×10^{1}	1×10^{4}
U-236 (medium lung absorption) *(e)*	4×10^{1}	2×10^{-2}	1×10^{2}	1×10^{5}
U-236 (slow lung absorption) *(f)*	4×10^{1}	6×10^{-3}	1×10^{1}	1×10^{4}
U-238 (all lung absorption types) *(d)* (e) *(f)*	Unlimited	Unlimited	1×10^{1} *(b)*	1×10^{4} *(b)*
U (nat)	Unlimited	Unlimited	1×10^{0} *(b)*	1×10^{3} *(b)*
U (enriched to 20% or less) *(g)*	Unlimited	Unlimited	1×10^{0}	1×10^{3}
U (dep)	Unlimited	Unlimited	1×10^{0}	1×10^{3}
Vanadium (23)				
V-48	4×10^{-1}	4×10^{-1}	1×10^{1}	1×10^{5}
V-49	4×10^{1}	4×10^{1}	1×10^{4}	1×10^{7}
Tungsten (74)				
W-178 *(a)*	9×10^{0}	5×10^{0}	1×10^{1}	1×10^{6}
W-181	3×10^{1}	3×10^{1}	1×10^{3}	1×10^{7}
W-185	4×10^{1}	8×10^{-1}	1×10^{4}	1×10^{7}
W-187	2×10^{0}	6×10^{-1}	1×10^{2}	1×10^{6}
W-188 *(a)*	4×10^{-1}	3×10^{-1}	1×10^{2}	1×10^{5}
Xenon (54)				
Xe-122 *(a)*	4×10^{-1}	4×10^{-1}	1×10^{2}	1×10^{9}
Xe-123	2×10^{0}	7×10^{-1}	1×10^{2}	1×10^{9}
Xe-127	4×10^{0}	2×10^{0}	1×10^{3}	1×10^{5}
Xe-131m	4×10^{1}	4×10^{1}	1×10^{4}	1×10^{4}
Xe-133	2×10^{1}	1×10^{1}	1×10^{3}	1×10^{4}
Xe-135	3×10^{0}	2×10^{0}	1×10^{3}	1×10^{10}
Yttrium (39)				
Y-87 *(a)*	1×10^{0}	1×10^{0}	1×10^{1}	1×10^{6}
Y-88	4×10^{-1}	4×10^{-1}	1×10^{1}	1×10^{6}
Y-90	3×10^{-1}	3×10^{-1}	1×10^{3}	1×10^{5}
Y-91	6×10^{-1}	6×10^{-1}	1×10^{3}	1×10^{6}
Y-91m	2×10^{0}	2×10^{0}	1×10^{2}	1×10^{6}
Y-92	2×10^{-1}	2×10^{-1}	1×10^{2}	1×10^{5}
Y-93	3×10^{-1}	3×10^{-1}	1×10^{2}	1×10^{5}
Ytterbium (70)				
Yb-169	4×10^{0}	1×10^{0}	1×10^{2}	1×10^{7}
Yb-175	3×10^{1}	9×10^{-1}	1×10^{3}	1×10^{7}
Zinc (30)				
Zn-65	2×10^{0}	2×10^{0}	1×10^{1}	1×10^{6}
Zn-69	3×10^{0}	6×10^{-1}	1×10^{4}	1×10^{6}
Zn-69m *(a)*	3×10^{0}	6×10^{-1}	1×10^{2}	1×10^{6}
Zirconium (40)				
Zr-88	3×10^{0}	3×10^{0}	1×10^{2}	1×10^{6}
Zr-93	Unlimited	Unlimited	1×10^{3} *(b)*	1×10^{7} *(b)*
Zr-95 *(a)*	2×10^{0}	8×10^{-1}	1×10^{1}	1×10^{6}
Zr-97 *(a)*	4×10^{-1}	4×10^{-1}	1×10^{1} *(b)*	1×10^{5} *(b)*

(a) A_1 and/or A_2 values for these parent radionuclides include contributions from their progeny with half-lives less than 10 days, as listed in the following:

Mg-28	Al-28
Ar-42	K-42
Ca-47	Sc-47
Ti-44	Sc-44
Fe-52	Mn-52m
Fe-60	Co-60m
Zn-69m	Zn-69
Ge-68	Ga-68
Rb-83	Kr-83m
Sr-82	Rb-82
Sr-90	Y-90
Sr-91	Y-91m
Sr-92	Y-92
Y-87	Sr-87m
Zr-95	Nb-95m
Zr-97	Nb-97m, Nb-97
Mo-99	Tc-99m
Tc-95m	Tc-95
Tc-96m	Tc-96
Ru-103	Rh-103m
Ru-106	Rh-106
Pd-103	Rh-103m
Ag-108m	Ag-108
Ag-110m	Ag-110
Cd-115	In-115m
In-114m	In-114
Sn-113	In-113m
Sn-121m	Sn-121
Sn-126	Sb-126m
Te-118	Sb-118
Te-127m	Te-127
Te-129m	Te-129
Te-131m	Te-131
Te-132	I-132
I-135	Xe-135m
Xe-122	I-122
Cs-137	Ba-137m
Ba-131	Cs-131
Ba-140	La-140
Ce-144	Pr-144m, Pr-144
Pm-148m	Pm-148
Gd-146	Eu-146
Dy-166	Ho-166
Hf-172	Lu-172
W-178	Ta-178
W-188	Re-188
Re-189	Os-189m
Os-194	Ir-194
Ir-189	Os-189m
Pt-188	Ir-188
Hg-194	Au-194
Hg-195m	Hg-195
Pb-210	Bi-210

Pb-212	Bi-212, Tl-208, Po-212
Bi-210m	Tl-206
Bi-212	Tl-208, Po-212
At-211	Po-211
Rn-222	Po-218, Pb-214, At-218, Bi-214, Po-214
Ra-223	Rn-219, Po-215, Pb-211, Bi-211, Po-211, Tl-207
Ra-224	Rn-220, Po-216, Pb-212, Bi-212, Tl-208, Po-212
Ra-225	Ac-225, Fr-221, At-217, Bi-213, Tl-209, Po-213, Pb-209
Ra-226	Rn-222, Po-218, Pb-214, At-218, Bi-214, Po-214
Ra-228	Ac-228
Ac-225	Fr-221, At-217, Bi-213, Tl-209, Po-213, Pb-209
Ac-227	Fr-223
Th-228	Ra-224, Rn-220, Po-216, Pb-212, Bi-212, Tl-208, Po-212
Th-234	Pa-234m, Pa-234
Pa-230	Ac-226, Th-226, Fr-222, Ra-222, Rn-218, Po-214
U-230	Th-226, Ra-222, Rn-218, Po-214
U-235	Th-231
Pu-241	U-237
Pu-244	U-240, Np-240m
Am-242m	Am-242, Np-238
Am-243	Np-239
Cm-247	Pu-243
Bk-249	Am-245
Cf-253	Cm-249

(b) Parent nuclides and their progeny included in secular equilibrium are listed in the following (the activity to be taken into account is that of the parent nuclide only):

Sr-90	Y-90
Zr-93	Nb-93m
Zr-97	Nb-97
Ru-106	Rh-106
Ag-108m	Ag-108
Cs-137	Ba-137m
Ce-144	Pr-144
Ba-140	La-140
Bi-212	Tl-208 (0.36), Po-212 (0.64)
Pb-210	Bi-210, Po-210
Pb-212	Bi-212, Tl-208 (0.36), Po-212 (0.64)
Rn-222	Po-218, Pb-214, Bi-214, Po-214
Ra-223	Rn-219, Po-215, Pb-211, Bi-211, Tl-207
Ra-224	Rn-220, Po-216, Pb-212, Bi-212, Tl-208 (0.36), Po-212 (0.64)
Ra-226	Rn-222, Po-218, Pb-214, Bi-214, Po-214, Pb-210, Bi-210, Po-210
Ra-228	Ac-228
Th-228	Ra-224, Rn-220, Po-216, Pb-212, Bi-212, Tl-208 (0.36), Po-212 (0.64)
Th-229	Ra-225, Ac-225, Fr-221, At-217, Bi-213, Po-213, Pb-209
Th (nat)*	Ra-228, Ac-228, Th-228, Ra-224, Rn-220, Po-216, Pb-212, Bi-212, Tl-208 (0.36), Po-212 (0.64)
Th-234	Pa-234m
U-230	Th-226, Ra-222, Rn-218, Po-214
U-232	Th-228, Ra-224, Rn-220, Po-216, Pb-212, Bi-212, Tl-208 (0.36), Po-212 (0.64)
U-235	Th-231
U-238	Th-234, Pa-234m
U (nat)*	Th-234, Pa-234m, U-234, Th-230, Ra-226, Rn-222, Po-218, Pb-214, Bi-214, Po-214, Pb-210, Bi-210, Po-210

* In the case of Th-natural, the parent nuclide is Th-232, in the case of U-natural the parent nuclide is U-238.

Np-237 Pa-233
Am-242m Am-242
Am-243 Np-239

(c) The quantity may be determined from a measurement of the rate of decay or a measurement of the dose rate at a prescribed distance from the source.

(d) These values apply only to compounds of uranium that take the chemical form of UF_6, UO_2F_2 and $UO_2(NO_3)_2$ in both normal and accident conditions of transport.

(e) These values apply only to compounds of uranium that take the chemical form of UO_3, UF_4, UCl_4 and hexavalent compounds in both normal and accident conditions of transport.

(f) These values apply to all compounds of uranium other than those specified in *(d)* and *(e)* above.

(g) These values apply to unirradiated uranium only.

2.7.2.2.2 For individual radionuclides:

.1 which are not listed in table 2.7.2.2.1, the determination of the basic radionuclide values referred to in 2.7.2.2.1 shall require multilateral approval. For these radionuclides, activity concentration limits for exempt material and activity limits for exempt consignments shall be calculated in accordance with the principles established in the *Radiation Protection and Safety of Radiation Sources: International Basic Safety Standards, IAEA Safety Standards Series No. GSR Part 3, IAEA*, Vienna (2014). It is permissible to use an A_2 value calculated using a dose coefficient for the appropriate lung absorption type as recommended by the International Commission on Radiological Protection, if the chemical forms of each radionuclide under both normal and accident conditions of transport are taken into consideration. Alternatively, the radionuclide values in table 2.7.2.2.2 may be used without obtaining competent authority approval;

.2 In instruments or articles in which the radioactive material is enclosed or is included as a component part of the instrument or other manufactured article and which meet 2.7.2.4.1.3.3, alternative basic radionuclide values to those in table 2.7.2.2.1 for the activity limit for an exempt consignment are permitted and shall require multilateral approval. Such alternative activity limits for an exempt consignment shall be calculated in accordance with the principles set out in GSR Part 3.

Table 2.7.2.2.2 – *Basic radionuclide values for unknown radionuclides or mixtures*

Radioactive contents	A_1 (TBq)	A_2 (TBq)	Activity concentration limit for exempt material (Bq/g)	Activity limit for exempt consignments (Bq)
Only beta or gamma emitting nuclides are known to be present	0.1	0.02	1×10^1	1×10^4
Alpha emitting nuclides but no neutron emitters are known to be present	0.2	9×10^{-5}	1×10^{-1}	1×10^3
Neutron emitting nuclides are known to be present or no relevant data are available	0.001	9×10^{-5}	1×10^{-1}	1×10^3

2.7.2.2.3 In the calculations of A_1 and A_2 for a radionuclide not in table 2.7.2.2.1, a single radioactive decay chain in which the radionuclides are present in their naturally occurring proportions, and in which no progeny nuclide has a half-life either longer than 10 days or longer than that of the parent nuclide, shall be considered as a single radionuclide; and the activity to be taken into account and the A_1 or A_2 value to be applied shall be those corresponding to the parent nuclide of that chain. In the case of radioactive decay chains in which any progeny nuclide has a half-life either longer than 10 days or greater than that of the parent nuclide, the parent and such progeny nuclides shall be considered as mixtures of different nuclides.

2.7.2.2.4 For mixtures of radionuclides, the basic radionuclide values referred to in 2.7.2.2.1 may be determined as follows:

$$X_m = \frac{1}{\sum_i \frac{f(i)}{X(i)}}$$

where:

$f(i)$ is the fraction of activity or activity concentration of radionuclide i in the mixture;

$X(i)$ is the appropriate value of A_1 or A_2, or the activity concentration limit for exempt material or the activity limit for an exempt consignment, as appropriate, for the radionuclide i; and

X_m is the derived value of A_1 or A_2, or the activity concentration limit for exempt material or the activity limit for an exempt consignment in the case of a mixture.

2.7.2.2.5 When the identity of each radionuclide is known but the individual activities of some of the radionuclides are not known, the radionuclides may be grouped and the lowest radionuclide value, as appropriate, for the radionuclides in each group may be used in applying the formulae in 2.7.2.2.4 and 2.7.2.4.4. Groups may be based on the total alpha activity and the total beta/gamma activity when these are known, using the lowest radionuclide values for the alpha emitters or beta/gamma emitters, respectively.

2.7.2.2.6 For individual radionuclides or for mixtures of radionuclides for which relevant data are not available, the values shown in table 2.7.2.2.2 shall be used.

2.7.2.3 Determination of other material characteristics

2.7.2.3.1 *Low specific activity (LSA) material*

2.7.2.3.1.1 [Reserved]

2.7.2.3.1.2 LSA material shall be in one of three groups:

.1 LSA-I

- **.1** uranium and thorium ores and concentrates of such ores, and other ores containing naturally occurring radionuclides;
- **.2** Natural uranium, depleted uranium, natural thorium or their compounds or mixtures, that are unirradiated and in solid or liquid form;
- **.3** radioactive material for which the A_2 value is unlimited. Fissile material may be included only if excepted under 2.7.2.3.5; or
- **.4** other radioactive material in which the activity is distributed throughout and the estimated average specific activity does not exceed 30 times the values for activity concentration specified in 2.7.2.2.1 to 2.7.2.2.6. Fissile material may be included only if excepted under 2.7.2.3.5;

.2 LSA-II

- **.1** water with tritium concentration up to 0.8 TBq/L;
- **.2** other material in which the activity is distributed throughout and the estimated average specific activity does not exceed $10^{-4}A_2$/g for solids and gases, and $10^{-5}A_2$/g for liquids;

.3 LSA-III – Solids (e.g. consolidated wastes, activated materials), excluding powders, in which:

- **.1** the radioactive material is distributed throughout a solid or a collection of solid objects, or is essentially uniformly distributed in a solid compact binding agent (such as concrete, bitumen and ceramic);
- **.2** the estimated average specific activity of the solid, excluding any shielding material, does not exceed $2 \times 10^{-3}A_2$/g.

2.7.2.3.1.3 Deleted.

△ 2.7.2.3.1.4 Deleted.

△ 2.7.2.3.1.5 Deleted.

2.7.2.3.2 *Surface contaminated object (SCO)*

SCO is classified in one of three groups:

.1 SCO-I: A solid object on which:

- **.1** the non-fixed contamination on the accessible surface averaged over 300 cm^2 (or the area of the surface if less than 300 cm^2) does not exceed 4 Bq/cm^2 for beta and gamma emitters and low-toxicity alpha emitters, or 0.4 Bq/cm^2 for all other alpha emitters;
- **.2** the fixed contamination on the accessible surface averaged over 300 cm^2 (or the area of the surface if less than 300 cm^2) does not exceed 4×10^4 Bq/cm^2 for beta and gamma emitters and low-toxicity alpha emitters, or 4×10^3 Bq/cm^2 for all other alpha emitters; and
- **.3** the non-fixed contamination plus the fixed contamination on the inaccessible surface averaged over 300 cm^2 (or the area of the surface if less than 300 cm^2) does not exceed 4×10^4 Bq/cm^2 for beta and gamma emitters and low-toxicity alpha emitters, or 4×10^3 Bq/cm^2 for all other alpha emitters;

.2 SCO-II: A solid object on which either the fixed or non-fixed contamination on the surface exceeds the applicable limits specified for SCO-I in 2.7.2.3.2.1 above and on which:

- **.1** the non-fixed contamination on the accessible surface averaged over 300 cm^2 (or the area of the surface if less than 300 cm^2) does not exceed 400 Bq/cm^2 for beta and gamma emitters and low-toxicity alpha emitters, or 40 Bq/cm^2 for all other alpha emitters;
- **.2** the fixed contamination on the accessible surface averaged over 300 cm^2 (or the area of the surface if less than 300 cm^2) does not exceed 8×10^5 Bq/cm^2 for beta and gamma emitters and low-toxicity alpha emitters, or 8×10^4 Bq/cm^2 for all other alpha emitters; and

.3 the non-fixed contamination plus the fixed contamination on the inaccessible surface averaged over 300 cm^2 (or the area of the surface if less than 300 cm^2) does not exceed 8×10^5 Bq/cm^2 for beta and gamma emitters and low-toxicity alpha emitters, or 8×10^4 Bq/cm^2 for all other alpha emitters.

.3 SCO-III: A large solid object which, because of its size, cannot be transported in a type of package described in this Code and for which:

.1 all openings are sealed to prevent release of radioactive material during conditions defined in 4.1.9.2.4.5;

.2 the inside of the object is as dry as practicable;

.3 the non-fixed contamination on the external surfaces does not exceed the limits specified in 4.1.9.1.2; and

.4 the non-fixed contamination plus the fixed contamination on the inaccessible surface averaged over 300 cm^2 does not exceed 8×10^5 Bq/cm^2 for beta and gamma emitters and low toxicity alpha emitters, or 8×10^4 Bq/cm^2 for all other alpha emitters.

2.7.2.3.3 *Special form radioactive material*

2.7.2.3.3.1 .1 Special form radioactive material shall have at least one dimension not less than 5 mm.

.2 When a sealed capsule constitutes part of the special form radioactive material, the capsule shall be so manufactured that it can be opened only by destroying it.

.3 The design for special form radioactive material requires unilateral approval.

2.7.2.3.3.2 Special form radioactive material shall be of such a nature or shall be so designed that, if it is subjected to the tests specified in 2.7.2.3.3.4 to 2.7.2.3.3.8, it shall meet the following requirements:

.1 It would not break or shatter under the impact, percussion and bending tests 2.7.2.3.3.5.1, 2.7.2.3.3.5.2, 2.7.2.3.3.5.3, and 2.7.2.3.3.6.1 as applicable;

.2 It would not melt or disperse in the applicable heat test 2.7.2.3.3.5.4 or 2.7.2.3.3.6.2 as applicable; and

.3 The activity in the water from the leaching tests specified in 2.7.2.3.3.7 and 2.7.2.3.3.8 would not exceed 2 kBq; or alternatively for sealed sources, the leakage rate for the volumetric leakage assessment test specified in ISO 9978:1992, *Radiation protection – Sealed radioactive sources – Leakage test methods,* would not exceed the applicable acceptance threshold acceptable to the competent authority.

2.7.2.3.3.3 Demonstration of compliance with the performance standards in 2.7.2.3.3.2 shall be in accordance with 6.4.12.1 and 6.4.12.2.

2.7.2.3.3.4 Specimens that comprise or simulate special form radioactive material shall be subjected to the impact test, the percussion test, the bending test, and the heat test specified in 2.7.2.3.3.5 or alternative tests as authorized in 2.7.2.3.3.6. A different specimen may be used for each of the tests. Following each test, a leaching assessment or volumetric leakage test shall be performed on the specimen by a method no less sensitive than the methods given in 2.7.2.3.3.7 for indispersible solid material or 2.7.2.3.3.8 for encapsulated material.

2.7.2.3.3.5 The relevant test methods are:

.1 *Impact test:* The specimen shall drop onto the target from a height of 9 m. The target shall be as defined in 6.4.14;

.2 *Percussion test:* The specimen shall be placed on a sheet of lead which is supported by a smooth solid surface and struck by the flat face of a mild steel bar so as to cause an impact equivalent to that resulting from a free drop of 1.4 kg from a height of 1 m. The lower part of the bar shall be 25 mm in diameter with the edges rounded off to a radius of (3.0 ± 0.3) mm. The lead, of hardness number 3.5 to 4.5 on the Vickers scale and not more than 25 mm thick, shall cover an area greater than that covered by the specimen. A fresh surface of lead shall be used for each impact. The bar shall strike the specimen so as to cause maximum damage;

.3 *Bending test:* The test shall apply only to long, slender sources with both a minimum length of 10 cm and a length to minimum width ratio of not less than 10. The specimen shall be rigidly clamped in a horizontal position so that one half of its length protrudes from the face of the clamp. The orientation of the specimen shall be such that the specimen will suffer maximum damage when its free end is struck by the flat face of a steel bar. The bar shall strike the specimen so as to cause an impact equivalent to that resulting from a free vertical drop of 1.4 kg from a height of 1 m. The lower part of the bar shall be 25 mm in diameter with the edges rounded off to a radius of (3.0 ± 0.3) mm;

.4 *Heat test:* The specimen shall be heated in air to a temperature of 800°C and held at that temperature for a period of 10 minutes and shall then be allowed to cool.

2

2.7.2.3.3.6 Specimens that comprise or simulate radioactive material enclosed in a sealed capsule may be excepted from:

.1 The tests prescribed in 2.7.2.3.3.5.1 and 2.7.2.3.3.5.2 provided that the specimens are alternatively subjected to the impact test prescribed in ISO 2919:2012, *Radiation Protection – Sealed Radioactive Sources – General requirements and classification:*

.1 the class 4 impact test if the mass of the special form radioactive material is less than 200 g; and

.2 the class 5 impact test if the mass of the special form radioactive material is equal to or more than 200 g but is less than 500 g.

.2 The test prescribed in 2.7.2.3.3.5.4 provided they are alternatively subjected to the class 6 temperature test specified in ISO 2919:2012, *Radiation protection – Sealed radioactive sources – General requirements and classification*.

2.7.2.3.3.7 For specimens which comprise or simulate indispersible solid material, a leaching assessment shall be performed as follows:

.1 The specimen shall be immersed for 7 days in water at ambient temperature. The volume of water to be used in the test shall be sufficient to ensure that at the end of the 7-day test period the free volume of the unabsorbed and unreacted water remaining shall be at least 10% of the volume of the solid test sample itself. The water shall have an initial pH of 6 to 8 and a maximum conductivity of 1 mS/m at 20°C;

.2 The water and the specimen shall then be heated to a temperature of (50 ± 5)°C and maintained at this temperature for 4 hours;

.3 The activity of the water shall then be determined;

.4 The specimen shall then be kept for at least 7 days in still air at not less than 30°C and relative humidity not less than 90%;

.5 The specimen shall then be immersed in water of the same specification as in 2.7.2.3.3.7.1 above and the water and the specimen heated to (50 ± 5)°C and maintained at this temperature for 4 hours;

.6 The activity of the water shall then be determined.

2.7.2.3.3.8 For specimens which comprise or simulate radioactive material enclosed in a sealed capsule, either a leaching assessment or a volumetric leakage assessment shall be performed as follows:

.1 The leaching assessment shall consist of the following steps:

.1 the specimen shall be immersed in water at ambient temperature. The water shall have an initial pH of 6 to 8 with a maximum conductivity of 1 mS/m at 20°C;

.2 the water and specimen shall then be heated to a temperature of (50 ± 5)°C and maintained at this temperature for 4 hours;

.3 the activity of the water shall then be determined;

.4 the specimen shall then be kept for at least 7 days in still air at not less than 30°C and relative humidity of not less than 90%;

.5 the process in .1, .2 and .3 shall be repeated.

.2 The alternative volumetric leakage assessment shall comprise any of the tests prescribed in ISO 9978:1992, *Radiation protection – Sealed radioactive sources – Leakage test methods,* provided that they are acceptable to the competent authority.

△ 2.7.2.3.4 ***Low dispersible radioactive material***

2.7.2.3.4.1 The design for low dispersible radioactive material shall require multilateral approval. Low dispersible radioactive material shall be such that the total amount of this radioactive material in a package, taking into account the provisions of 6.4.8.14, shall meet the following provisions:

.1 The dose rate at 3 m from the unshielded radioactive material does not exceed 10 mSv/h;

.2 If subjected to the tests specified in 6.4.20.3 and 6.4.20.4, the airborne release in gaseous and particulate forms of up to 100 μm aerodynamic equivalent diameter would not exceed $100A_2$. A separate specimen may be used for each test; and

△ .3 If subjected to the test specified in 2.7.2.3.4.3, the activity in the water would not exceed $100A_2$. In the application of this test, the damaging effects of the tests specified in 2.7.2.3.4.1.2 above shall be taken into account.

2.7.2.3.4.2 Low dispersible material shall be tested as follows:

A specimen that comprises or simulates low dispersible radioactive material shall be subjected to the enhanced thermal test specified in 6.4.20.3 and the impact test specified in 6.4.20.4. A different specimen may be used for each of the tests. Following each test, the specimen shall be subjected to the leach test specified in 2.7.2.3.1.4. After each test it shall be determined if the applicable provisions of 2.7.2.3.4.1 have been met.

■ 2.7.2.3.4.3 A solid material sample representing the entire contents of the package shall be immersed for seven days in water at ambient temperature. The volume of water to be used in the test shall be sufficient to ensure that at the end of the seven-day test period the free volume of the unabsorbed and unreacted water remaining shall be at least 10% of the volume of the solid test sample itself. The water shall have an initial pH of 6 to 8 and a maximum conductivity of 1 mS/m at 20°C. The total activity of the free volume of water shall be measured following the seven-day immersion of the test sample.

△ 2.7.2.3.4.4 Demonstration of compliance with the performance standards in 2.7.2.3.4.1, 2.7.2.3.4.2 and 2.7.2.3.4.3 shall be in accordance with 6.4.12.1 and 6.4.12.2.

2.7.2.3.5 *Fissile material*

Fissile material and packages containing fissile material shall be classified under the relevant entry as "FISSILE" in accordance with table 2.7.2.1.1 unless excepted by one of the provisions of subparagraphs .1 to .6 below and transported subject to the requirements of 5.1.5.5. All provisions apply only to material in packages that meets the requirements of 6.4.7.2 unless unpackaged material is specifically allowed in the provision.

.1 uranium enriched in uranium-235 to a maximum of 1% by mass, and with a total plutonium and uranium-233 content not exceeding 1% of the mass of uranium-235, provided that the fissile nuclides are distributed essentially homogeneously throughout the material. In addition, if uranium-235 is present in metallic, oxide or carbide forms, it shall not form a lattice arrangement;

.2 liquid solutions of uranyl nitrate enriched in uranium-235 to a maximum of 2% by mass, with a total plutonium and uranium-233 content not exceeding 0.002% of the mass of uranium, and with a minimum nitrogen to uranium atomic ratio (N/U) of 2;

.3 uranium with a maximum uranium enrichment of 5% by mass uranium-235 provided:

.1 there is no more than 3.5 g of uranium-235 per package;

.2 the total plutonium and uranium-233 content does not exceed 1% of the mass of uranium-235 per package;

.3 transport of the package is subject to the consignment limit provided in 5.1.5.5.3;

.4 fissile nuclides with a total mass not greater than 2 g per package provided the package is transported subject to the consignment limit provided in 5.1.5.5.4;

.5 fissile nuclides with a total mass not greater than 45 g either packaged or unpackaged subject to the requirements of 5.1.5.5.5;

.6 a fissile material that meets the requirements of 5.1.5.5.2, 2.7.2.3.6 and 5.1.5.2.1.

2.7.2.3.6 Fissile material excepted from classification as "FISSILE" under 2.7.2.3.5.6 shall be subcritical without the need for accumulation control under the following conditions:

.1 the conditions of 6.4.11.1 (a);

.2 the conditions consistent with the assessment provisions stated in 6.4.11.12 (b) and 6.4.11.13 (b) for packages; and

.3 the conditions specified in 6.4.11.11 (a), if transported by air.

2.7.2.4 **Classification of packages or unpacked material**

The quantity of radioactive material in a package shall not exceed the relevant limits for the package type as specified below.

2.7.2.4.1 *Classification as excepted package*

2.7.2.4.1.1 A package may be classified as an excepted package if it meets one of the following conditions:

.1 it is an empty package having contained radioactive material;

.2 it contains instruments or articles not exceeding the activity limits specified in columns (2) and (3) of table 2.7.2.4.1.2;

.3 it contains articles manufactured of natural uranium, depleted uranium or natural thorium;

.4 it contains radioactive material not exceeding the activity limits specified in column (4) of table 2.7.2.4.1.2; or

.5 it contains less than 0.1 kg of uranium hexafluoride not exceeding the activity limits specified in column (4) of table 2.7.2.4.1.2.

2.7.2.4.1.2 A package containing radioactive material may be classified as an excepted package provided that the dose rate at any point on its external surface does not exceed 5 μSv/h.

Table 2.7.2.4.1.2 – *Activity limits for excepted packages*

Physical state of contents	Instruments or article		Material package limits[a]
	Item limits[a]	Package limits[a]	
(1)	(2)	(3)	(4)
Solids			
special form	$10^{-2}\ A_1$	A_1	$10^{-3}\ A_1$
other form	$10^{-2}\ A_2$	A_2	$10^{-3}\ A_2$
Liquids	$10^{-3}\ A_2$	$10^{-1}\ A_2$	$10^{-4}\ A_2$
Gases			
tritium	$2 \times 10^{-2}\ A_2$	$2 \times 10^{-1}\ A_2$	$2 \times 10^{-2}\ A_2$
special form	$10^{-3}\ A_1$	$10^{-2}\ A_1$	$10^{-3}\ A_1$
other forms	$10^{-3}\ A_2$	$10^{-2}\ A_2$	$10^{-3}\ A_2$

[a] For mixtures of radionuclides, see 2.7.2.2.4 to 2.7.2.2.6.

2.7.2.4.1.3 Radioactive material which is enclosed in or is included as a component part of an instrument or other manufactured article may be classified under UN 2911, RADIOACTIVE MATERIAL, EXCEPTED PACKAGE – INSTRUMENTS or ARTICLES provided that:

.1 the dose rate at 10 cm from any point on the external surface of any unpackaged instrument or article is not greater than 0.1 mSv/h; and

.2 each instrument or manufactured article bears the mark "RADIOACTIVE" on its external surface except for the following:

.1 radioluminescent time-pieces or devices;

.2 consumer products that either have received regulatory approval in accordance with 1.5.1.4.5 or do not individually exceed the activity limit for an exempt consignment in table 2.7.2.2.1 (column 5), provided such products are transported in a package that bears the mark "RADIOACTIVE" on its internal surface in such a manner that a warning of the presence of radioactive material is visible on opening the package;

.3 other instruments or articles too small to bear the mark "RADIOACTIVE", provided that they are transported in a package that bears the mark "RADIOACTIVE" on its internal surface in such a manner that a warning of the presence of radioactive material is visible on opening the package; and

.3 the active material is completely enclosed by non-active components (a device performing the sole function of containing radioactive material shall not be considered to be an instrument or manufactured article);

.4 the limits specified in columns 2 and 3 of table 2.7.2.4.1.2 are met for each individual item and each package, respectively;

.5 reserved; and

.6 if the package contains fissile material, one of the provisions of sub-paragraphs .1 to .6 of 2.7.2.3.5 applies.

2.7.2.4.1.4 Radioactive material in forms other than as specified in 2.7.2.4.1.3 and with an activity not exceeding the limits specified in column 4 of table 2.7.2.4.1.2, may be classified under UN 2910, RADIOACTIVE MATERIAL, EXCEPTED PACKAGE – LIMITED QUANTITY OF MATERIAL provided that:

.1 the package retains its radioactive contents under routine conditions of transport;

.2 the package bears the mark "RADIOACTIVE" on either:

.1 an internal surface in such a manner that a warning of the presence of radioactive material is visible on opening the package; or

.2 the outside of the package, where it is impractical to mark an internal surface; and

.3 if the package contains fissile material, one of the provisions of sub-paragraphs .1 to .6 of 2.7.2.3.5 applies.

2.7.2.4.1.5 Uranium hexafluoride not exceeding the limits specified in column 4 of table 2.7.2.4.1.2 may be classified under UN 3507 URANIUM HEXAFLUORIDE, RADIOACTIVE MATERIAL, EXCEPTED PACKAGE, less than 0.1 kg per package, non-fissile or fissile-excepted, provided that:

.1 the mass of uranium hexafluoride in the package is less than 0.1 kg; and

.2 the conditions of 2.7.2.4.5.1 and 2.7.2.4.1.4.1 and 2.7.2.4.1.4.2 are met.

2.7.2.4.1.6 Articles manufactured of natural uranium, depleted uranium or natural thorium and articles in which the sole radioactive material is unirradiated natural uranium, unirradiated depleted uranium or unirradiated natural thorium may be classified under UN 2909, RADIOACTIVE MATERIAL, EXCEPTED PACKAGE – ARTICLES MANUFACTURED FROM NATURAL URANIUM or DEPLETED URANIUM or NATURAL THORIUM, provided that the outer surface of the uranium or thorium is enclosed in an inactive sheath made of metal or some other substantial material.

2.7.2.4.1.7 An empty packaging which had previously contained radioactive material may be classified under UN 2908, RADIOACTIVE MATERIAL, EXCEPTED PACKAGE – EMPTY PACKAGING, provided that:

.1 it is in a well-maintained condition and securely closed;

.2 the outer surface of any uranium or thorium in its structure is covered with an inactive sheath made of metal or some other substantial material;

.3 the level of internal non-fixed contamination, when averaged over any 300 cm^2, does not exceed:

.1 400 Bq/cm^2 for beta and gamma emitters and low-toxicity alpha emitters; and

.2 40 Bq/cm^2 for all other alpha emitters;

.4 any labels which may have been displayed on it in conformity with 5.2.2.1.12.1 are no longer visible; and

.5 if the packaging has contained fissile material, one of the provisions of sub-paragraphs .1 to .6 of 2.7.2.3.5 or one of the provisions for exclusion in 2.7.1.3 applies.

2.7.2.4.2 ***Classification as low specific activity (LSA) material***

Radioactive material may only be classified as LSA material if the definition of LSA in 2.7.1.3 and the conditions of 2.7.2.3.1, 4.1.9.2 and 7.1.4.5.1 are met.

2.7.2.4.3 ***Classification as surface contaminated object (SCO)***

Radioactive material may be classified as SCO if the definition of SCO in 2.7.1.3 and the conditions of 2.7.2.3.2, 4.1.9.2 and 7.1.4.5.1 are met.

2.7.2.4.4 ***Classification as Type A package***

Packages containing radioactive material may be classified as Type A packages provided that the following conditions are met:

Type A packages shall not contain activities greater than either of the following:

.1 for special form radioactive material – A_1;

.2 for all other radioactive material – A_2.

For mixtures of radionuclides whose identities and respective activities are known, the following condition shall apply to the radioactive contents of a Type A package:

$$\sum_i \frac{B(i)}{A_1(i)} + \sum_j \frac{C(j)}{A_2(j)} \leq 1$$

where:

$B(i)$ is the activity of radionuclide i as special form radioactive material;

$A_1(i)$ is the A_1 value for radionuclide i;

$C(j)$ is the activity of radionuclide j as other than special form radioactive material;

$A_2(j)$ is the A_2 value for radionuclide j.

2.7.2.4.5 ***Classification of uranium hexafluoride***

2.7.2.4.5.1 Uranium hexafluoride shall only be assigned to:

.1 UN 2977, RADIOACTIVE MATERIAL, URANIUM HEXAFLUORIDE, FISSILE;

.2 UN 2978, RADIOACTIVE MATERIAL, URANIUM HEXAFLUORIDE, non-fissile or fissile-excepted; or

.3 UN 3507, URANIUM HEXAFLUORIDE, RADIOACTIVE MATERIAL, EXCEPTED PACKAGE less than 0.1 kg per package, non-fissile or fissile-excepted.

2.7.2.4.5.2 The contents of a package containing uranium hexafluoride shall comply with the following requirements:

.1 for UN Nos. 2977 and 2978, the mass of uranium hexafluoride shall not be different from that allowed for the package design, and for UN 3507, the mass of uranium hexafluoride shall be less than 0.1 kg;

.2 the mass of uranium hexafluoride shall not be greater than a value that would lead to an ullage smaller than 5% at the maximum temperature of the package as specified for the plant systems where the package shall be used; and

.3 the uranium hexafluoride shall be in solid form and the internal pressure shall not be above atmospheric pressure when presented for transport.

2.7.2.4.6 *Classification as Type B(U), Type B(M) or Type C packages*

2.7.2.4.6.1 Packages not otherwise classified in 2.7.2.4 (2.7.2.4.1 to 2.7.2.4.5) shall be classified in accordance with the competent authority certificate of approval for the package issued by the country of origin of design.

2.7.2.4.6.2 The contents of a Type B(U), Type B(M) or Type C package shall be as specified in the certificate of approval.

2.7.2.5 **Special arrangements**

Radioactive material shall be classified as transported under special arrangement when it is intended to be transported in accordance with 1.5.4.

Chapter 2.8

Class 8 – Corrosive substances

2.8.1 Definition, general provisions and properties

2.8.1.1 Definition

2.8.1.1.1 *Corrosive substances* are substances which, by chemical action, will cause irreversible damage to the skin, or, in the case of leakage, will materially damage, or even destroy, other goods or the means of transport.

2.8.1.1.2 For substances and mixtures that are corrosive to skin, general classification provisions are provided in section 2.8.2. Skin corrosion refers to the production of irreversible damage to the skin, namely, visible necrosis through the epidermis and into the dermis occurring after exposure to a substance or mixture.

2.8.1.1.3 Liquids and solids which may become liquid during transport, which are judged not to be skin corrosive shall still be considered for their potential to cause corrosion to certain metal surfaces in accordance with the criteria in 2.8.3.3.3.2.

2.8.1.2 Properties

2.8.1.2.1 In cases where particularly severe personal damage is to be expected, a note to that effect is made in the Dangerous Goods List in chapter 3.2 in the wording “causes (severe) burns to skin, eyes and mucous membranes”.

2.8.1.2.2 Many substances are sufficiently volatile to evolve vapour irritating to the nose and eyes. If so, this fact is mentioned in the Dangerous Goods List in chapter 3.2 in the wording “vapour irritates mucous membranes”.

2.8.1.2.3 A few substances may produce toxic gases when decomposed by very high temperatures. In these cases the statement “when involved in a fire, evolves toxic gases” appears in the Dangerous Goods List in chapter 3.2.

2.8.1.2.4 In addition to direct destructive action in contact with skin or mucous membranes, some substances in this class are toxic or harmful. Poisoning may result if they are swallowed, or if their vapour is inhaled; some of them even may penetrate the skin. Where appropriate, a statement is made to that effect in the Dangerous Goods List in chapter 3.2.

2.8.1.2.5 All substances in this class have a more or less destructive effect on materials such as metals and textiles.

2.8.1.2.5.1 In the Dangerous Goods List, the term “corrosive to most metals” means that any metal likely to be present in a ship, or in its cargo, may be attacked by the substance or its vapour.

2.8.1.2.5.2 The term “corrosive to aluminium, zinc, and tin” implies that iron or steel is not damaged in contact with the substance.

2.8.1.2.5.3 A few substances in this class can corrode glass, earthenware and other siliceous materials. Where appropriate, this is stated in the Dangerous Goods List in chapter 3.2.

2.8.1.2.6 Many substances in this class only become corrosive after having reacted with water, or with moisture in the air. This fact is indicated in the Dangerous Goods List in chapter 3.2 by the words “in the presence of moisture…”. The reaction of water with many substances is accompanied by the liberation of irritating and corrosive gases. Such gases usually become visible as fumes in the air.

2.8.1.2.7 A few substances in this class generate heat in reaction with water or organic materials, including wood, paper, fibres, some cushioning materials and certain fats and oils. Where appropriate, this is indicated in the Dangerous Goods List in chapter 3.2.

2.8.2 General classification provisions

2.8.2.1 Substances and mixtures of class 8 are divided among the three packing groups according to their degree of danger in transport:

.1 Packing group I: very dangerous substances and mixtures;

.2 Packing group II: substances and mixtures presenting medium danger;

.3 Packing group III: substances and mixtures that present minor danger.

2.8.2.2 Allocation of substances listed in the Dangerous Goods List in chapter 3.2 to the packing groups in class 8 has been made on the basis of experience taking into account such additional factors as inhalation risk (see 2.8.2.4) and reactivity with water (including the formation of dangerous decomposition products).

2.8.2.3 New substances and mixtures can be assigned to packing groups on the basis of the length of time of contact necessary to produce irreversible damage of intact skin tissue in accordance with the criteria in 2.8.3. Alternatively, for mixtures, the criteria in 2.8.4 can be used.

2.8.2.4 A substance or mixture meeting the criteria of class 8 having an inhalation toxicity of dusts and mists (LC_{50}) in the range of packing group I, but toxicity through oral ingestion or dermal contact only in the range of packing group III or less, shall be allocated to class 8 (see note under 2.6.2.2.4.1).

2.8.3 Packing group assignment for substances and mixtures

2.8.3.1 Existing human and animal data including information from single or repeated exposure shall be the first line of evaluation, as they give information directly relevant to effects on the skin.

△ **2.8.3.2** In assigning the packing group in accordance with 2.8.2.3, account shall be taken of human experience in instances of accidental exposure. In the absence of human experience, classification shall be based on data obtained from experiments in accordance with OECD Test Guidelines Nos. 404,* 435,† 431,‡ or 430§. A substance or mixture which is determined not to be corrosive in accordance with one of these or non-classified in accordance with OECD Test Guideline No. 439,¶ may be considered not to be corrosive to skin for the purposes of this Code without further testing. If the test results indicate that the substance or mixture is corrosive and not assigned to packing group I, but the test method does not allow discrimination between packing groups II and III, it shall be considered to be packing group II. If the test results indicate that the substance or mixture is corrosive, but the test method does not allow discrimination between packing groups, it shall be assigned to packing group I if no other test results indicate a different packing group.

2.8.3.3 Packing groups are assigned to corrosive substances in accordance with the following criteria (see table 2.8.3.4):

.1 Packing group I is assigned to substances that cause irreversible damage of intact skin tissue within an observation period of up to 60 minutes starting after the exposure time of three minutes or less.

.2 Packing group II is assigned to substances that cause irreversible damage of intact skin tissue within an observation period of up to 14 days starting after the exposure time of more than three minutes but not more than 60 minutes.

.3 Packing group III is assigned to substances that:

.1 cause irreversible damage of intact skin tissue within an observation period up to 14 days starting after the exposure time of more than 60 minutes but not more than 4 hours; or

△ **.2** are judged not to cause irreversible damage of intact skin tissue but which exhibit a corrosion rate on either steel or aluminium surfaces exceeding 6.25 mm a year at a test temperature of 55°C when tested on both materials. For the purposes of testing steel, type S235JR+CR (1.0037 resp. St 37-2), S275J2G3+CR (1.0144 resp. St 44-3), ISO 3574, Unified Numbering System (UNS) G10200 or SAE 1020, and for testing aluminium, non-clad, types 7075–T6 or AZ5GU-T6 shall be used. An acceptable test is prescribed in the *Manual of Tests and Criteria*, part III, section 37.

Note: Where an initial test on either steel or aluminium indicates the substance being tested is corrosive, the follow-up test on the other metal is not required.

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* *OECD Guideline for the testing of chemicals No. 404 Acute Dermal Irritation/Corrosion 2015.*

† *OECD Guideline for the testing of chemicals No. 435 In Vitro Membrane Barrier Test Method for Skin Corrosion 2015.*

‡ *OECD Guideline for the testing of chemicals No. 431 In Vitro Skin Corrosion: Reconstructed Human Epidermis (RHE) Test Method 2016.*

§ *OECD Guideline for the testing of chemicals No. 430 In Vitro Skin Corrosion: Transcutaneous Electrical Resistance Test Method (TER) 2015.*

■ ¶ *OECD Guideline for the testing of chemicals No. 439 In Vitro Skin Irritation: Reconstructed Human Epidermis Test Method 2015.*

Table 2.8.3.4 – *Table summarizing the criteria in 2.8.3.3*

Packing group	Exposure time	Observation period	Effect
I	≤ 3 min	≤ 60 min	Irreversible damage of intact skin
II	> 3 min ≤ 1 h	≤ 14 d	Irreversible damage of intact skin
III	> 1 h ≤ 4 h	≤ 14 d	Irreversible damage of intact skin
III	–	–	Corrosion rate on either steel or aluminium surfaces exceeding 6.25 mm a year at a test temperature of 55°C when tested on both materials

2.8.4 Alternative packing group assignment methods for mixtures: step-wise approach

2.8.4.1 General provisions

2.8.4.1.1 For mixtures it is necessary to obtain or derive information that allows the criteria to be applied to the mixture for the purpose of classification and assignment of packing groups. The approach to classification and assignment of packing groups is tiered, and is dependent upon the amount of information available for the mixture itself, for similar mixtures and/or for its ingredients. The flow chart of figure 2.8.4.1 below outlines the process to be followed:

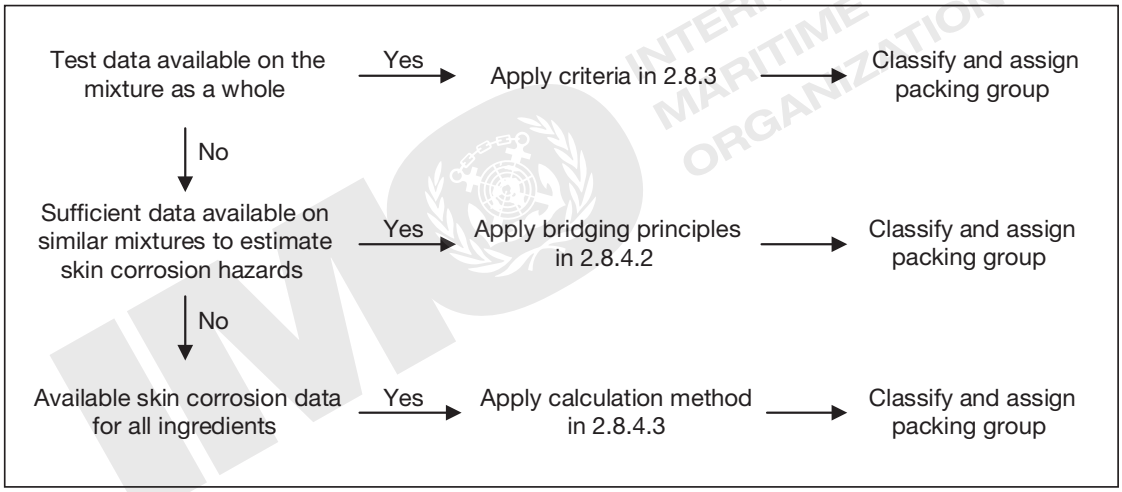

Figure 2.8.4.1 – *Step-wise approach to classify and assign packing group of corrosive mixtures*

2.8.4.2 Bridging principles

2.8.4.2.1 Where a mixture has not been tested to determine its skin corrosion potential, but there are sufficient data on both the individual ingredients and similar tested mixtures to adequately classify and assign a packing group for the mixture, these data will be used in accordance with the following bridging principles. This ensures that the classification process uses the available data to the greatest extent possible in characterizing the hazards of the mixture.

.1 *Dilution:* If a tested mixture is diluted with a diluent which does not meet the criteria for class 8 and does not affect the packing group of other ingredients, then the new diluted mixture may be assigned to the same packing group as the original tested mixture.

Note: In certain cases, diluting a mixture or substance may lead to an increase in the corrosive properties. If this is the case, this bridging principle cannot be used.

.2 *Batching:* The skin corrosion potential of a tested production batch of a mixture can be assumed to be substantially equivalent to that of another untested production batch of the same commercial product when produced by or under the control of the same manufacturer, unless there is reason to believe there is significant variation such that the skin corrosion potential of the untested batch has changed. If the latter occurs, a new classification is necessary.

.3 *Concentration of mixtures of packing group I:* If a tested mixture meeting the criteria for inclusion in packing group I is concentrated, the more concentrated untested mixture may be assigned to packing group I without additional testing.

.4 *Interpolation within one packing group:* For three mixtures (A, B and C) with identical ingredients, where mixtures A and B have been tested and are in the same skin corrosion packing group, and where untested mixture C has the same class 8 ingredients as mixtures A and B but has concentrations of class 8 ingredients intermediate to the concentrations in mixtures A and B, then mixture C is assumed to be in the same skin corrosion packing group as A and B.

.5 *Substantially similar mixtures:* Given the following:

.1 two mixtures: (A+B) and (C+B);

.2 the concentration of ingredient B is the same in both mixtures;

.3 the concentration of ingredient A in mixture (A+B) equals the concentration of ingredient C in mixture (C+B); and

.4 data on skin corrosion for ingredients A and C are available and substantially equivalent, i.e. they are the same skin corrosion packing group and do not affect the skin corrosion potential of B.

If mixture (A+B) or (C+B) is already classified based on test data, then the other mixture may be assigned to the same packing group.

2.8.4.3 Calculation method based on the classification of the substances

2.8.4.3.1 Where a mixture has not been tested to determine its skin corrosion potential, nor is sufficient data available on similar mixtures, the corrosive properties of the substances in the mixture shall be considered to classify and assign a packing group.

Applying the calculation method is only allowed if there are no synergistic effects that make the mixture more corrosive than the sum of its substances. This restriction applies only if packing group II or III would be assigned to the mixture.

2.8.4.3.2 When using the calculation method, all class 8 ingredients present at a concentration of $\geq$ 1% shall be taken into account, or $<$ 1% if these ingredients are still relevant for classifying the mixture to be corrosive to skin.

2.8.4.3.3 To determine whether a mixture containing corrosive substances shall be considered a corrosive mixture and to assign a packing group, the calculation method in the flow chart in figure 2.8.4.3 shall be applied. For this calculation method, generic concentration limits apply where 1% is used in the first step for the assessment of the packing group I substances, and where 5% is used for the other steps respectively.

2.8.4.3.4 When a specific concentration limit (*SCL*) is assigned to a substance following its entry in the Dangerous Goods List or in a special provision, this limit shall be used instead of the generic concentration limits (*GCL*).

2.8.4.3.5 For this purpose, the summation formula for each step of the calculation method shall be adapted. This means that, where applicable, the generic concentration limit shall be substituted by the specific concentration limit assigned to the substance(s) (SCL_i), and the adapted formula is a weighted average of the different concentration limits assigned to the different substances in the mixture:

$$\frac{PGx_1}{GCL} + \frac{PGx_2}{SCL_2} + \ldots + \frac{PGx_i}{SCL_i} \geq 1$$

Where:

PGx_i = concentration of substance 1, 2 ... *i* in the mixture, assigned to packing group *x* (I, II or III)

GCL = generic concentration limit

SCL_i = specific concentration limit assigned to substance *i*

The criterion for a packing group is fulfilled when the result of the calculation is $\geq$ 1. The generic concentration limits to be used for the evaluation in each step of the calculation method are those found in figure 2.8.4.3.

Examples for the application of the above formula can be found in the note below.

Note: *Examples for the application of the above formula*

Example 1: A mixture contains one corrosive substance in a concentration of 5% assigned to packing group I without a specific concentration limit:

Calculation for packing group I: $\frac{5}{5\ (GCL)} = 1 \rightarrow$ assign to class 8, packing group I.

Example 2: A mixture contains three substances corrosive to skin; two of them (A and B) have specific concentration limits; for the third one (C) the generic concentration limits applies. The rest of the mixture needs not to be taken into consideration.

Substance X in the mixture and its packing group assignment within class 8	Concentration (conc) in the mixture in %	Specific concentration limit (*SCL*) for packing group I	Specific concentration limit (*SCL*) for packing group II	Specific concentration limit (*SCL*) for packing group III
A, assigned to packing group I	3	30%	none	none
B, assigned to packing group I	2	20%	10%	none
C, assigned to packing group III	10	none	none	none

Calculation for packing group I: $\frac{3\ (\text{conc A})}{30\ (SCL\ \text{PGI})} + \frac{2\ (\text{conc B})}{20\ (SCL\ \text{PGI})} = 0.2 < 1$

The criterion for packing group I is not fulfilled.

Calculation for packing group II: $\frac{3\ (\text{conc A})}{5\ (GCL\ \text{PGII})} + \frac{2\ (\text{conc B})}{10\ (SCL\ \text{PGII})} = 0.8 < 1$

The criterion for packing group II is not fulfilled.

Calculation for packing group III: $\frac{3\ (\text{conc A})}{5\ (GCL\ \text{PGIII})} + \frac{2\ (\text{conc B})}{5\ (GCL\ \text{PGIII})} + \frac{10\ (\text{conc C})}{5\ (GCL\ \text{PGIII})} = 3 \geq 1$

The criterion for packing group III is fulfilled, the mixture shall be assigned to class 8, packing group III.

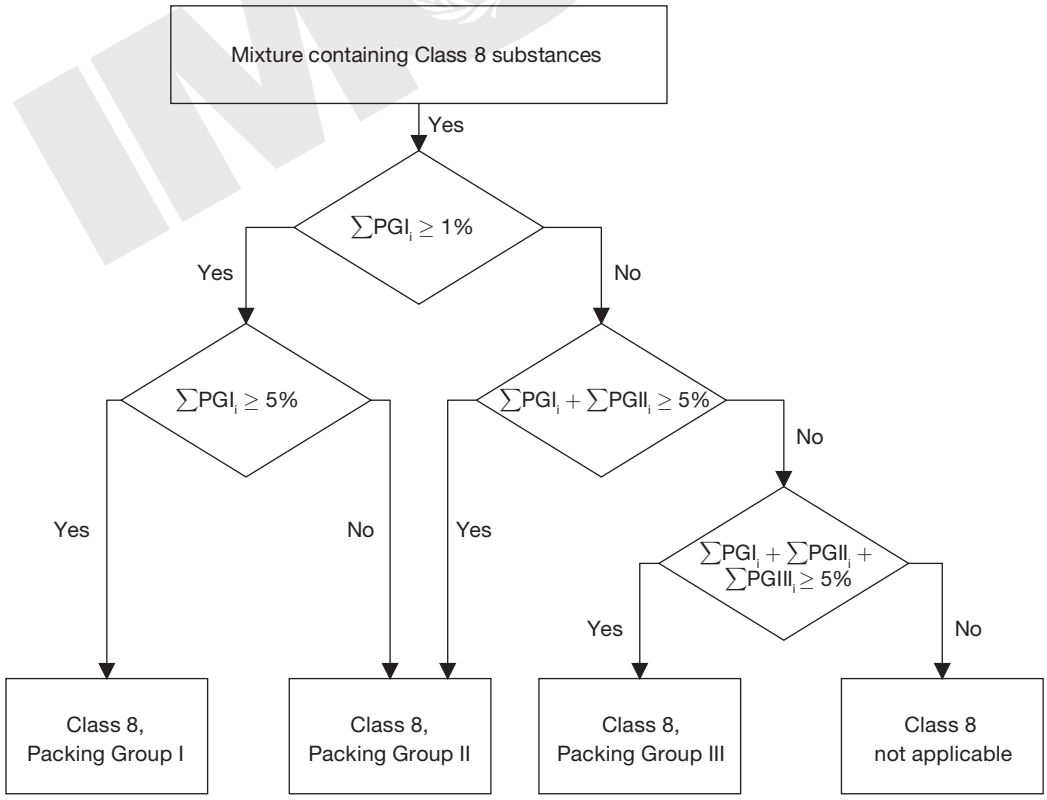

Figure 2.8.4.3 – *Calculation method*

2.8.5 Substances not accepted for transport

Chemically unstable substances of class 8 shall not be accepted for transport unless the necessary precautions have been taken to prevent the possibility of a dangerous decomposition or polymerization under normal conditions of transport. For the precautions necessary to prevent polymerization, see special provision 386 of chapter 3.3. To this end particular care shall be taken to ensure that receptacles and tanks do not contain any substances liable to promote these reactions.

2

Chapter 2.9

Miscellaneous dangerous substances and articles (class 9) and environmentally hazardous substances

Note 1: For the purposes of this Code, the environmentally hazardous substances (aquatic environment) criteria contained in this chapter apply to the classification of marine pollutants (see 2.10).

Note 2: Although the environmentally hazardous substances (aquatic environment) criteria apply to all hazard classes, except for class 7 (see paragraphs 2.10.2.3, 2.10.2.5 and 2.10.3.2), the criteria have been included in this chapter.

2.9.1 Definition

2.9.1.1 *Class 9 substances and articles (miscellaneous dangerous substances and articles)* are substances and articles which, during transport, present a danger not covered by other classes.

2.9.2 Assignment to class 9

2.9.2.1 Class 9 includes, inter alia:

.1 substances and articles not covered by other classes which experience has shown, or may show, to be of such a dangerous character that the provisions of part A of chapter VII of SOLAS, as amended, shall apply.

.2 substances not subject to the provisions of part A in chapter VII of the aforementioned Convention, but to which the provisions of Annex III of MARPOL, as amended, apply.

2.9.2.2 The substances and articles of class 9 are subdivided as follows:

Substances which, on inhalation as fine dust, may endanger health

2212 ASBESTOS, AMPHIBOLE (amosite, tremolite, actinolite, anthophyllite, crocidolite)

2590 ASBESTOS, CHRYSOTILE

Substances evolving flammable vapour

2211 POLYMERIC BEADS, EXPANDABLE, evolving flammable vapour

3314 PLASTICS MOULDING COMPOUND in dough, sheet or extruded rope form evolving flammable vapour

Lithium batteries

3090 LITHIUM METAL BATTERIES (including lithium alloy batteries)

3091 LITHIUM METAL BATTERIES CONTAINED IN EQUIPMENT (including lithium alloy batteries) or

3091 LITHIUM METAL BATTERIES PACKED WITH EQUIPMENT (including lithium alloy batteries)

3480 LITHIUM ION BATTERIES (including lithium ion polymer batteries)

3481 LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT (including lithium ion polymer batteries) or

3481 LITHIUM ION BATTERIES PACKED WITH EQUIPMENT (including lithium ion polymer batteries)

3536 LITHIUM BATTERIES INSTALLED IN CARGO TRANSPORT UNIT lithium ion batteries or lithium metal batteries

Note: See 2.9.4.

Capacitors

3499 CAPACITOR, ELECTRIC DOUBLE LAYER (with an energy storage capacity greater than 0.3 Wh)

3508 CAPACITOR, ASYMMETRIC (with an energy storage capacity greater than 0.3 Wh)

Life-saving appliances

2990 LIFE-SAVING APPLIANCES, SELF-INFLATING

3072 LIFE-SAVING APPLIANCES, NOT SELF-INFLATING containing dangerous goods as equipment

3268 SAFETY DEVICES, electrically initiated

Substances and articles which, in the event of fire, may form dioxins

This group of substances includes:

2315 POLYCHLORINATED BIPHENYLS, LIQUID

3432 POLYCHLORINATED BIPHENYLS, SOLID

3151 POLYHALOGENATED BIPHENYLS, LIQUID or

3151 HALOGENATED MONOMETHYLDIPHENYLMETHANES, LIQUID or

3151 POLYHALOGENATED TERPHENYLS, LIQUID

3152 POLYHALOGENATED BIPHENYLS, SOLID or

3152 HALOGENATED MONOMETHYLDIPHENYLMETHANES, SOLID or

3152 POLYHALOGENATED TERPHENYLS, SOLID

Examples of articles are transformers, condensers and apparatus containing those substances.

Substances transported or offered for transport at elevated temperatures

3257 ELEVATED TEMPERATURE LIQUID, N.O.S., at or above 100°C and below its flashpoint (including molten metal, molten salts, etc.)

3258 ELEVATED TEMPERATURE SOLID, N.O.S., at or above 240°C

Environmentally hazardous substances

3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

These entries are used for substances and mixtures which are dangerous to the aquatic environment that do not meet the classification criteria of any other class or another substance within class 9. These entries may also be used for wastes not otherwise subject to the provisions of this Code but which are covered under the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal and for substances designated to be environmentally hazardous substances by the competent authority of the country of origin, transit or destination which do not meet the criteria for an environmentally hazardous substance according to the provisions of this Code or for any other hazard class. The criteria for substances which are hazardous to the aquatic environment are given in section 2.9.3.

Genetically modified microorganisms (GMMOs) and genetically modified organisms (GMOs)

3245 GENETICALLY MODIFIED MICROORGANISMS or

3245 GENETICALLY MODIFIED ORGANISMS

GMMOs and GMOs which do not meet the definition of toxic substances (see 2.6.2) or infectious substances (see 2.6.3) shall be assigned to UN 3245.

GMMOs or GMOs are not subject to the provisions of this Code when authorized for use by the competent authorities of the countries of origin, transit and destination.

Genetically modified live animals shall be transported under terms and conditions of the competent authorities of the countries of origin and destination.

Ammonium nitrate based fertilizers

2071 AMMONIUM NITRATE BASED FERTILIZER

Solid ammonium nitrate based fertilizers shall be classified in accordance with the procedure as set out in the *Manual of Tests and Criteria*, part III, section 39.

Other substances or articles presenting a danger during transport, but not meeting the definitions of another class:

1841 ACETALDEHYDE AMMONIA

1845 CARBON DIOXIDE, SOLID (DRY ICE)

1931 ZINC DITHIONITE (ZINC HYDROSULPHITE)

1941 DIBROMODIFLUOROMETHANE

1990 BENZALDEHYDE

2216 FISH MEAL (FISH SCRAP), STABILIZED

2807 MAGNETIZED MATERIAL

2969 CASTOR BEANS or

2969 CASTOR MEAL or

2969 CASTOR POMACE or

2969 CASTOR FLAKE

3166 VEHICLE, FLAMMABLE GAS POWERED or

3166 VEHICLE, FLAMMABLE LIQUID POWERED or

3166 VEHICLE, FUEL CELL, FLAMMABLE GAS POWERED or

3166 VEHICLE, FUEL CELL, FLAMMABLE LIQUID POWERED

3171 BATTERY-POWERED VEHICLE or

3171 BATTERY-POWERED EQUIPMENT

3316 CHEMICAL KIT or

3316 FIRST AID KIT

3334 AVIATION REGULATED LIQUID, N.O.S.

3335 AVIATION REGULATED SOLID, N.O.S.

3359 FUMIGATED CARGO TRANSPORT UNIT

3363 DANGEROUS GOODS IN ARTICLES or

3363 DANGEROUS GOODS IN MACHINERY or

3363 DANGEROUS GOODS IN APPARATUS

3496 BATTERIES, NICKEL-METAL HYDRIDE

3509 PACKAGINGS, DISCARDED, EMPTY, UNCLEANED

3530 ENGINE, INTERNAL COMBUSTION or

3530 MACHINERY, INTERNAL COMBUSTION

3548 ARTICLES CONTAINING MISCELLANEOUS DANGEROUS GOODS N.O.S.

2.9.3 Environmentally hazardous substances (aquatic environment)

2.9.3.1 General definitions

2.9.3.1.1 Environmentally hazardous substances include, inter alia, liquid or solid substances pollutant to the aquatic environment and solutions and mixtures of such substances (such as preparations and wastes).

For the purposes of this section,

Substance means chemical elements and their compounds in the natural state or obtained by any production process, including any additive necessary to preserve the stability of the product and any impurities deriving from the process used, but excluding any solvent which may be separated without affecting the stability of the substance or changing its composition.

2.9.3.1.2 The aquatic environment may be considered in terms of the aquatic organisms that live in the water, and the aquatic ecosystem of which they are part.* The basis, therefore, of the identification of hazard is the aquatic toxicity of the substance or mixture, although this may be modified by further information on the degradation and bioaccumulation behaviour.

2.9.3.1.3 While the following classification procedure is intended to apply to all substances and mixtures, it is recognized that in some cases, e.g. metals or poorly soluble inorganic compounds, special guidance will be necessary.†

2.9.3.1.4 The following definitions apply for acronyms or terms used in this section:

BCF	bioconcentration factor;
BOD	biochemical oxygen demand;
COD	chemical oxygen demand;
GLP	good laboratory practices;
EC_x	the concentration associated with x% response;
EC_{50}	the effective concentration of substance that causes 50% of the maximum response;
ErC_{50}	EC_{50} in terms of reduction of growth;
K_{ow}	octanol/water partition coefficient;
LC_{50} (50% lethal concentration)	the concentration of a substance in water which causes the death of 50% (one half) in a group of test animals;
$L(E)C_{50}$	LC_{50} or EC_{50};
NOEC (no observed effect concentration)	the test concentration immediately below the lowest tested concentration with statistically significant adverse effect. The NOEC has no statistically significant adverse effect compared to the control;
OECD Test Guidelines	Test guidelines published by the Organization for Economic Co-operation and Development (OECD).

2.9.3.2 Definitions and data requirements

2.9.3.2.1 The basic elements for classification of environmentally hazardous substances (aquatic environment) are:

.1 acute aquatic toxicity;

.2 chronic aquatic toxicity;

.3 potential for or actual bioaccumulation; and

.4 degradation (biotic or abiotic) for organic chemicals;

2.9.3.2.2 While data from internationally harmonized test methods are preferred, in practice, data from national methods may also be used where they are considered as equivalent. In general, it has been agreed that freshwater and marine species toxicity data can be considered as equivalent data and are preferably to be derived using OECD Test Guidelines or equivalent according to the principles of good laboratory practices (GLP). Where such data are not available, classification shall be based on the best available data.

2.9.3.2.3 *Acute aquatic toxicity* means the intrinsic property of a substance to be injurious to an organism in a short-term aquatic exposure to that substance.

Acute (short-term) hazard, for classification purposes, means the hazard of a chemical caused by its acute toxicity to an organism during short-term aquatic exposure to that chemical.

Acute aquatic toxicity shall normally be determined using a fish 96 h LC_{50} (OECD Test Guideline 203 or equivalent), a crustacea species 48 h EC_{50} (OECD Test Guideline 202 or equivalent) and/or an algal species 72 or 96 h EC_{50} (OECD Test Guideline 201 or equivalent). These species are considered as surrogate for all

* This does not address aquatic pollutants for which there may be a need to consider effects beyond the aquatic environment such as the impacts on human health, etc.

† This can be found in annex 10 of the GHS.

aquatic organisms and data on other species such as Lemna may also be considered if the test methodology is suitable.

2.9.3.2.4 Chronic aquatic toxicity means the intrinsic property of a substance to cause adverse effects to aquatic organisms during aquatic exposures which are determined in relation to the life cycle of the organism.

Long-term hazard, for classification purposes, means the hazard of a chemical caused by its chronic toxicity following long-term exposure in the aquatic environment.

Chronic toxicity data are less available than acute data and the range of testing procedures less standardized. Data generated according to the OECD Test Guidelines 210 (Fish Early Life Stage) or 211 (Daphnia Reproduction) and 201 (Algal Growth Inhibition) may be accepted. Other validated and internationally accepted tests may also be used. The NOECs or other equivalent EC_x shall be used.

2.9.3.2.5 *Bioaccumulation* means net result of uptake, transformation and elimination of a substance in an organism due to all routes of exposure (i.e. air, water, sediment/soil and food).

The potential for bioaccumulation shall normally be determined by using the octanol/water partition coefficient, usually reported as a log K_{ow} determined according to OECD Test Guidelines 107, 117 or 123. While this represents a potential to bioaccumulate, an experimentally determined bioconcentration factor (BCF) provides a better measure and shall be used in preference when available. A BCF shall be determined according to OECD Test Guideline 305.

2.9.3.2.6 *Degradation* means the decomposition of organic molecules to smaller molecules and eventually to carbon dioxide, water and salts.

Environmental degradation may be biotic or abiotic (e.g. hydrolysis) and the criteria used reflect this fact. Ready biodegradation is most easily defined using the biodegradability tests (A to F) of OECD Test Guidelines 301. A pass level in these tests may be considered as indicative of rapid degradation in most environments. These are freshwater tests and thus the use of the results from OECD Test Guideline 306, which is more suitable for marine environments, has also been included. Where such data are not available, a BOD(5 days)/COD ratio $\geq$ 0.5 is considered as indicative of rapid degradation. Abiotic degradation such as hydrolysis, primary degradation, both abiotic and biotic, degradation in non-aquatic media and proven rapid degradation in the environment may all be considered in defining rapid degradability.*

Substances are considered rapidly degradable in the environment if the following criteria are met:

.1 In 28-day ready biodegradation studies, the following levels of degradation are achieved:

.1 tests based on dissolved organic carbon: 70%;

.2 tests based on oxygen depletion or carbon dioxide generation: 60% of theoretical maxima.

These levels of biodegradation shall be achieved within 10 days of the start of degradation which point is taken as the time when 10% of the substance has been degraded, unless the substance is identified as a complex, multi-component substance with structurally similar constituents. In this case, and where there is sufficient justification, the 10-day window condition may be waived and the pass level applied at 28 days;†

.2 in those cases where only BOD and COD data are available, when the ratio of BOD_5/COD is $\geq$ 0.5; or

.3 if other convincing scientific evidence is available to demonstrate that the substance or mixture can be degraded (biotically and/or abiotically) in the aquatic environment to a level above 70% within a 28-day period.

2.9.3.3 Substance classification categories and criteria

2.9.3.3.1 Substances shall be classified as "environmentally hazardous substances (aquatic environment)", if they satisfy the criteria for Acute 1, Chronic 1 or Chronic 2, according to table 2.9.1. These criteria describe in detail the classification categories. They are diagrammatically summarized in table 2.9.2.

Table 2.9.1 – *Categories for substances hazardous to the aquatic environment (see note 1)*

(a) Acute (short-term) aquatic hazard

Category: Acute 1 (see note 2)	
96 hr LC_{50} (for fish)	$\leq$ 1 mg/L and/or
48 hr EC_{50} (for crustacea)	$\leq$ 1 mg/L and/or
72 or 96 hr ErC_{50} (for algae or other aquatic plants)	$\leq$ 1 mg/L (see note 3)

* Special guidance on data interpretation is provided in chapter 4.1 and annex 9 of the GHS.

† See chapter 4.1 and annex 9, paragraph A9.4.2.2.3 of the GHS.

(b) Long-term aquatic hazard (see also figure 2.9.1)

(i) Non-rapidly degradable substances (see note 4) for which there are adequate chronic toxicity data available

Category: Chronic 1 (see note 2)	
Chronic NOEC or EC_x (for fish)	$\leq$ 0.1 mg/L and/or
Chronic NOEC or EC_x (for crustacea)	$\leq$ 0.1 mg/L and/or
Chronic NOEC or EC_x (for algae or other aquatic plants)	$\leq$ 0.1 mg/L
Category: Chronic 2	
Chronic NOEC or EC_x (for fish)	$\leq$ 1 mg/L and/or
Chronic NOEC or EC_x (for crustacea)	$\leq$ 1 mg/L and/or
Chronic NOEC or EC_x (for algae or other aquatic plants)	$\leq$ 1 mg/L

(ii) Rapidly degradable substances for which there are adequate chronic toxicity data available

Category: Chronic 1 (see note 2)	
Chronic NOEC or EC_x (for fish)	$\leq$ 0.01 mg/L and/or
Chronic NOEC or EC_x (for crustacea)	$\leq$ 0.01 mg/L and/or
Chronic NOEC or EC_x (for algae or other aquatic plants)	$\leq$ 0.01 mg/L
Category: Chronic 2	
Chronic NOEC or EC_x (for fish)	$\leq$ 0.1 mg/L and/or
Chronic NOEC or EC_x (for crustacea)	$\leq$ 0.1 mg/L and/or
Chronic NOEC or EC_x (for algae or other aquatic plants)	$\leq$ 0.1 mg/L

(iii) Substances for which adequate chronic toxicity data are not available

Category: Chronic 1 (see note 2)	
96 hr LC_{50} (for fish)	$\leq$ 1 mg/L and/or
48 hr EC_{50} (for crustacea)	$\leq$ 1 mg/L and/or
72 or 96 hr ErC_{50} (for algae or other aquatic plants)	$\leq$ 1 mg/L (see note 3)
and the substance is not rapidly degradable and/or the experimentally determined BCF is $\geq$ 500 (or, if absent, the log $K_{ow} \geq 4$) (see notes 4 and 5)	
Category: Chronic 2	
96 hr LC_{50} (for fish)	$>$ 1 but $\leq$ 10 mg/L and/or
48 hr EC_{50} (for crustacea)	$>$ 1 but $\leq$ 10 mg/L and/or
72 or 96 hr ErC_{50} (for algae or other aquatic plants)	$>$ 1 but $\leq$ 10 mg/L and/or (see note 3)
and the substance is not rapidly degradable and/or the experimentally determined BCF is $\geq$ 500 (or, if absent, the log $K_{ow} \geq 4$) (see notes 4 and 5)	

Note 1: The organisms fish, crustacea and algae are tested as surrogate species covering a range of trophic levels and taxa, and the test methods are highly standardized. Data on other organisms may also be considered, however, provided they represent equivalent species and test endpoints.

Note 2: When classifying substances as Acute 1 and/or Chronic 1 it is necessary at the same time to indicate an appropriate M factor (see 2.9.3.4.6.4) to apply the summation method.

Note 3: Where the algal toxicity ErC_{50} (= EC_{50} (growth rate)) falls more than 100 times below the next most sensitive species and results in a classification based solely on this effect, consideration shall be given to whether this toxicity is representative of the toxicity to aquatic plants. Where it can be shown that this is not the case, professional judgment shall be used in deciding if classification shall be applied. Classification shall be based on the ErC_{50}. In circumstances where the basis of the EC_{50} is not specified and no ErC_{50} is recorded, classification shall be based on the lowest EC_{50} available.

Note 4: Lack of rapid degradability is based on either a lack of ready biodegradability or other evidence of lack of rapid degradation. When no useful data on degradability are available, either experimentally determined or estimated data, the substance shall be regarded as not rapidly degradable.

Note 5: Potential to bioaccumulate, based on an experimentally derived BCF $\geq$ 500 or, if absent, a log $K_{ow} \geq 4$ provided log K_{ow} is an appropriate descriptor for the bioaccumulation potential of the substance. Measured log K_{ow} values take precedence over estimated values and measured BCF values take precedence over log K_{ow} values.

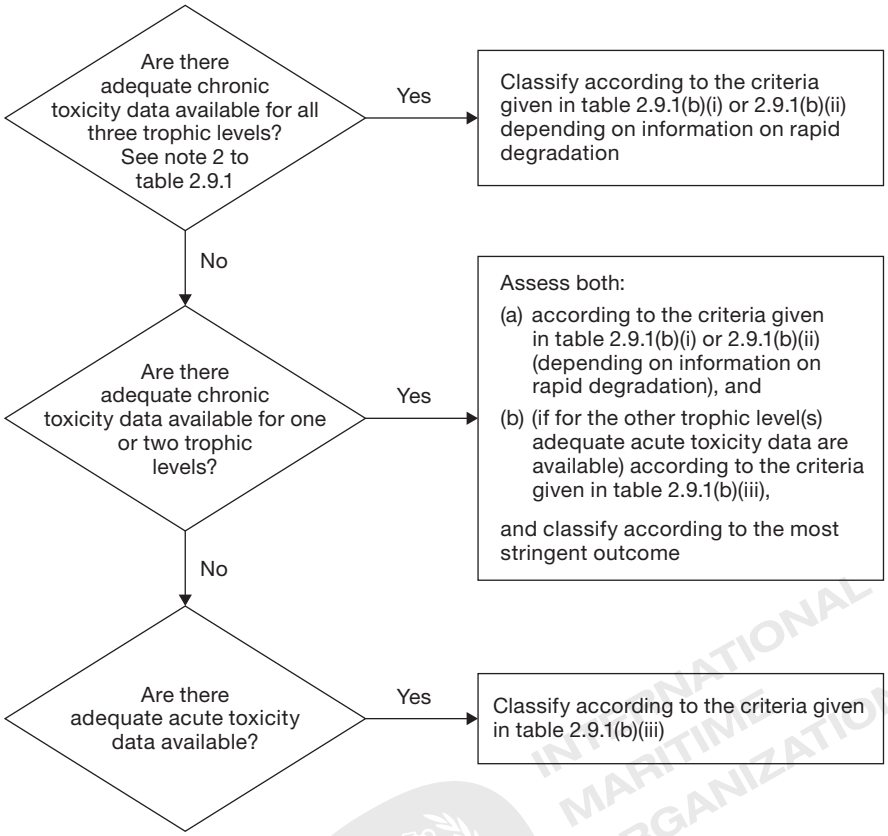

Figure 2.9.1 – *Categories for substances long-term hazardous to the aquatic environment*

2.9.3.3.2 The classification scheme in table 2.9.2 below summarizes the classification criteria for substances.

Table 2.9.2 – *Classification scheme for substances hazardous to the aquatic environment*

Classification categories			
Acute hazard (see note 1)	**Long-term hazard** (see note 2)		
	Adequate chronic toxicity data available		**Adequate chronic toxicity data not available** (see note 1)
	Non-rapidly degradable substances (see note 3)	**Rapidly degradable substances** (see note 3)	
Category: Acute 1	**Category: Chronic 1**	**Category: Chronic 1**	**Category: Chronic 1**
$L(E)C_{50} \leq 1.00$	NOEC or $EC_x \leq 0.1$	NOEC or $EC_x \leq 0.01$	$L(E)C_{50} \leq 1.00$ and lack of rapid degradability and/or BCF ≥ 500 or, if absent, log $K_{ow} \geq 4$
	Category: Chronic 2	**Category: Chronic 2**	**Category: Chronic 2**
	$0.1 <$ NOEC or $EC_x \leq 1$	$0.01 <$ NOEC or $EC_x \leq 0.1$	$1.00 < L(E)C_{50} \leq 10.0$ and lack of rapid degradability and/or BCF ≥ 500 or, if absent, log $K_{ow} \geq 4$

Note 1: Acute toxicity band based on $L(E)C_{50}$ values in mg/L for fish, crustacea and/or algae or other aquatic plants (or Quantitative Structure Activity Relationships (QSAR) estimation if no experimental data).*

Note 2: Substances are classified in the various chronic categories unless there are adequate chronic toxicity data available for all three trophic levels above the water solubility or above 1 mg/L. ("Adequate" means that the data sufficiently cover the endpoint of concern. Generally this would mean measured test data, but in order to avoid unnecessary testing it can on a case by case basis also be estimated data, e.g. (Q)SAR, or for obvious cases expert judgment).

* Special guidance is provided in chapter 4.1, paragraph 4.1.2.13 and annex 9, section A9.6 of the GHS.

Note 3: Chronic toxicity band based on NOEC or equivalent EC_x values in mg/L for fish or crustacea or other recognized measures for chronic toxicity.

2.9.3.4 Mixtures classification categories and criteria

2.9.3.4.1 The classification system for mixtures covers the classification categories which are used for substances, meaning categories Acute 1 and Chronic 1 and 2. In order to make use of all available data for purposes of classifying the aquatic environmental hazards of the mixture, the following assumption is made and is applied where appropriate:

The "relevant ingredients" of a mixture are those which are present in a concentration equal to or greater than 0.1% (by mass) for ingredients classified as Acute and/or Chronic 1 and equal to or greater than 1% for other ingredients, unless there is a presumption (e.g. in the case of highly toxic ingredients) that an ingredient present at less than 0.1% can still be relevant for classifying the mixture for aquatic environmental hazards.

2.9.3.4.2 The approach for classification of aquatic environmental hazards is tiered, and is dependent upon the type of information available for the mixture itself and for its ingredients. Elements of the tiered approach include:

.1 classification based on tested mixtures;

.2 classification based on bridging principles;

.3 the use of "summation of classified ingredients" and/or an "additivity formula".

Figure 2.9.2 outlines the process to be followed.

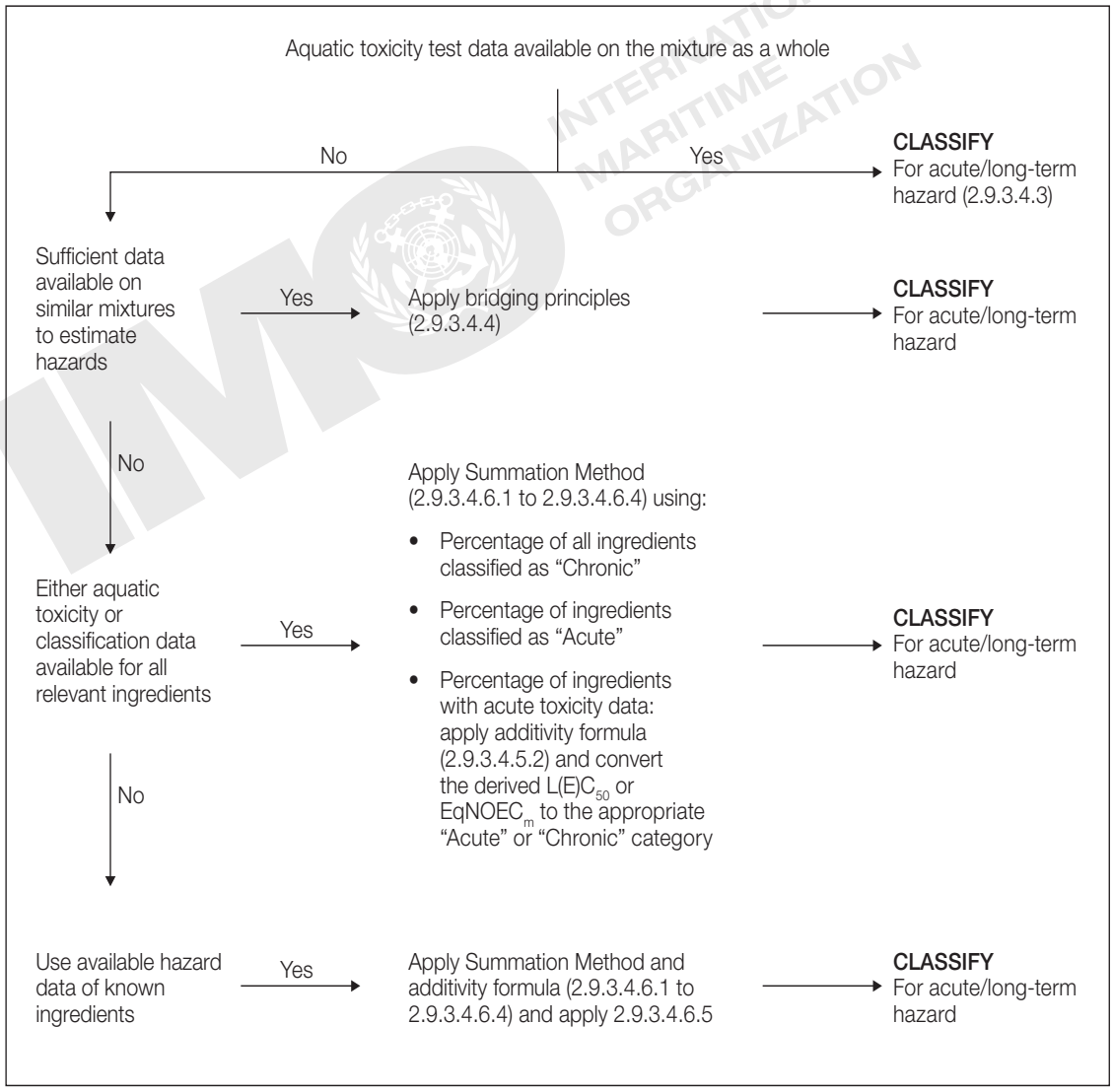

Figure 2.9.2 – *Tiered approach to classification of mixtures for acute and long-term aquatic environmental hazards*

2.9.3.4.3 ***Classification of mixtures when toxicity data are available for the complete mixture***

2.9.3.4.3.1 When the mixture as a whole has been tested to determine its aquatic toxicity, this information shall be used for classifying the mixture according to the criteria that have been agreed for substances. The classification is normally based on the data for fish, crustacea and algae/plants (see 2.9.3.2.3 and 2.9.3.2.4). When adequate acute or chronic data for the mixture as a whole are lacking, "bridging principles" or "summation method" shall be applied (see 2.9.3.4.4 to 2.9.3.4.6).

2.9.3.4.3.2 The long-term hazard classification of mixtures requires additional information on degradability and in certain cases bioaccumulation. There are no degradability and bioaccumulation data for mixtures as a whole. Degradability and bioaccumulation tests for mixtures are not used as they are usually difficult to interpret, and such tests may be meaningful only for single substances.

2.9.3.4.3.3 *Classification for category Acute 1*

(a) When there are adequate acute toxicity test data (LC_{50} or EC_{50}) available for the mixture as a whole showing $L(E)C_{50} \leq 1$ mg/L:

Classify the mixture as Acute 1 in accordance with table 2.9.1 (a);

(b) When there are acute toxicity test data (LC_{50}(s) or EC_{50}(s) available for the mixture as a whole showing $L(E)C_{50}(s) > 1$ mg/L, or above the water solubility:

No need to classify for acute hazard under this Code.

2.9.3.4.3.4 *Classification for categories Chronic 1 and 2*

(a) When there are adequate chronic toxicity data (EC_x or NOEC) available for the mixture as a whole showing EC_x or NOEC of the tested mixture ≤ 1 mg/L:

(i) classify the mixture as Chronic 1 or 2 in accordance with table 2.9.1 (b)(ii) (rapidly degradable) if the available information allows the conclusion that all relevant ingredients of the mixture are rapidly degradable;

■ **Note:** In this situation, when ECx or NOEC of the tested mixture > 0.1 mg/L, there is no need to classify for long-term hazard under these provisions.

(ii) classify the mixture as Chronic 1 or 2 in all other cases in accordance with table 2.9.1 (b)(i) (non-rapidly degradable);

(b) When there are adequate chronic toxicity data (EC_x or NOEC) available for the mixture as a whole showing EC_x(s) or NOEC(s) of the tested mixture > 1 mg/L or above the water solubility:

No need to classify for long-term hazard under this Code.

2.9.3.4.4 ***Classification of mixtures when toxicity data are not available for the complete mixture: bridging principles***

2.9.3.4.4.1 Where the mixture itself has not been tested to determine its aquatic environmental hazard, but there are sufficient data on the individual ingredients and similar tested mixtures to adequately characterize the hazards of the mixture, these data shall be used in accordance with the following agreed bridging rules. This ensures that the classification process uses the available data to the greatest extent possible in characterizing the hazards of the mixture without the necessity for additional testing in animals.

2.9.3.4.4.2 *Dilution*

2.9.3.4.4.2.1 Where a new mixture is formed by diluting a tested mixture or a substance with a diluent which has an equivalent or lower aquatic hazard classification than the least toxic original ingredient and which is not expected to affect the aquatic hazards of other ingredients, then the resulting mixture shall be classified as equivalent to the original tested mixture or substance. Alternatively, the method explained in 2.9.3.4.5 may be applied.

2.9.3.4.4.2.2 If a mixture is formed by diluting another classified mixture or a substance with water or other totally non-toxic material, the toxicity of the mixture shall be calculated from the original mixture or substance.

2.9.3.4.4.3 *Batching*

2.9.3.4.4.3.1 The aquatic hazard classification of a tested production batch of a mixture shall be assumed to be substantially equivalent to that of another untested production batch of the same commercial product when produced by or under the control of the same manufacturer, unless there is reason to believe there is significant variation such that the aquatic hazard classification of the untested batch has changed. If the latter occurs, new classification is necessary.

2.9.3.4.4.4 *Concentration of mixtures which are classified with the most severe classification categories (Chronic 1 and Acute 1)*

2.9.3.4.4.4.1 If a tested mixture is classified as Chronic 1 and/or Acute 1, and the ingredients of the mixture which are classified as Chronic 1 and/or Acute 1 are further concentrated, the more concentrated untested mixture shall be classified with the same classification category as the original tested mixture without additional testing.

2.9.3.4.4.5 *Interpolation within one toxicity category*

2.9.3.4.4.5.1 For three mixtures (A, B and C) with identical ingredients, where mixtures A and B have been tested and are in the same toxicity category, and where untested mixture C has the same toxicologically active ingredients as mixtures A and B but has concentrations of toxicologically active ingredients intermediate to the concentrations in mixtures A and B, then mixture C is assumed to be in the same category as A and B.

2.9.3.4.4.6 *Substantially similar mixtures*

2.9.3.4.4.6.1 Given the following:

(a) Two mixtures:

(i) A + B

(ii) C + B

(b) The concentration of ingredient B is essentially the same in both mixtures;

(c) The concentration of ingredient A in mixture (i) equals that of ingredient C in mixture (ii);

(d) Data on aquatic hazards for A and C are available and are substantially equivalent, i.e. they are in the same hazard category and are not expected to affect the aquatic toxicity of B.

If mixture (i) or (ii) is already classified based on test data, then the other mixture can be assigned the same hazard category.

2.9.3.4.5 ***Classification of mixtures when toxicity data are available for all ingredients or only for some ingredients of the mixture***

2.9.3.4.5.1 The classification of a mixture shall be based on summation of the concentrations of its classified ingredients. The percentage of ingredients classified as Acute or Chronic will feed straight into the summation method. Details of the summation method are described in 2.9.3.4.6.1 to 2.9.3.4.6.4.1.

2.9.3.4.5.2 Mixtures may be made of a combination of both ingredients that are classified (as Acute 1 and/or Chronic 1, 2) and those for which adequate toxicity test data are available. When adequate toxicity data are available for more than one ingredient in the mixture, the combined toxicity of those ingredients shall be calculated using the following additivity formulas (a) or (b), depending on the nature of the toxicity data:

(a) Based on acute aquatic toxicity:

$$\frac{\sum C_i}{\mathrm{L(E)C}_{50m}} = \sum_n \frac{C_i}{\mathrm{L(E)C}_{50i}}$$

where: C_i = concentration of ingredient *i* (mass percentage);

$\mathrm{L(E)C}_{50i}$ = LC_{50} or EC_{50} for ingredient *i* (mg/L);

n = number of ingredients, and *i* is running from 1 to *n*; and

$\mathrm{L(E)C}_{50m}$ = $\mathrm{L(E)C}_{50}$ of the part of the mixture with test data

The calculated toxicity shall be used to assign that portion of the mixture an acute hazard category which is then subsequently used in applying the summation method;

(b) Based on chronic aquatic toxicity:

$$\frac{\sum C_i + \sum C_j}{\mathrm{EqNOEC}_m} = \sum_n \frac{C_i}{\mathrm{NOEC}_i} + \sum_n \frac{C_j}{0.1 \times \mathrm{NOEC}_j}$$

where: C_i = concentration of ingredient *i* (mass percentage) covering the rapidly degradable ingredients;

C_j = concentration of ingredient *j* (mass percentage) covering the non-rapidly degradable ingredients;

$NOEC_i$ = NOEC (or other recognized measures for chronic toxicity) for ingredient *i* covering the rapidly degradable ingredients, in mg/L;

$NOEC_j$ = NOEC (or other recognized measures for chronic toxicity) for ingredient *j* covering the non-rapidly degradable ingredients, in mg/L;

n = number of ingredients, and *i* and *j* are running from 1 to *n*;

$EqNOEC_m$ = equivalent NOEC of the part of the mixture with test data;

The equivalent toxicity thus reflects the fact that non-rapidly degrading substances are classified one hazard category level more "severe" than rapidly degrading substances.

The calculated equivalent toxicity shall be used to assign that portion of the mixture a long-term hazard category, in accordance with the criteria for rapidly degradable substances (table 2.9.1 (b)(ii)), which is then subsequently used in applying the summation method.

2.9.3.4.5.3 When applying the additivity formula for part of the mixture, it is preferable to calculate the toxicity of this part of the mixture using for each ingredient toxicity values that relate to the same taxonomic group (i.e. fish, crustacea or algae) and then to use the highest toxicity (lowest value) obtained (i.e. use the most sensitive of the three groups). However, when toxicity data for each ingredient are not available in the same taxonomic group, the toxicity value of each ingredient shall be selected in the same manner that toxicity values are selected for the classification of substances, i.e. the higher toxicity (from the most sensitive test organism) is used. The calculated acute and chronic toxicity shall then be used to classify this part of the mixture as Acute 1 and/or Chronic 1 or 2 using the same criteria described for substances.

2.9.3.4.5.4 If a mixture is classified in more than one way, the method yielding the more conservative result shall be used.

2.9.3.4.6 ***Summation method***

2.9.3.4.6.1 *Classification procedure*

2.9.3.4.6.1.1 In general a more severe classification for mixtures overrides a less severe classification, e.g. a classification with Chronic 1 overrides a classification with Chronic 2. As a consequence the classification procedure is already completed if the results of the classification is Chronic 1. A more severe classification than Chronic 1 is not possible; therefore, it is not necessary to pursue the classification procedure further.

2.9.3.4.6.2 *Classification for category Acute 1*

2.9.3.4.6.2.1 First, all ingredients classified as Acute 1 are considered. If the sum of the concentrations (in %) of these ingredients is greater than or equal to 25% the whole mixture shall be classified as Acute 1. If the result of the calculation is a classification of the mixture as Acute 1, the classification process is completed.

2.9.3.4.6.2.2 The classification of mixtures for acute hazards based on this summation of the concentrations of classified ingredients is summarized in table 2.9.3 below.

Table 2.9.3 – *Classification of a mixture for acute hazards based on summation of the concentrations of classified ingredients*

Sum of the concentrations (in %) of ingredients classified as:	Mixture is classified as:
Acute 1 × M^* ≥ 25%	Acute 1

* For explanation of the *M* factor, see 2.9.3.4.6.4.

2.9.3.4.6.3 *Classification for categories Chronic 1 and 2*

2.9.3.4.6.3.1 First, all ingredients classified as Chronic 1 are considered. If the sum of the concentrations (in %) of these ingredients is greater than or equal to 25% the mixture shall be classified as Chronic 1. If the result of the calculation is a classification of the mixture as Chronic 1 the classification procedure is completed.

2.9.3.4.6.3.2 In cases where the mixture is not classified as Chronic 1, classification of the mixture as Chronic 2 is considered. A mixture shall be classified as Chronic 2 if 10 times the sum of the concentrations (in %) of all ingredients classified as Chronic 1 plus the sum of the concentrations (in %) of all ingredients classified as Chronic 2 is greater than or equal to 25%. If the result of the calculation is classification of the mixture as Chronic 2, the classification process is completed.

2.9.3.4.6.3.3 The classification of mixtures for long-term hazards based on this summation of the concentrations of classified ingredients is summarized in table 2.9.4 below.

Table 2.9.4 – *Classification of a mixture for long-term hazards based on summation of the concentrations of classified ingredients*

Sum of the concentrations (in %) of ingredients classified as:	Mixture classified as:
Chronic 1 × M^* ≥ 25%	Chronic 1
(M × 10 × Chronic 1) + Chronic 2 ≥ 25%	Chronic 2

* For explanation of the *M* factor, see 2.9.3.4.6.4.

2.9.3.4.6.4 *Mixtures with highly toxic ingredients*

2.9.3.4.6.4.1 Acute 1 or Chronic 1 ingredients with acute toxicities well below 1 mg/L and/or chronic toxicities well below 0.1 mg/L (if non-rapidly degradable) and 0.01 mg/L (if rapidly degradable) may influence the toxicity of the mixture and are given increased weight in applying the summation method. When a mixture contains ingredients classified as Acute 1 or Chronic 1, the tiered approach described in 2.9.3.4.6.2 and 2.9.3.4.6.3 shall be applied using a weighted sum by multiplying the concentrations of Acute 1 and Chronic 1 ingredients by a factor, instead of merely adding up the percentages. This means that the concentration of Acute 1 in the left column of table 2.9.3 and the concentration of Chronic 1 in the left column of table 2.9.4 are multiplied by the appropriate multiplying factor. The multiplying factors to be applied to these ingredients are defined using the toxicity value, as summarized in table 2.9.5 below. Therefore, in order to classify a mixture containing Acute 1 and/or Chronic 1 ingredients, the classifier needs to be informed of the value of the *M* factor in order to apply the summation method. Alternatively, the additivity formula (2.9.3.4.5.2) may be used when toxicity data are available for all highly toxic ingredients in the mixture and there is convincing evidence that all other ingredients, including those for which specific acute and/or chronic toxicity data are not available, are of low or no toxicity and do not significantly contribute to the environmental hazard of the mixture.

Table 2.9.5 – *Multiplying factors for highly toxic ingredients of mixtures*

Acute toxicity	M factor	Chronic toxicity	M factor	
$L(E)C_{50}$ value		NOEC value	NRD* ingredients	RD† ingredients
$0.1 < L(E)C_{50} \leq 1$	1	$0.01 < NOEC \leq 0.1$	1	–
$0.01 < L(E)C_{50} \leq 0.1$	10	$0.001 < NOEC \leq 0.01$	10	1
$0.001 < L(E)C_{50} \leq 0.01$	100	$0.0001 < NOEC \leq 0.001$	100	10
$0.0001 < L(E)C_{50} \leq 0.001$	1,000	$0.00001 < NOEC \leq 0.0001$	1,000	100
$0.00001 < L(E)C_{50} \leq 0.0001$	10,000	$0.000001 < NOEC \leq 0.00001$	10,000	1,000
(continue in factor 10 intervals)		(continue in factor 10 intervals)		

* Non-rapidly degradable.

† Rapidly degradable.

2.9.3.4.6.5 *Classification of mixtures with ingredients without any useable information*

2.9.3.4.6.5.1 In the event that no useable information on acute and/or chronic aquatic toxicity is available for one or more relevant ingredients, it is concluded that the mixture cannot be attributed (a) definitive hazard category(ies). In this situation the mixture shall be classified based on the known ingredients only.

2.9.4 Lithium batteries

Cells and batteries, cells and batteries contained in equipment, or cells and batteries packed with equipment, containing lithium in any form shall be assigned to UN Nos. 3090, 3091, 3480 or 3481 as appropriate. They may be transported under these entries if they meet the following provisions:

.1 Each cell or battery is of the type proved to meet the requirements of each test of the *Manual of Tests and Criteria*, part III, subsection 38.3.

Cells and batteries manufactured according to a type meeting the requirements of subsection 38.3 of the *Manual of Tests and Criteria*, revision 3, amendment 1 or any subsequent revision and amendment applicable at the date of the type testing may continue to be transported, unless otherwise provided in this Code.

Cell and battery types only meeting the requirements of the *Manual of Tests and Criteria*, revision 3, are no longer valid. However, cells and batteries manufactured in conformity with such types before 1 July 2003 may continue to be transported if all other applicable requirements are fulfilled.

Note: Batteries shall be of a type proved to meet the testing requirements of the *Manual of Tests and Criteria*, part III, subsection 38.3, irrespective of whether the cells of which they are composed are of a tested type.

.2 Each cell and battery incorporates a safety venting device or is designed to preclude a violent rupture under conditions normally incident to transport.

.3 Each cell and battery is equipped with an effective means of preventing external short circuits.

.4 Each battery containing cells or series of cells connected in parallel is equipped with effective means as necessary to prevent dangerous reverse current flow (e.g. diodes, fuses, etc.).

.5 Cells and batteries shall be manufactured under a quality management programme that includes:

.1 a description of the organizational structure and responsibilities of personnel with regard to design and product quality;

.2 the relevant inspection and test, quality control, quality assurance, and process operation instructions that will be used;

.3 process controls that should include relevant activities to prevent and detect internal short circuit failure during manufacture of cells;

.4 quality records, such as inspection reports, test data, calibration data and certificates. Test data shall be kept and made available to the competent authority upon request;

.5 management reviews to ensure the effective operation of the quality management programme;

.6 a process for control of documents and their revision;

.7 a means for control of cells or batteries that are not conforming to the type tested as mentioned in 2.9.4.1 above;

.8 training programmes and qualification procedures for relevant personnel; and

.9 procedures to ensure that there is no damage to the final product.

Note: In-house quality management programmes may be accepted. Third party certification is not required, but the procedures listed in .1 to .9 above shall be properly recorded and traceable. A copy of the quality management programme shall be made available to the competent authority upon request.

.6 Lithium batteries, containing both primary lithium metal cells and rechargeable lithium ion cells, that are not designed to be externally charged (see special provision 387 of chapter 3.3) shall meet the following conditions:

.1 the rechargeable lithium ion cells can only be charged from the primary lithium metal cells;

.2 overcharge of the rechargeable lithium ion cells is precluded by design;

.3 the battery has been tested as a lithium primary battery; and

.4 component cells of the battery shall be of a type proved to meet the respective testing requirements of the *Manual of Tests and Criteria*, part III, subsection 38.3.

△ **.7** Except for button cells installed in equipment (including circuit boards), manufacturers and subsequent distributors of cells or batteries manufactured after 30 June 2003 shall make available the test summary as specified in the *Manual of Tests and Criteria*, part III, subsection 38.3, paragraph 38.3.5.

Chapter 2.10

Marine pollutants

2.10.1 Definition

Marine pollutants means substances which are subject to the provisions of Annex III of MARPOL, as amended.

2.10.2 General provisions

2.10.2.1 Marine pollutants shall be transported under the provisions of Annex III of MARPOL, as amended.

2.10.2.2 The Index indicates by the symbol P in the column headed **MP** those substances, materials and articles that are identified as marine pollutants.

2.10.2.3 Marine pollutants shall be transported under the appropriate entry according to their properties if they fall within the criteria of any of the classes 1 to 8. If they do not fall within the criteria of any of these classes, they shall be transported under the entry: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., UN 3077 or ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., UN 3082, as appropriate, unless there is a specific entry in class 9.

2.10.2.4 Column 4 of the Dangerous Goods List also provides information on marine pollutants using the symbol P for single entries. The absence of the symbol P or the presence of a "–" in that column does not preclude the application of 2.10.3.

2.10.2.5 When a substance, material or article possesses properties that meet the criteria of a marine pollutant but is not identified in this Code, such substance, material or article shall be transported as a marine pollutant in accordance with the Code.

2.10.2.6 With the approval of the competent authority (see 7.9.2), substances, materials or articles that are identified as marine pollutants in this Code but which no longer meet the criteria as a marine pollutant need not be transported in accordance with the provisions of this Code applicable to marine pollutants.

2.10.2.7 Marine pollutants packaged in single or combination packagings containing a net quantity per single or inner packaging of 5 L or less for liquids or having a net mass per single or inner packaging of 5 kg or less for solids are not subject to any other provisions of this Code relevant to marine pollutants provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8. In the case of marine pollutants also meeting the criteria for inclusion in another hazard class, all provisions of this Code relevant to any additional hazards continue to apply.

2.10.3 Classification

2.10.3.1 Marine pollutants shall be classified in accordance with chapter 2.9.3.

2.10.3.2 The classification criteria of 2.9.3 are not applicable to substances or materials of class 7.

IMDG CODE

INTERNATIONAL MARITIME DANGEROUS GOODS CODE

VOLUME 1 & 2

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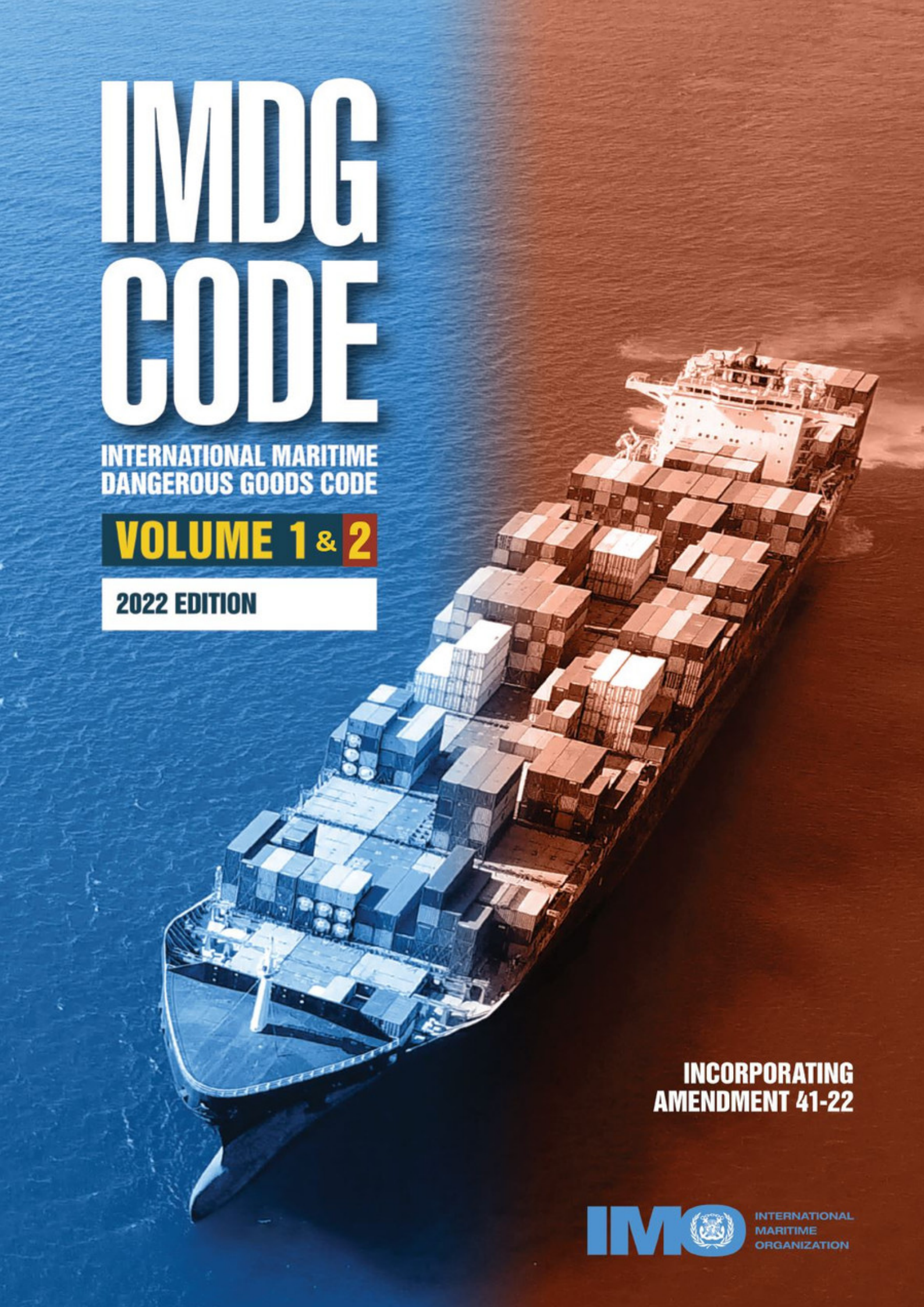

INCORPORATING AMENDMENT 41-22

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Note

The following symbols placed against an item indicate changes from the previous edition, in accordance with Amendment 41-22 to the IMDG Code:

- ■ Insertion of an item
- ⊗ Deletion of an item
- △ Change to an item

PART 3

DANGEROUS GOODS LIST, SPECIAL PROVISIONS AND EXCEPTIONS

Chapter 3.1

General

3.1.1 Scope and general provisions

3.1.1.1 The Dangerous Goods List in chapter 3.2 lists many of the dangerous goods most commonly transported. The list includes entries for specific chemical substances and articles and generic or "not otherwise specified" entries. Since it is not practical to include a separate entry for every chemical substance or article of commercial importance specifically by name, especially names for mixtures and solutions of various chemical constituents and concentrations, the Dangerous Goods List also includes generic or "not otherwise specified" names (e.g. EXTRACTS, LIQUID, for flavour or aroma, UN 1197 or FLAMMABLE LIQUID, N.O.S., UN 1993). On this basis, the Dangerous Goods List is intended to include an appropriate name or entry for any dangerous good which may be transported.

3.1.1.2 Where a dangerous good is specifically listed by name in the Dangerous Goods List, it shall be transported in accordance with the provisions in the List which are appropriate for that dangerous good. A generic or "not otherwise specified" entry may be used to permit the transport of substances, materials or articles which do not appear specifically by name in the Dangerous Goods List. Such a dangerous good may be transported only after its dangerous properties have been determined. Dangerous goods shall be classified according to the class definitions, tests and criteria. The name which most appropriately describes the dangerous goods shall be used. Only when the specific name of the dangerous goods does not appear in the Dangerous Goods List or the associated primary or subsidiary hazards assigned to it are not appropriate may a generic or "not otherwise specified" name be used. The classification shall be made by the shipper/consignor or by the appropriate competent authority where so specified in the Code. Once the class of the dangerous good has been so established, all conditions for transport, as provided in this Code, shall be met. Any dangerous good having or suspected of having explosive characteristics shall first be considered for inclusion in class 1. Some collective entries may be of the generic or "not otherwise specified" type provided that the Code contains provisions ensuring safety, both by excluding extremely dangerous goods from normal transport and by covering all subsidiary hazards inherent in some goods.

3.1.1.3 Inherent instability in goods may take different dangerous forms, for example explosion, polymerization with intense evolution of heat or emission of flammable, toxic, corrosive or asphyxiant gases. The Dangerous Goods List indicates that certain dangerous goods, or dangerous goods in a specific form, concentration or state, are prohibited for transport by sea. This means that the goods specified are not suitable for transport by sea under normal conditions of transport. This does not mean that such goods may not be transported under any circumstances. For most goods, such inherent instability can be controlled by suitable packaging, dilution, stabilization, addition of an inhibitor, temperature control or other measures.

3.1.1.4 Where precautionary measures are laid down in the Dangerous Goods List in respect of a given dangerous good (such as that it shall be "stabilized" or "with *x*% water or phlegmatizer"), such dangerous good may not normally be transported when these measures have not been taken, unless the item in question is listed elsewhere (such as class 1) without any indication of, or with different, precautionary measures.

3.1.1.5 Certain substances, by the nature of their chemical composition, tend to polymerize or otherwise react in a dangerous manner under certain conditions of temperature or in contact with a catalyst. Mitigation of this tendency can be carried out either by requiring special transport conditions or by adding adequate amounts of chemical inhibitors or stabilizers to the product. These products shall be sufficiently stabilized to prevent any dangerous reaction during the intended voyage. If this cannot be ensured, the transport of such products is prohibited.

3.1.1.6 Where the contents of a portable tank is to be transported heated, the transport temperature is to be maintained during the intended voyage unless it is established that crystallization or solidification on cooling would not result in instability, which can occur with some stabilized or inhibited products.

3.1.2 Proper shipping names

Note 1: The proper shipping names of the dangerous goods are those listed in chapter 3.2, Dangerous Goods List. Synonyms, secondary names, initials, abbreviations of names, etc. have been included in the Index to facilitate the search for the proper shipping name (see part 5, Consignment procedures).

Note 2: For proper shipping names to be used for transport of samples, see 2.0.4. For proper shipping names to be used for transport of wastes, see 5.4.1.4.3.3.

3.1.2.1 The proper shipping name is that portion of the entry most accurately describing the goods in the Dangerous Goods List, which is shown in upper-case characters (plus any numbers, Greek letters, '*sec*', '*tert*', and the letters *m*, *n*, *o*, *p*, which form an integral part of the name). An alternative proper shipping name may be shown in brackets following the main proper shipping name (such as ETHANOL (ETHYL ALCOHOL)). Portions of an entry appearing in lower case need not be considered as part of the proper shipping name but may be used.

3.1.2.2 When a combination of several distinct proper shipping names are listed under a single UN number, and these are separated by "and" or "or" in lower case or are punctuated by commas, only the most appropriate shall be shown in the transport document and package marks.

Examples illustrating the selection of the proper shipping name for such entries are:

.1 UN 1057 LIGHTERS or LIGHTER REFILLS – The proper shipping name is the most appropriate of the following possible combinations:

LIGHTERS

LIGHTER REFILLS;

.2 UN 2583 ALKYLSULPHONIC ACIDS, SOLID or ARYLSULPHONIC ACIDS, SOLID with more than 5% free sulphuric acid – The proper shipping name is the most appropriate of the following:

ALKYLSULPHONIC ACIDS, SOLID

ARYLSULPHONIC ACIDS, SOLID;

.3 UN 2793 FERROUS METAL BORINGS, SHAVINGS, TURNINGS or CUTTINGS in a form liable to self-heating. The proper shipping name is the most appropriate of the following combinations:

FERROUS METAL BORINGS

FERROUS METAL SHAVINGS

FERROUS METAL TURNINGS

FERROUS METAL CUTTINGS.

3.1.2.3 Proper shipping names may be used in the singular or plural as appropriate. In addition, when qualifying words are used as part of the proper shipping name, their sequence on documentation or packages is optional. Commercial or military names for goods of class 1, which contain the proper shipping name supplemented by additional text, may be used.

3.1.2.4 Many substances have an entry for both the liquid and solid state (see definitions for *liquids* and *solids* in 1.2.1), or for the solid and solution. These are allocated separate UN numbers which are not necessarily adjacent to each other. Details are provided in the alphabetical index, e.g.:

NITROXYLENES, LIQUID	–	6.1	1665
NITROXYLENES, SOLID	–	6.1	3447.

3.1.2.5 Where it is not already included, the qualifying word "MOLTEN" shall be added to the proper shipping name when a substance which is solid in accordance with the definition in 1.2.1 is offered for transport in the molten state (such as ALKYLPHENOL, SOLID, N.O.S., MOLTEN). For elevated temperature substances, see 5.4.1.4.3.4.

3.1.2.6 Except for self-reactive substances and organic peroxides and unless it is already included in capital letters in the name indicated in the Dangerous Goods List, the word STABILIZED shall be added as part of the proper shipping name of the substance which without stabilization would be forbidden from transport in accordance with 1.1.3 due to it being liable to dangerously react under conditions normally encountered in transport (such as TOXIC LIQUID, ORGANIC, N.O.S., STABILIZED). When temperature control is used to stabilize such substances to prevent the development of any dangerous excess pressure, or the evolution of excessive heat, or when chemical stabilization is used in combination with temperature control, then:

.1 For liquids and solids where the SAPT (measured without or with inhibitor, when chemical stabilization is applied) is less than or equal to that prescribed in 2.4.2.5.2, special provision 386 of chapter 3.3 and the provisions of 7.3.7 apply;

.2 Unless it is already included in capital letters in the name indicated in the Dangerous Goods List, the words "TEMPERATURE CONTROLLED" shall be added as part of the proper shipping name;

.3 For gases: the conditions of transport shall be approved by the competent authority.

3.1.2.7 Hydrates may be transported under the proper shipping name for the anhydrous substance.

3.1.2.8 Generic or "not otherwise specified" (N.O.S.) entries

3.1.2.8.1 Generic and "not otherwise specified" proper shipping names that are assigned to special provision 274 or 318 in column 6 of the Dangerous Goods List shall be supplemented with the technical or chemical group names unless a national law or international convention prohibits its disclosure if it is a controlled substance. For explosives of class 1, the dangerous goods description may be supplemented by additional descriptive text to indicate commercial or military names. Technical and chemical group names shall be entered in brackets immediately following the proper shipping name. An appropriate modifier, such as "contains" or "containing" or other qualifying words such as "mixture", "solution", etc., and the percentage of the technical constituent may also be used. For example: "UN 1993 Flammable liquid, n.o.s. (contains xylene and benzene), 3, PG II".

3.1.2.8.1.1 The technical name shall be a recognized chemical or biological name or other name currently used in scientific and technical handbooks, journals and texts. Trade names shall not be used for this purpose. In the case of pesticides, only ISO common name(s), other name(s) in *The WHO Recommended Classification of Pesticides by Hazard and Guidelines to Classification*, or the name(s) of the active substance(s) may be used.

3.1.2.8.1.2 When a mixture of dangerous goods or articles containing dangerous goods are described by one of the "N.O.S." or "generic" entries to which special provision 274 has been allocated in the Dangerous Goods List, not more than the two constituents which most predominantly contribute to the hazard or hazards of the mixture or of the articles need to be shown, excluding controlled substances when their disclosure is prohibited by national law or international convention. If a package containing a mixture is labelled with any subsidiary hazard label, one of the two technical names shown in brackets shall be the name of the constituent which compels the use of the subsidiary hazard label.

3.1.2.8.1.3 Examples illustrating the selection of the proper shipping name supplemented with the technical name of goods for such N.O.S. entries are:

UN 2902 PESTICIDE, LIQUID, TOXIC, N.O.S. (drazoxolon)

UN 3394 ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER-REACTIVE (trimethylgallium).

UN 3540 ARTICLES CONTAINING FLAMMABLE LIQUID, N.O.S. (pyrrolidine)

3.1.2.9 Marine pollutants

3.1.2.9.1 For the purpose of documentation, the proper shipping name of "not otherwise specified" (N.O.S.) entries which are classified as marine pollutants in accordance with 2.10.3, shall be supplemented with the recognized chemical name of the constituent which most predominantly contributes to the classification as marine pollutant unless otherwise provided by SP274.

3.1.2.9.2 An example illustrating the selection of the proper shipping name supplemented with the recognized technical name of goods for such entries are is indicated below:

UN 1993 FLAMMABLE LIQUID, N.O.S. (propyl acetate, di-*n*-butyltin di-2-ethylhexanoate) class 3 PG III (50°C c.c.) MARINE POLLUTANT

3.1.3 Mixtures or solutions

Note: Where a substance is specifically listed by name in the Dangerous Goods List, it shall be identified in transport by the proper shipping name in the Dangerous Goods List. Such substances may contain technical impurities (for example those deriving from the production process) or additives for stability or other purposes that do not affect their classification. However, a substance listed by name containing technical impurities or additives for stability or other purposes affecting its classification shall be considered a mixture or solution (see 2.0.2.2 and 2.0.2.5).

3.1.3.1 A mixture or solution is not subject to the provisions of this Code if the characteristics, properties, form or physical state of the mixture or solution are such that it does not meet the criteria, including human experience criteria, for inclusion in any class.

3.1.3.2 A mixture or solution meeting the classification criteria of this Code composed of a single predominant substance identified by name in the Dangerous Goods List and one or more substances not subject to the provisions of this Code and/or traces of one or more substances identified by name in the Dangerous Goods List, shall be assigned the UN number and proper shipping name of the predominant substance named in the Dangerous Goods List unless:

.1 the mixture or solution is identified by name in the Dangerous Goods List;

.2 the name and description of the substance named in the Dangerous Goods List specifically indicate that they apply only to the pure substance;

.3 the hazard class or division, subsidiary hazard(s), packing group, or physical state of the mixture or solution is different from that of the substance named in the Dangerous Goods List; or

.4 the hazard characteristics and properties of the mixture or solution necessitate emergency response measures that are different from those required for the substance identified by name in the Dangerous Goods List.

3.1.3.3 Qualifying words such as "MIXTURE" or "SOLUTION", as appropriate, shall be added as part of the proper shipping name, for example, "ACETONE SOLUTION". In addition, the concentration of the mixture or solution may also be indicated after the basic description of the mixture or solution, for example, "ACETONE 75% SOLUTION".

3.1.3.4 A mixture or solution meeting the classification criteria of this Code that is not identified by name in the Dangerous Goods List and that is composed of two or more dangerous goods shall be assigned to an entry that has the proper shipping name, description, hazard class or division, subsidiary hazard(s) and packing group that most precisely describe the mixture or solution.

3.1.4 Segregation groups

3.1.4.1 For the purpose of segregation, dangerous goods having certain similar chemical properties have been grouped together in segregation groups, see 7.2.5.

3.1.4.2 It is recognized that not all substances, mixtures, solutions or preparations falling within a segregation group are listed in the IMDG Code by name. These are shipped under N.O.S. entries. Although these N.O.S. entries are not themselves listed in the segregation groups (see 3.1.4.4), the consignor shall decide whether inclusion under the segregation group is appropriate and, if so, shall mention that fact in the transport document (see 5.4.1.5.11).

3.1.4.3 The segregation groups in this Code do not cover substances which fall outside the classification criteria of the Code. It is recognized that some non-hazardous substances have similar chemical properties as substances listed in the segregation groups. A consignor or the person responsible for packing the goods into a cargo transport unit who does have knowledge of the chemical properties of such non-dangerous goods may decide to implement the segregation provisions of a related segregation group on a voluntary basis.

3.1.4.4 The following segregation groups are identified.

△ **1 Acids (SGG1)**

△ 1052 Hydrogen fluoride, anhydrous
1182 Ethyl chloroformate
1183 Ethyldichlorosilane
1238 Methyl chloroformate
1242 Methyldichlorosilane
1250 Methyltrichlorosilane
1295 Trichlorosilane
1298 Trimethylchlorosilane
1305 Vinyltrichlorosilane
1572 Cacodylic acid
1595 Dimethyl sulphate
1715 Acetic anhydride
1716 Acetyl bromide
1717 Acetyl chloride
1718 Butyl acid phosphate
1722 Allyl chloroformate
1723 Allyl iodide
1724 Allyltrichlorosilane, stabilized
1725 Aluminium bromide, anhydrous
1726 Aluminium chloride, anhydrous
1727 Ammonium hydrogendifluoride, solid
1728 Amyltrichlorosilane
1729 Anisoyl chloride
1730 Antimony pentachloride, liquid
1731 Antimony pentachloride solution

	1732	Antimony pentafluoride
	1733	Antimony trichloride
	1736	Benzoyl chloride
	1737	Benzyl bromide
	1738	Benzyl chloride
	1739	Benzyl chloroformate
	1740	Hydrogendifluorides, n.o.s.
	1742	Boron trifluoride acetic acid complex, liquid
	1743	Boron trifluoride propionic acid complex, liquid
	1744	Bromine or bromine solution
	1745	Bromine pentafluoride
	1746	Bromine trifluoride
	1747	Butyltrichlorosilane
	1750	Chloroacetic acid solution
	1751	Chloroacetic acid, solid
	1752	Chloroacetyl chloride
	1753	Chlorophenyltrichlorosilane
	1754	Chlorosulphonic acid (with or without sulphur trioxide)
	1755	Chromic acid solution
	1756	Chromic fluoride, solid
	1757	Chromic fluoride solution
	1758	Chromium oxychloride
	1762	Cyclohexenyltrichlorosilane
	1763	Cyclohexyltrichlorosilane
	1764	Dichloroacetic acid
	1765	Dichloroacetyl chloride
	1766	Dichlorophenyltrichlorosilane
	1767	Diethyldichlorosilane
	1768	Difluorophosphoric acid, anhydrous
	1769	Diphenyldichlorosilane
	1770	Diphenylmethyl bromide
	1771	Dodecyltrichlorosilane
	1773	Ferric chloride, anhydrous
	1775	Fluoroboric acid
	1776	Fluorophosphoric acid, anhydrous
△	1777	Fluorosulphonic acid
	1778	Fluorosilicic acid
	1779	Formic acid with more than 85% acid by mass
	1780	Fumaryl chloride
	1781	Hexadecyltrichlorosilane
	1782	Hexafluorophosphoric acid
	1784	Hexyltrichlorosilane
△	1786	Hydrofluoric acid and sulphuric acid mixture
△	1787	Hydriodic acid
△	1788	Hydrobromic acid
△	1789	Hydrochloric acid
△	1790	Hydrofluoric acid
	1792	Iodine monochloride, solid
	1793	Isopropyl acid phosphate
	1794	Lead sulphate with more than 3% free acid

△	1796	Nitrating acid mixture
△	1798	Nitrohydrochloric acid
	1799	Nonyltrichlorosilane
	1800	Octadecyltrichlorosilane
	1801	Octyltrichlorosilane
△	1802	Perchloric acid with not more than 50% acid, by mass
	1803	Phenolsulphonic acid, liquid
	1804	Phenyltrichlorosilane
	1805	Phosphoric acid, solution
	1806	Phosphorus pentachloride
	1807	Phosphorus pentoxide
	1808	Phosphorus tribromide
	1809	Phosphorus trichloride
	1810	Phosphorus oxychloride
	1811	Potassium hydrogendifluoride, solid
	1815	Propionyl chloride
	1816	Propyltrichlorosilane
	1817	Pyrosulphuryl chloride
	1818	Silicon tetrachloride
△	1826	Nitrating acid mixture, spent
	1827	Stannic chloride, anhydrous
	1828	Sulphur chlorides
	1829	Sulphur trioxide, inhibited or sulphur trioxide, stabilized
△	1830	Sulphuric acid with more than 51% acid
△	1831	Sulphuric acid, fuming
△	1832	Sulphuric acid, spent
	1833	Sulphurous acid
	1834	Sulphuryl chloride
	1836	Thionyl chloride
	1837	Thiophosphoryl chloride
	1838	Titanium tetrachloride
	1839	Trichloroacetic acid
	1840	Zinc chloride solution
	1848	Propionic acid with not less than 10% and less than 90% acid, by mass
△	1873	Perchloric acid with more than 50% but not more than 72% acid, by mass
	1898	Acetyl iodide
	1902	Diisooctyl acid phosphate
	1905	Selenic acid
△	1906	Sludge acid
	1938	Bromoacetic acid solution
	1939	Phosphorus oxybromide
	1940	Thioglycolic acid
△	2031	Nitric acid, other than red fuming
△	2032	Nitric acid, red fuming
	2214	Phthalic anhydride with more than 0.05% of maleic anhydride
	2215	Maleic anhydride
	2218	Acrylic acid, inhibited
	2225	Benzenesulphonyl chloride
	2226	Benzotrichloride
△	2240	Chromosulphuric acid

	2262	Dimethylcarbamoyl chloride
	2267	Dimethyl thiophosphoryl chloride
	2305	Nitrobenzenesulphonic acid
△	2308	Nitrosylsulphuric acid, liquid
	2331	Zinc chloride, anhydrous
	2353	Butyryl chloride
	2395	Isobutyryl chloride
	2407	Isopropyl chloroformate
	2434	Dibenzyldichlorosilane
	2435	Ethylphenyldichlorosilane
	2437	Methylphenyldichlorosilane
	2438	Trimethylacetyl chloride
	2439	Sodium hydrogendifluoride
	2440	Stannic chloride pentahydrate
	2442	Trichloroacetyl chloride
	2443	Vanadium oxytrichloride
	2444	Vanadium tetrachloride
	2475	Vanadium trichloride
	2495	Iodine pentafluoride
	2496	Propionic anhydride
	2502	Valeryl chloride
	2503	Zirconium tetrachloride
	2506	Ammonium hydrogen sulphate
	2507	Chloroplatinic acid, solid
	2508	Molybdenum pentachloride
	2509	Potassium hydrogen sulphate
	2511	2-Chloropropionic acid
	2513	Bromoacetyl bromide
	2531	Methacrylic acid, stabilized
	2564	Trichloroacetic acid solution
	2571	Alkylsulphuric acids
	2576	Phosphorus oxybromide, molten
	2577	Phenylacetyl chloride
	2578	Phosphorus trioxide
	2580	Aluminium bromide solution
	2581	Aluminium chloride solution
	2582	Ferric chloride solution
	2583	Alkylsulphonic acids, solid or arylsulphonic acids, solid with more than 5% free sulphuric acid
	2584	Alkylsulphonic acids, liquid or arylsulphonic acids, liquid with more than 5% free sulphuric acid
	2585	Alkylsulphonic acids, solid or arylsulphonic acids, solid with not more than 5% free sulphuric acid
	2586	Alkylsulphonic acids, liquid or arylsulphonic acids, liquid with not more than 5% free sulphuric acid
	2604	Boron trifluoride diethyl etherate
	2626	Chloric acid, aqueous solution with not more than 10% chloric acid
	2642	Fluoroacetic acid
	2670	Cyanuric chloride
	2691	Phosphorus pentabromide
	2692	Boron tribromide
	2698	Tetrahydrophthalic anhydrides with more than 0.05% maleic anhydride
	2699	Trifluoroacetic acid

	2739	Butyric anhydride
	2740	Propyl chloroformate
	2742	Chloroformates, toxic, corrosive, flammable, n.o.s.
	2743	*n*-Butyl chloroformate
	2744	Cyclobutyl chloroformate
	2745	Chloromethyl chloroformate
	2746	Phenyl chloroformate
	2748	2-Ethylhexyl chloroformate
	2751	Diethylthiophosphoryl chloride
	2789	Acetic acid, glacial or acetic acid solution, more than 80% acid, by mass
	2790	Acetic acid solution, more than 10% but not more than 80% acid, by mass
	2794	Batteries, wet, filled with acid electric storage
△	2796	Sulphuric acid with not more than 51% acid or battery fluid, acid
	2798	Phenylphosphorus dichloride
	2799	Phenylphosphorus thiodichloride
	2802	Copper chloride
	2817	Ammonium hydrogendifluoride solution
	2819	Amyl acid phosphate
	2820	Butyric acid
	2823	Crotonic acid, solid
	2826	Ethyl chlorothioformate
	2829	Caproic acid
	2834	Phosphorous acid
	2851	Boron trifluoride dihydrate
	2865	Hydroxylamine sulphate
	2869	Titanium trichloride mixture
	2879	Selenium oxychloride
	2967	Sulphamic acid
	2985	Chlorosilanes, flammable, corrosive, n.o.s.
	2986	Chlorosilanes, corrosive, flammable, n.o.s.
	2987	Chlorosilanes, corrosive, n.o.s.
	2988	Chlorosilanes, water-reactive, flammable, corrosive, n.o.s.
	3246	Methanesulphonyl chloride
	3250	Chloroacetic acid, molten
	3260	Corrosive solid, acidic, inorganic, n.o.s.
	3261	Corrosive solid, acidic, organic, n.o.s.
	3264	Corrosive liquid, acidic, inorganic, n.o.s.
	3265	Corrosive liquid, acidic, organic, n.o.s.
	3277	Chloroformates, toxic, corrosive, n.o.s.
	3361	Chlorosilanes, toxic, corrosive, n.o.s.
	3362	Chlorosilanes, toxic, corrosive, flammable, n.o.s.
	3412	Formic acid with not less than 10% but not more than 85% acid by mass
	3412	Formic acid with not less than 5% but not more than 10% acid by mass
	3419	Boron trifluoride acetic acid complex, solid
	3420	Boron trifluoride propionic acid complex, solid
	3421	Potassium hydrogendifluoride solution
	3425	Bromoacetic acid, solid
	3453	Phosphoric acid, solid
	3456	Nitrosylsulphuric acid, solid
	3463	Propionic acid with not less than 90% acid by mass

3472 Crotonic acid, liquid
3498 Iodine monochloride, liquid

⊗

2 Ammonium compounds (SGG2)

0004 Ammonium picrate dry or wetted with less than 10% water, by mass
0222 Ammonium nitrate, with more than 0.2% combustible substances
0402 Ammonium perchlorate
1310 Ammonium picrate, wetted with not less than 10% water, by mass
1439 Ammonium dichromate
1442 Ammonium perchlorate
1444 Ammonium persulphate
1546 Ammonium arsenate
1630 Mercury ammonium chloride
1727 Ammonium hydrogendifluoride, solid
1835 Tetramethylammonium hydroxide solution
1843 Ammonium dinitro-*o*-cresolate, solid
1942 Ammonium nitrate with not more than 0.2% combustible substances
2067 Ammonium nitrate based fertilizer
2071 Ammonium nitrate based fertilizer
2073 Ammonia solution, relative density less than 0.880 at 15°C in water, with more than 35% but not more than 50% ammonia
2426 Ammonium nitrate, liquid (hot concentrated solution)
2505 Ammonium fluoride
2506 Ammonium hydrogen sulphate
2683 Ammonium sulphide solution
2687 Dicyclohexylammonium nitrite
2817 Ammonium hydrogendifluoride solution
2818 Ammonium polysulphide solution
2854 Ammonium fluorosilicate
2859 Ammonium metavanadate
2861 Ammonium polyvanadate
2863 Sodium ammonium vanadate
3375 Ammonium nitrate emulsion or suspension or gel, intermediate for blasting explosives
3423 Tetramethylammonium hydroxide, solid
3424 Ammonium dinitro-*o*-cresolate solution

3 Bromates (SGG3)

1450 Bromates, inorganic, n.o.s.
1473 Magnesium bromate
1484 Potassium bromate
1494 Sodium bromate
2469 Zinc bromate
2719 Barium bromate
3213 Bromates, inorganic, aqueous solution, n.o.s.

4 Chlorates (SGG4)

1445 Barium chlorate, solid
1452 Calcium chlorate
1458 Chlorate and borate mixture
1459 Chlorate and magnesium chloride mixture, solid
1461 Chlorates, inorganic, n.o.s.
1485 Potassium chlorate

1495 Sodium chlorate
1506 Strontium chlorate
1513 Zinc chlorate
2427 Potassium chlorate, aqueous solution
2428 Sodium chlorate, aqueous solution
2429 Calcium chlorate, aqueous solution
2573 Thallium chlorate
2721 Copper chlorate
2723 Magnesium chlorate
3405 Barium chlorate solution
3407 Chlorate and magnesium chloride mixture solution

5 Chlorites (SGG5)

1453 Calcium chlorite
1462 Chlorites, inorganic, n.o.s.
1496 Sodium chlorite
1908 Chlorite solution

6 Cyanides (SGG6)

1541 Acetone cyanhydrin, stabilized
1565 Barium cyanide
1575 Calcium cyanide
1587 Copper cyanide
1588 Cyanides, inorganic, solid, n.o.s.
1620 Lead cyanide
1626 Mercuric potassium cyanide
1636 Mercury cyanide
1642 Mercury oxycyanide, desensitized
1653 Nickel cyanide
1679 Potassium cuprocyanide
1680 Potassium cyanide, solid
1684 Silver cyanide
1689 Sodium cyanide, solid
1694 Bromobenzyl cyanides, liquid
1713 Zinc cyanide
1889 Cyanogen bromide
1935 Cyanide solution, n.o.s.
2205 Adiponitrile
2316 Sodium cuprocyanide, solid
2317 Sodium cuprocyanide solution
3413 Potassium cyanide solution
3414 Sodium cyanide solution
3449 Bromobenzyl cyanides, solid

7 Heavy metals and their salts (including their organometallic compounds) (SGG7)

0129 Lead azide, wetted, with not less than 20% water, or mixture of alcohol and water, by mass
0130 Lead styphnate (lead trinitroresorcinate), wetted with not less than 20% water, or mixture of alcohol and water, by mass
0135 Mercury fulminate, wetted with not less than 20% water, or mixture of alcohol and water, by mass
1347 Silver picrate, wetted with not less than 30% water, by mass
1389 Alkali metal amalgam, liquid
1392 Alkaline earth metal amalgam, liquid

1435	Zinc ashes
1436	Zinc dust or zinc powder
1469	Lead nitrate
1470	Lead perchlorate, solid
1493	Silver nitrate
1513	Zinc chlorate
1514	Zinc nitrate
1515	Zinc permanganate
1516	Zinc peroxide
1587	Copper cyanide
1616	Lead acetate
1617	Lead arsenates
1618	Lead arsenites
1620	Lead cyanide
1623	Mercuric arsenate
1624	Mercuric chloride
1625	Mercuric nitrate
1626	Mercuric potassium cyanide
1627	Mercurous nitrate
1629	Mercury acetate
1630	Mercury ammonium chloride
1631	Mercury benzoate
1634	Mercury bromides
1636	Mercury cyanide
1637	Mercury gluconate
1638	Mercury iodide
1639	Mercury nucleate
1640	Mercury oleate
1641	Mercury oxide
1642	Mercury oxycyanide, desensitized
1643	Mercury potassium iodide
1644	Mercury salicylate
1645	Mercury sulphate
1646	Mercury thiocyanate
1649	Motor fuel anti-knock mixture
1653	Nickel cyanide
1674	Phenylmercuric acetate
1683	Silver arsenite
1684	Silver cyanide
1712	Zinc arsenate and zinc arsenite mixture
1713	Zinc cyanide
1714	Zinc phosphide
1794	Lead sulphate with more than 3% free acid
1838	Titanium tetrachloride
1840	Zinc chloride solution
1872	Lead dioxide
1894	Phenylmercuric hydroxide
1895	Phenylmercuric nitrate
1931	Zinc dithionite
1931	Zinc hydrosulphite

2024 Mercury compound, liquid, n.o.s.
2025 Mercury compound, solid, n.o.s.
2026 Phenylmercuric compound, n.o.s.
2291 Lead compound, soluble, n.o.s.
2331 Zinc chloride, anhydrous
2441 Titanium trichloride, pyrophoric or titanium trichloride mixture, pyrophoric
2469 Zinc bromate
2546 Titanium powder, dry
2714 Zinc resinate
2777 Mercury based pesticide, solid, toxic
2778 Mercury based pesticide, liquid, flammable, toxic
2809 Mercury
2855 Zinc fluorosilicate
2869 Titanium trichloride mixture
2878 Titanium, sponge granules or titanium, sponge powders
2881 Metal catalyst, dry
2989 Lead phosphite, dibasic
3011 Mercury based pesticide, liquid, toxic, flammable
3012 Mercury based pesticide, liquid, toxic
3089 Metal powder, flammable, n.o.s.
3174 Titanium disulphide
3181 Metal salts of organic compounds, flammable, n.o.s.
3189 Metal powder, self-heating, n.o.s.
3401 Alkali metal amalgam, solid
3402 Alkaline earth metal amalgam, solid
3408 Lead perchlorate solution
3483 Motor fuel anti-knock mixture, flammable

8 **Hypochlorites (SGG8)**

1471 Lithium hypochlorite
1748 Calcium hypochlorite, dry or calcium hypochlorite mixture, dry with more than 39% available chlorine (8.8% available oxygen)
1791 Hypochlorite solution
2208 Calcium hypochlorite mixture, dry with more than 10% but not more than 39% available chlorine
2741 Barium hypochlorite with more than 22% available chlorine
2880 Calcium hypochlorite, hydrated or calcium hypochlorite, hydrated mixture with not less than 5.5% but not more than 16% water
3212 Hypochlorites, inorganic, n.o.s.
3255 *tert*-Butyl hypochlorite
3485 Calcium hypochlorite, dry, corrosive or calcium hypochlorite mixture, dry, corrosive with more than 39% available chlorine (8.8% available oxygen)
3486 Calcium hypochlorite mixture, dry, corrosive with more than 10% but not more than 39% available chlorine
3487 Calcium hypochlorite, hydrated, corrosive or calcium hypochlorite, hydrated mixture, corrosive, with not less than 5.5% but not more than 16% water

9 **Lead and its compounds (SGG9)**

0129 Lead azide, wetted with not less than 20% water, or mixture of alcohol and water, by mass
0130 Lead styphnate, wetted with not less than 20% water, or mixture of alcohol and water, by mass
0130 Lead trinitroresorcinate, wetted with not less than 20% water, or mixture of alcohol and water, by mass
1469 Lead nitrate

1470 Lead perchlorate, solid
1616 Lead acetate
1617 Lead arsenates
1618 Lead arsenites
1620 Lead cyanide
1649 Motor fuel anti-knock mixture
1794 Lead sulphate with more than 3% free acid
1872 Lead dioxide
2291 Lead compound, soluble, n.o.s.
2989 Lead phosphide, dibasic
3408 Lead perchlorate solution
3483 Motor fuel anti-knock mixture, flammable

10 Liquid halogenated hydrocarbons (SGG10)

1099 Allyl bromide
1100 Allyl chloride
1107 Amyl chloride
1126 1-Bromobutane
1127 Chlorobutanes
1134 Chlorobenzene
1150 1,2-Dichloroethylene
1152 Dichloropentanes
1184 Ethylene dichloride
1278 1-Chloropropane
1279 1,2-Dichloropropane
1303 Vinylidene chloride, stabilized
1591 *o*-Dichlorobenzene
1593 Dichloromethane
1605 Ethylene dibromide
1647 Methyl bromide and ethylene dibromide mixture, liquid
1669 Pentachloroethane
1701 Xylyl bromide
1702 1,1,2,2-Tetrachloroethane
1710 Trichloroethylene
1723 Allyl iodide
1737 Benzyl bromide
1738 Benzyl chloride
1846 Carbon tetrachloride
1887 Bromochloromethane
1888 Chloroform
1891 Ethyl bromide
1897 Tetrachloroethylene
1991 Chloroprene, stabilized
2234 Chlorobenzotrifluorides
2238 Chlorotoluenes
2279 Hexachlorobutadiene
2321 Trichlorobenzenes, liquid
2322 Trichlorobutene
2339 2-Bromobutane
2341 1-Bromo-3-methylbutane
2342 Bromomethylpropanes

2343 2-Bromopentane
2344 Bromopropanes
2356 2-Chloropropane
2362 1,1-Dichloroethane
2387 Fluorobenzene
2388 Fluorotoluenes
2390 2-Iodobutane
2391 Iodomethylpropanes
2392 Iodopropanes
2456 2-Chloropropene
2504 Tetrabromoethane
2515 Bromoform
2554 Methylallyl chloride
2644 Methyl iodide
2646 Hexachlorocyclopentadiene
2664 Dibromomethane
2688 1-Bromo-3-chloropropane
2831 1,1,1-Trichloroethane
2872 Dibromochloropropanes

11 Mercury and mercury compounds (SGG11)

0135 Mercury fulminate, wetted with not less than 20% water, or mixture of alcohol and water, by mass
1389 Alkali metal amalgam, liquid
1392 Alkaline earth metal amalgam, liquid
1623 Mercuric arsenate
1624 Mercuric chloride
1625 Mercuric nitrate
1626 Mercuric potassium cyanide
1627 Mercurous nitrate
1629 Mercury acetate
1630 Mercury ammonium chloride
1631 Mercury benzoate
1634 Mercury bromides
1636 Mercury cyanide
1637 Mercury gluconate
1638 Mercury iodide
1639 Mercury nucleate
1640 Mercury oleate
1641 Mercury oxide
1642 Mercury oxycyanide, desensitized
1643 Mercury potassium iodide
1644 Mercury salicylate
1645 Mercury sulphate
1646 Mercury thiocyanate
1894 Phenylmercuric hydroxide
1895 Phenylmercuric nitrate
2024 Mercury compound, liquid, n.o.s.
2025 Mercury compound, solid, n.o.s.
2026 Phenylmercuric compound, n.o.s.
2777 Mercury based pesticide, solid, toxic

2778 Mercury based pesticide, liquid, flammable, toxic
2809 Mercury
3011 Mercury based pesticide, liquid, toxic, flammable
3012 Mercury based pesticide, liquid, toxic
3401 Alkali metal amalgam, solid
3402 Alkaline earth metal amalgam, solid

12 Nitrites and their mixtures (SGG12)

1487 Potassium nitrate and sodium nitrite mixture
1488 Potassium nitrite
1500 Sodium nitrite
2627 Nitrites, inorganic, n.o.s.
2726 Nickel nitrite
3219 Nitrites, inorganic, aqueous solution, n.o.s.

13 Perchlorates (SGG13)

1442 Ammonium perchlorate
1447 Barium perchlorate, solid
1455 Calcium perchlorate
1470 Lead perchlorate, solid
1475 Magnesium perchlorate
1481 Perchlorates, inorganic, n.o.s.
1489 Potassium perchlorate
1502 Sodium perchlorate
1508 Strontium perchlorate
3211 Perchlorates, inorganic, aqueous solution, n.o.s.
3406 Barium perchlorate solution
3408 Lead perchlorate solution

14 Permanganates (SGG14)

1448 Barium permanganate
1456 Calcium permanganate
1482 Permanganates, inorganic, n.o.s.
1490 Potassium permanganate
1503 Sodium permanganate
1515 Zinc permanganate
3214 Permanganates, inorganic, aqueous solution, n.o.s.

15 Powdered metals (SGG15)

1309 Aluminium powder, coated
1326 Hafnium powder, wetted with not less than 25% water
1352 Titanium powder, wetted with not less than 25% water
1358 Zirconium powder, wetted with not less than 25% water
1383 Pyrophoric alloy or pyrophoric metal, n.o.s.
1396 Aluminium powder, uncoated
1398 Aluminium silicon powder, uncoated
1418 Magnesium powder or magnesium alloys powder
1435 Zinc ashes
1436 Zinc dust or zinc powder
1854 Barium alloys, pyrophoric
2008 Zirconium powder, dry
2009 Zirconium, dry, sheets, strip or coiled wire
2545 Hafnium powder, dry
2546 Titanium powder, dry

2878 Titanium sponge powders
2881 Metal catalyst, dry
2950 Magnesium granules, coated, particle size not less than 149 microns
3078 Cerium, turnings or gritty powder
3089 Metal powder, flammable, n.o.s.
3170 Aluminium smelting by-products or aluminium remelting by-products
3189 Metal powder, self-heating, n.o.s.

16 Peroxides (SGG16)

1449 Barium peroxide
1457 Calcium peroxide
1472 Lithium peroxide
1476 Magnesium peroxide
1483 Peroxides, inorganic, n.o.s.
1491 Potassium peroxide
1504 Sodium peroxide
1509 Strontium peroxide
1516 Zinc peroxide
2014 Hydrogen peroxide, aqueous solution, 20–60%
2015 Hydrogen peroxide, aqueous solution, stabilized
2466 Potassium superoxide
2547 Sodium superoxide
3149 Hydrogen peroxide and peroxyacetic acid mixture
3377 Sodium perborate monohydrate
3378 Sodium carbonate peroxyhydrate

17 Azides (SGG17)

0129 Lead azide, wetted with not less than 20% water, or mixture of alcohol and water, by mass
0224 Barium azide, dry or wetted with less than 50% water, by mass
1571 Barium azide, wetted with not less than 50% water, by mass
1687 Sodium azide

18 Alkalis (SGG18)

1005 Ammonia, anhydrous
1160 Dimethylamine, aqueous solution
1163 Dimethylhydrazine, unsymmetrical
1235 Methylamine, aqueous solution
1244 Methylhydrazine
1289 Sodium methylate solution in alcohol
1382 Potassium sulphide, anhydrous or potassium sulphide with less than 30% water of crystallization
1385 Sodium sulphide, anhydrous or sodium sulphide with less than 30% water of crystallization
1431 Sodium methylate
1604 Ethylenediamine
1719 Caustic alkali liquid, n.o.s.
1813 Potassium hydroxide, solid
1814 Potassium hydroxide solution
1819 Sodium aluminate solution
1823 Sodium hydroxide, solid
1824 Sodium hydroxide solution
1825 Sodium monoxide
1835 Tetramethylammonium hydroxide solution
1847 Potassium sulphide, hydrated with not less than 30% water of crystallization
1849 Sodium sulphide, hydrated with not less than 30% water

1907	Soda lime with more than 4% sodium hydroxide
1922	Pyrrolidine
2029	Hydrazine, anhydrous
2030	Hydrazine, aqueous solution with more than 37% hydrazine, by mass
2033	Potassium monoxide
2073	Ammonia solution, relative density less than 0.880 at 15°C in water, with more than 35% but not more than 50% ammonia
2079	Diethylenetriamine
2259	Triethylenetetramine
2270	Ethylamine, aqueous solution, with not less than 50% but not more than 70% ethylamine
2318	Sodium hydrosulphide with less than 25% water of crystallization
2320	Tetraethylenepentamine
2379	1,3-Dimethylbutylamine
2382	Dimethylhydrazine, symmetrical
2386	1-Ethylpiperidine
2399	1-Methylpiperidine
2401	Piperidine
2491	Ethanolamine or ethanolamine solution
2579	Piperazine
2671	Aminopyridines (*o*-, *m*-, *p*-)
2672	Ammonia solution relative density between 0.880 and 0.957 at 15°C in water, with more than 10% but not more than 35% ammonia, by mass
2677	Rubidium hydroxide solution
2678	Rubidium hydroxide
2679	Lithium hydroxide solution
2680	Lithium hydroxide
2681	Caesium hydroxide solution
2682	Caesium hydroxide
2683	Ammonium sulphide solution
2733	Amines, flammable, corrosive, n.o.s. or polyamines, flammable, corrosive, n.o.s.
2734	Amines, liquid, corrosive, flammable, n.o.s. or polyamines, liquid, corrosive, flammable, n.o.s.
2735	Amines, liquid, corrosive, n.o.s. or polyamines, liquid, corrosive, n.o.s.
2795	Batteries, wet, filled with alkali, electric storage
2797	Battery fluid, alkali
2818	Ammonium polysulphide solution
2949	Sodium hydrosulphide, hydrated with not less than 25% water of crystallization
3028	Batteries, dry, containing potassium hydroxide, solid electric storage
3073	Vinylpyridines, stabilized
3206	Alkali metal alcoholates, self-heating, corrosive, n.o.s.
3253	Disodium trioxosilicate
3259	Amines, solid, corrosive, n.o.s. or polyamines, solid, corrosive, n.o.s.
3262	Corrosive solid, basic, inorganic, n.o.s.
3263	Corrosive solid, basic, organic, n.o.s.
3266	Corrosive liquid, basic, inorganic, n.o.s.
3267	Corrosive liquid, basic, organic, n.o.s.
3274	Alcoholates solution, n.o.s. in alcohol
3293	Hydrazine, aqueous solution with not more than 37% hydrazine, by mass
3318	Ammonia solution, relative density less than 0.880 at 15°C in water, with more than 50% ammonia
3320	Sodium borohydride and sodium hydroxide solution with not more than 12% sodium borohydride and not more than 40% sodium hydroxide, by mass

3423 Tetramethylammonium hydroxide, solid

3484 Hydrazine aqueous solution, flammable, with more than 37% hydrazine, by mass

Chapter 3.2

Dangerous Goods List

3.2.1 Structure of the Dangerous Goods List

The Dangerous Goods List is divided into 18 columns as follows:

Column 1 **UN No.** – this column contains the United Nations number assigned to a dangerous good by the United Nations Sub-Committee of Experts on the Transport of Dangerous Goods (UN List).

Column 2 **Proper shipping name (PSN)** – this column contains the proper shipping names in upper-case characters, which may have to be followed by additional descriptive text in lower-case characters (see 3.1.2). Proper shipping names may be shown in plural where isomers of similar classification exist. Hydrates may be included under the proper shipping name for the anhydrous substances. Unless otherwise indicated for an entry in the Dangerous Goods List, the word "SOLUTION" in a proper shipping name means one or more named dangerous goods dissolved in a liquid that is not otherwise subject to this Code. When a flashpoint is mentioned in this column, the data is based on closed-cup (c.c.) methods.

Column 3 **Class or division** – this column contains the class and, in the case of class 1, the division and the compatibility group assigned to the substance or article according to the classification system described in part 2, chapter 2.1.

Column 4 **Subsidiary hazard(s)** – this column contains the class number(s) of any subsidiary hazard(s) which have been identified by applying the classification system described in part 2. This column also identifies a dangerous good as a marine pollutant as follows:

P – Marine pollutant: a non-exhaustive list of known marine pollutants, based on previous criteria and assignment. The absence of the symbol P or the presence of a "–" in that column does not preclude the application of 2.10.3.

Column 5 **Packing group** – this column contains the packing group number (i.e. I, II or III) where assigned to the substance or article. If more than one packing group is indicated for the entry, the packing group of the substance or formulation to be transported shall be determined, based on its properties, through application of the hazard grouping criteria as provided in part 2.

Column 6 **Special provisions** – this column contains a number referring to any special provision(s) indicated in chapter 3.3 that is relevant to the substance or article. Special provisions apply to all packing groups permitted for a particular substance or article unless the wording makes it otherwise apparent. The special provision numbers specific to the sea mode start from 900.

Note: When a special provision is no longer needed, this special provision is deleted but the special provision number is not allocated again, in order not to confuse the users of this Code. For this reason, some of the numbers are missing.

Column 7a **Limited quantities** – this column provides the maximum quantity per inner packaging or article for transporting dangerous goods as limited quantities in accordance with chapter 3.4.

Column 7b **Excepted quantities** – this column provides an alpha-numeric code described in subsection 3.5.1.2 which indicates the maximum quantity per inner and outer packaging for transporting dangerous goods as excepted quantities in accordance with chapter 3.5.

Column 8 **Packing instructions** – this column contains alpha-numeric codes which refer to the relevant packing instruction(s) in 4.1.4. The packing instructions indicate the packagings (including large packagings) which may be used for the transport of substances and articles.

A code including the letter "P" refers to packing instructions for the use of packagings described in chapter 6.1, 6.2 or 6.3.

A code including the letters "LP" refers to packing instructions for the use of large packagings described in chapter 6.6.

When a code including the letter(s) "P" or "LP" is not provided, it means that the substance is not allowed in that type of packaging.

Column 9 **Special packing provisions** – this column contains alpha-numeric codes which refer to the relevant special packing provisions specified in 4.1.4. The special packing provisions indicate the packagings (including large packagings).

A special packing provision including the letters "PP" refers to a special packing provision applicable to the use of a packing instruction bearing the Code "P" in 4.1.4.1.

A special packing provision including the letter "L" refers to a special packing provision applicable to a packing instruction bearing the code "LP" in 4.1.4.3.

Column 10 **IBC packing instructions** – this column contains alpha-numeric codes that refer to the relevant IBC instruction, which indicates the type of IBC that shall be used for the transport of the substance under reference. A code including the letters "IBC" refers to packing instructions for the use of IBCs described in chapter 6.5. When a code is not provided, it means the substance is not authorized in IBC.

Column 11 **IBC special provisions** – this column contains an alpha-numeric code, including the letter "B", which refers to special packing provisions applicable to the use of packing instructions bearing the code "IBC" in 4.1.4.2.

Column 12 [Reserved]

Column 13 **Tank and bulk container instructions** – this column contains T codes (see 4.2.5.2.6) applicable to the transport of dangerous goods in portable tanks and road tank vehicles.

When a T code is not provided in this column, it means that the dangerous goods are not authorized for transport in tanks unless specifically approved by the competent authority.

A code including the letters "BK" refers to the type of bulk containers used for the transport of bulk goods described in chapters 4.3 and 6.9.

The gases authorized for transport in MEGCs are indicated in the column "MEGC" in tables 1 and 2 of packing instruction P200 in 4.1.4.1.

Column 14 **Tank special provisions** – this column contains TP notes (see 4.2.5.3) applicable to the transport of dangerous goods in portable tanks and road tank vehicles. The TP notes specified in this column apply to the portable tanks specified in column 13.

Column 15 **EmS** – this column refers to the relevant emergency schedules for FIRE and SPILLAGE in "The EmS Guide – Revised Emergency Response Procedures for Ships Carrying Dangerous Goods".

The first EmS code refers to the relevant Fire Schedule (e.g. Fire Schedule Alfa "F-A" General Fire Schedule).

The second EmS code refers to the relevant Spillage Schedule (e.g. Spillage Schedule Alfa "S-A" Toxic Substances).

Underlined EmS codes (special cases) indicate a substance, material or article for which additional advice is given in the emergency response procedures.

For dangerous goods offered for transport under N.O.S. entries or other generic entries, the most relevant emergency response procedures may vary with the properties of the hazardous constituents. As a consequence, shippers may have to declare different EmS codes from those indicated, if, to their knowledge, such codes are more appropriate.

The provisions in this column are not mandatory.

Column 16a **Stowage and handling** – this column contains the stowage and handling codes as specified in 7.1.5 and 7.1.6.

Column 16b **Segregation** – this column contains the segregation group codes as specified in 7.2.5.2 and the segregation codes as specified in 7.2.8.

Column 17 **Properties and observations** – this column contains properties of and observations on the dangerous goods listed. The provisions in this column are not mandatory.

Properties of most gases include an indication of its density in relation to air. The figures in brackets give the density relative to air.

.1 "lighter than air" when the vapour density is down to half that of air;

.2 "much lighter than air" when the vapour density is less than half that of air;

.3 "heavier than air" when the vapour density is up to twice that of air; and

.4 "much heavier than air" when the vapour density is more than twice that of air.

When explosive limits are given, these refer to the volume percentage of the vapour of the substance when mixed with air.

The ease and extent to which different liquids mix with water varies greatly and most entries have included an indication of miscibility. In these cases "miscible with water" normally means capable of being mixed with water in all proportions to form a completely homogeneous liquid.

Column 18 **UN No.** – see column 1.

3.2.2 Abbreviations and symbols

The following abbreviations and symbols are used in the Dangerous Goods List and have the meanings shown:

Abbreviation/symbol	Column	Meaning
N.O.S.	2	Not otherwise specified
P	4	Marine pollutant

Dangerous Goods List

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
0004	AMMONIUM PICRATE dry or wetted with less than 10% water, by mass	1.1D	–	–	–	0	E0	P112 (a), (b) or (c)	PP26	–	–	–	–	–	F-B, S-Y	Category 04 SW1	
0005	CARTRIDGES FOR WEAPONS with bursting charge	1.1F	–	–	–	0	E0	P130 LP101	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0006	CARTRIDGES FOR WEAPONS with bursting charge	1.1E	–	–	–	0	E0	P130 LP101	PP67 L1	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0007	CARTRIDGES FOR WEAPONS with bursting charge	1.2F	–	–	–	0	E0	P130 LP101	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0009	AMMUNITION, INCENDIARY with or without burster, expelling charge or propelling charge	1.2G	–	–	–	0	E0	P130 LP101	PP67 L1	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0010	AMMUNITION, INCENDIARY with or without burster, expelling charge or propelling charge	1.3G	–	–	–	0	E0	P130 LP101	PP67 L1	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0012	CARTRIDGES FOR WEAPONS, INERT PROJECTILE or CARTRIDGES, SMALL ARMS	1.4S	–	–	364	5 kg	E0	P130 LP101	–	–	–	–	–	–	F-B, S-X	Category 01 SW1	
0014	CARTRIDGES FOR WEAPONS, BLANK or CARTRIDGES, SMALL ARMS, BLANK or CARTRIDGES FOR TOOLS, BLANK	1.4S	–	–	364	5 kg	E0	P130 LP101	–	–	–	–	–	–	F-B, S-X	Category 01 SW1	
0015	AMMUNITION, SMOKE with or without burster, expelling charge or propelling charge	1.2G	See SP204	–	204	0	E0	P130 LP101	PP67 L1	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0016	AMMUNITION, SMOKE with or without burster, expelling charge or propelling charge	1.3G	See SP204	–	204	0	E0	P130 LP101	PP67 L1	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0018	AMMUNITION, TEAR-PRODUCING with burster, expelling charge or propelling charge	1.2G	6.1/8	–	–	0	E0	P130 LP101	PP67 L1	–	–	–	–	–	F-B, S-Z	Category 03 SW1	
0019	AMMUNITION, TEAR-PRODUCING with burster, expelling charge or propelling charge	1.3G	6.1/8	–	–	0	E0	P130 LP101	PP67 L1	–	–	–	–	–	F-B, S-Z	Category 03 SW1	
0020	AMMUNITION, TOXIC with burster, expelling charge or propelling charge	1.2K	6.1	–	274	0	E0	P101	–	–	–	–	–	–	F-B, S-Z	Category 05 SW1	
0021	AMMUNITION, TOXIC with burster, expelling charge or	1.3K	6.1	–	274	0	E0	P101	–	–	–	–	–	–	F-B, S-Z	Category 05 SW1	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
0034	BOMBS with bursting charge	1.1D	–	–	–	0	E0	P130 LP101	PP67 L1	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0035	BOMBS with bursting charge	1.2D	–	–	–	0	E0	P130 LP101	PP67 L1	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0037	BOMBS, PHOTO-FLASH	1.1F	–	–	–	0	E0	P130 LP101	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0038	BOMBS, PHOTO-FLASH	1.1D	–	–	–	0	E0	P130 LP101	PP67 L1	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0039	BOMBS, PHOTO-FLASH	1.2G	–	–	–	0	E0	P130 LP101	PP67 L1	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0042	BOOSTERS without detonator	1.1D	–	–	–	0	E0	P132 (a) or (b)	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0043	BURSTERS explosive	1.1D	–	–	–	0	E0	P133	PP69	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0044	PRIMERS, CAP TYPE	1.4S	–	–	–	0	E0	P133	–	–	–	–	–	–	F-B, S-X	Category 01 SW1	
0048	CHARGES, DEMOLITION	1.1D	–	–	–	0	E0	P130 LP101	PP67 L1	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0049	CARTRIDGES, FLASH	1.1G	–	–	–	0	E0	P135	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0050	CARTRIDGES, FLASH	1.3G	–	–	–	0	E0	P135	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0054	CARTRIDGES, SIGNAL	1.3G	–	–	–	0	E0	P135	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0055	CASES, CARTRIDGE, EMPTY, WITH PRIMER	1.4S	–	–	364	5 kg	E0	P136	–	–	–	–	–	–	F-B, S-X	Category 01 SW1	
0056	CHARGES, DEPTH	1.1D	–	–	–	0	E0	P130 LP101	PP67 L1	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0059	CHARGES, SHAPED, without detonator	1.1D	–	–	–	0	E0	P137	PP70	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0060	CHARGES, SUPPLEMENTARY, EXPLOSIVE	1.1D	–	–	–	0	E0	P132 (a) or (b)	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0065	CORD, DETONATING, flexible	1.1D	–	–	–	0	E0	P139	PP71 PP72	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0066	CORD, IGNITER	1.4G	–	–	–	0	E0	P140	–	–	–	–	–	–	F-B, S-X	Category 02 SW1	
0070	CUTTERS, CABLE, EXPLOSIVE	1.4S	–	–	–	0	E0	P134 LP102	–	–	–	–	–	–	F-B, S-X	Category 01 SW1	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
0076	DINITROPHENOL, dry or wetted with less than 15% water, by mass	1.1D	6.1 P	–	–	0	E0	P112 (a), (b) or (c)	PP26	–	–	–	–	–	F-B, S-Z	Category 04 SW1	
0077	DINITROPHENOLATES, alkali metals, dry or wetted with less than 15% water, by mass	1.3C	6.1 P	–	–	0	E0	P114 (a) or (b)	PP26	–	–	–	–	–	F-B, S-Z	Category 04 SW1	
0078	DINITRORESORCINOL, dry or wetted with less than 15% water, by mass	1.1D	–	–	–	0	E0	P112 (a), (b) or (c)	PP26	–	–	–	–	–	F-B, S-Y	Category 04 SW1	
0079	HEXANITRODIPHENYLAMINE (DIPICRYLAMINE; HEXYL)	1.1D	–	–	–	0	E0	P112 (b) or (c)	–	–	–	–	–	–	F-B, S-Y	Category 04 SW1	
0081	EXPLOSIVE, BLASTING, TYPE A	1.1D	–	–	–	0	E0	P116	PP63 PP66	–	–	–	–	–	F-B, S-Y	Category 04 SW1	
0082	EXPLOSIVE, BLASTING, TYPE B	1.1D	–	–	–	0	E0	P116	PP61 PP62	IBC100	B9	–	–	–	F-B, S-Y	Category 04 SW1	
0083	EXPLOSIVE, BLASTING, TYPE C	1.1D	–	–	267	0	E0	P116	–	–	–	–	–	–	F-B, S-Y	Category 04 SW1	
0084	EXPLOSIVE, BLASTING, TYPE D	1.1D	–	–	–	0	E0	P116	–	–	–	–	–	–	F-B, S-Y	Category 04 SW1	
0092	FLARES, SURFACE	1.3G	–	–	–	0	E0	P135	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0093	FLARES, AERIAL	1.3G	–	–	–	0	E0	P135	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0094	FLASH POWDER	1.1G	–	–	–	0	E0	P113	PP49	–	–	–	–	–	F-B, S-Y	Category 03 SW1	
0099	FRACTURING DEVICES, EXPLOSIVE without detonator, for oil wells	1.1D	–	–	–	0	E0	P134 LP102	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0101	FUSE, NON-DETONATING	1.3G	–	–	–	0	E0	P140	PP74 PP75	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0102	CORD (FUSE), DETONATING, metal-clad	1.2D	–	–	–	0	E0	P139	PP71	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0103	FUSE, IGNITER tubular, metal-clad	1.4G	–	–	–	0	E0	P140	–	–	–	–	–	–	F-B, S-X	Category 02 SW1	
0104	CORD (FUSE), DETONATING, MILD EFFECT, metal-clad	1.4D	–	–	–	0	E0	P139	PP71	–	–	–	–	–	F-B, S-X	Category 02 SW1	
0105	FUSE, SAFETY	1.4S	–	–	–	0	E0	P140	PP73	–	–	–	–	–	F-B, S-X	Category 01 SW1	
0106	FUZES, DETONATING	1.1B	–	–	–	0	E0	P141	–	–	–	–	–	–	F-B, S-X	Category 05	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
0118	HEXOLITE (HEXOTOL), dry or wetted with less than 15% water, by mass	1.1D	–	–	–	0	E0	P112 (a), (b) or (c)	–	–	–	–	–	–	F-B, S-Y	Category 04 SW1	
0121	IGNITERS	1.1G	–	–	–	0	E0	P142	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0124	JET PERFORATING GUNS, CHARGED, oil well, without detonator	1.1D	–	–	–	0	E0	P101	–	–	–	–	–	–	F-B, S-X	Category 03 SW1 SW30	
0129	LEAD AZIDE, WETTED with not less than 20% water, or mixture of alcohol and water, by mass	1.1A	–	–	266	0	E0	P110 (a) or (b)	PP42	–	–	–	–	–	F-B, S-Y	Category 05 SW1	
0130	LEAD STYPHNATE (LEAD TRINITRORESORCINATE), WETTED with not less than 20% water, or mixture of alcohol and water, by mass	1.1A	–	–	266	0	E0	P110 (a) or (b)	PP42	–	–	–	–	–	F-B, S-Y	Category 05 SW1	
0131	LIGHTERS, FUSE	1.4S	–	–	–	0	E0	P142	–	–	–	–	–	–	F-B, S-X	Category 01 SW1	
0132	DEFLAGRATING METAL SALTS OF AROMATIC NITRO-DERIVATIVES, N.O.S.	1.3C	–	–	–	0	E0	P114 (b)	PP26	–	–	–	–	–	F-B, S-Y	Category 04 SW1	
0133	MANNITOL HEXANITRATE (NITROMANNITE), WETTED with not less than 40% water, or mixture of alcohol and water, by mass	1.1D	–	–	266	0	E0	P112 (a)	–	–	–	–	–	–	F-B, S-Y	Category 04 SW1	
0135	MERCURY FULMINATE, WETTED with not less than 20% water, or mixture of alcohol and water, by mass	1.1A	–	–	266	0	E0	P110 (a) or (b)	PP42	–	–	–	–	–	F-B, S-Y	Category 05 SW1	
0136	MINES with bursting charge	1.1F	–	–	–	0	E0	P130 LP101	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0137	MINES with bursting charge	1.1D	–	–	–	0	E0	P130 LP101	PP67 L1	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0138	MINES with bursting charge	1.2D	–	–	–	0	E0	P130 LP101	PP67 L1	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0143	NITROGLYCERIN, DESENSITIZED with not less than 40%	1.1D	See SP271	–	266 271	0	E0	P115	PP53 PP54	–	–	–	–	–	F-B, S-Z	Category 04 SW1	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
0150	PENTAERYTHRITE TETRANITRATE (PENTAERYTHRITOL TETRANITRATE; PETN), WETTED with not less than 25% water, by mass or PENTAERYTHRITE TETRANITRATE (PENTAERYTHRITOL TETRANITRATE; PETN), DESENSITIZED with not less than 15% phlegmatizer, by mass	1.1D	–	–	266	0	E0	P112 (a) or (b)	–	–	–	–	–	–	F-B, S-Y	Category 04 SW1	
0151	PENTOLITE, dry or wetted with less than 15% water, by mass	1.1D	–	–	–	0	E0	P112 (a), (b) or (c)	–	–	–	–	–	–	F-B, S-Y	Category 04 SW1	
0153	TRINITROANILINE (PICRAMIDE)	1.1D	–	–	–	0	E0	P112 (b) or (c)	–	–	–	–	–	–	F-B, S-Y	Category 04 SW1	
0154	TRINITROPHENOL (PICRIC ACID), dry or wetted with less than 30% water, by mass	1.1D	–	–	–	0	E0	P112 (a), (b) or (c)	PP26	–	–	–	–	–	F-B, S-Y	Category 04 SW1	
0155	TRINITROCHLOROBENZENE (PICRYL CHLORIDE)	1.1D	–	–	–	0	E0	P112 (b) or (c)	–	–	–	–	–	–	F-B, S-Y	Category 04 SW1	
0159	POWDER CAKE (POWDER PASTE), WETTED with not less than 25% water, by mass	1.3C	–	–	266	0	E0	P111	PP43	–	–	–	–	–	F-B, S-Y	Category 04 SW1	
0160	POWDER, SMOKELESS	1.1C	–	–	–	0	E0	P114 (b)	PP50 PP52	–	–	–	–	–	F-B, S-Y	Category 04 SW1	
0161	POWDER, SMOKELESS	1.3C	–	–	–	0	E0	P114 (b)	PP50 PP52	–	–	–	–	–	F-B, S-Y	Category 04 SW1	
0167	PROJECTILES with bursting charge	1.1F	–	–	–	0	E0	P130 LP101	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0168	PROJECTILES with bursting charge	1.1D	–	–	–	0	E0	P130 LP101	PP67 L1	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0169	PROJECTILES with bursting charge	1.2D	–	–	–	0	E0	P130 LP101	PP67 L1	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0171	AMMUNITION, ILLUMINATING with or without burster, expelling charge or propelling charge	1.2G	–	–	–	0	E0	P130 LP101	PP67 L1	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0173	RELEASE DEVICES, EXPLOSIVE	1.4S	–	–	–	0	E0	P134 LP102	–	–	–	–	–	–	F-B, S-X	Category 01 SW1	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
0191	SIGNAL DEVICES, HAND	1.4G	–	–	–	0	E0	P135	–	–	–	–	–	–	F-B, S-X	Category 02 SW1	
0192	SIGNALS, RAILWAY TRACK, EXPLOSIVE	1.1G	–	–	–	0	E0	P135	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0193	SIGNALS, RAILWAY TRACK, EXPLOSIVE	1.4S	–	–	–	0	E0	P135	–	–	–	–	–	–	F-B, S-X	Category 01 SW1	
0194	SIGNALS, DISTRESS, ship	1.1G	–	–	–	0	E0	P135	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0195	SIGNALS, DISTRESS, ship	1.3G	–	–	–	0	E0	P135	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0196	SIGNALS, SMOKE	1.1G	–	–	–	0	E0	P135	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0197	SIGNALS, SMOKE	1.4G	–	–	–	0	E0	P135	–	–	–	–	–	–	F-B, S-X	Category 02 SW1	
0204	SOUNDING DEVICES, EXPLOSIVE	1.2F	–	–	–	0	E0	P134 LP102	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0207	TETRANITROANILINE	1.1D	–	–	–	0	E0	P112 (b) or (c)	–	–	–	–	–	–	F-B, S-Y	Category 04 SW1	
0208	TRINITROPHENYLMETHYL-NITRAMINE (TETRYL)	1.1D	–	–	–	0	E0	P112 (b) or (c)	–	–	–	–	–	–	F-B, S-Y	Category 04 SW1	
0209	TRINITROTOLUENE (TNT), dry or wetted with less than 30% water, by mass	1.1D	–	–	–	0	E0	P112 (a), (b) or (c)	PP46	–	–	–	–	–	F-B, S-Y	Category 04 SW1	
0212	TRACERS FOR AMMUNITION	1.3G	–	–	–	0	E0	P133	PP69	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0213	TRINITROANISOLE	1.1D	–	–	–	0	E0	P112 (b) or (c)	–	–	–	–	–	–	F-B, S-Y	Category 04 SW1	
0214	TRINITROBENZENE, dry or wetted with less than 30% water, by mass	1.1D	–	–	–	0	E0	P112 (a), (b) or (c)	–	–	–	–	–	–	F-B, S-Y	Category 04 SW1	
0215	TRINITROBENZOIC ACID, dry or wetted with less than 30% water, by mass	1.1D	–	–	–	0	E0	P112 (a), (b) or (c)	–	–	–	–	–	–	F-B, S-Y	Category 04 SW1	
0216	TRINITRO-*m*-CRESOL	1.1D	–	–	–	0	E0	P112 (b) or (c)	PP26	–	–	–	–	–	F-B, S-Y	Category 04 SW1	
0217	TRINITRONAPHTHALENE	1.1D	–	–	–	0	E0	P112 (b) or (c)	–	–	–	–	–	–	F-B, S-Y	Category 04 SW1	
0218	TRINITROPHENETOLE	1.1D	–	–	–	0	E0	P112 (b) or (c)	–	–	–	–	–	–	F-B, S-Y	Category 04 SW1	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
0224	BARIUM AZIDE, dry or wetted with less than 50% water, by mass	1.1A	6.1	–	–	0	E0	P110 (a) or (b)	PP42	–	–	–	–	–	F-B, S-Z	Category 05 SW1	
0225	BOOSTERS WITH DETONATOR	1.1B	–	–	–	0	E0	P133	PP69	–	–	–	–	–	F-B, S-X	Category 05 SW1	
0226	CYCLOTETRAMETHYLENE-TETRANITRAMINE (HMX; OCTOGEN), WETTED with not less than 15% water, by mass	1.1D	–	–	266	0	E0	P112 (a)	PP45	–	–	–	–	–	F-B, S-Y	Category 04 SW1	
0234	SODIUM DINITRO-*o*-CRESOLATE, dry or wetted with less than 15% water, by mass	1.3C	6.1 P	–	–	0	E0	P114 (a) or (b)	PP26	–	–	–	–	–	F-B, S-Z	Category 04 SW1	
0235	SODIUM PICRAMATE, dry or wetted with less than 20% water, by mass	1.3C	–	–	–	0	E0	P114 (a) or (b)	PP26	–	–	–	–	–	F-B, S-Y	Category 04 SW1	
0236	ZIRCONIUM PICRAMATE, dry or wetted with less than 20% water, by mass	1.3C	–	–	–	0	E0	P114 (a) or (b)	PP26	–	–	–	–	–	F-B, S-Y	Category 04 SW1	
0237	CHARGES, SHAPED, FLEXIBLE, LINEAR	1.4D	–	–	–	0	E0	P138	–	–	–	–	–	–	F-B, S-X	Category 02 SW1	
0238	ROCKETS, LINE-THROWING	1.2G	–	–	–	0	E0	P130 LP101	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0240	ROCKETS, LINE-THROWING	1.3G	–	–	–	0	E0	P130 LP101	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0241	EXPLOSIVE, BLASTING, TYPE E	1.1D	–	–	–	0	E0	P116	PP61 PP62	IBC100	B10	–	–	–	F-B, S-X	Category 04 SW1	
0242	CHARGES, PROPELLING, FOR CANNON	1.3C	–	–	–	0	E0	P130 LP101	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0243	AMMUNITION, INCENDIARY, WHITE PHOSPHORUS with burster, expelling charge or propelling charge	1.2H	–	–	–	0	E0	P130 LP101	PP67 L1	–	–	–	–	–	F-B, S-X	Category 05 SW1	
0244	AMMUNITION, INCENDIARY, WHITE PHOSPHORUS with burster, expelling charge or propelling charge	1.3H	–	–	–	0	E0	P130 LP101	PP67 L1	–	–	–	–	–	F-B, S-X	Category 05 SW1	
0245	AMMUNITION, SMOKE, WHITE PHOSPHORUS with burster, expelling charge or propelling	1.2H	–	–	–	0	E0	P130 LP101	PP67 L1	–	–	–	–	–	F-B, S-X	Category 05 SW1	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
0249	CONTRIVANCES, WATER-ACTIVATED with burster, expelling charge or propelling charge	1.3L	4.3	–	274	0	E0	P144	PP77	–	–	–	–	–	F-B, S-Y	Category 05 SW1	
0250	ROCKET MOTORS WITH HYPERGOLIC LIQUIDS with or without expelling charge	1.3L	–	–	–	0	E0	P101	–	–	–	–	–	–	F-B, S-X	Category 05 SW1	
0254	AMMUNITION, ILLUMINATING with or without burster, expelling charge or propelling charge	1.3G	–	–	–	0	E0	P130 LP101	PP67 L1	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0255	DETONATORS, ELECTRIC for blasting	1.4B	–	–	399	0	E0	P131	–	–	–	–	–	–	F-B, S-X	Category 05 SW1	
0257	FUZES, DETONATING	1.4B	–	–	–	0	E0	P141	–	–	–	–	–	–	F-B, S-X	Category 05 SW1	
0266	OCTOLITE (OCTOL), dry or wetted with less than 15% water, by mass	1.1D	–	–	–	0	E0	P112 (a), (b) or (c)	–	–	–	–	–	–	F-B, S-Y	Category 04 SW1	
0267	DETONATORS, NON-ELECTRIC for blasting	1.4B	–	–	–	0	E0	P131	PP68	–	–	–	–	–	F-B, S-X	Category 05 SW1	
0268	BOOSTERS WITH DETONATOR	1.2B	–	–	–	0	E0	P133	PP69	–	–	–	–	–	F-B, S-X	Category 05 SW1	
0271	CHARGES, PROPELLING	1.1C	–	–	–	0	E0	P143	PP76	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0272	CHARGES, PROPELLING	1.3C	–	–	–	0	E0	P143	PP76	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0275	CARTRIDGES, POWER DEVICE	1.3C	–	–	–	0	E0	P134 LP102	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0276	CARTRIDGES, POWER DEVICE	1.4C	–	–	–	0	E0	P134 LP102	–	–	–	–	–	–	F-B, S-X	Category 02 SW1	
0277	CARTRIDGES, OIL WELL	1.3C	–	–	–	0	E0	P134 LP102	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0278	CARTRIDGES, OIL WELL	1.4C	–	–	–	0	E0	P134 LP102	–	–	–	–	–	–	F-B, S-X	Category 02 SW1	
0279	CHARGES, PROPELLING, FOR CANNON	1.1C	–	–	–	0	E0	P130 LP101	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0280	ROCKET MOTORS	1.1C	–	–	–	0	E0	P130 LP101	PP67 L1	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0281	ROCKET MOTORS	1.2C	–	–	–	0	E0	P130 LP101	PP67 L1	–	–	–	–	–	F-B, S-X	Category 04 SW1	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
0289	CORD, DETONATING, flexible	1.4D	–	–	–	0	E0	P139	PP71 PP72	–	–	–	–	–	F-B, S-X	Category 02 SW1	
0290	CORD (FUSE), DETONATING, metal-clad	1.1D	–	–	–	0	E0	P139	PP71	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0291	BOMBS with bursting charge	1.2F	–	–	–	0	E0	P130 LP101	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0292	GRENADES, hand or rifle, with bursting charge	1.1F	–	–	–	0	E0	P141	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0293	GRENADES, hand or rifle, with bursting charge	1.2F	–	–	–	0	E0	P141	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0294	MINES with bursting charge	1.2F	–	–	–	0	E0	P130 LP101	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0295	ROCKETS with bursting charge	1.2F	–	–	–	0	E0	P130 LP101	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0296	SOUNDING DEVICES, EXPLOSIVE	1.1F	–	–	–	0	E0	P134 LP102	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0297	AMMUNITION, ILLUMINATING with or without burster, expelling charge or propelling charge	1.4G	–	–	–	0	E0	P130 LP101	PP67 L1	–	–	–	–	–	F-B, S-X	Category 02 SW1	
0299	BOMBS, PHOTO-FLASH	1.3G	–	–	–	0	E0	P130 LP101	PP67 L1	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0300	AMMUNITION, INCENDIARY with or without burster, expelling charge or propelling charge	1.4G	–	–	–	0	E0	P130 LP101	PP67 L1	–	–	–	–	–	F-B, S-X	Category 02 SW1	
0301	AMMUNITION, TEAR-PRODUCING with burster, expelling charge or propelling charge	1.4G	6.1/8	–	–	0	E0	P130 LP101	PP67 L1	–	–	–	–	–	F-B, S-Z	Category 02 SW1	
0303	AMMUNITION, SMOKE with or without burster, expelling charge or propelling charge	1.4G	See SP204	–	204	0	E0	P130 LP101	PP67 L1	–	–	–	–	–	F-B, S-X	Category 02 SW1	
0305	FLASH POWDER	1.3G	–	–	–	0	E0	P113	PP49	–	–	–	–	–	F-B, S-Y	Category 03 SW1	
0306	TRACERS FOR AMMUNITION	1.4G	–	–	–	0	E0	P133	PP69	–	–	–	–	–	F-B, S-X	Category 02 SW1	
0312	CARTRIDGES, SIGNAL	1.4G	–	–	–	0	E0	P135	–	–	–	–	–	–	F-B, S-X	Category 02 SW1	
0313	SIGNALS, SMOKE	1.2G	–	–	–	0	E0	P135	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
0321	CARTRIDGES FOR WEAPONS with bursting charge	1.2E	–	–	–	0	E0	P130 LP101	PP67 L1	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0322	ROCKET MOTORS WITH HYPERGOLIC LIQUIDS with or without expelling charge	1.2L	–	–	–	0	E0	P101	–	–	–	–	–	–	F-B, S-X	Category 05 SW1	
0323	CARTRIDGES, POWER DEVICE	1.4S	–	–	347	0	E0	P134 LP102	–	–	–	–	–	–	F-B, S-X	Category 01 SW1	
0324	PROJECTILES with bursting charge	1.2F	–	–	–	0	E0	P130 LP101	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0325	IGNITERS	1.4G	–	–	–	0	E0	P142	–	–	–	–	–	–	F-B, S-X	Category 02 SW1	
0326	CARTRIDGES FOR WEAPONS, BLANK	1.1C	–	–	–	0	E0	P130 LP101	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0327	CARTRIDGES FOR WEAPONS, BLANK or CARTRIDGES, SMALL ARMS, BLANK	1.3C	–	–	–	0	E0	P130 LP101	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0328	CARTRIDGES FOR WEAPONS, INERT PROJECTILE	1.2C	–	–	–	0	E0	P130 LP101	PP67 L1	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0329	TORPEDOES with bursting charge	1.1E	–	–	–	0	E0	P130 LP101	PP67 L1	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0330	TORPEDOES with bursting charge	1.1F	–	–	–	0	E0	P130 LP101	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0331	EXPLOSIVE, BLASTING, TYPE B (AGENT, BLASTING, TYPE B)	1.5D	–	–	–	0	E0	P116	PP61 PP62 PP64	IBC100	–	–	T1	TP1 TP17 TP32	F-B, S-Y	Category 03 SW1	
0332	EXPLOSIVE, BLASTING, TYPE E (AGENT, BLASTING, TYPE E)	1.5D	–	–	–	0	E0	P116	PP61 PP62	IBC100	–	–	T1	TP1 TP17 TP32	F-B, S-Y	Category 03 SW1	
0333	FIREWORKS	1.1G	–	–	–	0	E0	P135	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0334	FIREWORKS	1.2G	–	–	–	0	E0	P135	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0335	FIREWORKS	1.3G	–	–	–	0	E0	P135	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0336	FIREWORKS	1.4G	–	–	–	0	E0	P135	–	–	–	–	–	–	F-B, S-X	Category 02 SW1	
0337	FIREWORKS	1.4S	–	–	–	0	E0	P135	–	–	–	–	–	–	F-B, S-X	Category 01 SW1	
0338	CARTRIDGES FOR WEAPONS,	1.4C	–	–	–	0	E0	P130	–	–	–	–	–	–	F-B, S-X	Category 02	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
0343	NITROCELLULOSE, PLASTICIZED with not less than 18% plasticizing substance, by mass	1.3C	–	–	105 393	0	E0	P111	–	–	–	–	–	–	F-B, S-Y	Category 04 SW1	
0344	PROJECTILES with bursting charge	1.4D	–	–	–	0	E0	P130 LP101	PP67 L1	–	–	–	–	–	F-B, S-X	Category 02 SW1	
0345	PROJECTILES, inert with tracer	1.4S	–	–	–	0	E0	P130 LP101	PP67 L1	–	–	–	–	–	F-B, S-X	Category 01 SW1	
0346	PROJECTILES with burster or expelling charge	1.2D	–	–	–	0	E0	P130 LP101	PP67 L1	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0347	PROJECTILES with burster or expelling charge	1.4D	–	–	–	0	E0	P130 LP101	PP67 L1	–	–	–	–	–	F-B, S-X	Category 02 SW1	
0348	CARTRIDGES FOR WEAPONS with bursting charge	1.4F	–	–	–	0	E0	P130 LP101	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0349	ARTICLES, EXPLOSIVE, N.O.S.	1.4S	–	–	178 274 347	0	E0	P101	–	–	–	–	–	–	F-B, S-X	Category 01 SW1	
0350	ARTICLES, EXPLOSIVE, N.O.S.	1.4B	–	–	178 274	0	E0	P101	–	–	–	–	–	–	F-B, S-X	Category 05 SW1	
0351	ARTICLES, EXPLOSIVE, N.O.S.	1.4C	–	–	178 274	0	E0	P101	–	–	–	–	–	–	F-B, S-X	Category 02 SW1	
0352	ARTICLES, EXPLOSIVE, N.O.S.	1.4D	–	–	178 274	0	E0	P101	–	–	–	–	–	–	F-B, S-X	Category 02 SW1	
0353	ARTICLES, EXPLOSIVE, N.O.S.	1.4G	–	–	178 274	0	E0	P101	–	–	–	–	–	–	F-B, S-X	Category 02 SW1	
0354	ARTICLES, EXPLOSIVE, N.O.S.	1.1L	See SP943	–	178 274	0	E0	P101	–	–	–	–	–	–	F-B, S-X	Category 05 SW1	
0355	ARTICLES, EXPLOSIVE, N.O.S.	1.2L	See SP943	–	178 274	0	E0	P101	–	–	–	–	–	–	F-B, S-X	Category 05 SW1	
0356	ARTICLES, EXPLOSIVE, N.O.S.	1.3L	See SP943	–	178 274	0	E0	P101	–	–	–	–	–	–	F-B, S-X	Category 05 SW1	
0357	SUBSTANCES, EXPLOSIVE, N.O.S.	1.1L	–	–	178 274	0	E0	P101	–	–	–	–	–	–	F-B, S-Y	Category 05 SW1	
0358	SUBSTANCES, EXPLOSIVE, N.O.S.	1.2L	–	–	178 274	0	E0	P101	–	–	–	–	–	–	F-B, S-Y	Category 05 SW1	
0359	SUBSTANCES, EXPLOSIVE, N.O.S.	1.3L	–	–	178 274	0	E0	P101	–	–	–	–	–	–	F-B, S-Y	Category 05 SW1	
0360	DETONATOR ASSEMBLIES, NON-ELECTRIC for blasting	1.1B	–	–	–	0	E0	P131	–	–	–	–	–	–	F-B, S-X	Category 05 SW1	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
0368	FUZES, IGNITING	1.4S	–	–	–	0	E0	P141	–	–	–	–	–	–	F-B, S-X	Category 01 SW1	
0369	WARHEADS, ROCKET with bursting charge	1.1F	–	–	–	0	E0	P130 LP101	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0370	WARHEADS, ROCKET with burster or expelling charge	1.4D	–	–	–	0	E0	P130 LP101	PP67 L1	–	–	–	–	–	F-B, S-X	Category 02 SW1	
0371	WARHEADS, ROCKET with burster or expelling charge	1.4F	–	–	–	0	E0	P130 LP101	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0372	GRENADES, PRACTICE, hand or rifle	1.2G	–	–	–	0	E0	P141	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0373	SIGNAL DEVICES, HAND	1.4S	–	–	–	0	E0	P135	–	–	–	–	–	–	F-B, S-X	Category 01 SW1	
0374	SOUNDING DEVICES, EXPLOSIVE	1.1D	–	–	–	0	E0	P134 LP102	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0375	SOUNDING DEVICES, EXPLOSIVE	1.2D	–	–	–	0	E0	P134 LP102	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0376	PRIMERS, TUBULAR	1.4S	–	–	–	0	E0	P133	–	–	–	–	–	–	F-B, S-X	Category 01 SW1	
0377	PRIMERS, CAP TYPE	1.1B	–	–	–	0	E0	P133	–	–	–	–	–	–	F-B, S-X	Category 05 SW1	
0378	PRIMERS, CAP TYPE	1.4B	–	–	–	0	E0	P133	–	–	–	–	–	–	F-B, S-X	Category 05 SW1	
0379	CASES, CARTRIDGE, EMPTY, WITH PRIMER	1.4C	–	–	–	0	E0	P136	–	–	–	–	–	–	F-B, S-X	Category 02 SW1	
0380	ARTICLES, PYROPHORIC	1.2L	–	–	–	0	E0	P101	–	–	–	–	–	–	F-B, S-X	Category 05 SW1	
0381	CARTRIDGES, POWER DEVICE	1.2C	–	–	–	0	E0	P134 LP102	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0382	COMPONENTS, EXPLOSIVE TRAIN, N.O.S.	1.2B	–	–	178 274	0	E0	P101	–	–	–	–	–	–	F-B, S-X	Category 05 SW1	
0383	COMPONENTS, EXPLOSIVE TRAIN, N.O.S.	1.4B	–	–	178 274	0	E0	P101	–	–	–	–	–	–	F-B, S-X	Category 05 SW1	
0384	COMPONENTS, EXPLOSIVE TRAIN, N.O.S.	1.4S	–	–	178 274 347	0	E0	P101	–	–	–	–	–	–	F-B, S-X	Category 01 SW1	
0385	5-NITROBENZOTRIAZOL	1.1D	–	–	–	0	E0	P112 (b) or (c)	–	–	–	–	–	–	F-B, S-Y	Category 04 SW1	
0386	TRINITROBENZENESULPHONIC ACID	1.1D	–	–	–	0	E0	P112 (b) or (c)	PP26	–	–	–	–	–	F-B, S-Y	Category 04 SW1	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
0391	CYCLOTRIMETHYLENE-TRINITRAMINE (CYCLONITE; HEXOGEN; RDX) AND CYCLOTETRAMETHYLENE-TETRANITRAMINE (HMX; OCTOGEN) MIXTURE, WETTED with not less than 15% water, by mass or CYCLOTRIMETHYLENE-TRINITRAMINE (CYCLONITE; HEXOGEN; RDX) AND CYCLOTETRAMETHYLENE-TETRANITRAMINE (HMX; OCTOGEN) MIXTURE, DESENSITIZED with not less than 10% phlegmatizer, by mass	1.1D	–	–	266	0	E0	P112 (a) or (b)	–	–	–	–	–	–	F-B, S-Y	Category 04 SW1	
0392	HEXANITROSTILBENE	1.1D	–	–	–	0	E0	P112 (b) or (c)	–	–	–	–	–	–	F-B, S-Y	Category 04 SW1	
0393	HEXOTONAL	1.1D	–	–	–	0	E0	P112 (b)	–	–	–	–	–	–	F-B, S-Y	Category 04 SW1	
0394	TRINITRORESORCINOL (STYPHNIC ACID), WETTED with not less than 20% water, or mixture of alcohol and water, by mass	1.1D	–	–	–	0	E0	P112 (a)	PP26	–	–	–	–	–	F-B, S-Y	Category 04 SW1	
0395	ROCKET MOTORS, LIQUID FUELLED	1.2J	–	–	–	0	E0	P101	–	–	–	–	–	–	F-B, S-X	Category 05 SW1	
0396	ROCKET MOTORS, LIQUID FUELLED	1.3J	–	–	–	0	E0	P101	–	–	–	–	–	–	F-B, S-X	Category 05 SW1	
0397	ROCKETS, LIQUID FUELLED with bursting charge	1.1J	–	–	–	0	E0	P101	–	–	–	–	–	–	F-B, S-X	Category 05 SW1	
0398	ROCKETS, LIQUID FUELLED with bursting charge	1.2J	–	–	–	0	E0	P101	–	–	–	–	–	–	F-B, S-X	Category 05 SW1	
0399	BOMBS WITH FLAMMABLE LIQUID with bursting charge	1.1J	–	–	–	0	E0	P101	–	–	–	–	–	–	F-B, S-X	Category 05 SW1	
0400	BOMBS WITH FLAMMABLE LIQUID with bursting charge	1.2J	–	–	–	0	E0	P101	–	–	–	–	–	–	F-B, S-X	Category 05 SW1	
0401	DIPICRYL SULPHIDE, dry or wetted with less than 10% water, by mass	1.1D	–	–	–	0	E0	P112 (a), (b) or (c)	–	–	–	–	–	–	F-B, S-Y	Category 04 SW1	
0402	AMMONIUM PERCHLORATE	1.1D	–	–	152	0	E0	P112 (b) or (c)	–	–	–	–	–	–	F-B, S-Y	Category 04 SW1	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
0410	FUZES, DETONATING with protective features	1.4D	–	–	–	0	E0	P141	–	–	–	–	–	–	F-B, S-X	Category 02 SW1	
0411	PENTAERYTHRITE TETRANITRATE (PENTAERYTHRITOL TETRANITRATE; PETN) with not less than 7% wax, by mass	1.1D	–	–	131	0	E0	P112 (b) or (c)	–	–	–	–	–	–	F-B, S-Y	Category 04 SW1	
0412	CARTRIDGES FOR WEAPONS with bursting charge	1.4E	–	–	–	0	E0	P130 LP101	PP67 L1	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0413	CARTRIDGES FOR WEAPONS, BLANK	1.2C	–	–	–	0	E0	P130 LP101	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0414	CHARGES, PROPELLING, FOR CANNON	1.2C	–	–	–	0	E0	P130 LP101	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0415	CHARGES, PROPELLING	1.2C	–	–	–	0	E0	P143	PP76	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0417	CARTRIDGES FOR WEAPONS, INERT PROJECTILE or CARTRIDGES, SMALL ARMS	1.3C	–	–	–	0	E0	P130 LP101	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0418	FLARES, SURFACE	1.1G	–	–	–	0	E0	P135	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0419	FLARES, SURFACE	1.2G	–	–	–	0	E0	P135	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0420	FLARES, AERIAL	1.1G	–	–	–	0	E0	P135	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0421	FLARES, AERIAL	1.2G	–	–	–	0	E0	P135	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0424	PROJECTILES, inert with tracer	1.3G	–	–	–	0	E0	P130 LP101	PP67 L1	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0425	PROJECTILES, inert with tracer	1.4G	–	–	–	0	E0	P130 LP101	PP67 L1	–	–	–	–	–	F-B, S-X	Category 02 SW1	
0426	PROJECTILES with burster or expelling charge	1.2F	–	–	–	0	E0	P130 LP101	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0427	PROJECTILES with burster or expelling charge	1.4F	–	–	–	0	E0	P130 LP101	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0428	ARTICLES, PYROTECHNIC for technical purposes	1.1G	–	–	–	0	E0	P135	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0429	ARTICLES, PYROTECHNIC for technical purposes	1.2G	–	–	–	0	E0	P135	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0430	ARTICLES, PYROTECHNIC for	1.3G	–	–	–	0	E0	P135	–	–	–	–	–	–	F-B, S-X	Category 03	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
0437	ROCKETS with expelling charge	1.3C	–	–	–	0	E0	P130 LP101	PP67 L1	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0438	ROCKETS with expelling charge	1.4C	–	–	–	0	E0	P130 LP101	PP67 L1	–	–	–	–	–	F-B, S-X	Category 02 SW1	
0439	CHARGES, SHAPED, without detonator	1.2D	–	–	–	0	E0	P137	PP70	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0440	CHARGES, SHAPED, without detonator	1.4D	–	–	–	0	E0	P137	PP70	–	–	–	–	–	F-B, S-X	Category 02 SW1	
0441	CHARGES, SHAPED, without detonator	1.4S	–	–	347	0	E0	P137	PP70	–	–	–	–	–	F-B, S-X	Category 01 SW1	
0442	CHARGES, EXPLOSIVE, COMMERCIAL without detonator	1.1D	–	–	–	0	E0	P137	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0443	CHARGES, EXPLOSIVE, COMMERCIAL without detonator	1.2D	–	–	–	0	E0	P137	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0444	CHARGES, EXPLOSIVE, COMMERCIAL without detonator	1.4D	–	–	–	0	E0	P137	–	–	–	–	–	–	F-B, S-X	Category 02 SW1	
0445	CHARGES, EXPLOSIVE, COMMERCIAL without detonator	1.4S	–	–	347	0	E0	P137	–	–	–	–	–	–	F-B, S-X	Category 01 SW1	
0446	CASES, COMBUSTIBLE, EMPTY, WITHOUT PRIMER	1.4C	–	–	–	0	E0	P136	–	–	–	–	–	–	F-B, S-X	Category 02 SW1	
0447	CASES, COMBUSTIBLE, EMPTY, WITHOUT PRIMER	1.3C	–	–	–	0	E0	P136	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0448	5-MERCAPTOTETRAZOL-1-ACETIC ACID	1.4C	–	–	–	0	E0	P114 (b)	–	–	–	–	–	–	F-B, S-Y	Category 02 SW1	
0449	TORPEDOES, LIQUID FUELLED with or without bursting charge	1.1J	–	–	–	0	E0	P101	–	–	–	–	–	–	F-B, S-X	Category 05 SW1	
0450	TORPEDOES, LIQUID FUELLED with inert head	1.3J	–	–	–	0	E0	P101	–	–	–	–	–	–	F-B, S-X	Category 05 SW1	
0451	TORPEDOES with bursting charge	1.1D	–	–	–	0	E0	P130 LP101	PP67 L1	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0452	GRENADES, PRACTICE, hand or rifle	1.4G	–	–	–	0	E0	P141	–	–	–	–	–	–	F-B, S-X	Category 02 SW1	
0453	ROCKETS, LINE-THROWING	1.4G	–	–	–	0	E0	P130 LP101	–	–	–	–	–	–	F-B, S-X	Category 02 SW1	
0454	IGNITERS	1.4S	–	–	–	0	E0	P142	–	–	–	–	–	–	F-B, S-X	Category 01 SW1	
0455	DETONATORS, NON-ELECTRIC for blasting	1.4S	–	–	347	0	E0	P131	PP68	–	–	–	–	–	F-B, S-X	Category 01 SW1	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
0463	ARTICLES, EXPLOSIVE, N.O.S.	1.1D	–	–	178 274	0	E0	P101	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0464	ARTICLES, EXPLOSIVE, N.O.S.	1.1E	–	–	178 274	0	E0	P101	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0465	ARTICLES, EXPLOSIVE, N.O.S.	1.1F	–	–	178 274	0	E0	P101	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0466	ARTICLES, EXPLOSIVE, N.O.S.	1.2C	–	–	178 274	0	E0	P101	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0467	ARTICLES, EXPLOSIVE, N.O.S.	1.2D	–	–	178 274	0	E0	P101	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0468	ARTICLES, EXPLOSIVE, N.O.S.	1.2E	–	–	178 274	0	E0	P101	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0469	ARTICLES, EXPLOSIVE, N.O.S.	1.2F	–	–	178 274	0	E0	P101	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0470	ARTICLES, EXPLOSIVE, N.O.S.	1.3C	–	–	178 274	0	E0	P101	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0471	ARTICLES, EXPLOSIVE, N.O.S.	1.4E	–	–	178 274	0	E0	P101	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0472	ARTICLES, EXPLOSIVE, N.O.S.	1.4F	–	–	178 274	0	E0	P101	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0473	SUBSTANCES, EXPLOSIVE, N.O.S.	1.1A	–	–	178 274	0	E0	P101	–	–	–	–	–	–	F-B, S-Y	Category 05 SW1	
0474	SUBSTANCES, EXPLOSIVE, N.O.S.	1.1C	–	–	178 274	0	E0	P101	–	–	–	–	–	–	F-B, S-Y	Category 04 SW1	
0475	SUBSTANCES, EXPLOSIVE, N.O.S.	1.1D	–	–	178 274	0	E0	P101	–	–	–	–	–	–	F-B, S-Y	Category 04 SW1	
0476	SUBSTANCES, EXPLOSIVE, N.O.S.	1.1G	–	–	178 274	0	E0	P101	–	–	–	–	–	–	F-B, S-Y	Category 03 SW1	
0477	SUBSTANCES, EXPLOSIVE, N.O.S.	1.3C	–	–	178 274	0	E0	P101	–	–	–	–	–	–	F-B, S-Y	Category 04 SW1	
0478	SUBSTANCES, EXPLOSIVE, N.O.S.	1.3G	–	–	178 274	0	E0	P101	–	–	–	–	–	–	F-B, S-Y	Category 03 SW1	
0479	SUBSTANCES, EXPLOSIVE, N.O.S.	1.4C	–	–	178 274	0	E0	P101	–	–	–	–	–	–	F-B, S-Y	Category 02 SW1	
0480	SUBSTANCES, EXPLOSIVE, N.O.S.	1.4D	–	–	178 274	0	E0	P101	–	–	–	–	–	–	F-B, S-Y	Category 02 SW1	
0481	SUBSTANCES, EXPLOSIVE, N.O.S.	1.4S	–	–	178 274 347	0	E0	P101	–	–	–	–	–	–	F-B, S-Y	Category 01 SW1	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
0487	SIGNALS, SMOKE	1.3G	–	–	–	0	E0	P135	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0488	AMMUNITION, PRACTICE	1.3G	–	–	–	0	E0	P130 LP101	PP67 L1	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0489	DINITROGLYCOLURIL (DINGU)	1.1D	–	–	–	0	E0	P112 (b) or (c)	–	–	–	–	–	–	F-B, S-Y	Category 04 SW1	
0490	NITROTRIAZOLONE (NTO)	1.1D	–	–	–	0	E0	P112 (b) or (c)	–	–	–	–	–	–	F-B, S-Y	Category 04 SW1	
0491	CHARGES, PROPELLING	1.4C	–	–	–	0	E0	P143	PP76	–	–	–	–	–	F-B, S-X	Category 02 SW1	
0492	SIGNALS, RAILWAY TRACK, EXPLOSIVE	1.3G	–	–	–	0	E0	P135	–	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0493	SIGNALS, RAILWAY TRACK, EXPLOSIVE	1.4G	–	–	–	0	E0	P135	–	–	–	–	–	–	F-B, S-X	Category 02 SW1	
0494	JET PERFORATING GUNS, CHARGED, oil well, without detonator	1.4D	–	–	–	0	E0	P101	–	–	–	–	–	–	F-B, S-X	Category 02 SW1 SW30	
0495	PROPELLANT, LIQUID	1.3C	–	–	224	0	E0	P115	PP53 PP54 PP57 PP58	–	–	–	–	–	F-B, S-Y	Category 04 SW1	
0496	OCTONAL	1.1D	–	–	–	0	E0	P112 (b) or (c)	–	–	–	–	–	–	F-B, S-Y	Category 04 SW1	
0497	PROPELLANT, LIQUID	1.1C	–	–	224	0	E0	P115	PP53 PP54 PP57 PP58	–	–	–	–	–	F-B, S-Y	Category 04 SW1	
0498	PROPELLANT, SOLID	1.1C	–	–	–	0	E0	P114 (b)	–	–	–	–	–	–	F-B, S-Y	Category 04 SW1	
0499	PROPELLANT, SOLID	1.3C	–	–	–	0	E0	P114 (b)	–	–	–	–	–	–	F-B, S-Y	Category 04 SW1	
0500	DETONATOR ASSEMBLIES, NON-ELECTRIC for blasting	1.4S	–	–	347	0	E0	P131	–	–	–	–	–	–	F-B, S-X	Category 01 SW1	
0501	PROPELLANT, SOLID	1.4C	–	–	–	0	E0	P114 (b)	–	–	–	–	–	–	F-B, S-Y	Category 02 SW1	
0502	ROCKETS with inert head	1.2C	–	–	–	0	E0	P130 LP101	PP67 L1	–	–	–	–	–	F-B, S-X	Category 03 SW1	
0503	SAFETY DEVICES, PYROTECHNIC	1.4G	–	–	235 289	0	E0	P135	–	–	–	–	–	–	F-B, S-X	Category 02 SW1	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
0511	DETONATORS, ELECTRONIC programmable for blasting	1.1B	–	–	399	0	E0	P131	–	–	–	–	–	–	F-B, S-X	Category 05 SW1	
0512	DETONATORS, ELECTRONIC programmable for blasting	1.4B	–	–	399	0	E0	P131	–	–	–	–	–	–	F-B, S-X	Category 05 SW1	
0513	DETONATORS, ELECTRONIC programmable for blasting	1.4S	–	–	347 399	0	E0	P131	–	–	–	–	–	–	F-B, S-X	Category 01 SW1	
1001	ACETYLENE, DISSOLVED	2.1	–	–	–	0	E0	P200	–	–	–	–	–	–	F-D, S-U	Category D SW1 SW2	
△ 1002	AIR, COMPRESSED	2.2	–	–	392 397	120 mL	E1	P200	–	–	–	–	–	–	F-C, S-V	Category A	
1003	AIR, REFRIGERATED LIQUID	2.2	5.1	–	–	0	E0	P203	–	–	–	–	T75	TP5 TP22	F-C, S-W	Category D	
1005	AMMONIA, ANHYDROUS	2.3	8 P	–	23 379	0	E0	P200	–	–	–	–	T50	–	F-C, S-U	Category D SW2	
1006	ARGON, COMPRESSED	2.2	–	–	378 392	120 mL	E1	P200	–	–	–	–	–	–	F-C, S-V	Category A	
1008	BORON TRIFLUORIDE	2.3	8	–	373	0	E0	P200	–	–	–	–	–	–	F-C, S-U	Category D SW2	
1009	BROMOTRIFLUOROMETHANE (REFRIGERANT GAS R 13B1)	2.2	–	–	–	120 mL	E1	P200	–	–	–	–	T50	–	F-C, S-V	Category A	
1010	BUTADIENES, STABILIZED or BUTADIENES AND HYDROCARBON MIXTURE, STABILIZED, containing more than 40% butadienes	2.1	–	–	386	0	E0	P200	–	–	–	–	T50	–	F-D, S-U	Category B SW1 SW2	
1011	BUTANE	2.1	–	–	392	0	E0	P200	–	–	–	–	T50	–	F-D, S-U	Category E SW2	
△ 1012	BUTYLENE	2.1	–	–	398	0	E0	P200	–	–	–	–	T50	–	F-D, S-U	Category E SW2	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
1021	1-CHLORO-1,2,2,2-TETRA-FLUOROETHANE (REFRIGERANT GAS R 124)	2.2	–	–	–	120 mL	E1	P200	–	–	–	–	T50	–	F-C, S-V	Category A	
1022	CHLOROTRIFLUOROMETHANE (REFRIGERANT GAS R 13)	2.2	–	–	–	120 mL	E1	P200	–	–	–	–	–	–	F-C, S-V	Category A	
1023	COAL GAS, COMPRESSED	2.3	2.1	–	–	0	E0	P200	–	–	–	–	–	–	F-D, S-U	Category D SW2	
1026	CYANOGEN	2.3	2.1	–	–	0	E0	P200	–	–	–	–	–	–	F-D, S-U	Category D SW2	
1027	CYCLOPROPANE	2.1	–	–	–	0	E0	P200	–	–	–	–	T50	–	F-D, S-U	Category E SW2	
1028	DICHLORODIFLUOROMETHANE (REFRIGERANT GAS R 12)	2.2	–	–	–	120 mL	E1	P200	–	–	–	–	T50	–	F-C, S-V	Category A	
1029	DICHLOROFLUOROMETHANE (REFRIGERANT GAS R 21)	2.2	–	–	–	120 mL	E1	P200	–	–	–	–	T50	–	F-C, S-V	Category A	
1030	1,1-DIFLUOROETHANE (REFRIGERANT GAS R 152a)	2.1	–	–	–	0	E0	P200	–	–	–	–	T50	–	F-D, S-U	Category B SW2	
1032	DIMETHYLAMINE, ANHYDROUS	2.1	–	–	–	0	E0	P200	–	–	–	–	T50	–	F-D, S-U	Category D SW2	
1033	DIMETHYL ETHER	2.1	–	–	–	0	E0	P200	–	–	–	–	T50	–	F-D, S-U	Category B SW2	
1035	ETHANE	2.1	–	–	–	0	E0	P200	–	–	–	–	–	–	F-D, S-U	Category E SW2	
1036	ETHYLAMINE	2.1	–	–	912	0	E0	P200	–	–	–	–	T50	–	F-D, S-U	Category D SW2	
1037	ETHYL CHLORIDE	2.1	–	–	–	0	E0	P200	–	–	–	–	T50	–	F-D, S-U	Category B SW2	
1038	ETHYLENE, REFRIGERATED LIQUID	2.1	–	–	–	0	E0	P203	–	–	–	–	T75	TP5	F-D, S-U	Category D SW2	
1039	ETHYL METHYL ETHER	2.1	–	–	–	0	E0	P200	–	–	–	–	–	–	F-D, S-U	Category B SW2	
1040	ETHYLENE OXIDE or ETHYLENE OXIDE WITH NITROGEN up to a total pressure of 1 MPa (10 bar) at 50°C	2.3	2.1	–	342	0	E0	P200	–	–	–	–	T50	TP20 TP90	F-D, S-U	Category D SW2	
1041	ETHYLENE OXIDE AND CARBON DIOXIDE MIXTURE with more than 9% but not more than 87%	2.1	–	–	–	0	E0	P200	–	–	–	–	T50	–	F-D, S-U	Category B SW2	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
1048	HYDROGEN BROMIDE, ANHYDROUS	2.3	8	–	–	0	E0	P200	–	–	–	–	–	–	F-C, S-U	Category D SW2	
1049	HYDROGEN, COMPRESSED	2.1	–	–	392 974	0	E0	P200	–	–	–	–	–	–	F-D, S-U	Category E SW2	
1050	HYDROGEN CHLORIDE, ANHYDROUS	2.3	8	–	–	0	E0	P200	–	–	–	–	–	–	F-C, S-U	Category D SW2	
1051	HYDROGEN CYANIDE, STABILIZED containing less than 3% water	6.1	3 P	I	386	0	E0	P200	–	–	–	–	–	–	F-E, S-D	Category D SW1 SW2	
△ 1052	HYDROGEN FLUORIDE, ANHYDROUS	8	6.1	I	–	0	E0	P200	–	–	–	–	T10	TP2	F-C, S-U	Category D SW2	
1053	HYDROGEN SULPHIDE	2.3	2.1	–	–	0	E0	P200	–	–	–	–	–	–	F-D, S-U	Category D SW2	
1055	ISOBUTYLENE	2.1	–	–	–	0	E0	P200	–	–	–	–	T50	–	F-D, S-U	Category E SW2	
1056	KRYPTON, COMPRESSED	2.2	–	–	378 392	120 mL	E1	P200	–	–	–	–	–	–	F-C, S-V	Category A	
1057	LIGHTERS or LIGHTER REFILLS containing flammable gas	2.1	–	–	201	0	E0	P002	PP84	–	–	–	–	–	F-D, S-U	Category B SW2	
1058	LIQUEFIED GASES non-flammable, charged with nitrogen, carbon dioxide or air	2.2	–	–	392	120 mL	E1	P200	–	–	–	–	–	–	F-C, S-V	Category A	
1060	METHYLACETYLENE AND PROPADIENE MIXTURE, STABILIZED	2.1	–	–	386	0	E0	P200	–	–	–	–	T50	–	F-D, S-U	Category B SW1 SW2	
1061	METHYLAMINE, ANHYDROUS	2.1	–	–	–	0	E0	P200	–	–	–	–	T50	–	F-D, S-U	Category B SW2	
1062	METHYL BROMIDE with not more than 2.0% chloropicrin	2.3	–	–	23	0	E0	P200	–	–	–	–	T50	–	F-C, S-U	Category D SW2	
1063	METHYL CHLORIDE (REFRIGERANT GAS R 40)	2.1	–	–	–	0	E0	P200	–	–	–	–	T50	–	F-D, S-U	Category D SW2	
1064	METHYL MERCAPTAN	2.3	2.1			0	E0	P200					T50		F-D, S-U		

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
1071	OIL GAS, COMPRESSED	2.3	2.1	–	–	0	E0	P200	–	–	–	–	–	–	F-D, S-U	Category D SW2	
1072	OXYGEN, COMPRESSED	2.2	5.1	–	355	0	E0	P200	–	–	–	–	–	–	F-C, S-W	Category A	
1073	OXYGEN, REFRIGERATED LIQUID	2.2	5.1	–	–	0	E0	P203	–	–	–	–	T75	TP5 TP22	F-C, S-W	Category D	
1075	PETROLEUM GASES, LIQUEFIED	2.1	–	–	392	0	E0	P200	–	–	–	–	T50	–	F-D, S-U	Category E SW2	
1076	PHOSGENE	2.3	8	–	–	0	E0	P200	–	–	–	–	–	–	F-C, S-U	Category D SW2	
1077	PROPYLENE	2.1	–	–	–	0	E0	P200	–	–	–	–	T50	–	F-D, S-U	Category E SW2	
1078	REFRIGERANT GAS, N.O.S.	2.2	–	–	274	120 mL	E1	P200	–	–	–	–	T50	–	F-C, S-V	Category A	
1079	SULPHUR DIOXIDE	2.3	8	–	–	0	E0	P200	–	–	–	–	T50	TP19	F-C, S-U	Category D SW2	
1080	SULPHUR HEXAFLUORIDE	2.2	–	–	392	120 mL	E1	P200	–	–	–	–	–	–	F-C, S-V	Category A	
1081	TETRAFLUOROETHYLENE, STABILIZED	2.1	–	–	386	0	E0	P200	–	–	–	–	–	–	F-D, S-U	Category E SW1 SW2	
1082	TRIFLUOROCHLORO-ETHYLENE, STABILIZED (REFRIGERANT GAS R 1113)	2.3	2.1	–	386	0	E0	P200	–	–	–	–	T50	–	F-D, S-U	Category D SW1 SW2	
1083	TRIMETHYLAMINE, ANHYDROUS	2.1	–	–	–	0	E0	P200	–	–	–	–	T50	–	F-D, S-U	Category B SW2	
1085	VINYL BROMIDE, STABILIZED	2.1	–	–	386	0	E0	P200	–	–	–	–	T50	–	F-D, S-U	Category B SW1 SW2	
1086	VINYL CHLORIDE, STABILIZED	2.1	–	–	386	0	E0	P200	–	–	–	–	T50	–	F-D, S-U	Category B SW1 SW2	
1087	VINYL METHYL ETHER	2.1			386	0	E0	P200					T50		F-D, S-U		

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
1092	ACROLEIN, STABILIZED	6.1	3 P	I	354 386	0	E0	P601	–	–	–	–	T22	TP2 TP7 TP13	F-E, S-D	Category D SW1 SW2	
1093	ACRYLONITRILE, STABILIZED	3	6.1	I	386	0	E0	P001	–	–	–	–	T14	TP2 TP13	F-E, S-D	Category D SW1 SW2	
1098	ALLYL ALCOHOL	6.1	3 P	I	354	0	E0	P602	–	–	–	–	T20	TP2 TP13	F-E, S-D	Category D SW2	
1099	ALLYL BROMIDE	3	6.1 P	I	–	0	E0	P001	–	–	–	–	T14	TP2 TP13	F-E, S-D	Category B SW2	
1100	ALLYL CHLORIDE	3	6.1	I	–	0	E0	P001	–	–	–	–	T14	TP2 TP13	F-E, S-D	Category E SW2	
1104	AMYL ACETATES	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
1105	PENTANOLS	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1 TP29	F-E, S-D	Category B	
1105	PENTANOLS	3	–	III	223	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
1106	AMYLAMINE	3	8	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP1	F-E, S-C	Category B	
1106	AMYLAMINE	3	8	III	223	5 L	E1	P001	–	IBC03	–	–	T4	TP1	F-E, S-C	Category A	
1107	AMYL CHLORIDE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
1108	1-PENTENE (*n*-AMYLENE)	3	–	I	–	0	E3	P001	–	–	–	–	T11	TP2	F-E, S-D	Category E	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
1112	AMYL NITRATE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A SW2	
1113	AMYL NITRITE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category E SW2	
1114	BENZENE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B SW2	
1120	BUTANOLS	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1 TP29	F-E, S-D	Category B	
1120	BUTANOLS	3	–	III	223	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
1123	BUTYL ACETATES	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
1123	BUTYL ACETATES	3	–	III	223	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
1125	*n*-BUTYLAMINE	3	8	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP1	F-E, S-C	Category B SW2	
1126	1-BROMOBUTANE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B SW2	
1127	CHLOROBUTANES	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
1128	*n*-BUTYL FORMATE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
1129	BUTYRALDEHYDE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
1134	CHLOROBENZENE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
1135	ETHYLENE CHLOROHYDRIN	6.1	3	I	354	0	E0	P602	–	–	–	–	T20	TP2 TP13	F-E, S-D	Category D SW2	
1136	COAL TAR DISTILLATES, FLAMMABLE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-E	Category B	
1136	COAL TAR DISTILLATES, FLAMMABLE	3	–	III	223 955	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1 TP29	F-E, S-E	Category A	
1139	COATING SOLUTION (includes surface treatments or coatings used for industrial or other purposes such as vehicle under-coating, drum or barrel lining)	3	–	I	–	500 mL	E3	P001	–	–	–	–	T11	TP1 TP8 TP27	F-E, S-E	Category E	
1139	COATING SOLUTION (includes surface treatments or coatings used for industrial or other purposes such as vehicle under-coating, drum or barrel lining)	3	–	II	–	5 L	E2	P001	–	IBC02	–	–	T4	TP1 TP8	F-E, S-E	Category B	
1139	COATING SOLUTION (includes surface treatments or coatings used for industrial or other purposes such as vehicle under-coating, drum or barrel lining)	3	–	III	955	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-E	Category A	
1143	CROTONALDEHYDE or CROTONALDEHYDE, STABILIZED	6.1	3 P	I	324 354 386	0	E0	P602	–	–	–	–	T20	TP2 TP13	F-E, S-D	Category D SW1 SW2	
1144	CROTONYLENE	3	–	I	–	0	E3	P001	–	–	–	–	T11	TP2	F-E, S-D	Category E	
1145	CYCLOHEXANE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category E	
1146	CYCLOPENTANE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP1	F-E, S-D	Category E	
1147	DECAHYDRONAPHTHALENE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
1153	ETHYLENE GLYCOL DIETHYL ETHER	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category A	
1153	ETHYLENE GLYCOL DIETHYL ETHER	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
1154	DIETHYLAMINE	3	8	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP1	F-E, S-C	Category E SW2	
1155	DIETHYL ETHER (ETHYL ETHER)	3	–	I	–	0	E3	P001	–	–	–	–	T11	TP2	F-E, S-D	Category E SW2	
1156	DIETHYL KETONE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
1157	DIISOBUTYL KETONE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
1158	DIISOPROPYLAMINE	3	8	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP1	F-E, S-C	Category B	
1159	DIISOPROPYL ETHER	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category E SW2	
1160	DIMETHYLAMINE, AQUEOUS SOLUTION	3	8	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP1	F-E, S-C	Category B	
1161	DIMETHYL CARBONATE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
1162	DIMETHYLDICHLOROSILANE	3	8	II	–	0	E0	P010	–	–	–	–	T10	TP2 TP7 TP13	F-E, S-C	Category B SW2	
1163	DIMETHYLHYDRAZINE, UNSYMMETRICAL	6.1	3/8 P	I	354	0	E0	P602	–	–	–	–	T20	TP2 TP13	F-E, S-C	Category D SW2	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
1167	DIVINYL ETHER, STABILIZED	3	–	I	386	0	E3	P001	–	–	–	–	T11	TP2	F-E, S-D	Category E SW1 SW2	
1170	ETHANOL (ETHYL ALCOHOL) or ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)	3	–	II	144	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category A	
1170	ETHANOL (ETHYL ALCOHOL) or ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)	3	–	III	144 223	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
1171	ETHYLENE GLYCOL MONOETHYL ETHER	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
1172	ETHYLENE GLYCOL MONOETHYL ETHER ACETATE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
1173	ETHYL ACETATE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
1175	ETHYLBENZENE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
1176	ETHYL BORATE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
1177	2-ETHYLBUTYL ACETATE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
1178	2-ETHYLBUTYRALDEHYDE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
1179	ETHYL BUTYL ETHER	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
1180	ETHYL BUTYRATE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
1181	ETHYL CHLOROACETATE	6.1	3	II	–	100 mL	E4	P001	–	IBC02	–	–	T7	TP2	F-E, S-D	Category A	
1182	ETHYL CHLOROFORMATE	6.1	3/8	I	354	0	E0	P602	–	–	–	–	T20	TP2 TP13	F-E, S-C	Category D SW2	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
1188	ETHYLENE GLYCOL MONOMETHYL ETHER	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
1189	ETHYLENE GLYCOL MONOMETHYL ETHER ACETATE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
1190	ETHYL FORMATE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category E	
1191	OCTYL ALDEHYDES	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
1192	ETHYL LACTATE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
1193	ETHYL METHYL KETONE (METHYL ETHYL KETONE)	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
1194	ETHYL NITRITE SOLUTION	3	6.1	I	900	0	E0	P001	–	–	–	–	–	–	F-E, S-D	Category D SW2	
1195	ETHYL PROPIONATE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
1196	ETHYLTRICHLOROSILANE	3	8	II	–	0	E0	P010	–	–	–	–	T10	TP2 TP7 TP13	F-E, S-C	Category B SW2	
△ 1197	EXTRACTS, LIQUID, for flavour or aroma	3	–	II	–	5 L	E2	P001	–	IBC02	–	–	T4	TP1 TP8	F-E, S-D	Category B	
△ 1197	EXTRACTS, LIQUID, for flavour or aroma	3	–	III	223 955	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
1198	FORMALDEHYDE SOLUTION, FLAMMABLE	3	8	III	–	5 L	E0	P001	–	IBC03	–	–	T4	TP1	F-E, S-C	Category A SW2	
1199	FURALDEHYDES	6.1	3	II	–	100 mL	E4	P001	–	IBC02	–	–	T7	TP2	F-E, S-D	Category A	
1201	FUSEL OIL	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
1207	HEXALDEHYDE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
1208	HEXANES	3	– P	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP2	F-E, S-D	Category E	
1210	PRINTING INK, flammable or PRINTING INK RELATED MATERIAL (including printing ink thinning or reducing compound), flammable	3	–	I	163 367	500 mL	E3	P001	–	–	–	–	T11	TP1 TP8	F-E, S-D	Category E	
1210	PRINTING INK, flammable or PRINTING INK RELATED MATERIAL (including printing ink thinning or reducing compound), flammable	3	–	II	163 367	5 L	E2	P001	PP1	IBC02	–	–	T4	TP1 TP8	F-E, S-D	Category B	
1210	PRINTING INK, flammable or PRINTING INK RELATED MATERIAL (including printing ink thinning or reducing compound), flammable	3	–	III	163 223 367 955	5 L	E1	P001 LP01	PP1	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
1212	ISOBUTANOL (ISOBUTYL ALCOHOL)	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
1213	ISOBUTYL ACETATE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
1214	ISOBUTYLAMINE	3	8	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP1	F-E, S-C	Category B SW2	
1216	ISOOCTENES	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
1218	ISOPRENE, STABILIZED	3	– P	I	386	0	E3	P001	–	–	–	–	T11	TP2	F-E, S-D	Category D SW1	
1219	ISOPROPANOL (ISOPROPYL ALCOHOL)	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
1220	ISOPROPYL ACETATE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
1221	ISOPROPYLAMINE	3	8	I	–	0	E0	P001	–	–	–	–	T11	TP2	F-E, S-C	Category E SW2	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
1228	MERCAPTANS, LIQUID, FLAMMABLE, TOXIC, N.O.S. or MERCAPTAN MIXTURE, LIQUID, FLAMMABLE, TOXIC, N.O.S.	3	6.1	III	223 274	5 L	E1	P001	–	IBC03	–	–	T7	TP1 TP28	F-E, S-D	Category B SW2	
1229	MESITYL OXIDE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
1230	METHANOL	3	6.1	II	279	1 L	E2	P001	–	IBC02	–	–	T7	TP2	F-E, S-D	Category B SW2	
1231	METHYL ACETATE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
1233	METHYLAMYL ACETATE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
1234	METHYLAL	3	–	II	–	1 L	E2	P001	–	IBC02	B8	–	T7	TP2	F-E, S-D	Category E	
1235	METHYLAMINE, AQUEOUS SOLUTION	3	8	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP1	F-E, S-C	Category E	
1237	METHYL BUTYRATE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
1238	METHYL CHLOROFORMATE	6.1	3/8	I	354	0	E0	P602	–	–	–	–	T22	TP2 TP13	F-E, S-C	Category D SW2	
1239	METHYL CHLOROMETHYL ETHER	6.1	3	I	354	0	E0	P602	–	–	–	–	T22	TP2 TP13	F-E, S-D	Category D SW2	
1242	METHYLDICHLOROSILANE	4.3	3/8	I	–	0	E0	P401	PP31	–	–	–	T14	TP2 TP7 TP13	F-G, S-O	Category D SW2 H1	
1243	METHYL FORMATE	3	–	I	–	0	E3	P001	–	–	–	–	T11	TP2	F-E, S-D	Category E	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
1249	METHYL PROPYL KETONE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
1250	METHYLTRICHLOROSILANE	3	8	II	–	0	E0	P010	–	–	–	–	T10	TP2 TP7 TP13	F-E, S-C	Category B SW2	
1251	METHYL VINYL KETONE, STABILIZED	6.1	3/8	I	354 386	0	E0	P601	–	–	–	–	T22	TP2 TP13	F-E, S-C	Category D SW1 SW2	
1259	NICKEL CARBONYL	6.1	3 P	I	–	0	E0	P601	–	–	–	–	–	–	F-E, S-D	Category D SW2	
1261	NITROMETHANE	3	–	II	26	1 L	E0	P001	–	–	–	–	–	–	F-E, S-D	Category A	
1262	OCTANES	3	– P	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP2	F-E, S-E	Category B	
1263	PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning or reducing compound)	3	–	I	163 367	500 mL	E3	P001	–	–	–	–	T11	TP1 TP8 TP27	F-E, S-E	Category E	
1263	PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning or reducing compound)	3	–	II	163 367	5 L	E2	P001	PP1	IBC02	–	–	T4	TP1 TP8 TP28	F-E, S-E	Category B	
1263	PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL	3	–	III	163 223 367 955	5 L	E1	P001 LP01	PP1	IBC03	–	–	T2	TP1 TP29	F-E, S-E	Category A	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
1267	PETROLEUM CRUDE OIL	3	–	I	357	500 mL	E3	P001	–	–	–	–	T11	TP1 TP8	F-E, S-E	Category E	
1267	PETROLEUM CRUDE OIL	3	–	II	357	1 L	E2	P001	–	IBC02	–	–	T4	TP1 TP8	F-E, S-E	Category B	
1267	PETROLEUM CRUDE OIL	3	–	III	223 357	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-E	Category A	
1268	PETROLEUM DISTILLATES, N.O.S. or PETROLEUM PRODUCTS, N.O.S.	3	–	I	–	500 mL	E3	P001	–	–	–	–	T11	TP1 TP8	F-E, S-E	Category E	
1268	PETROLEUM DISTILLATES, N.O.S. or PETROLEUM PRODUCTS, N.O.S.	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP1 TP8 TP28	F-E, S-E	Category B	
1268	PETROLEUM DISTILLATES, N.O.S. or PETROLEUM PRODUCTS, N.O.S.	3	–	III	223 955	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1 TP29	F-E, S-E	Category A	
1272	PINE OIL	3	– P	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP2	F-E, S-E	Category A	
1274	*n*-PROPANOL (PROPYL ALCOHOL, NORMAL)	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
1274	*n*-PROPANOL (PROPYL ALCOHOL, NORMAL)	3	–	III	223	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
1275	PROPIONALDEHYDE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP1	F-E, S-D	Category E	
1276	*n*-PROPYL ACETATE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
1277	PROPYLAMINE	3	8	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP1	F-E, S-C	Category E SW2	
1278	1-CHLOROPROPANE	3	–	II	–	1 L	E0	P001	–	IBC02	B8	–	T7	TP2	F-E, S-D	Category E	
1279	1,2-DICHLOROPROPANE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
1280	PROPYLENE OXIDE	3	–	I	–	0	E3	P001	–	–	–	–	T11	TP2 TP7	F-E, S-D	Category E SW2	
1281	PROPYL FORMATES	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
1288	SHALE OIL	3	–	III	223	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-E	Category A	
1289	SODIUM METHYLATE SOLUTION in alcohol	3	8	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP1 TP8	F-E, S-C	Category B	
1289	SODIUM METHYLATE SOLUTION in alcohol	3	8	III	223	5 L	E1	P001	–	IBC03	–	–	T4	TP1	F-E, S-C	Category A	
1292	TETRAETHYL SILICATE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A.	
1293	TINCTURES, MEDICINAL	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1 TP8	F-E, S-D	Category B	
1293	TINCTURES, MEDICINAL	3	–	III	904 955	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
1294	TOLUENE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
1295	TRICHLOROSILANE	4.3	3/8	I	–	0	E0	P401	PP31	–	–	–	T14	TP2 TP7 TP13	F-G, S-O	Category D SW2 H1	
1296	TRIETHYLAMINE	3	8	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP1	F-E, S-C	Category B SW2	
1297	TRIMETHYLAMINE, AQUEOUS SOLUTION, not more than 50% trimethylamine, by mass	3	8	I	–	0	E0	P001	–	–	–	–	T11	TP1	F-E, S-C	Category D SW2	
1297	TRIMETHYLAMINE, AQUEOUS SOLUTION, not more than 50% trimethylamine, by mass	3	8	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP1	F-E, S-C	Category B SW2	
1297	TRIMETHYLAMINE, AQUEOUS SOLUTION, not more than 50% trimethylamine, by mass	3	8	III	223	5 L	E1	P001	–	IBC03	–	–	T7	TP1	F-E, S-C	Category A SW2	
1298	TRIMETHYLCHLOROSILANE	3	8	II	–	0	E0	P010	–	–	–	–	T10	TP2 TP7	F-E, S-C	Category E SW2	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
1303	VINYLIDENE CHLORIDE, STABILIZED	3	– P	I	386	0	E3	P001	–	–	–	–	T12	TP2 TP7	F-E, S-D	Category D SW1 SW2	
1304	VINYL ISOBUTYL ETHER, STABILIZED	3	–	II	386	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category C SW1	
1305	VINYLTRICHLOROSILANE	3	8	II	–	0	E0	P010	–	–	–	–	T10	TP2 TP7 TP13	F-E, S-C	Category B SW2	
1306	WOOD PRESERVATIVES, LIQUID	3	–	II	–	5 L	E2	P001	–	IBC02	–	–	T4	TP1 TP8	F-E, S-D	Category B	
1306	WOOD PRESERVATIVES, LIQUID	3	–	III	223 955	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
1307	XYLENES	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
1307	XYLENES	3	–	III	223	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
1308	ZIRCONIUM, SUSPENDED IN A FLAMMABLE LIQUID	3	–	I	–	0	E0	P001	PP33	–	–	–	–	–	F-E, S-D	Category D	
1308	ZIRCONIUM, SUSPENDED IN A FLAMMABLE LIQUID	3	–	II	–	1 L	E2	P001	PP33	–	–	–	–	–	F-E, S-D	Category B	
1308	ZIRCONIUM, SUSPENDED IN A FLAMMABLE LIQUID	3	–	III	223	5 L	E1	P001	–	–	–	–	–	–	F-E, S-D	Category B	
1309	ALUMINIUM POWDER, COATED	4.1	–	II	–	1 kg	E2	P002	PP38 PP100	IBC08	B4 B21	–	T3	TP33	F-G, S-G	Category A H1	
1309	ALUMINIUM POWDER, COATED	4.1	–	III	223	5 kg	E1	P002 LP02	PP11 PP38 PP100 L3	IBC08	B4	–	T1	TP33	F-G, S-G	Category A H1	
1310	AMMONIUM PICRATE, WETTED	4.1	–	I	28	0	E0	P406	PP26	–	–	–	–	–	F-B, S-J	Category D	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
1320	DINITROPHENOL, WETTED with not less than 15% water, by mass	4.1	6.1 P	I	28	0	E0	P406	PP26 PP31	–	–	–	–	–	F-B, S-J	Category E	
1321	DINITROPHENOLATES, WETTED with not less than 15% water, by mass	4.1	6.1 P	I	28	0	E0	P406	PP26 PP31	–	–	–	–	–	F-B, S-J	Category E	
1322	DINITRORESORCINOL, WETTED with not less than 15% water, by mass	4.1	–	I	28	0	E0	P406	PP26 PP31	–	–	–	–	–	F-B, S-J	Category E	
1323	FERROCERIUM	4.1	–	II	249	1 kg	E2	P002	PP100	IBC08	B4 B21	–	T3	TP33	F-G, S-G	Category A H1	
1324	FILMS, NITROCELLULOSE BASE, gelatin coated, except scrap	4.1	–	III	–	5 kg	E1	P002	PP15	–	–	–	–	–	F-A, S-I	Category D	
1325	FLAMMABLE SOLID, ORGANIC, N.O.S.	4.1	–	II	274	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-G	Category B	
1325	FLAMMABLE SOLID, ORGANIC, N.O.S.	4.1	–	III	223 274	5 kg	E1	P002	–	IBC08	B3	–	T1	TP33	F-A, S-G	Category B	
1326	HAFNIUM POWDER, WETTED with not less than 25% water (a visible excess of water must be present) (a) mechanically produced, particle size less than 53 microns; (b) chemically produced, particle size less than 840 microns	4.1	–	II	916	1 kg	E2	P410	PP31 PP40	IBC06	B21	–	T3	TP33	F-A, S-J	Category E	
1327	HAY, STRAW or BHUSA	4.1	–	–	29 281 954 973	3 kg	E0	P003	PP19	IBC08	B6	–	–	–	F-A, S-I	Category A SW10	
1328	HEXAMETHYLENETETRAMINE	4.1	–	III	–	5 kg	E1	P002	–	IBC08	B3	–	T1	TP33	F-A, S-G	Category A	
1330	MANGANESE RESINATE	4.1	–	III	–	5 kg	E1	P002	–	IBC06	–	–	T1	TP33	F-A, S-I	Category A	
1331	MATCHES, “STRIKE ANYWHERE”	4.1	–	III	293	5 kg	E0	P407	PP27	–	–	–	–	–	F-A, S-I	Category B	
1332	METALDEHYDE	4.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-G	Category A	
1333	CERIUM, slabs, ingots or rods	4.1	–	II	–	1 kg	E2	P002	PP100	IBC08	B4 B21	–	–	–	F-G, S-P	Category A H1	
1334	NAPHTHALENE, CRUDE or	4.1	–	III	948	5 kg	E1	P002	–	IBC08	B3	–	T1	TP33	F-A, S-G	Category A	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
1339	PHOSPHORUS HEPTASULPHIDE, free from yellow or white phosphorus	4.1	–	II	–	1 kg	E2	P410	PP31	IBC04	–	–	T3	TP33	F-G, S-G	Category B H1	
1340	PHOSPHORUS PENTASULPHIDE, free from yellow or white phosphorus	4.3	4.1	II	–	500 g	E2	P410	PP31 PP40	IBC04	–	–	T3	TP33	F-G, S-N	Category D H1	
1341	PHOSPHORUS SESQUISULPHIDE, free from yellow or white phosphorus	4.1	–	II	–	1 kg	E2	P410	PP31	IBC04	–	–	T3	TP33	F-A, S-G	Category B	
1343	PHOSPHORUS TRISULPHIDE, free from yellow or white phosphorus	4.1	–	II	–	1 kg	E2	P410	PP31	IBC04	–	–	T3	TP33	F-G, S-G	Category B H1	
1344	TRINITROPHENOL (PICRIC ACID), WETTED with not less than 30% water, by mass	4.1	–	I	28	0	E0	P406	PP26 PP31	–	–	–	–	–	F-B, S-J	Category E	
1345	RUBBER SCRAP or RUBBER SHODDY, powdered or granulated, not exceeding 840 microns and rubber content exceeding 45%	4.1	–	II	223 917	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-I	Category A	
1346	SILICON POWDER, AMORPHOUS	4.1	–	III	32	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-G	Category A	
1347	SILVER PICRATE, WETTED with not less than 30% water, by mass	4.1	–	I	28 900	0	E0	P406	PP25 PP26 PP31	–	–	–	–	–	F-B, S-J	Category D	
1348	SODIUM DINITRO-*o*-CRESOLATE, WETTED with not less than 15% water, by mass	4.1	6.1 P	I	28	0	E0	P406	PP26 PP31	–	–	–	–	–	F-B, S-J	Category E	
1349	SODIUM PICRAMATE, WETTED with not less than 20% water, by mass	4.1	–	I	28	0	E0	P406	PP26 PP31	–	–	–	–	–	F-B, S-J	Category E	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
1353	FIBRES or FABRICS IMPREGNATED WITH WEAKLY NITRATED NITROCELLULOSE, N.O.S.	4.1	–	III	–	5 kg	E1	P410	–	IBC08	B3	–	–	–	F-A, S-I	Category D	
1354	TRINITROBENZENE, WETTED with not less than 30% water, by mass	4.1	–	I	28	0	E0	P406	PP31	–	–	–	–	–	F-B, S-J	Category E	
1355	TRINITROBENZOIC ACID, WETTED with not less than 30% water, by mass	4.1	–	I	28	0	E0	P406	PP31	–	–	–	–	–	F-B, S-J	Category E	
1356	TRINITROTOLUENE (TNT), WETTED with not less than 30% water, by mass	4.1	–	I	28	0	E0	P406	PP31	–	–	–	–	–	F-B, S-J	Category E	
1357	UREA NITRATE, WETTED with not less than 20% water, by mass	4.1	–	I	28 227	0	E0	P406	PP31	–	–	–	–	–	F-B, S-J	Category E	
1358	ZIRCONIUM POWDER, WETTED with not less than 25% water (a visible excess of water must be present) (a) mechanically produced, particle size less than 53 microns; (b) chemically produced, particle size less than 840 microns	4.1	–	II	916	1 kg	E2	P410	PP31 PP40	IBC06	B21	–	T3	TP33	F-G, S-J	Category E H1	
1360	CALCIUM PHOSPHIDE	4.3	6.1	I	–	0	E0	P403	PP31	–	–	–	–	–	F-G, S-N	Category E SW2 SW5 H1	
1361	CARBON, animal or vegetable origin	4.2	–	II	925	0	E0	P002	PP12	IBC06	–	–	T3	TP33	F-A, S-J	Category A SW1 H2	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
1365	COTTON, WET	4.2	–	III	29 973	0	E0	P003	PP19	IBC08	B3 B6	–	–	–	F-A, S-J	Category A	
1369	*p*-NITROSODIMETHYLANILINE	4.2	–	II	927	0	E2	P410	–	IBC06	B21	–	T3	TP33	F-A, S-J	Category D	
1372	FIBRES, ANIMAL or FIBRES, VEGETABLE burnt, wet or damp	4.2	–	III	123	0	E1	P410	–	–	–	–	–	–	F-A, S-J	Category A	
1373	FIBRES or FABRICS, ANIMAL or VEGETABLE or SYNTHETIC, N.O.S. with oil	4.2	–	III	–	0	E0	P410	PP31	IBC08	B3	–	T1	TP33	F-A, S-J	Category A	
1374	FISH MEAL, UNSTABILIZED or FISH SCRAP, UNSTABILIZED High hazard. Unrestricted moisture content. Unrestricted fat content in excess of 12%, by mass; unrestricted fat content in excess of 15%, by mass, in the case of anti-oxidant treated fish meal or fish scrap	4.2	–	II	300 928	0	E2	P410	PP31 PP40	IBC08	B4 B21	–	T3	TP33	F-A, S-J	Category B SW1 SW24	
1374	FISH MEAL, UNSTABILIZED or FISH SCRAP, UNSTABILIZED Not anti-oxidant treated. Moisture content: more than 5% but not more than 12%, by mass. Fat content: not more than 12%, by mass	4.2	–	III	29 300 907 928	0	E1	P410	PP31	IBC08	B3 B21	–	T1	TP33	F-A, S-J	Category A SW1 SW24	
1376	IRON OXIDE, SPENT or IRON SPONGE, SPENT obtained from coal gas purification	4.2	–	III	223	0	E0	P002 LP02	PP100 L3	IBC08	B4	–	T1 BK2	TP33	F-G, S-P	Category E H1	
1378	METAL CATALYST, WETTED with a visible excess of liquid	4.2	–	II	274	0	E0	P410	PP31 PP39 PP40	IBC01	–	–	T3	TP33	F-H, S-M	Category C	
1379	PAPER, UNSATURATED OIL TREATED, incompletely dried (including carbon paper)	4.2	–	III	–	0	E0	P410	PP31	IBC08	B3	–	–	–	F-A, S-J	Category A	
1380	PENTABORANE	4.2	6.1	I	–	0	E0	P601	–	–	–	–	–	–	F-G, S-L	Category D H1	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
1386	SEED CAKE, containing vegetable oil (a) mechanically expelled seeds, containing more than 10% oil or more than 20% oil and moisture combined	4.2	–	III	29 929 973	0	E0	P003 LP02	PP20	IBC08	B3 B6	–	BK2	–	F-A, S-J	Category E SW1 SW25 H1	
1386	SEED CAKE, containing vegetable oil (b) solvent extractions and expelled seeds, containing not more than 10% of oil and when the amount of moisture is higher than 10%, not more than 20% of oil and moisture combined	4.2	–	III	29 929 973	0	E0	P003 LP02	PP20	IBC08	B3 B6	–	BK2	–	F-A, S-J	Category A SW1 SW25 H1	
1387	WOOL WASTE, WET	4.2	–	III	123	0	E1	P410	–	–	–	–	–	–	F-A, S-J	Category A	
1389	ALKALI METAL AMALGAM, LIQUID	4.3	–	I	182	0	E0	P402	PP31	–	–	–	–	–	F-G, S-N	Category D H1	
1390	ALKALI METAL AMIDES	4.3	–	II	182	500 g	E2	P410	PP31 PP40	IBC07	B4 B21	–	T3	TP33	F-G, S-O	Category E SW2 H1	
1391	ALKALI METAL DISPERSION or ALKALINE EARTH METAL DISPERSION	4.3	–	I	182 183	0	E0	P402	PP31	–	–	–	–	–	F-G, S-N	Category D H1	
1392	ALKALINE EARTH METAL AMALGAM, LIQUID	4.3	–	I	183	0	E0	P402	PP31	–	–	–	–	–	F-G, S-N	Category D H1	
1393	ALKALINE EARTH METAL ALLOY, N.O.S.	4.3	–	II	183	500 g	E2	P410	PP31 PP40	IBC07	B4 B21	–	T3	TP33	F-G, S-N	Category E H1	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
1397	ALUMINIUM PHOSPHIDE	4.3	6.1	I	–	0	E0	P403	PP31	–	–	–	–	–	F-G, S-N	Category E SW2 SW5 H1	
1398	ALUMINIUM SILICON POWDER, UNCOATED	4.3	–	III	37 223 932	1 kg	E1	P410	PP31	IBC08	B4	–	T1 BK2	TP33	F-G, S-N	Category A SW2 SW5 H1	
1400	BARIUM	4.3	–	II	–	500 g	E2	P410	PP31 PP40	IBC07	B4 B21	–	T3	TP33	F-G, S-O	Category E H1	
1401	CALCIUM	4.3	–	II	–	500 g	E2	P410	PP31 PP40	IBC07	B4 B21	–	T3	TP33	F-G, S-O	Category E H1	
1402	CALCIUM CARBIDE	4.3	–	I	–	0	E0	P403	PP31	IBC04	B1	–	–	–	F-G, S-N	Category B H1	
1402	CALCIUM CARBIDE	4.3	–	II	–	500 g	E2	P410	PP31 PP40	IBC07	B4 B21	–	T3	TP33	F-G, S-N	Category B H1	
1403	CALCIUM CYANAMIDE with more than 0.1% calcium carbide	4.3	–	III	38 934	1 kg	E1	P410	PP31	IBC08	B4	–	T1	TP33	F-G, S-N	Category A H1	
1404	CALCIUM HYDRIDE	4.3	–	I	–	0	E0	P403	PP31	–	–	–	–	–	F-G, S-O	Category E H1	
1405	CALCIUM SILICIDE	4.3	–	II	932	500 g	E2	P410	PP31 PP40	IBC07	B4 B21	–	T3	TP33	F-G, S-N	Category B SW5 H1	
1405	CALCIUM SILICIDE	4.3	–	III	223 932	1 kg	E1	P410	PP31	IBC08	B4	–	T1	TP33	F-G, S-N	Category B SW5 H1	
1407	CAESIUM	4.3	–	I	–	0	E0	P403	PP31	IBC04	B1	–	–	–	F-G, S-N	Category D H1	
1408	FERROSILICON with 30% or more but less than 90% silicon	4.3	6.1	III	39 223 932	1 kg	E1	P003	PP20 PP100	IBC08	B4 B6	–	T1 BK2	TP33	F-G, S-N	Category A SW2 SW5 H1	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
1414	LITHIUM HYDRIDE	4.3	–	I	–	0	E0	P403	PP31	–	–	–	–	–	F-G, S-N	Category E H1	
1415	LITHIUM	4.3	–	I	–	0	E0	P403	PP31	IBC04	B1	–	T9	TP7 TP33	F-G, S-N	Category E H1	
1417	LITHIUM SILICON	4.3	–	II	–	500 g	E2	P410	PP31 PP40	IBC07	B4 B21	–	T3	TP33	F-G, S-N	Category A SW5 H1	
1418	MAGNESIUM POWDER or MAGNESIUM ALLOYS POWDER	4.3	4.2	I	–	0	E0	P403	PP31	–	–	–	–	–	F-G, S-O	Category A H1	
1418	MAGNESIUM POWDER or MAGNESIUM ALLOYS POWDER	4.3	4.2	II	–	0	E2	P410	PP31 PP40	IBC05	B21	–	T3	TP33	F-G, S-O	Category A H1	
1418	MAGNESIUM POWDER or MAGNESIUM ALLOYS POWDER	4.3	4.2	III	223	0	E1	P410	PP31	IBC08	B4	–	T1	TP33	F-G, S-O	Category A H1	
1419	MAGNESIUM ALUMINIUM PHOSPHIDE	4.3	6.1	I	–	0	E0	P403	PP31	–	–	–	–	–	F-G, S-N	Category E SW2 SW5 H1	
1420	POTASSIUM METAL ALLOYS, LIQUID	4.3	–	I	–	0	E0	P402	PP31	–	–	–	–	–	F-G, S-L	Category D H1	
1421	ALKALI METAL ALLOY, LIQUID, N.O.S.	4.3	–	I	182	0	E0	P402	PP31	–	–	–	–	–	F-G, S-L	Category D H1	
1422	POTASSIUM SODIUM ALLOYS, LIQUID	4.3	–	I	–	0	E0	P402	PP31	–	–	–	T9	TP3 TP7 TP31	F-G, S-L	Category D H1	
1423	RUBIDIUM	4.3	–	I	–	0	E0	P403	PP31	IBC04	B1	–	–	–	F-G, S-N	Category D	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
1432	SODIUM PHOSPHIDE	4.3	6.1	I	–	0	E0	P403	PP31	–	–	–	–	–	F-G, S-N	Category E SW2 SW5 H1	
1433	STANNIC PHOSPHIDE	4.3	6.1	I	–	0	E0	P403	PP31	–	–	–	–	–	F-G, S-N	Category E SW2 SW5 H1	
1435	ZINC ASHES	4.3	–	III	223 935	1 kg	E1	P002	PP100	IBC08	B4	–	T1 BK2	TP33	F-G, S-O	Category A H1	
1436	ZINC POWDER or ZINC DUST	4.3	4.2	I	–	0	E0	P403	PP31	–	–	–	–	–	F-G, S-O	Category A H1	
1436	ZINC POWDER or ZINC DUST	4.3	4.2	II	–	0	E2	P410	PP31 PP40	IBC07	B21	–	T3	TP33	F-G, S-O	Category A H1	
1436	ZINC POWDER or ZINC DUST	4.3	4.2	III	223	0	E1	P410	PP31	IBC08	B4	–	T1	TP33	F-G, S-O	Category A H1	
1437	ZIRCONIUM HYDRIDE	4.1	–	II	–	1 kg	E2	P410	PP31 PP40	IBC04	–	–	T3	TP33	F-A, S-G	Category E	
1438	ALUMINIUM NITRATE	5.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1 BK2	TP33	F-A, S-Q	Category A	
△ 1439	AMMONIUM DICHROMATE	5.1	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-H, S-Q	Category A	
1442	AMMONIUM PERCHLORATE	5.1	–	II	152	1 kg	E2	P002	–	IBC06	B21	–	T3	TP33	F-H, S-Q	Category E	
1444	AMMONIUM PERSULPHATE	5.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-Q	Category A	
1445	BARIUM CHLORATE, SOLID	5.1	6.1	II	–	1 kg	E2	P002	–	IBC06	B21	–	T3	TP33	F-H, S-Q	Category A	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
1448	BARIUM PERMANGANATE	5.1	6.1	II	–	1 kg	E2	P002	–	IBC06	B21	–	T3	TP33	F-H, S-Q	Category D	
1449	BARIUM PEROXIDE	5.1	6.1	II	–	1 kg	E2	P002	PP100	IBC06	B21	–	T3	TP33	F-G, S-Q	Category C H1	
1450	BROMATES, INORGANIC, N.O.S.	5.1	–	II	274 350	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-H, S-Q	Category A	
1451	CAESIUM NITRATE	5.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-Q	Category A	
1452	CALCIUM CHLORATE	5.1	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-H, S-Q	Category A	
1453	CALCIUM CHLORITE	5.1	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-H, S-Q	Category A	
1454	CALCIUM NITRATE	5.1	–	III	208 967	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1 BK2 BK3	TP33	F-A, S-Q	Category A SW23	
1455	CALCIUM PERCHLORATE	5.1	–	II	–	1 kg	E2	P002	–	IBC06	B21	–	T3	TP33	F-H, S-Q	Category A	
1456	CALCIUM PERMANGANATE	5.1	–	II	–	1 kg	E2	P002	–	IBC06	B21	–	T3	TP33	F-H, S-Q	Category D	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
1459	CHLORATE AND MAGNESIUM CHLORIDE MIXTURE, SOLID	5.1	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-H, S-Q	Category A	
1459	CHLORATE AND MAGNESIUM CHLORIDE MIXTURE, SOLID	5.1	–	III	223	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-H, S-Q	Category A	
1461	CHLORATES, INORGANIC, N.O.S.	5.1	–	II	274 351	1 kg	E2	P002	–	IBC06	B21	–	T3	TP33	F-H, S-Q	Category A	
1462	CHLORITES, INORGANIC, N.O.S.	5.1	–	II	274 352	1 kg	E2	P002	–	IBC06	B21	–	T3	TP33	F-H, S-Q	Category A	
1463	CHROMIUM TRIOXIDE, ANHYDROUS	5.1	6.1/8	II	–	1 kg	E2	P002	PP31	IBC08	B4 B21	–	T3	TP33	F-A, S-Q	Category A	
1465	DIDYMIUM NITRATE	5.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-Q	Category A	
1466	FERRIC NITRATE	5.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-Q	Category A	
1467	GUANIDINE NITRATE	5.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-Q	Category A	
1469	LEAD NITRATE	5.1	6.1 P	II	–	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-Q	Category A	
1470	LEAD PERCHLORATE, SOLID	5.1	6.1 P	II	–	1 kg	E2	P002	–	IBC06	B21	–	T3	TP33	F-H, S-Q	Category A	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
1472	LITHIUM PEROXIDE	5.1	–	II	–	1 kg	E2	P002	PP100	IBC06	B21	–	T3	TP33	F-G, S-Q	Category C H1	
1473	MAGNESIUM BROMATE	5.1	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-H, S-Q	Category A	
1474	MAGNESIUM NITRATE	5.1	–	III	332 967	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1 BK2 BK3	TP33	F-A, S-Q	Category A SW23	
1475	MAGNESIUM PERCHLORATE	5.1	–	II	–	1 kg	E2	P002	–	IBC06	B21	–	T3	TP33	F-H, S-Q	Category A	
1476	MAGNESIUM PEROXIDE	5.1	–	II	–	1 kg	E2	P002	PP100	IBC06	B21	–	T3	TP33	F-G, S-Q	Category C H1	
1477	NITRATES, INORGANIC, N.O.S.	5.1	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-Q	Category A	
1477	NITRATES, INORGANIC, N.O.S.	5.1	–	III	223	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-Q	Category A	
1479	OXIDIZING SOLID, N.O.S.	5.1	–	I	274 900	0	E0	P503	–	IBC05	B1	–	–	–	F-A, S-Q	Category D	
1479	OXIDIZING SOLID, N.O.S.	5.1	–	II	274 900	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-Q	Category B	
1479	OXIDIZING SOLID, N.O.S.	5.1	–	III	223 274 900	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-Q	Category B	
1481	PERCHLORATES, INORGANIC, N.O.S.	5.1	–	II	–	1 kg	E2	P002	–	IBC06	B21	–	T3	TP33	F-H, S-Q	Category A	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
1483	PEROXIDES, INORGANIC, N.O.S.	5.1	–	II	–	1 kg	E2	P002	PP100	IBC06	B21	–	T3	TP33	F-G, S-Q	Category C H1	
1483	PEROXIDES, INORGANIC, N.O.S.	5.1	–	III	223	5 kg	E1	P002 LP02	PP100 L3	IBC08	B4	–	T1	TP33	F-G, S-Q	Category C H1	
1484	POTASSIUM BROMATE	5.1	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-H, S-Q	Category A	
1485	POTASSIUM CHLORATE	5.1	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-H, S-Q	Category A	
1486	POTASSIUM NITRATE	5.1	–	III	964 967	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1 BK2 BK3	TP33	F-A, S-Q	Category A SW23	
1487	POTASSIUM NITRATE AND SODIUM NITRITE MIXTURE	5.1	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-Q	Category A	
1488	POTASSIUM NITRITE	5.1	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-Q	Category A	
1489	POTASSIUM PERCHLORATE	5.1	–	II	–	1 kg	E2	P002	–	IBC06	B21	–	T3	TP33	F-H, S-Q	Category A	
1490	POTASSIUM PERMANGANATE	5.1	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-H, S-Q	Category D	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
1494	SODIUM BROMATE	5.1	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-H, S-Q	Category A	
1495	SODIUM CHLORATE	5.1	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21	–	T3 BK2	TP33	F-H, S-Q	Category A	
1496	SODIUM CHLORITE	5.1	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-H, S-Q	Category A	
1498	SODIUM NITRATE	5.1	–	III	964 967	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1 BK2 BK3	TP33	F-A, S-Q	Category A SW23	
1499	SODIUM NITRATE AND POTASSIUM NITRATE MIXTURE	5.1	–	III	964 967	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1 BK2 BK3	TP33	F-A, S-Q	Category A SW23	
1500	SODIUM NITRITE	5.1	6.1	III	–	5 kg	E1	P002	–	IBC08	B3	–	T1	TP33	F-A, S-Q	Category A	
1502	SODIUM PERCHLORATE	5.1	–	II	–	1 kg	E2	P002	–	IBC06	B21	–	T3	TP33	F-H, S-Q	Category A	
1503	SODIUM PERMANGANATE	5.1	–	II	–	1 kg	E2	P002	–	IBC06	B21	–	T3	TP33	F-H, S-Q	Category D	
1504	SODIUM PEROXIDE	5.1	–	I	–	0	E0	P503	–	IBC05	B1	–	–	–	F-G, S-Q	Category C	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
1508	STRONTIUM PERCHLORATE	5.1	–	II	–	1 kg	E2	P002	–	IBC06	B21	–	T3	TP33	F-H, S-Q	Category A	
1509	STRONTIUM PEROXIDE	5.1	–	II	–	1 kg	E2	P002	PP100	IBC06	B21	–	T3	TP33	F-G, S-Q	Category C H1	
1510	TETRANITROMETHANE	6.1	5.1	I	354	0	E0	P602	–	–	–	–	–	–	F-H, S-Q	Category D SW2	
1511	UREA HYDROGEN PEROXIDE	5.1	8	III	–	5 kg	E1	P002	–	IBC08	B3	–	T1	TP33	F-A, S-Q	Category A H1	
1512	ZINC AMMONIUM NITRITE	5.1	–	–	900	–	–	–	–	–	–	–	–	–	–	–	
1513	ZINC CHLORATE	5.1	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-H, S-Q	Category A	
1514	ZINC NITRATE	5.1	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-H, S-Q	Category A	
1515	ZINC PERMANGANATE	5.1	–	II	–	1 kg	E2	P002	–	IBC06	B21	–	T3	TP33	F-H, S-Q	Category D	
1516	ZINC PEROXIDE	5.1	–	II	–	1 kg	E2	P002	PP100	IBC06	B21	–	T3	TP33	F-G, S-Q	Category C H1	
1517	ZIRCONIUM PICRAMATE, WETTED with not less than 20% water, by mass	4.1	–	I	28	0	E0	P406	PP26 PP31	–	–	–	–	–	F-B, S-J	Category D	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
1545	ALLYL ISOTHIOCYANATE, STABILIZED	6.1	3	II	386	100 mL	E0	P001	–	IBC02	–	–	T7	TP2	F-E, S-D	Category D SW1 SW2	
1546	AMMONIUM ARSENATE	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
1547	ANILINE	6.1	– P	II	279	100 mL	E4	P001	–	IBC02	–	–	T7	TP2	F-A, S-A	Category A SW2	
1548	ANILINE HYDROCHLORIDE	6.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A	
1549	ANTIMONY COMPOUND, INORGANIC, SOLID, N.O.S.	6.1	–	III	45 274	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A	
1550	ANTIMONY LACTATE	6.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A	
1551	ANTIMONY POTASSIUM TARTRATE	6.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A	
1553	ARSENIC ACID, LIQUID	6.1	–	I	–	0	E5	P001	PP31	–	–	–	T20	TP2 TP7 TP13	F-A, S-A	Category B	
1554	ARSENIC ACID, SOLID	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
1555	ARSENIC BROMIDE	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A SW1 SW2 H2	
1556	ARSENIC COMPOUND, LIQUID, N.O.S. inorganic, including: Arsenates, n.o.s., Arsenites, n.o.s., and Arsenic sulphides, n.o.s.	6.1	–	I	43 274	0	E5	P001	–	–	–	–	T14	TP2 TP13 TP27	F-A, S-A	Category B SW2	
1556	ARSENIC COMPOUND, LIQUID, N.O.S. inorganic, including: Arsenates, n.o.s., Arsenites, n.o.s., and Arsenic sulphides, n.o.s.	6.1	–	II	43 274	100 mL	E4	P001	–	IBC02	–	–	T11	TP2 TP13 TP27	F-A, S-A	Category B SW2	
1556	ARSENIC COMPOUND, LIQUID, N.O.S. inorganic, including: Arsenates, n.o.s., Arsenites, n.o.s., and	6.1	–	III	43 223 274	5 L	E1	P001 LP01	–	IBC03	–	–	T7	TP2 TP28	F-A, S-A	Category B SW2	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
1558	ARSENIC	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
1559	ARSENIC PENTOXIDE	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
1560	ARSENIC TRICHLORIDE	6.1	–	I	–	0	E0	P602	–	–	–	–	T14	TP2 TP13	F-A, S-A	Category B SW2	
1561	ARSENIC TRIOXIDE	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
1562	ARSENICAL DUST	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
1564	BARIUM COMPOUND, N.O.S.	6.1	–	II	177 274	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
1564	BARIUM COMPOUND, N.O.S.	6.1	–	III	177 223 274	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A	
1565	BARIUM CYANIDE	6.1	– P	I	–	0	E5	P002	PP31	IBC07	B1	–	T6	TP33	F-A, S-A	Category A SW2	
1566	BERYLLIUM COMPOUND, N.O.S.	6.1	–	II	274	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
1566	BERYLLIUM COMPOUND, N.O.S.	6.1	–	III	223 274	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A	
1567	BERYLLIUM POWDER	6.1	4.1	II	–	500 g	E4	P002	PP100	IBC08	B4 B21	–	T3	TP33	F-G, S-G	Category A H1	
1569	BROMOACETONE	6.1	3 P	II	–	0	E0	P602	–	–	–	–	T20	TP2 TP13	F-E, S-D	Category D SW2	
1570	BRUCINE	6.1	–	I	43	0	E5	P002	–	IBC07	B1	–	T6	TP33	F-A, S-A	Category A	
1571	BARIUM AZIDE, WETTED with not less than 50% water, by mass	4.1	6.1	I	28	0	E0	P406	PP31	–	–	–	–	–	F-B, S-J	Category D	
1572	CACODYLIC ACID	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category E	
1573	CALCIUM ARSENATE	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4	–	T3	TP33	F-A, S-A	Category A	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
1580	CHLOROPICRIN	6.1	– P	I	354	0	E0	P601	–	–	–	–	T22	TP2 TP13	F-A, S-A	Category D SW2	
1581	CHLOROPICRIN AND METHYL BROMIDE MIXTURE with more than 2% chloropicrin	2.3	–	–	–	0	E0	P200	–	–	–	–	T50	–	F-C, S-U	Category D SW1 SW2	
1582	CHLOROPICRIN AND METHYL CHLORIDE MIXTURE	2.3	–	–	–	0	E0	P200	–	–	–	–	T50	–	F-C, S-U	Category D SW1 SW2	
1583	CHLOROPICRIN MIXTURE, N.O.S.	6.1	–	I	43 274 315	0	E0	P602	–	–	–	–	–	–	F-A, S-A	Category C SW2	
1583	CHLOROPICRIN MIXTURE, N.O.S.	6.1	–	II	43 274	100 mL	E0	P001	–	IBC02	–	–	–	–	F-A, S-A	Category C SW2	
1583	CHLOROPICRIN MIXTURE, N.O.S.	6.1	–	III	43 223 274	5 L	E0	P001 LP01	–	IBC03	–	–	–	–	F-A, S-A	Category C SW2	
1585	COPPER ACETOARSENITE	6.1	– P	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
1586	COPPER ARSENITE	6.1	– P	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
1587	COPPER CYANIDE	6.1	– P	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
1588	CYANIDES, INORGANIC, SOLID, N.O.S.	6.1	– P	I	47 274	0	E5	P002	–	IBC07	B1	–	T6	TP33	F-A, S-A	Category A	
1588	CYANIDES, INORGANIC, SOLID, N.O.S.	6.1	– P	II	47 274	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
1588	CYANIDES, INORGANIC, SOLID, N.O.S.	6.1	– P	III	47 223 274	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A	
1589	CYANOGEN CHLORIDE, STABILIZED	2.3	8 P	–	386	0	E0	P200	–	–	–	–	–	–	F-C, S-U	Category D SW1 SW2	
1590	DICHLOROANILINES, LIQUID	6.1	–	II	279	100 mL	E4	P001	–	IBC02	–	–	T7	TP2	F-A, S-A	Category A	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
1596	DINITROANILINES	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
1597	DINITROBENZENES, LIQUID	6.1	–	II	–	100 mL	E4	P001	–	IBC03	–	–	T7	TP2	F-A, S-A	Category A	
1597	DINITROBENZENES, LIQUID	6.1	–	III	223	5 L	E1	P001 LP01	–	IBC03	–	–	T7	TP2	F-A, S-A	Category A	
1598	DINITRO-*o*-CRESOL	6.1	– P	II	43	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
1599	DINITROPHENOL SOLUTION	6.1	– P	II	–	100 mL	E4	P001	–	IBC02	–	–	T7	TP2	F-A, S-A	Category A	
1599	DINITROPHENOL SOLUTION	6.1	– P	III	223	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-A	Category A	
1600	DINITROTOLUENES, MOLTEN	6.1	– P	II	–	0	E0	–	–	–	–	–	T7	TP3	F-A, S-A	Category C	
1601	DISINFECTANT, SOLID, TOXIC, N.O.S.	6.1	–	I	274	0	E5	P002	–	IBC07	B1	–	T6	TP33	F-A, S-A	Category A SW2	
1601	DISINFECTANT, SOLID, TOXIC, N.O.S.	6.1	–	II	274	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A SW2	
1601	DISINFECTANT, SOLID, TOXIC, N.O.S.	6.1	–	III	223 274	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A SW2	
1602	DYE, LIQUID, TOXIC, N.O.S. or DYE INTERMEDIATE, LIQUID, TOXIC, N.O.S.	6.1	–	I	274	0	E5	P001	–	–	–	–	–	–	F-A, S-A	Category A	
1602	DYE, LIQUID, TOXIC, N.O.S. or DYE INTERMEDIATE, LIQUID, TOXIC, N.O.S.	6.1	–	II	274	100 mL	E4	P001	–	IBC02	–	–	–	–	F-A, S-A	Category A	
1602	DYE, LIQUID, TOXIC, N.O.S. or DYE INTERMEDIATE, LIQUID, TOXIC, N.O.S.	6.1	–	III	223 274	5 L	E1	P001 LP01	–	IBC03	–	–	–	–	F-A, S-A	Category A	
1603	ETHYL BROMOACETATE	6.1	3	II	–	100 mL	E0	P001	–	IBC02	–	–	T7	TP2	F-E, S-D	Category D SW2	
1604	ETHYLENEDIAMINE	8	3	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP2	F-E, S-C	Category A SW2	
1605	ETHYLENE DIBROMIDE	6.1	–	I	354	0	E0	P602	–	–	–	–	T20	TP2 TP13	F-A, S-A	Category D SW2	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
1613	HYDROCYANIC ACID, AQUEOUS SOLUTION (HYDROGEN CYANIDE, AQUEOUS SOLUTION) with not more than 20% hydrogen cyanide	6.1	– P	I	900	0	E0	P601	–	–	–	–	T14	TP2 TP13	F-A, S-A	Category D SW2	
1614	HYDROGEN CYANIDE, STABILIZED, containing less than 3% water and absorbed in a porous inert material	6.1	– P	I	386	0	E0	P099	–	–	–	–	–	–	F-A, S-U	Category D SW1 SW2	
1616	LEAD ACETATE	6.1	– P	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A	
1617	LEAD ARSENATES	6.1	– P	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
1618	LEAD ARSENITES	6.1	– P	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
1620	LEAD CYANIDE	6.1	– P	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
1621	LONDON PURPLE	6.1	– P	II	43	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
1622	MAGNESIUM ARSENATE	6.1	– P	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
1623	MERCURIC ARSENATE	6.1	– P	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
1624	MERCURIC CHLORIDE	6.1	– P	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
1625	MERCURIC NITRATE	6.1	– P	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
1626	MERCURIC POTASSIUM CYANIDE	6.1	– P	I	–	0	E5	P002	PP31	IBC07	B1	–	T6	TP33	F-A, S-A	Category A	
1627	MERCUROUS NITRATE	6.1	– P	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
1629	MERCURY ACETATE	6.1	– P	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
1630	MERCURY AMMONIUM CHLORIDE	6.1	– P	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
1640	MERCURY OLEATE	6.1	– P	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
1641	MERCURY OXIDE	6.1	– P	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
1642	MERCURY OXYCYANIDE, DESENSITIZED	6.1	– P	II	900	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
1643	MERCURY POTASSIUM IODIDE	6.1	– P	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
1644	MERCURY SALICYLATE	6.1	– P	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
1645	MERCURY SULPHATE	6.1	– P	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
1646	MERCURY THIOCYANATE	6.1	– P	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
1647	METHYL BROMIDE AND ETHYLENE DIBROMIDE MIXTURE, LIQUID	6.1	– P	I	354	0	E0	P602	–	–	–	–	T20	TP2 TP13	F-A, S-A	Category D SW2	
1648	ACETONITRILE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP2	F-E, S-D	Category B SW2	
1649	MOTOR FUEL ANTI-KNOCK MIXTURE	6.1	– P	I	–	0	E0	P602	–	–	–	–	T14	TP2 TP13	F-A, S-A	Category D SW1 SW2	
1650	*beta*-NAPHTHYLAMINE, SOLID	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
1651	NAPHTHYLTHIOUREA	6.1	–	II	43	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
1652	NAPHTHYLUREA	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
1653	NICKEL CYANIDE	6.1	– P	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
1654	NICOTINE	6.1		II		100 ml	E4	P001		IBC02					F-A, S-A		

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
1657	NICOTINE SALICYLATE	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
1658	NICOTINE SULPHATE SOLUTION	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–	–	T7	TP2	F-A, S-A	Category A	
1658	NICOTINE SULPHATE SOLUTION	6.1	–	III	223	5 L	E1	P001 LP01	–	IBC03	–	–	T7	TP2	F-A, S-A	Category A	
1659	NICOTINE TARTRATE	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
1660	NITRIC OXIDE, COMPRESSED	2.3	5.1/8	–	–	0	E0	P200	–	–	–	–	–	–	F-C, S-W	Category D SW2	
1661	NITROANILINES (*o*-, *m*-, *p*-)	6.1	–	II	279	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
1662	NITROBENZENE	6.1	–	II	279	100 mL	E4	P001	–	IBC02	–	–	T7	TP2	F-A, S-A	Category A SW2	
1663	NITROPHENOLS (*o*-, *m*-, *p*-)	6.1	–	III	279	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A	
1664	NITROTOLUENES, LIQUID	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–	–	T7	TP2	F-A, S-A	Category A	
1665	NITROXYLENES, LIQUID	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–	–	T7	TP2	F-A, S-A	Category A	
1669	PENTACHLOROETHANE	6.1	– P	II	–	100 mL	E4	P001	–	IBC02	–	–	T7	TP2	F-A, S-A	Category A SW2	
1670	PERCHLOROMETHYL MERCAPTAN	6.1	– P	I	354	0	E0	P602	–	–	–	–	T20	TP2 TP13	F-A, S-A	Category D SW2	
1671	PHENOL, SOLID	6.1	–	II	279	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
1672	PHENYLCARBYLAMINE CHLORIDE	6.1	–	I	–	0	E0	P602	–	–	–	–	T14	TP2 TP13	F-A, S-A	Category D SW2	
1673	PHENYLENEDIAMINES	6.1	–	III	279	5 kg	E1	P002	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
1683	SILVER ARSENITE	6.1	– P	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
1684	SILVER CYANIDE	6.1	– P	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A SW2	
1685	SODIUM ARSENATE	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
1686	SODIUM ARSENITE, AQUEOUS SOLUTION	6.1	–	II	43	100 mL	E4	P001	–	IBC02	–	–	T7	TP2	F-A, S-A	Category A	
1686	SODIUM ARSENITE, AQUEOUS SOLUTION	6.1	–	III	43 223	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP2	F-A, S-A	Category A	
1687	SODIUM AZIDE	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	–	–	F-A, S-A	Category A	
1688	SODIUM CACODYLATE	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
1689	SODIUM CYANIDE, SOLID	6.1	– P	I	–	0	E5	P002	PP31	IBC07	B1	–	T6	TP33	F-A, S-A	Category B	
1690	SODIUM FLUORIDE, SOLID	6.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A	
1691	STRONTIUM ARSENITE	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
1692	STRYCHNINE or STRYCHNINE SALTS	6.1	– P	I	43	0	E5	P002	–	IBC07	B1	–	T6	TP33	F-A, S-A	Category A	
1693	TEAR GAS SUBSTANCE, LIQUID, N.O.S.	6.1	–	I	274	0	E0	P001	PP31	–	–	–	–	–	F-A, S-A	Category D SW2	
1693	TEAR GAS SUBSTANCE, LIQUID, N.O.S.	6.1	–	II	274	0	E0	P001	PP31	IBC02	–	–	–	–	F-A, S-A	Category D SW2	
1694	BROMOBENZYL CYANIDES, LIQUID	6.1	–	I	138	0	E0	P001	PP31	–	–	–	T14	TP2 TP13	F-A, S-A	Category D SW1 SW2 H2	
1695	CHLOROACETONE, STABILIZED	6.1	3/8 P	I	354	0	E0	P602	–	–	–	–	T20	TP2 TP13	F-E, S-C	Category D SW2	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
1701	XYLYL BROMIDE, LIQUID	6.1	–	II	–	0	E0	P001	PP31	IBC02	–	–	T7	TP2 TP13	F-A, S-A	Category D SW2	
1702	1,1,2,2-TETRACHLOROETHANE	6.1	– P	II	–	100 mL	E4	P001	–	IBC02	–	–	T7	TP2	F-A, S-A	Category A SW2	
1704	TETRAETHYL DITHIOPYROPHOSPHATE	6.1	– P	II	43	100 mL	E4	P001	–	IBC02	–	–	T7	TP2	F-A, S-A	Category D SW2	
1707	THALLIUM COMPOUND, N.O.S.	6.1	– P	II	43 274	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
1708	TOLUIDINES, LIQUID	6.1	– P	II	279	100 mL	E4	P001	–	IBC02	–	–	T7	TP2	F-A, S-A	Category A	
1709	2,4-TOLUYLENEDIAMINE, SOLID	6.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A	
1710	TRICHLOROETHYLENE	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-A	Category A SW2	
1711	XYLIDINES, LIQUID	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–	–	T7	TP2	F-A, S-A	Category A	
1712	ZINC ARSENATE, ZINC ARSENITE or ZINC ARSENATE AND ZINC ARSENITE MIXTURE	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
1713	ZINC CYANIDE	6.1	– P	I	–	0	E5	P002	–	IBC07	B1	–	T6	TP33	F-A, S-A	Category A	
1714	ZINC PHOSPHIDE	4.3	6.1	I	–	0	E0	P403	PP31	–	–	–	–	–	F-G, S-N	Category E SW2 SW5 H1	
1715	ACETIC ANHYDRIDE	8	3	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP2	F-E, S-C	Category A SW2	
1716	ACETYL BROMIDE	8	–	II	–	1 L	E2	P001	–	IBC02	B20	–	T8	TP2	F-A, S-B	Category C SW2	
1717	ACETYL CHLORIDE	3	8	II	–	1 L	E2	P001	–	IBC02	B20	–	T8	TP2	F-E, S-C	Category B SW2	
1718	BUTYL ACID PHOSPHATE	8		III		5 L	E1	P001		IBC03		–	T4	TP1	F-A, S-B	Category A	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
1723	ALLYL IODIDE	3	8	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP2 TP13	F-E, S-C	Category B SW2	
1724	ALLYLTRICHLOROSILANE, STABILIZED	8	3	II	386	0	E0	P010	–	–	–	–	T10	TP2 TP7 TP13	F-E, S-C	Category C SW1 SW2	
1725	ALUMINIUM BROMIDE, ANHYDROUS	8	–	II	937	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-B	Category A SW2	
1726	ALUMINIUM CHLORIDE, ANHYDROUS	8	–	II	937	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-B	Category A SW2	
1727	AMMONIUM HYDROGENDIFLUORIDE, SOLID	8	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-B	Category A SW1 SW2	
1728	AMYLTRICHLOROSILANE	8	–	II	–	0	E0	P010	–	–	–	–	T10	TP2 TP7 TP13	F-A, S-B	Category C SW2	
1729	ANISOYL CHLORIDE	8	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-B	Category C SW2	
1730	ANTIMONY PENTACHLORIDE, LIQUID	8	–	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP2	F-A, S-B	Category C SW2	
1731	ANTIMONY PENTACHLORIDE	8	–	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP2	F-A, S-B	Category C	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
1736	BENZOYL CHLORIDE	8	–	II	–	1 L	E2	P001	–	IBC02	B20	–	T8	TP2 TP13	F-A, S-B	Category C SW2	
1737	BENZYL BROMIDE	6.1	8	II	–	0	E4	P001	–	IBC02	B20	–	T8	TP2 TP13	F-A, S-B	Category D SW2 H1	
1738	BENZYL CHLORIDE	6.1	8	II	–	0	E4	P001	–	IBC02	B20	–	T8	TP2 TP13	F-A, S-B	Category D SW2 H1	
1739	BENZYL CHLOROFORMATE	8	– P	I	–	0	E0	P001	–	–	–	–	T10	TP2 TP13	F-A, S-B	Category D SW2	
1740	HYDROGENDIFLUORIDES, SOLID, N.O.S.	8	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-B	Category A SW1 SW2	
1740	HYDROGENDIFLUORIDES, SOLID, N.O.S.	8	–	III	223	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-B	Category A SW1 SW2	
1741	BORON TRICHLORIDE	2.3	8	–	–	0	E0	P200	–	–	–	–	–	–	F-C, S-U	Category D SW1 SW2	
1742	BORON TRIFLUORIDE ACETIC ACID COMPLEX, LIQUID	8	–	II	–	1 L	E2	P001	–	IBC02	B20	–	T8	TP2	F-A, S-B	Category A	
1743	BORON TRIFLUORIDE PROPIONIC ACID COMPLEX, LIQUID	8	–	II	–	500 mL	E2	P001	–	IBC02	B20	–	T8	TP2	F-A, S-B	Category A	
1744	BROMINE or BROMINE SOLUTION	8	6.1	I	–	0	E0	P804	–	–	–	–	T22	TP2 TP10 TP13	F-A, S-B	Category D SW1 SW2 H2	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
1746	BROMINE TRIFLUORIDE	5.1	6.1/8	I	–	0	E0	P200	–	–	–	–	T22	TP2 TP13	F-A, S-B	Category D SW1 SW2	
1747	BUTYLTRICHLOROSILANE	8	3	II	–	0	E0	P010	–	–	–	–	T10	TP2 TP7 TP13	F-E, S-C	Category C SW2	
1748	CALCIUM HYPOCHLORITE, DRY or CALCIUM HYPOCHLORITE MIXTURE, DRY with more than 39% available chlorine (8.8% available oxygen)	5.1	– P	II	314	1 kg	E2	P002	PP85	–	–	–	–	–	F-H, S-Q	Category D SW1 SW11	
1748	CALCIUM HYPOCHLORITE, DRY or CALCIUM HYPOCHLORITE MIXTURE, DRY with more than 39% available chlorine (8.8% available oxygen)	5.1	– P	III	316	5 kg	E1	P002	PP85	–	–	–	–	–	F-H, S-Q	Category D SW1 SW11	
1749	CHLORINE TRIFLUORIDE	2.3	5.1/8	–	–	0	E0	P200	–	–	–	–	–	–	F-C, S-W	Category D SW2	
1750	CHLOROACETIC ACID SOLUTION	6.1	8	II	–	100 mL	E4	P001	–	IBC02	–	–	T7	TP2	F-A, S-B	Category C SW2	
1751	CHLOROACETIC ACID, SOLID	6.1	8	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-B	Category C SW2	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
1755	CHROMIC ACID SOLUTION	8	–	II	–	1 L	E2	P001	–	IBC02	B20	–	T8	TP2	F-A, S-B	Category C SW2	
1755	CHROMIC ACID SOLUTION	8	–	III	223	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-B	Category C SW2	
△ 1756	CHROMIC FLUORIDE, SOLID	8	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-B	Category A	
△ 1757	CHROMIC FLUORIDE SOLUTION	8	–	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP2	F-A, S-B	Category A	
1757	CHROMIC FLUORIDE SOLUTION	8	–	III	223	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-B	Category A	
1758	CHROMIUM OXYCHLORIDE	8	–	I	–	0	E0	P001	–	–	–	–	T10	TP2	F-A, S-B	Category C SW2	
1759	CORROSIVE SOLID, N.O.S.	8	–	I	274	0	E0	P002	–	IBC07	B1	–	T6	TP33	F-A, S-B	Category B	
1759	CORROSIVE SOLID, N.O.S.	8	–	II	274	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-B	Category A	
1759	CORROSIVE SOLID, N.O.S.	8	–	III	223 274	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-B	Category A	
1760	CORROSIVE LIQUID, N.O.S.	8	–	I	274	0	E0	P001	–	–	–	–	T14	TP2 TP27	F-A, S-B	Category B SW2	
1760	CORROSIVE LIQUID, N.O.S.	8	–	II	274	1 L	E2	P001	–	IBC02	–	–	T11	TP2 TP27	F-A, S-B	Category B SW2	
1760	CORROSIVE LIQUID, N.O.S.	8	–	III	223 274	5 L	E1	P001 LP01	–	IBC03	–	–	T7	TP1 TP28	F-A, S-B	Category A SW2	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
1764	DICHLOROACETIC ACID	8	–	II	–	1 L	E2	P001	–	IBC02	B20	–	T8	TP2	F-A, S-B	Category A	
1765	DICHLOROACETYL CHLORIDE	8	–	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP2	F-A, S-B	Category D SW2	
1766	DICHLOROPHENYL-TRICHLOROSILANE	8	– P	II	–	0	E0	P010	–	–	–	–	T10	TP2 TP7 TP13	F-A, S-B	Category C SW2	
1767	DIETHYLDICHLOROSILANE	8	3	II	–	0	E0	P010	–	–	–	–	T10	TP2 TP7 TP13	F-E, S-C	Category C SW2	
1768	DIFLUOROPHOSPHORIC ACID, ANHYDROUS	8	–	II	–	1 L	E2	P001	–	IBC02	B20	–	T8	TP2	F-A, S-B	Category A SW2	
1769	DIPHENYLDICHLOROSILANE	8	–	II	–	0	E0	P010	–	–	–	–	T10	TP2 TP7 TP13	F-A, S-B	Category C SW2	
1770	DIPHENYLMETHYL BROMIDE	8	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-B	Category D SW2	
1771	DODECYLTRICHLOROSILANE	8	–	II	–	0	E0	P010	–	–	–	–	T10	TP2 TP7 TP13	F-A, S-B	Category C SW2	
1773	FERRIC CHLORIDE, ANHYDROUS	8	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-B	Category A	
1774	FIRE EXTINGUISHER CHARGES, corrosive liquid	8	–	II	–	1 L	E0	P001	PP4	–	–	–	–	–	F-A, S-B	Category A	
1775	FLUOROBORIC ACID	8	–	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP2	F-A, S-B	Category A	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
1780	FUMARYL CHLORIDE	8	–	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP2	F-A, S-B	Category C SW2	
1781	HEXADECYLTRICHLOROSILANE	8	–	II	–	0	E0	P010	–	–	–	–	T10	TP2 TP7 TP13	F-A, S-B	Category C SW2	
1782	HEXAFLUOROPHOSPHORIC ACID	8	–	II	–	1 L	E2	P001	–	IBC02	B20	–	T8	TP2	F-A, S-B	Category A	
1783	HEXAMETHYLENEDIAMINE SOLUTION	8	–	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP2	F-A, S-B	Category A	
1783	HEXAMETHYLENEDIAMINE SOLUTION	8	–	III	223	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-B	Category A	
1784	HEXYLTRICHLOROSILANE	8	–	II	–	0	E0	P010	–	–	–	–	T10	TP2 TP7 TP13	F-A, S-B	Category C SW2	
△ 1786	HYDROFLUORIC ACID AND SULPHURIC ACID MIXTURE	8	6.1	I	–	0	E0	P001	–	–	–	–	T10	TP2 TP13	F-A, S-B	Category D SW2	
△ 1787	HYDRIODIC ACID	8	–	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP2	F-A, S-B	Category C	
△ 1787	HYDRIODIC ACID	8	–	III	223	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-B	Category C	
△ 1788	HYDROBROMIC ACID	8	–	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP2	F-A, S-B	Category C	
△ 1788	HYDROBROMIC ACID	8	–	III	223	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-B	Category C	
△ 1789	HYDROCHLORIC ACID	8	–	II	–	1 L	E2	P001	–	IBC02	B20	–	T8	TP2	F-A, S-B	Category C	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
1791	HYPOCHLORITE SOLUTION	8	– P	III	223 274 900	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP2 TP24	F-A, S-B	Category B	
1792	IODINE MONOCHLORIDE, SOLID	8	–	II	–	1 kg	E0	P002	–	IBC08	B4 B21	–	T7	TP2	F-A, S-B	Category D SW2	
1793	ISOPROPYL ACID PHOSPHATE	8	–	III	–	5 L	E1	P001 LP01	–	IBC02	–	–	T4	TP1	F-A, S-B	Category A	
1794	LEAD SULPHATE with more than 3% free acid	8	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-B	Category A	
△ 1796	NITRATING ACID MIXTURE with more than 50% nitric acid	8	5.1	I	–	0	E0	P001	–	–	–	–	T10	TP2 TP13	F-A, S-Q	Category D SW2	
△ 1796	NITRATING ACID MIXTURE with not more than 50% nitric acid	8	–	II	–	1 L	E0	P001	–	IBC02	B20	–	T8	TP2 TP13	F-A, S-B	Category D SW2	
△ 1798	NITROHYDROCHLORIC ACID	8	–	I	–	0	E0	P802	–	–	–	–	T10	TP2 TP13	F-A, S-B	Category D SW2	
1799	NONYLTRICHLOROSILANE	8	–	II	–	0	E0	P010	–	–	–	–	T10	TP2 TP7 TP13	F-A, S-B	Category C SW2	
1800	OCTADECYLTRICHLORO-SILANE	8	–	II	–	0	E0	P010	–	–	–	–	T10	TP2 TP7 TP13	F-A, S-B	Category C SW2	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
1804	PHENYLTRICHLOROSILANE	8	–	II	–	0	E0	P010	–	–	–	–	T10	TP2 TP7 TP13	F-A, S-B	Category C SW2	
1805	PHOSPHORIC ACID, SOLUTION	8	–	III	223	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-B	Category A	
1806	PHOSPHORUS PENTACHLORIDE	8	–	II	–	1 kg	E0	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-B	Category C SW2	
1807	PHOSPHORUS PENTOXIDE	8	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-B	Category A	
1808	PHOSPHORUS TRIBROMIDE	8	–	II	–	1 L	E0	P001	–	IBC02	–	–	T7	TP2	F-A, S-B	Category C SW2	
1809	PHOSPHORUS TRICHLORIDE	6.1	8	I	354	0	E0	P602	–	–	–	–	T20	TP2 TP13	F-A, S-B	Category D SW2	
1810	PHOSPHORUS OXYCHLORIDE	6.1	8	I	354	0	E0	P602	–	–	–	–	T20	TP2 TP13	F-A, S-B	Category D SW2	
1811	POTASSIUM HYDROGEN DIFLUORIDE, SOLID	8	6.1	II	–	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-B	Category A SW1 SW2	
1812	POTASSIUM FLUORIDE, SOLID	6.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A	
1813	POTASSIUM HYDROXIDE, SOLID	8	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-B	Category A	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
1816	PROPYLTRICHLOROSILANE	8	3	II	–	0	E0	P010	–	–	–	–	T10	TP2 TP7 TP13	F-E, S-C	Category C SW2	
1817	PYROSULPHURYL CHLORIDE	8	–	II	–	1 L	E2	P001	–	IBC02	–	–	T8	TP2	F-A, S-B	Category C SW2	
1818	SILICON TETRACHLORIDE	8	–	II	–	0	E0	P010	–	–	–	–	T10	TP2 TP7 TP13	F-A, S-B	Category C SW2	
1819	SODIUM ALUMINATE SOLUTION	8	–	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP2	F-A, S-B	Category A	
1819	SODIUM ALUMINATE SOLUTION	8	–	III	223	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-B	Category A	
1823	SODIUM HYDROXIDE, SOLID	8	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-B	Category A	
1824	SODIUM HYDROXIDE SOLUTION	8	–	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP2	F-A, S-B	Category A	
1824	SODIUM HYDROXIDE SOLUTION	8	–	III	223	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-B	Category A	
1825	SODIUM MONOXIDE	8	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-B	Category A	
△ 1826	NITRATING ACID MIXTURE, SPENT, with more than 50% nitric acid	8	5.1	I	113	0	E0	P001	–	–	–	–	T10	TP2 TP13	F-A, S-Q	Category D SW2	
△ 1826	NITRATING ACID MIXTURE, SPENT, with not more than 50% nitric acid	8	–	II	113	1 L	E0	P001	–	IBC02	B20	–	T8	TP2	F-A, S-B	Category D SW2	

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							Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
	(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
△	1831	SULPHURIC ACID, FUMING	8	6.1	I	–	0	E0	P602	–	–	–	–	T20	TP2 TP13	F-A, S-B	Category C SW2 SW15	
△	1832	SULPHURIC ACID, SPENT	8	–	II	113	1 L	E0	P001	–	IBC02	B20	–	T8	TP2	F-A, S-B	Category C SW15	
	1833	SULPHUROUS ACID	8	–	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP2	F-A, S-B	Category B SW2	
	1834	SULPHURYL CHLORIDE	6.1	8	I	354	0	E0	P602	–	–	–	–	T20	TP2 TP13	F-A, S-B	Category D SW2	
	1835	TETRAMETHYLAMMONIUM HYDROXIDE SOLUTION	8	–	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP2	F-A, S-B	Category A	
	1835	TETRAMETHYLAMMONIUM HYDROXIDE SOLUTION	8	–	III	223	5 L	E1	P001 LP01	–	IBC03	–	–	T7	TP2	F-A, S-B	Category A	
	1836	THIONYL CHLORIDE	8	–	I	–	0	E0	P802	–	–	–	–	T10	TP2 TP13	F-A, S-B	Category C SW2	
	1837	THIOPHOSPHORYL CHLORIDE	8	–	II	–	1 L	E0	P001	–	IBC02	–	–	T7	TP2	F-A, S-B	Category C SW2	
	1838	TITANIUM TETRACHLORIDE	6.1	8	I	354	0	E0	P602	–	–	–	–	T20	TP2 TP13	F-A, S-B	Category D SW2	
	1839	TRICHLOROACETIC ACID, SOLID	8	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-B	Category A	
	1840	ZINC CHLORIDE SOLUTION	8	–	III	223	5 L	E1	P001	–	IBC03	–	–	T4	TP2	F-A, S-B	Category A	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
1846	CARBON TETRACHLORIDE	6.1	– P	II	–	100 mL	E4	P001	–	IBC02	–	–	T7	TP2	F-A, S-A	Category A SW2	
1847	POTASSIUM SULPHIDE, HYDRATED with not less than 30% water of crystallization	8	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-B	Category A	
1848	PROPIONIC ACID with not less than 10% and less than 90% acid, by mass	8	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-B	Category A	
1849	SODIUM SULPHIDE, HYDRATED with not less than 30% water	8	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-B	Category A	
1851	MEDICINE, LIQUID, TOXIC, N.O.S.	6.1	–	II	221	100 mL	E4	P001	–	–	–	–	–	–	F-A, S-A	Category C SW2	
1851	MEDICINE, LIQUID, TOXIC, N.O.S.	6.1	–	III	221 223	5 L	E1	P001 LP01	–	–	–	–	–	–	F-A, S-A	Category C SW2	
1854	BARIUM ALLOYS, PYROPHORIC	4.2	–	I	–	0	E0	P404	PP31	–	–	–	T21	TP7 TP33	F-G, S-M	Category D H1	
1855	CALCIUM, PYROPHORIC or CALCIUM ALLOYS, PYROPHORIC	4.2	–	I	–	0	E0	P404	PP31	–	–	–	–	–	F-G, S-M	Category D H1	
1856	RAGS, OILY	4.2	–	–	29 123 973	0	E0	P003	PP19	IBC08	B3 B6	–	–	–	F-A, S-J	Category A	
1857	TEXTILE WASTE, WET	4.2	–	III	123	0	E1	P410	–	–	–	–	–	–	F-A, S-J	Category A	
1858	HEXAFLUOROPROPYLENE (REFRIGERANT GAS R 1216)	2.2	–	–	–	120 mL	E1	P200	–	–	–	–	T50	–	F-C, S-V	Category A	
1859	SILICON TETRAFLUORIDE	2.3	8	–	–	0	E0	P200	–	–	–	–	–	–	F-C, S-U	Category D SW2	
1860	VINYL FLUORIDE, STABILIZED	2.1	–	–	386	0	E0	P200	–	–	–	–	–	–	F-D, S-U	Category E SW1 SW2	
1862	ETHYL CROTONATE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP2	F-E, S-D	Category B	
1863	FUEL, AVIATION, TURBINE ENGINE	3	–	I	–	500 mL	E3	P001	–	–	–	–	T11	TP1 TP2	F-E, S-E	Category E	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
1866	RESIN SOLUTION, flammable	3	–	III	223 955	5 L	E1	P001 LP01	PP1	IBC03	–	–	T2	TP1	F-E, S-E	Category A	
1868	DECABORANE	4.1	6.1	II	–	1 kg	E0	P002	PP31	IBC06	B21	–	T3	TP33	F-A, S-G	Category A	
1869	MAGNESIUM or MAGNESIUM ALLOYS with more than 50% magnesium in pellets, turnings or ribbons	4.1	–	III	59 920	5 kg	E1	P002 LP02	PP100 L3	IBC08	B4	–	T1	TP33	F-G, S-G	Category A H1	
1870	POTASSIUM BOROHYDRIDE	4.3	–	I	–	0	E0	P403	PP31	–	–	–	–	–	F-G, S-O	Category E H1	
1871	TITANIUM HYDRIDE	4.1	–	II	–	1 kg	E2	P410	PP31 PP40	IBC04	–	–	T3	TP33	F-A, S-G	Category E	
1872	LEAD DIOXIDE	5.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-Q	Category A	
△ 1873	PERCHLORIC ACID with more than 50% but not more than 72% acid, by mass	5.1	8	I	900	0	E0	P502	PP28	–	–	–	T10	TP1	F-A, S-Q	Category D	
1884	BARIUM OXIDE	6.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A	
1885	BENZIDINE	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
1886	BENZYLIDENE CHLORIDE	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–	–	T7	TP2	F-A, S-A	Category D SW2	
1887	BROMOCHLOROMETHANE	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-A	Category A	
1888	CHLOROFORM	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T7	TP2	F-A, S-A	Category A SW2	
1889	CYANOGEN BROMIDE	6.1	8 P	I	–	0	E0	P002	PP31	–	–	–	T6	TP33	F-A, S-B	Category D SW2	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
1897	TETRACHLOROETHYLENE	6.1	– P	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-A	Category A SW2	
1898	ACETYL IODIDE	8	–	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP2 TP13	F-A, S-B	Category C SW2	
1902	DIISOOCTYL ACID PHOSPHATE	8	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-B	Category A	
1903	DISINFECTANT, LIQUID, CORROSIVE, N.O.S.	8	–	I	274	0	E0	P001	–	–	–	–	–	–	F-A, S-B	Category B	
1903	DISINFECTANT, LIQUID, CORROSIVE, N.O.S.	8	–	II	274	1 L	E2	P001	–	IBC02	–	–	–	–	F-A, S-B	Category B	
1903	DISINFECTANT, LIQUID, CORROSIVE, N.O.S.	8	–	III	223 274	5 L	E1	P001 LP01	–	IBC03	–	–	–	–	F-A, S-B	Category A	
1905	SELENIC ACID	8	–	I	–	0	E0	P002	–	IBC07	B1	–	T6	TP33	F-A, S-B	Category A	
△ 1906	SLUDGE ACID	8	–	II	–	1 L	E0	P001	–	IBC02	–	–	T8	TP2 TP28	F-A, S-B	Category C SW15	
1907	SODA LIME with more than 4% sodium hydroxide	8	–	III	62	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-B	Category A	
1908	CHLORITE SOLUTION	8	–	II	274 352	1 L	E2	P001	–	IBC02	–	–	T7	TP2 TP24	F-A, S-B	Category B	
1908	CHLORITE SOLUTION	8	–	III	223 274 352	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP2 TP24	F-A, S-B	Category B	
1910	CALCIUM OXIDE	8	–	–	960	–	–	–	–	–	–	–	–	–	–	–	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
1916	2,2′-DICHLORODIETHYL ETHER	6.1	3	II	–	100 mL	E4	P001	–	IBC02	–	–	T7	TP2	F-E, S-D	Category A	
1917	ETHYL ACRYLATE, STABILIZED	3	–	II	386	1 L	E2	P001	–	IBC02	–	–	T4	TP1 TP13	F-E, S-D	Category C SW1 SW2	
1918	ISOPROPYLBENZENE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-E	Category A	
1919	METHYL ACRYLATE, STABILIZED	3	–	II	386	1 L	E2	P001	–	IBC02	–	–	T4	TP1 TP13	F-E, S-D	Category C SW1	
1920	NONANES	3	– P	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP2	F-E, S-E	Category A	
1921	PROPYLENEIMINE, STABILIZED	3	6.1	I	386	0	E0	P001	–	–	–	–	T14	TP2 TP13	F-E, S-D	Category D SW1 SW2	
1922	PYRROLIDINE	3	8	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP1	F-E, S-C	Category B SW2	
1923	CALCIUM DITHIONITE (CALCIUM HYDROSULPHITE)	4.2	–	II	–	0	E2	P410	PP31	IBC06	B21	–	T3	TP33	F-A, S-J	Category E H1	
1928	METHYLMAGNESIUM BROMIDE IN ETHYL ETHER	4.3	3	I	–	0	E0	P402	–	–	–	–	–	–	F-G, S-L	Category D H1	
1929	POTASSIUM DITHIONITE (POTASSIUM HYDROSULPHITE)	4.2	–	II	–	0	E2	P410	PP31	IBC06	B21	–	T3	TP33	F-A, S-J	Category E H1	
1931	ZINC DITHIONITE (ZINC HYDROSULPHITE)	9	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-J	Category A H1	
1932	ZIRCONIUM SCRAP	4.2	–	III	223	0	E0	P002 LP02	PP31 L4	IBC08	B4	–	T1	TP33	F-G, S-L	Category D H1	
1935	CYANIDE SOLUTION, N.O.S.	6.1	– P	I	274	0	E5	P001	–	–	–	–	T14	TP2 TP13 TP27	F-A, S-A	Category B SW2	
1935	CYANIDE SOLUTION, N.O.S.	6.1	– P	II	274	100 mL	E4	P001	–	IBC02	–	–	T11	TP2 TP13 TP27	F-A, S-A	Category A SW2	
1935	CYANIDE SOLUTION, N.O.S.	6.1	–	III	223	5 L	E1	P001	–	IBC03	–	–	T7	TP2	F-A, S-A	Category A	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
1940	THIOGLYCOLIC ACID	8	–	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP2	F-A, S-B	Category A	
1941	DIBROMODIFLUOROMETHANE	9	–	III	–	5 L	E1	P001 LP01	–	–	–	–	T11	TP2	F-A, S-A	Category A SW1	
1942	AMMONIUM NITRATE with not more than 0.2% combustible substances, including any organic substance calculated as carbon, to the exclusion of any other added substance	5.1	–	III	900 952 967	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1 BK2 BK3	TP33	F-H, S-Q	Category C SW1 SW14 SW23	
1944	MATCHES, SAFETY (book, card or strike on box)	4.1	–	III	293 294	5 kg	E1	P407	–	–	–	–	–	–	F-A, S-I	Category A	
1945	MATCHES, WAX 'VESTA'	4.1	–	III	293 294	5 kg	E1	P407	–	–	–	–	–	–	F-A, S-I	Category B	
1950	AEROSOLS	2	– See SP63	–	63 190 277 327 344 381 959	See SP277	E0	P207 LP200	PP87 L2	–	–	–	–	–	F-D, S-U	– SW1 SW22	
1951	ARGON, REFRIGERATED LIQUID	2.2	–	–	–	120 mL	E1	P203	–	–	–	–	T75	TP5	F-C, S-V	Category D	
1952	ETHYLENE OXIDE AND CARBON DIOXIDE MIXTURE with not more than 9% ethylene oxide	2.2	–	–	392	120 mL	E1	P200	–	–	–	–	–	–	F-C, S-V	Category A	
1953	COMPRESSED GAS, TOXIC, FLAMMABLE, N.O.S.	2.3	2.1	–	274	0	E0	P200	–	–	–	–	–	–	F-D, S-U	Category D SW2	
1954	COMPRESSED GAS, FLAMMABLE, N.O.S.	2.1	–	–	274 392	0	E0	P200	–	–	–	–	–	–	F-D, S-U	Category D SW2	
1955	COMPRESSED GAS, TOXIC, N.O.S.	2.3	–	–	274	0	E0	P200	–	–	–	–	–	–	F-C, S-U	Category D SW2	
1956	COMPRESSED GAS, N.O.S.	2.2	–	–	274 378 392	120 mL	E1	P200	–	–	–	–	–	–	F-C, S-V	Category A	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
1964	HYDROCARBON GAS MIXTURE, COMPRESSED, N.O.S.	2.1	–	–	274	0	E0	P200	–	–	–	–	–	–	F-D, S-U	Category E SW2	
1965	HYDROCARBON GAS MIXTURE, LIQUEFIED, N.O.S.	2.1	–	–	274 392	0	E0	P200	–	–	–	–	T50	–	F-D, S-U	Category E SW2	
1966	HYDROGEN, REFRIGERATED LIQUID	2.1	–	–	–	0	E0	P203	–	–	–	–	T75	TP5 TP34	F-D, S-U	Category D SW2	
1967	INSECTICIDE GAS, TOXIC, N.O.S.	2.3	–	–	274	0	E0	P200	–	–	–	–	–	–	F-C, S-U	Category D SW2	
1968	INSECTICIDE GAS, N.O.S.	2.2	–	–	274	120 mL	E1	P200	–	–	–	–	–	–	F-C, S-V	Category A	
1969	ISOBUTANE	2.1	–	–	392	0	E0	P200	–	–	–	–	T50	–	F-D, S-U	Category E SW2	
1970	KRYPTON, REFRIGERATED LIQUID	2.2	–	–	–	120 mL	E1	P203	–	–	–	–	T75	TP5	F-C, S-V	Category D	
1971	METHANE, COMPRESSED or NATURAL GAS, COMPRESSED with high methane content	2.1	–	–	392 974	0	E0	P200	–	–	–	–	–	–	F-D, S-U	Category E SW2	
1972	METHANE, REFRIGERATED LIQUID or NATURAL GAS, REFRIGERATED LIQUID with high methane content	2.1	–	–	–	0	E0	P203	–	–	–	–	T75	TP5	F-D, S-U	Category D SW2	
1973	CHLORODIFLUOROMETHANE AND CHLOROPENTAFLUORO-ETHANE MIXTURE with fixed boiling point, with approximately 49% chlorodifluoromethane (REFRIGERANT GAS R 502)	2.2	–	–	–	120 mL	E1	P200	–	–	–	–	T50	–	F-C, S-V	Category A	
1974	CHLORODIFLUOROBROMO-METHANE (REFRIGERANT GAS R 12B1)	2.2	–	–	–	120 mL	E1	P200	–	–	–	–	T50	–	F-C, S-V	Category A	
1975	NITRIC OXIDE AND DINITROGEN TETROXIDE MIXTURE (NITRIC OXIDE AND NITROGEN DIOXIDE MIXTURE)	2.3	5.1/8	–	–	0	E0	P200	–	–	–	–	–	–	F-C, S-W	Category D SW2	
1976	OCTAFLUOROCYCLOBUTANE (REFRIGERANT GAS RC 318)	2.2	–	–	–	120 mL	E1	P200	–	–	–	–	T50	–	F-C, S-V	Category A	
1977	NITROGEN, REFRIGERATED	2.2	–	–	345	120 mL	E1	P203	–	–	–	–	T75	TP5	F-C, S-V	Category D	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
1986	ALCOHOLS, FLAMMABLE, TOXIC, N.O.S.	3	6.1	I	274	0	E0	P001	–	–	–	–	T14	TP2 TP13 TP27	F-E, S-D	Category E SW2	
1986	ALCOHOLS, FLAMMABLE, TOXIC, N.O.S.	3	6.1	II	274	1 L	E2	P001	–	IBC02	–	–	T11	TP2 TP27	F-E, S-D	Category B SW2	
1986	ALCOHOLS, FLAMMABLE, TOXIC, N.O.S.	3	6.1	III	223 274	5 L	E1	P001	–	IBC03	–	–	T7	TP1 TP28	F-E, S-D	Category A	
1987	ALCOHOLS, N.O.S.	3	–	II	274	1 L	E2	P001	–	IBC02	–	–	T7	TP1 TP8 TP28	F-E, S-D	Category B	
1987	ALCOHOLS, N.O.S.	3	–	III	223 274	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1 TP29	F-E, S-D	Category A	
1988	ALDEHYDES, FLAMMABLE, TOXIC, N.O.S.	3	6.1	I	274	0	E0	P001	–	–	–	–	T14	TP2 TP13 TP27	F-E, S-D	Category E SW2	
1988	ALDEHYDES, FLAMMABLE, TOXIC, N.O.S.	3	6.1	II	274	1 L	E2	P001	–	IBC02	–	–	T11	TP2 TP27	F-E, S-D	Category B SW2	
1988	ALDEHYDES, FLAMMABLE, TOXIC, N.O.S.	3	6.1	III	223 274	5 L	E1	P001	–	IBC03	–	–	T7	TP1 TP28	F-E, S-D	Category A	
1989	ALDEHYDES, N.O.S.	3	–	I	274	0	E3	P001	–	–	–	–	T11	TP1 TP27	F-E, S-D	Category E	
1989	ALDEHYDES, N.O.S.	3	–	II	274	1 L	E2	P001	–	IBC02	–	–	T7	TP1 TP8 TP28	F-E, S-D	Category B	
1989	ALDEHYDES, N.O.S.	3	–	III	223 274	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1 TP29	F-E, S-D	Category A	
1990	BENZALDEHYDE	9	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-A, S-A	Category A	
1991	CHLOROPRENE, STABILIZED	3	6.1	I	386	0	E0	P001	–	–	–	–	T14	TP2 TP6 TP13	F-E, S-D	Category D SW1 SW2	
1992	FLAMMABLE LIQUID, TOXIC, N.O.S.	3	6.1	I	274	0	E0	P001	–	–	–	–	T14	TP2 TP13 TP27	F-E, S-D	Category E SW2	
1992	FLAMMABLE LIQUID, TOXIC, N.O.S.	3	6.1	II	274	1 L	E2	P001	–	IBC02	–	–	T7	TP2 TP13	F-E, S-D	Category B SW2	
1992	FLAMMABLE LIQUID, TOXIC, N.O.S.	3	6.1	III	223 274	5 L	E1	P001	–	IBC03	–	–	T7	TP1 TP28	F-E, S-D	Category A	
1993	FLAMMABLE LIQUID, N.O.S.	3	–	I	274	0	E3	P001	–	–	–	–	T11	TP1 TP27	F-E, S-E	Category E	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
2000	CELLULOID in block, rods, rolls, sheets, tubes, etc., except scrap	4.1	–	III	223 383	5 kg	E1	P002 LP02	PP7	–	–	–	–	–	F-A, S-I	Category A	
2001	COBALT NAPHTHENATES, POWDER	4.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-I	Category A	
2002	CELLULOID, SCRAP	4.2	–	III	223	0	E0	P002 LP02	PP8	IBC08	B3	–	–	–	F-A, S-J	Category D	
2004	MAGNESIUM DIAMIDE	4.2	–	II	–	0	E2	P410	PP31	IBC06	–	–	T3	TP33	F-G, S-M	Category C H1	
2006	PLASTICS, NITROCELLULOSE-BASED, SELF-HEATING, N.O.S.	4.2	–	III	274	0	E0	P002	–	–	–	–	–	–	F-A, S-G	Category C	
2008	ZIRCONIUM POWDER, DRY	4.2	–	I	–	0	E0	P404	PP31	–	–	–	T21	TP7 TP33	F-G, S-M	Category D H1	
2008	ZIRCONIUM POWDER, DRY	4.2	–	II	–	0	E2	P410	PP31	IBC06	B21	–	T3	TP33	F-G, S-M	Category D H1	
2008	ZIRCONIUM POWDER, DRY	4.2	–	III	223	0	E1	P002 LP02	PP31 L4	IBC08	B4	–	T1	TP33	F-G, S-M	Category D H1	
2009	ZIRCONIUM, DRY, finished sheets, strip or coiled wire	4.2	–	III	223	0	E1	P002 LP02	PP31 L4	–	–	–	–	–	F-G, S-M	Category D H1	
2010	MAGNESIUM HYDRIDE	4.3	–	I	–	0	E0	P403	PP31	–	–	–	–	–	F-G, S-O	Category E H1	
2011	MAGNESIUM PHOSPHIDE	4.3	6.1	I	–	0	E0	P403	PP31	–	–	–	–	–	F-G, S-N	Category E SW2 SW5 H1	
2012	POTASSIUM PHOSPHIDE	4.3	6.1	I	–	0	E0	P403	PP31	–	–	–	–	–	F-G, S-N	Category E SW2 SW5 H1	
2013	STRONTIUM PHOSPHIDE	4.3	6.1	I	–	0	E0	P403	PP31	–	–	–	–	–	F-G, S-N	Category E SW2 SW5 H1	
2014	HYDROGEN PEROXIDE, AQUEOUS SOLUTION with not less than 20% but not more than 60% hydrogen peroxide (stabilized as necessary)	5.1	8	II	–	1 L	E2	P504	PP10	IBC02	B5	–	T7	TP2 TP6 TP24	F-H, S-Q	Category D SW1	
2015	HYDROGEN PEROXIDE, STABILIZED or HYDROGEN	5.1	8	I	–	0	E0	P501	–	–	–	–	T9	TP2 TP6	F-H, S-Q	Category D SW1	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
2019	CHLOROANILINES, LIQUID	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–	–	T7	TP2	F-A, S-A	Category A	
2020	CHLOROPHENOLS, SOLID	6.1	–	III	205	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A	
2021	CHLOROPHENOLS, LIQUID	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-A	Category A	
2022	CRESYLIC ACID	6.1	8	II	–	100 mL	E4	P001	–	IBC02	–	–	T7	TP2 TP13	F-A, S-B	Category B	
2023	EPICHLOROHYDRIN	6.1	3 P	II	279	100 mL	E4	P001	–	IBC02	–	–	T7	TP2 TP13	F-E, S-D	Category A SW2	
2024	MERCURY COMPOUND, LIQUID, N.O.S.	6.1	– P	I	43 66 274	0	E5	P001	–	–	–	–	–	–	F-A, S-A	Category B SW2	
2024	MERCURY COMPOUND, LIQUID, N.O.S.	6.1	– P	II	43 66 274	100 mL	E4	P001	–	IBC02	–	–	–	–	F-A, S-A	Category B SW2	
2024	MERCURY COMPOUND, LIQUID, N.O.S.	6.1	– P	III	43 66 223 274	5 L	E1	P001 LP01	–	IBC03	–	–	–	–	F-A, S-A	Category B SW2	
2025	MERCURY COMPOUND, SOLID, N.O.S.	6.1	– P	I	43 66 274	0	E5	P002	–	IBC07	B1	–	T6	TP33	F-A, S-A	Category A	
2025	MERCURY COMPOUND, SOLID, N.O.S.	6.1	– P	II	43 66 274	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
2025	MERCURY COMPOUND, SOLID, N.O.S.	6.1	– P	III	43 66 223 274	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A	
2026	PHENYLMERCURIC COMPOUND, N.O.S.	6.1	– P	I	43 274	0	E5	P002	–	IBC07	B1	–	T6	TP33	F-A, S-A	Category A	
2026	PHENYLMERCURIC COMPOUND, N.O.S.	6.1	– P	II	43 274	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
2026	PHENYLMERCURIC	6.1	–	III	43	5 kg	E1	P002	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A	

	UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
							Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
	(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
	2030	HYDRAZINE, AQUEOUS SOLUTION with more than 37% hydrazine, by mass	8	6.1	I	–	0	E0	P001	–	–	–	–	T10	TP2 TP13	F-A, S-B	Category D SW2	
	2030	HYDRAZINE, AQUEOUS SOLUTION with more than 37% hydrazine, by mass	8	6.1	II	–	1 L	E0	P001	–	IBC02	–	–	T7	TP2 TP13	F-A, S-B	Category D SW2	
	2030	HYDRAZINE, AQUEOUS SOLUTION with more than 37% hydrazine, by mass	8	6.1	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-B	Category D SW2	
△	2031	NITRIC ACID other than red fuming, with more than 70% nitric acid	8	5.1	I	–	0	E0	P001	PP81	–	–		T10	TP2 TP13	F-A, S-Q	Category D	
△	2031	NITRIC ACID other than red fuming, with at least 65% but with not more than 70% nitric acid	8	5.1	II	–	1 L	E2	P001	PP81	IBC02	B15 B20	–	T8	TP2	F-A, S-Q	Category D	
△	2031	NITRIC ACID other than red fuming, with less than 65% nitric acid	8	–	II	–	1 L	E2	P001	PP81	IBC02	B15 B20	–	T8	TP2	F-A, S-B	Category D	
△	2032	NITRIC ACID, RED FUMING	8	5.1/6.1	I	–	0	E0	P602	–	–	–	–	T20	TP2 TP13	F-A, S-Q	Category D SW2	
	2033	POTASSIUM MONOXIDE	8	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-B	Category A	
	2034	HYDROGEN AND METHANE MIXTURE, COMPRESSED	2.1	–	–	–	0	E0	P200	–	–	–	–	–	–	F-D, S-U	Category E SW2	
	2035	1,1,1-TRIFLUOROETHANE (REFRIGERANT GAS R 143a)	2.1	–	–	–	0	E0	P200	–	–	–	–	T50	–	F-D, S-U	Category B SW2	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
2045	ISOBUTYL ALDEHYDE (ISOBUTYRALDEHYDE)	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category E SW2	
2046	CYMENES	3	– P	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
2047	DICHLOROPROPENES	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
2047	DICHLOROPROPENES	3	–	III	223	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
2048	DICYCLOPENTADIENE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
2049	DIETHYLBENZENE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
2050	DIISOBUTYLENES, ISOMERIC COMPOUNDS	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
2051	2-DIMETHYLAMINOETHANOL	8	3	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP2	F-E, S-C	Category A	
2052	DIPENTENE	3	– P	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-E	Category A	
2053	METHYL ISOBUTYL CARBINOL	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
2054	MORPHOLINE	8	3	I	–	0	E0	P001	–	–	–	–	T10	TP2	F-E, S-C	Category A	
2055	STYRENE MONOMER, STABILIZED	3	–	III	386	5 L	E1	P001	–	IBC03	–	–	T2	TP1	F-E, S-D	Category C SW1	
2056	TETRAHYDROFURAN	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
2057	TRIPROPYLENE	3	– P	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP2	F-E, S-D	Category B	
2057	TRIPROPYLENE	3	– P	III	223	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP2	F-E, S-D	Category A	
2058	VALERALDEHYDE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
2067	AMMONIUM NITRATE BASED FERTILIZER	5.1	–	III	306 307 900 967	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1 BK2 BK3	TP33	F-H, S-Q	Category C SW1 SW14 SW23	
2071	AMMONIUM NITRATE BASED FERTILIZER	9	–	III	193	5 kg	E1	P002 LP02	–	IBC08	B3	–	BK2	–	F-H, S-Q	Category A SW26	
2073	AMMONIA SOLUTION, relative density less than 0.880 at 15°C in water, with more than 35% but not more than 50% ammonia	2.2	– P	–	–	120 mL	E0	P200	–	–	–	–	–	–	F-C, S-U	Category E SW2	
2074	ACRYLAMIDE, SOLID	6.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A SW1 H2	
2075	CHLORAL, ANHYDROUS, STABILIZED	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–	–	T7	TP2	F-A, S-A	Category D SW2	
2076	CRESOLS, LIQUID	6.1	8	II	–	100 mL	E4	P001	–	IBC02	–	–	T7	TP2	F-A, S-B	Category B	
2077	*alpha*-NAPHTHYLAMINE	6.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A	
2078	TOLUENE DIISOCYANATE	6.1	–	II	279	100 mL	E4	P001	–	IBC02	–	–	T7	TP2 TP13	F-A, S-A	Category C SW1 SW2	
2079	DIETHYLENETRIAMINE	8	–	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP2	F-A, S-B	Category A SW2	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
2191	SULPHURYL FLUORIDE	2.3	–	–	–	0	E0	P200	–	–	–	–	–	–	F-C, S-U	Category D SW2	
2192	GERMANE	2.3	2.1	–	–	0	E0	P200	–	–	–	–	–	–	F-D, S-U	Category D SW2	
2193	HEXAFLUOROETHANE (REFRIGERANT GAS R 116)	2.2	–	–	–	120 mL	E1	P200	–	–	–	–	–	–	F-C, S-V	Category A	
2194	SELENIUM HEXAFLUORIDE	2.3	8	–	–	0	E0	P200	–	–	–	–	–	–	F-C, S-U	Category D SW2	
2195	TELLURIUM HEXAFLUORIDE	2.3	8	–	–	0	E0	P200	–	–	–	–	–	–	F-C, S-U	Category D SW2	
2196	TUNGSTEN HEXAFLUORIDE	2.3	8	–	–	0	E0	P200	–	–	–	–	–	–	F-C, S-U	Category D SW2	
2197	HYDROGEN IODIDE, ANHYDROUS	2.3	8	–	–	0	E0	P200	–	–	–	–	–	–	F-C, S-U	Category D SW2	
2198	PHOSPHORUS PENTAFLUORIDE	2.3	8	–	–	0	E0	P200	–	–	–	–	–	–	F-C, S-U	Category D SW2	
2199	PHOSPHINE	2.3	2.1	–	–	0	E0	P200	–	–	–	–	–	–	F-D, S-U	Category D SW2	
2200	PROPADIENE, STABILIZED	2.1	–	–	386	0	E0	P200	–	–	–	–	–	–	F-D, S-U	Category B SW1 SW2	
2201	NITROUS OXIDE, REFRIGERATED LIQUID	2.2	5.1	–	–	0	E0	P203	–	–	–	–	T75	TP5 TP22	F-C, S-W	Category D SW2	
2202	HYDROGEN SELENIDE, ANHYDROUS	2.3	2.1	–	–	0	E0	P200	–	–	–	–	–	–	F-D, S-U	Category D SW2	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
2206	ISOCYANATES, TOXIC, N.O.S. or ISOCYANATE SOLUTION, TOXIC, N.O.S.	6.1	–	III	223 274	5 L	E1	P001 LP01	–	IBC03	–	–	T7	TP1 TP13 TP28	F-A, S-A	Category E SW1 SW2	
2208	CALCIUM HYPOCHLORITE MIXTURE, DRY with more than 10% but not more than 39% available chlorine	5.1	– P	III	314	5 kg	E1	P002	PP85	–	–	–	–	–	F-H, S-Q	Category D SW1 SW11	
2209	FORMALDEHYDE SOLUTION with not less than 25% formaldehyde	8	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-B	Category A	
2210	MANEB or MANEB PREPARATION with not less than 60% maneb	4.2	4.3 P	III	273	0	E1	P002	PP100	IBC06	–	–	T1	TP33	F-G, S-L	Category A H1	
2211	POLYMERIC BEADS, EXPANDABLE, evolving flammable vapour	9	–	III	382 965	5 kg	E1	P002	PP14	IBC08	B3 B6	–	T1	TP33	F-A, S-I	Category E SW1 SW6	
2212	ASBESTOS, AMPHIBOLE (amosite, tremolite, actinolite, anthophyllite, crocidolite)	9	–	II	168 274	1 kg	E0	P002	PP37	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A SW2 H4	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
2215	MALEIC ANHYDRIDE, MOLTEN	8	–	III	–	0	E0	–	–	–	–	–	T4	TP3	F-A, S-B	Category A	
2216	FISH MEAL (FISH SCRAP), STABILIZED Anti-oxidant treated. Moisture content greater than 5% but not exceeding 12%, by mass. Fat content not more than 15%	9	–	III	29 117 300 308 907 928 973	0	E1	P900	–	IBC08	B3	–	T1 BK2	TP33	F-A, S-J	Category B SW24	
2217	SEED CAKE with not more than 1.5% oil and not more than 11% moisture	4.2	–	III	29 142 973	0	E0	P002 LP02	PP20	IBC08	B3 B6	–	BK2	–	F-A, S-J	Category A SW1 SW4 H1	
2218	ACRYLIC ACID, STABILIZED	8	3 P	II	386	1 L	E2	P001	–	IBC02	–	–	T7	TP2	F-E, S-C	Category C SW1 SW2	
2219	ALLYL GLYCIDYL ETHER	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
2222	ANISOLE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
2224	BENZONITRILE	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–	–	T7	TP2	F-A, S-A	Category A SW2	
2225	BENZENESULPHONYL CHLORIDE	8	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-B	Category A SW2	
2226	BENZOTRICHLORIDE	8	–	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP2	F-A, S-B	Category A	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
2235	CHLOROBENZYL CHLORIDES, LIQUID	6.1	– P	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-A	Category A	
2236	3-CHLORO-4-METHYLPHENYL ISOCYANATE, LIQUID	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–	–	–	–	F-A, S-A	Category B SW2	
2237	CHLORONITROANILINES	6.1	– P	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A	
2238	CHLOROTOLUENES	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
2239	CHLOROTOLUIDINES, SOLID	6.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A	
△ 2240	CHROMOSULPHURIC ACID	8	–	I	–	0	E0	P001	–	–	–	–	T10	TP2 TP13	F-A, S-B	Category B SW2	
2241	CYCLOHEPTANE	3	– P	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP2	F-E, S-D	Category B SW2	
2242	CYCLOHEPTENE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
2243	CYCLOHEXYL ACETATE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
2244	CYCLOPENTANOL	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
2245	CYCLOPENTANONE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
2246	CYCLOPENTENE	3	–	II	–	1 L	E2	P001	–	IBC02	B8	–	T7	TP2	F-E, S-D	Category E	
2247	*n*-DECANE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-E	Category A	
2248	DI-*n*-BUTYLAMINE	8	3	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP2	F-E, S-C	Category A	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
2253	*N*,*N*-DIMETHYLANILINE	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–	–	T7	TP2	F-A, S-A	Category A	
2254	MATCHES, FUSEE	4.1	–	III	293	5 kg	E0	P407	–	–	–	–	–	–	F-A, S-I	Category A	
2256	CYCLOHEXENE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category E	
2257	POTASSIUM	4.3	–	I	–	0	E0	P403	PP31	IBC04	B1	–	T9	TP7 TP33	F-G, S-N	Category D H1	
2258	1,2-PROPYLENEDIAMINE	8	3	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP2	F-E, S-C	Category A SW2	
2259	TRIETHYLENETETRAMINE	8	–	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP2	F-A, S-B	Category B SW2	
2260	TRIPROPYLAMINE	3	8	III	–	5 L	E1	P001	–	IBC03	–	–	T4	TP1	F-E, S-C	Category A SW2	
2261	XYLENOLS, SOLID	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
2262	DIMETHYLCARBAMOYL CHLORIDE	8	–	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP2	F-A, S-B	Category A SW2	
2263	DIMETHYLCYCLOHEXANES	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
2264	*N*,*N*-DIMETHYL-CYCLOHEXYLAMINE	8	3	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP2	F-E, S-C	Category A SW2	
2265	*N*,*N*-DIMETHYLFORMAMIDE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP2	F-E, S-D	Category A	
2266	DIMETHYL-*N*-PROPYLAMINE	3	8	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP2 TP13	F-E, S-C	Category B SW2	
2267	DIMETHYL THIOPHOSPHORYL	6.1	8	II	–	100 mL	E4	P001	–	IBC02	–	–	T7	TP2	F-A, S-B	Category B	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
2271	ETHYL AMYL KETONES	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
2272	*N*-ETHYLANILINE	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-A	Category A	
2273	2-ETHYLANILINE	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-A	Category A	
2274	*N*-ETHYL-*N*-BENZYLANILINE	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-A	Category A	
2275	2-ETHYLBUTANOL	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
2276	2-ETHYLHEXYLAMINE	3	8	III	–	5 L	E1	P001	–	IBC03	–	–	T4	TP1	F-E, S-C	Category A SW2	
2277	ETHYL METHACRYLATE, STABILIZED	3	–	II	386	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category C SW1	
2278	*n*-HEPTENE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
2279	HEXACHLOROBUTADIENE	6.1	– P	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-A	Category A	
2280	HEXAMETHYLENEDIAMINE, MOLTEN	8	–	III	–	0	E0	–	–	–	–	–	T4	TP1	F-A, S-B	Category A SW1 H2	
2280	HEXAMETHYLENEDIAMINE, SOLID	8	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-B	Category A SW1 H2	
2281	HEXAMETHYLENE DIISOCYANATE	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–	–	T7	TP2 TP13	F-A, S-A	Category C SW2 H1	
2282	HEXANOLS	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
2283	ISOBUTYL METHACRYLATE,	3	–	III	386	5 L	E1	P001	–	IBC03	–	–	T2	TP1	F-E, S-D	Category C	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
2289	ISOPHORONEDIAMINE	8	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-B	Category A	
2290	ISOPHORONE DIISOCYANATE	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP2	F-A, S-A	Category B SW2	
2291	LEAD COMPOUND, SOLUBLE, N.O.S.	6.1	– P	III	199 274	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A	
2293	4-METHOXY-4-METHYL-PENTAN-2-ONE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
2294	*N*-METHYLANILINE	6.1	– P	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP2	F-A, S-A	Category A	
2295	METHYL CHLOROACETATE	6.1	3	I	–	0	E0	P001	–	–	–	–	T14	TP2 TP13	F-E, S-D	Category D	
2296	METHYLCYCLOHEXANE	3	– P	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP2	F-E, S-D	Category B	
2297	METHYLCYCLOHEXANONE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
2298	METHYLCYCLOPENTANE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
2299	METHYL DICHLOROACETATE	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-A	Category A	
2300	2-METHYL-5-ETHYLPYRIDINE	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-A	Category A	
2301	2-METHYLFURAN	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category E	
2302	5-METHYLHEXAN-2-ONE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
2303	ISOPROPENYLBENZENE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
△ 2308	NITROSYLSULPHURIC ACID, LIQUID	8	–	II	–	1 L	E2	P001	–	IBC02	B20	–	T8	TP2	F-A, S-B	Category D SW2	
2309	OCTADIENE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
2310	PENTANE-2,4-DIONE	3	6.1	III	–	5 L	E1	P001	–	IBC03	–	–	T4	TP1	F-E, S-D	Category A	
2311	PHENETIDINES	6.1	–	III	279	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-A	Category A	
2312	PHENOL, MOLTEN	6.1	–	II	–	0	E0	–	–	–	–	–	T7	TP3	F-A, S-A	Category B SW2	
2313	PICOLINES	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-E, S-D	Category A SW2	
2315	POLYCHLORINATED BIPHENYLS, LIQUID	9	– P	II	305	1 L	E2	P906	–	IBC02	–	–	T4	TP1	F-A, S-A	Category A	
2316	SODIUM CUPROCYANIDE, SOLID	6.1	– P	I	–	0	E5	P002	–	IBC07	B1	–	T6	TP33	F-A, S-A	Category A	
2317	SODIUM CUPROCYANIDE SOLUTION	6.1	– P	I	–	0	E5	P001	–	–	–	–	T14	TP2 TP13	F-A, S-A	Category B SW2	
2318	SODIUM HYDROSULPHIDE with less than 25% water of crystallization	4.2	–	II	–	0	E2	P410	PP31	IBC06	B21	–	T3	TP33	F-A, S-J	Category A	
2319	TERPENE HYDROCARBONS, N.O.S.	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1 TP29	F-E, S-D	Category A	
2320	TETRAETHYLENEPENTAMINE	8	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-B	Category A	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
2327	TRIMETHYLHEXAMETHYLENE-DIAMINES	8	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-B	Category A	
2328	TRIMETHYLHEXAMETHYLENE DIISOCYANATE	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP2 TP13	F-A, S-A	Category B	
2329	TRIMETHYL PHOSPHITE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
2330	UNDECANE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-E	Category A	
2331	ZINC CHLORIDE, ANHYDROUS	8	– P	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-B	Category A	
2332	ACETALDEHYDE OXIME	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-E, S-D	Category A	
2333	ALLYL ACETATE	3	6.1	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP1 TP13	F-E, S-D	Category E SW2	
2334	ALLYLAMINE	6.1	3	I	354	0	E0	P602	–	–	–	–	T20	TP2 TP13	F-E, S-D	Category D SW2	
2335	ALLYL ETHYL ETHER	3	6.1	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP1 TP13	F-E, S-D	Category E SW2	
2336	ALLYL FORMATE	3	6.1	I	–	0	E0	P001	–	–	–	–	T14	TP2 TP13	F-E, S-D	Category E SW2	
2337	PHENYL MERCAPTAN	6.1	3	I	354	0	E0	P602	–	–	–	–	T20	TP2 TP13	F-E, S-D	Category D SW2	
2338	BENZOTRIFLUORIDE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B SW2	
2339	2-BROMOBUTANE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B SW2	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
2345	3-BROMOPROPYNE	3	–	II	905	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category D SW2	
2346	BUTANEDIONE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
2347	BUTYL MERCAPTAN	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
2348	BUTYL ACRYLATES, STABILIZED	3	–	III	386	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category C SW1	
2350	BUTYL METHYL ETHER	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
2351	BUTYL NITRITES	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B SW2	
2351	BUTYL NITRITES	3	–	III	223	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A SW2	
2352	BUTYL VINYL ETHER, STABILIZED	3	–	II	386	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category C SW1 SW2	
2353	BUTYRYL CHLORIDE	3	8	II	–	1 L	E2	P001	–	IBC02	B20	–	T8	TP2 TP13	F-E, S-C	Category C SW2	
2354	CHLOROMETHYL ETHYL ETHER	3	6.1	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP1 TP13	F-E, S-D	Category E SW2	
2356	2-CHLOROPROPANE	3	–	I	–	0	E3	P001	–	–	–	–	T11	TP2 TP13	F-E, S-D	Category E	
2357	CYCLOHEXYLAMINE	8	3	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP2	F-E, S-C	Category A SW2	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
2362	1,1-DICHLOROETHANE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B SW2	
2363	ETHYL MERCAPTAN	3	– P	I	–	0	E0	P001	–	–	–	–	T11	TP2 TP13	F-E, S-D	Category E	
2364	*n*-PROPYLBENZENE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
2366	DIETHYL CARBONATE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
2367	*alpha*-METHYL-VALERALDEHYDE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
2368	*alpha*-PINENE	3	– P	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP2	F-E, S-E	Category A	
2370	1-HEXENE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category E	
2371	ISOPENTENES	3	–	I	–	0	E3	P001	–	–	–	–	T11	TP2	F-E, S-D	Category E	
2372	1,2-DI-(DIMETHYLAMINO) ETHANE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
2373	DIETHOXYMETHANE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
2374	3,3-DIETHOXYPROPENE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
2375	DIETHYL SULPHIDE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP1 TP13	F-E, S-D	Category E	
2376	2,3-DIHYDROPYRAN	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
2377	1,1-DIMETHOXYETHANE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP1	F-E, S-D	Category B	
2378	2-DIMETHYLAMINO-ACETONITRILE	3	6.1	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP1	F-E, S-D	Category A SW2	
2379	1,3-DIMETHYLBUTYLAMINE	3	8	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP1	F-E, S-C	Category B	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
2385	ETHYL ISOBUTYRATE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
2386	1-ETHYLPIPERIDINE	3	8	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP1	F-E, S-C	Category B	
2387	FLUOROBENZENE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
2388	FLUOROTOLUENES	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
2389	FURAN	3	–	I	–	0	E3	P001	–	–	–	–	T12	TP2 TP13	F-E, S-D	Category E SW2	
2390	2-IODOBUTANE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
2391	IODOMETHYLPROPANES	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
2392	IODOPROPANES	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
2393	ISOBUTYL FORMATE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
2394	ISOBUTYL PROPIONATE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category B	
2395	ISOBUTYRYL CHLORIDE	3	8	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP2	F-E, S-C	Category C SW2	
2396	METHACRYLALDEHYDE, STABILIZED	3	6.1	II	386	1 L	E2	P001	–	IBC02	–	–	T7	TP1 TP13	F-E, S-D	Category D SW1 SW2	
2397	3-METHYLBUTAN-2-ONE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
2398	METHYL *tert*-BUTYL ETHER	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP1	F-E, S-D	Category E	
2399	1-METHYLPIPERIDINE	3	8	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP1	F-E, S-C	Category B	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
2406	ISOPROPYL ISOBUTYRATE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
2407	ISOPROPYL CHLOROFORMATE	6.1	3/8	I	354	0	E0	P602	–	–	–	–	–	–	F-E, S-C	Category D SW2	
2409	ISOPROPYL PROPIONATE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
2410	1,2,3,6-TETRAHYDROPYRIDINE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
2411	BUTYRONITRILE	3	6.1	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP1 TP13	F-E, S-D	Category E SW2	
2412	TETRAHYDROTHIOPHENE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
2413	TETRAPROPYL ORTHOTITANATE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-E, S-D	Category A	
2414	THIOPHENE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B SW2	
2416	TRIMETHYL BORATE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP1	F-E, S-D	Category B	
2417	CARBONYL FLUORIDE	2.3	8	–	–	0	E0	P200	–	–	–	–	–	–	F-C, S-U	Category D SW2	
2418	SULPHUR TETRAFLUORIDE	2.3	8	–	–	0	E0	P200	–	–	–	–	–	–	F-C, S-U	Category D SW2	
2419	BROMOTRIFLUOROETHYLENE	2.1	–	–	–	0	E0	P200	–	–	–	–	–	–	F-D, S-U	Category B SW2	
2420	HEXAFLUOROACETONE	2.3	8	–	–	0	E0	P200	–	–	–	–	–	–	F-C, S-U	Category D SW2	
2421	NITROGEN TRIOXIDE	2.3	5.1/8	–	–	0	E0	P200	–	–	–	–	–	–	F-C, S-W	Category D SW2	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
△ 2426	AMMONIUM NITRATE, LIQUID (hot concentrated solution)	5.1	–	–	252 942	0	E0	–	–	–	–	–	T7	TP1 TP16 TP17	F-H, S-Q	Category D	
2427	POTASSIUM CHLORATE, AQUEOUS SOLUTION	5.1	–	II	–	1 L	E2	P504	–	IBC02	–	–	T4	TP1	F-H, S-Q	Category B	
2427	POTASSIUM CHLORATE, AQUEOUS SOLUTION	5.1	–	III	223	5 L	E1	P504	–	IBC02	–	–	T4	TP1	F-H, S-Q	Category B	
2428	SODIUM CHLORATE, AQUEOUS SOLUTION	5.1	–	II	–	1 L	E2	P504	–	IBC02	–	–	T4	TP1	F-H, S-Q	Category B	
2428	SODIUM CHLORATE, AQUEOUS SOLUTION	5.1	–	III	223	5 L	E1	P504	–	IBC02	–	–	T4	TP1	F-H, S-Q	Category B	
2429	CALCIUM CHLORATE, AQUEOUS SOLUTION	5.1	–	II	–	1 L	E2	P504	–	IBC02	–	–	T4	TP1	F-H, S-Q	Category B	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
2432	*N,N*-DIETHYLANILINE	6.1	–	III	279	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-A	Category A	
2433	CHLORONITROTOLUENES, LIQUID	6.1	– P	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-A	Category A	
2434	DIBENZYLDICHLOROSILANE	8	–	II	–	0	E0	P010	–	–	–	–	T10	TP2 TP7 TP13	F-A, S-B	Category C SW2	
2435	ETHYLPHENYL-DICHLOROSILANE	8	–	II	–	0	E0	P010	–	–	–	–	T10	TP2 TP7 TP13	F-A, S-B	Category C	
2436	THIOACETIC ACID	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
2437	METHYLPHENYL-DICHLOROSILANE	8	–	II	–	0	E0	P010	–	–	–	–	T10	TP2 TP7 TP13	F-A, S-B	Category C SW2	
2438	TRIMETHYLACETYL CHLORIDE	6.1	3/8	I	–	0	E0	P001	–	–	–	–	T14	TP2 TP13	F-E, S-C	Category D SW1 SW2	
2439	SODIUM HYDROGENDIFLUORIDE	8	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-B	Category A SW1 SW2 H2	
2440	STANNIC CHLORIDE PENTAHYDRATE	8	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-B	Category A	
2441	TITANIUM TRICHLORIDE, PYROPHORIC or TITANIUM TRICHLORIDE MIXTURE, PYROPHORIC	4.2	8	I	–	0	E0	P404	PP31	–	–	–	–	–	F-G, S-M	Category D SW2 H1	
2442	TRICHLOROACETYL CHLORIDE	8	–	II	–	0	E0	P001	–	–	–	–	T7	TP2	F-A, S-B	Category D SW2	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
2447	PHOSPHORUS, WHITE, MOLTEN	4.2	6.1 P	I	–	0	E0	–	–	–	–	–	T21	TP3 TP7 TP26	F-A, S-M	Category D	
2448	SULPHUR, MOLTEN	4.1	–	III	–	0	E0	–	–	IBC01	–	–	T1	TP3	F-A, S-H	Category C	
2451	NITROGEN TRIFLUORIDE	2.2	5.1	–	–	0	E0	P200	–	–	–	–	–	–	F-C, S-W	Category D SW2	
2452	ETHYLACETYLENE, STABILIZED	2.1	–	–	386	0	E0	P200	–	–	–	–	–	–	F-D, S-U	Category B SW1 SW2	
2453	ETHYL FLUORIDE (REFRIGERANT GAS R 161)	2.1	–	–	–	0	E0	P200	–	–	–	–	–	–	F-D, S-U	Category E SW2	
2454	METHYL FLUORIDE (REFRIGERANT GAS R 41)	2.1	–	–	–	0	E0	P200	–	–	–	–	–	–	F-D, S-U	Category E SW2	
2455	METHYL NITRITE	2.2	–	–	900	–	–	–	–	–	–	–	–	–	–	–	
2456	2-CHLOROPROPENE	3	–	I	–	0	E3	P001	–	–	–	–	T11	TP2	F-E, S-D	Category E	
2457	2,3-DIMETHYLBUTANE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP1	F-E, S-D	Category E	
2458	HEXADIENES	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
2459	2-METHYL-1-BUTENE	3	–	I	–	0	E3	P001	–	–	–	–	T11	TP2	F-E, S-D	Category E	
2460	2-METHYL-2-BUTENE	3	–	II	–	1 L	E2	P001	–	IBC02	B8	–	T7	TP1	F-E, S-D	Category E	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
2468	TRICHLOROISOCYANURIC ACID, DRY	5.1	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-Q	Category A H1	
2469	ZINC BROMATE	5.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-H, S-Q	Category A	
2470	PHENYLACETONITRILE, LIQUID	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-A	Category A	
2471	OSMIUM TETROXIDE	6.1	– P	I	–	0	E5	P002	PP30 PP31	IBC07	B1	–	T6	TP33	F-A, S-A	Category B SW2	
2473	SODIUM ARSANILATE	6.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A	
2474	THIOPHOSGENE	6.1	–	I	279 354	0	E0	P602	–	–	–	–	T20	TP2 TP13	F-A, S-A	Category D SW2	
2475	VANADIUM TRICHLORIDE	8	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-B	Category A SW2	
2477	METHYL ISOTHIOCYANATE	6.1	3	I	354	0	E0	P602	–	–	–	–	T20	TP2 TP13	F-E, S-D	Category D SW2	
2478	ISOCYANATES, FLAMMABLE, TOXIC, N.O.S. or ISOCYANATE SOLUTION, FLAMMABLE, TOXIC, N.O.S.	3	6.1	II	274	1 L	E2	P001	PP31	IBC02	–	–	T11	TP2 TP13 TP27	F-E, S-D	Category D SW2	
2478	ISOCYANATES, FLAMMABLE, TOXIC, N.O.S. or ISOCYANATE SOLUTION, FLAMMABLE, TOXIC, N.O.S.	3	6.1	III	223 274	5 L	E1	P001	PP31	IBC03	–	–	T7	TP1 TP13 TP28	F-E, S-D	Category A	
2480	METHYL ISOCYANATE	6.1	3	I	354	0	E0	P601	–	–	–	–	T22	TP2 TP13	F-E, S-D	Category D SW2	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
2484	*tert*-BUTYL ISOCYANATE	6.1	3	I	354	0	E0	P602	–	–	–	–	T20	TP2 TP13	F-E, S-D	Category D SW2	
2485	*n*-BUTYL ISOCYANATE	6.1	3	I	354	0	E0	P602	–	–	–	–	T20	TP2 TP13	F-E, S-D	Category D SW2	
2486	ISOBUTYL ISOCYANATE	6.1	3	I	354	0	E0	P602	–	–	–	–	T20	TP2 TP13	F-E, S-D	Category D SW2	
2487	PHENYL ISOCYANATE	6.1	3	I	354	0	E0	P602	–	–	–	–	T20	TP2 TP13	F-E, S-D	Category D SW2	
2488	CYCLOHEXYL ISOCYANATE	6.1	3	I	354	0	E0	P602	–	–	–	–	T20	TP2 TP13	F-E, S-D	Category D SW2	
2490	DICHLOROISOPROPYL ETHER	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–	–	T7	TP2	F-A, S-A	Category B	
2491	ETHANOLAMINE or ETHANOLAMINE SOLUTION	8	–	III	223	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-B	Category A	
2493	HEXAMETHYLENEIMINE	3	8	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP1	F-E, S-C	Category B SW2	
2495	IODINE PENTAFLUORIDE	5.1	6.1/8	I	–	0	E0	P200	–	–	–	–	–	–	F-A, S-Q	Category D SW1 SW2	
2496	PROPIONIC ANHYDRIDE	8	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-B	Category A	
2498	1,2,3,6-TETRAHYDRO-	3	–	III	–	5 L	E1	P001	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
2505	AMMONIUM FLUORIDE	6.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A	
2506	AMMONIUM HYDROGEN SULPHATE	8	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-B	Category A SW2	
2507	CHLOROPLATINIC ACID, SOLID	8	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-B	Category A	
2508	MOLYBDENUM PENTACHLORIDE	8	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-B	Category C SW2	
2509	POTASSIUM HYDROGEN SULPHATE	8	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-B	Category A	
2511	2-CHLOROPROPIONIC ACID	8	–	III	223	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP2	F-A, S-B	Category A	
2512	AMINOPHENOLS (*o*-, *m*-, *p*-)	6.1	–	III	279	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A	
2513	BROMOACETYL BROMIDE	8	–	II	–	1 L	E2	P001	–	IBC02	B20	–	T8	TP2	F-A, S-B	Category C SW2	
2514	BROMOBENZENE	3	– P	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
2515	BROMOFORM	6.1	– P	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-A	Category A SW1 SW2 H2	
2516	CARBON TETRABROMIDE	6.1	– P	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A SW1	
2517	1-CHLORO-1,1-DIFLUORO-ETHANE	2.1	–	–	–	0	E0	P200	–	–	–	–	T50	–	F-D, S-U	Category B SW2	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
2525	ETHYL OXALATE	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-A	Category A	
2526	FURFURYLAMINE	3	8	III	–	5 L	E1	P001	–	IBC03	–	–	T4	TP1	F-E, S-C	Category A SW2	
2527	ISOBUTYL ACRYLATE, STABILIZED	3	–	III	386	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category C SW1	
2528	ISOBUTYL ISOBUTYRATE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
2529	ISOBUTYRIC ACID	3	8	III	–	5 L	E1	P001	–	IBC03	–	–	T4	TP1	F-E, S-C	Category A	
2531	METHACRYLIC ACID, STABILIZED	8	–	II	386	1 L	E2	P001	–	IBC02	–	–	T7	TP2 TP18 TP30	F-A, S-B	Category C SW1 SW2	
2533	METHYL TRICHLOROACETATE	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-A	Category A	
2534	METHYLCHLOROSILANE	2.3	2.1/8	–	–	0	E0	P200	–	–	–	–	–	–	F-D, S-U	Category D SW2	
2535	4-METHYLMORPHOLINE (*N*-METHYLMORPHOLINE)	3	8	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP1	F-E, S-C	Category B SW2	
2536	METHYLTETRAHYDROFURAN	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
2538	NITRONAPHTHALENE	4.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-G	Category A	
2541	TERPINOLENE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-E	Category A	
2542	TRIBUTYLAMINE	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–	–	T7	TP2	F-A, S-A	Category A	
2545	HAFNIUM POWDER, DRY	4.2	–	I	–	0	E0	P404	PP31	–	–	–	–	–	F-G, S-M	Category D H1	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
2547	SODIUM SUPEROXIDE	5.1	–	I	–	0	E0	P503	–	IBC06	B1	–	–	–	F-G, S-Q	Category D H1	
2548	CHLORINE PENTAFLUORIDE	2.3	5.1/8	–	–	0	E0	P200	–	–	–	–	–	–	F-C, S-W	Category D SW2	
2552	HEXAFLUOROACETONE HYDRATE, LIQUID	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–	–	T7	TP2	F-A, S-A	Category B SW2	
2554	METHYLALLYL CHLORIDE	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1 TP13	F-E, S-D	Category E	
2555	NITROCELLULOSE WITH WATER (not less than 25% water, by mass)	4.1	–	II	28 394	0	E0	P406	PP31	–	–	–	–	–	F-B, S-J	Category E	
2556	NITROCELLULOSE WITH ALCOHOL (not less than 25% alcohol, by mass, and not more than 12.6% nitrogen, by dry mass)	4.1	–	II	28 394	0	E0	P406	PP31	–	–	–	–	–	F-B, S-J	Category D SW1 H2	
2557	NITROCELLULOSE with not more than 12.6% nitrogen, by dry mass, MIXTURE WITH or WITHOUT PLASTICIZER, WITH or WITHOUT PIGMENT	4.1	–	II	241 394	0	E0	P406	PP31	–	–	–	–	–	F-B, S-J	Category D	
2558	EPIBROMOHYDRIN	6.1	3 P	I	–	0	E0	P001	–	–	–	–	T14	TP2 TP13	F-E, S-D	Category D SW2	
2560	2-METHYLPENTAN-2-OL	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
2561	3-METHYL-1-BUTENE	3	–	I	–	0	E3	P001	–	–	–	–	T11	TP2	F-E, S-D	Category E	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
2570	CADMIUM COMPOUND	6.1	–	I	274	0	E5	P002	–	IBC07	B1	–	T6	TP33	F-A, S-A	Category A	
2570	CADMIUM COMPOUND	6.1	–	II	274	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
2570	CADMIUM COMPOUND	6.1	–	III	223 274	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A	
2571	ALKYLSULPHURIC ACIDS	8	–	II	–	1 L	E2	P001	–	IBC02	–	–	T8	TP2 TP13 TP28	F-A, S-B	Category C SW15	
2572	PHENYLHYDRAZINE	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–	–	T7	TP2	F-A, S-A	Category A SW2	
2573	THALLIUM CHLORATE	5.1	6.1 **P**	II	–	1 kg	E2	P002	–	IBC06	B21	–	T3	TP33	F-H, S-Q	Category A	
2574	TRICRESYL PHOSPHATE with more than 3% *ortho*-isomer	6.1	– **P**	II	–	100 mL	E4	P001	–	IBC02	–	–	T7	TP2	F-A, S-A	Category A	
2576	PHOSPHORUS OXYBROMIDE, MOLTEN	8	–	II	–	0	E0	–	–	–	–	–	T7	TP3 TP13	F-A, S-B	Category C SW2	
2577	PHENYLACETYL CHLORIDE	8	–	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP2	F-A, S-B	Category C SW2	
2578	PHOSPHORUS TRIOXIDE	8	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-B	Category A SW1 H2	
2579	PIPERAZINE	8	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-B	Category A SW1 H2	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
2584	ALKYLSULPHONIC ACIDS, LIQUID or ARYLSULPHONIC ACIDS, LIQUID with more than 5% free sulphuric acid	8	–	II	–	1 L	E2	P001	–	IBC02	B20	–	T8	TP2 TP13	F-A, S-B	Category B	
2585	ALKYLSULPHONIC ACIDS, SOLID or ARYLSULPHONIC ACIDS, SOLID with not more than 5% free sulphuric acid	8	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-B	Category A	
2586	ALKYLSULPHONIC ACIDS, LIQUID or ARYLSULPHONIC ACIDS, LIQUID with not more than 5% free sulphuric acid	8	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-B	Category B	
2587	BENZOQUINONE	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
2588	PESTICIDE, SOLID, TOXIC, N.O.S.	6.1	–	I	61 274	0	E5	P002	–	IBC99	–	–	T6	TP33	F-A, S-A	Category A SW2	
2588	PESTICIDE, SOLID, TOXIC, N.O.S.	6.1	–	II	61 274	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A SW2	
2588	PESTICIDE, SOLID, TOXIC, N.O.S.	6.1	–	III	61 223 274	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A SW2	
2589	VINYL CHLOROACETATE	6.1	3	II	–	100 mL	E4	P001	–	IBC02	–	–	T7	TP2	F-E, S-D	Category A	
2590	ASBESTOS, CHRYSOTILE	9	–	III	168	5 kg	E1	P002	PP37	IBC08	B3 B21	–	T1	TP33	F-A, S-A	Category A SW2 H4	
2591	XENON, REFRIGERATED LIQUID	2.2	–	–	–	120 mL	E1	P203	–	–	–	–	T75	TP5	F-C, S-V	Category D	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
2603	CYCLOHEPTATRIENE	3	6.1	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP1 TP13	F-E, S-D	Category E SW2	
2604	BORON TRIFLUORIDE DIETHYL ETHERATE	8	3	I	–	0	E0	P001	PP31	–	–	–	T10	TP2	F-E, S-C	Category D SW2	
2605	METHOXYMETHYL ISOCYANATE	6.1	3	I	354	0	E0	P602	–	–	–	–	T20	TP2 TP13	F-E, S-D	Category D SW2	
2606	METHYL ORTHOSILICATE	6.1	3	I	354	0	E0	P602	–	–	–	–	T20	TP2 TP13	F-E, S-D	Category D SW2	
2607	ACROLEIN DIMER, STABILIZED	3	–	III	386	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category C SW1 SW2	
2608	NITROPROPANES	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
2609	TRIALLYL BORATE	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	–	–	F-A, S-A	Category A H1	
2610	TRIALLYLAMINE	3	8	III	–	5 L	E1	P001	–	IBC03	–	–	T4	TP1	F-E, S-C	Category A SW2	
2611	PROPYLENE CHLOROHYDRIN	6.1	3	II	–	100 mL	E4	P001	–	IBC02	–	–	T7	TP2 TP13	F-E, S-D	Category A SW1 SW2 H2	
2612	METHYL PROPYL ETHER	3	–	II	–	1 L	E2	P001	–	IBC02	B8	–	T7	TP2	F-E, S-D	Category E SW2	
2614	METHALLYL ALCOHOL	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
2615	ETHYL PROPYL ETHER	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category E	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
2620	AMYL BUTYRATES	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
2621	ACETYL METHYL CARBINOL	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
2622	GLYCIDALDEHYDE	3	6.1	II	–	1 L	E2	P001	–	IBC02	B8	–	T7	TP1	F-E, S-D	Category A SW2	
2623	FIRELIGHTERS, SOLID with flammable liquid	4.1	–	III	–	5 kg	E1	P002 LP02	PP15	–	–	–	–	–	F-A, S-I	Category A	
2624	MAGNESIUM SILICIDE	4.3	–	II	–	500 g	E2	P410	PP31 PP40	IBC07	B4 B21	–	T3	TP33	F-G, S-O	Category B SW5 H1	
2626	CHLORIC ACID, AQUEOUS SOLUTION with not more than 10% chloric acid	5.1	–	II	900	1 L	E0	P504	PP31	IBC02	–	–	–	–	F-A, S-Q	Category D	
2627	NITRITES, INORGANIC, N.O.S.	5.1	–	II	274 900	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-Q	Category A	
2628	POTASSIUM FLUOROACETATE	6.1	–	I	–	0	E5	P002	–	IBC07	B1	–	T6	TP33	F-A, S-A	Category E	
2629	SODIUM FLUOROACETATE	6.1	–	I	–	0	E5	P002	–	IBC07	B1	–	T6	TP33	F-A, S-A	Category E	
2630	SELENATES or SELENITES	6.1	–	I	274	0	E5	P002	–	IBC07	B1	–	T6	TP33	F-A, S-A	Category E	
2642	FLUOROACETIC ACID	6.1	–	I	–	0	E5	P002	–	IBC07	B1	–	T6	TP33	F-A, S-A	Category E	
2643	METHYL BROMOACETATE	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–	–	T7	TP2	F-A, S-A	Category D SW2	
2644	METHYL IODIDE	6.1	–	I	354	0	E0	P602	–	–	–	–	T20	TP2 TP13	F-A, S-A	Category D SW1 SW2	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
2650	1,1-DICHLORO-1-NITRO-ETHANE	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–	–	T7	TP2	F-A, S-A	Category A SW1 SW2 H2	
2651	4,4′-DIAMINODIPHENYL-METHANE	6.1	– P	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A	
2653	BENZYL IODIDE	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–	–	T7	TP2	F-A, S-A	Category B SW1 SW2 H2	
2655	POTASSIUM FLUOROSILICATE	6.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A	
2656	QUINOLINE	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-A	Category A SW1 H2	
2657	SELENIUM DISULPHIDE	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
2659	SODIUM CHLOROACETATE	6.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A	
2660	NITROTOLUIDINES (MONO)	6.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A	
2661	HEXACHLOROACETONE	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-A	Category B SW1 SW2 H2	
2664	DIBROMOMETHANE	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-A	Category A	
2667	BUTYLTOLUENES	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-A	Category A	
2668	CHLOROACETONITRILE	6.1	3	I	354	0	E0	P602	–	–	–	–	T20	TP2 TP13	F-A, S-A	Category D SW1 SW2 H2	
2669	CHLOROCRESOLS SOLUTION	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–	–	T7	TP2	F-A, S-A	Category A SW1 H2	
2669	CHLOROCRESOLS SOLUTION	6.1	–	III	223	5 L	E1	P001	–	IBC03	–	–	T7	TP2	F-A, S-A	Category A	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
2673	2-AMINO-4-CHLOROPHENOL	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
2674	SODIUM FLUOROSILICATE	6.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A	
2676	STIBINE	2.3	2.1	–	–	0	E0	P200	–	–	–	–	–	–	F-D, S-U	Category D SW2	
2677	RUBIDIUM HYDROXIDE SOLUTION	8	–	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP2	F-A, S-B	Category A	
2677	RUBIDIUM HYDROXIDE SOLUTION	8	–	III	223	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-B	Category A	
2678	RUBIDIUM HYDROXIDE	8	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-B	Category A	
2679	LITHIUM HYDROXIDE SOLUTION	8	–	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP2	F-A, S-B	Category A	
2679	LITHIUM HYDROXIDE SOLUTION	8	–	III	223	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP2	F-A, S-B	Category A	
2680	LITHIUM HYDROXIDE	8	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-B	Category A	
2681	CAESIUM HYDROXIDE SOLUTION	8	–	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP2	F-A, S-B	Category A	
2681	CAESIUM HYDROXIDE SOLUTION	8	–	III	223	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-B	Category A	
2682	CAESIUM HYDROXIDE	8	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-B	Category A	
2683	AMMONIUM SULPHIDE SOLUTION	8	3/6.1	II	–	1 L	E2	P001	–	IBC01	–	–	T7	TP2 TP13	F-E, S-C	Category B SW1 H2	
2684	3-DIETHYLAMINO-	3	8	III	–	5 L	E1	P001	–	IBC03	–	–	T4	TP1	F-E, S-C	Category A	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
2689	GLYCEROL *alpha*-MONOCHLOROHYDRIN	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-A	Category A	
2690	*N,n*-BUTYLIMIDAZOLE	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–	–	T7	TP2	F-A, S-A	Category A	
2691	PHOSPHORUS PENTABROMIDE	8	–	II	–	1 kg	E0	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-B	Category B SW1 SW2 H2	
2692	BORON TRIBROMIDE	8	–	I	–	0	E0	P602	–	–	–	–	T20	TP2 TP13	F-A, S-B	Category C SW1 H2	
2693	BISULPHITES, AQUEOUS SOLUTION, N.O.S.	8	–	III	274	5 L	E1	P001 LP01	–	IBC03	–	–	T7	TP1 TP28	F-A, S-B	Category A SW2	
2698	TETRAHYDROPHTHALIC ANHYDRIDES with more than 0.05% maleic anhydride	8	–	III	29 169 939 973	5 kg	E1	P002 LP02	PP14	IBC08	B3	–	T1	TP33	F-A, S-B	Category A	
2699	TRIFLUOROACETIC ACID	8	–	I	–	0	E0	P001	–	–	–	–	T10	TP2	F-A, S-B	Category B SW1 SW2 H2	
2705	1-PENTOL	8	–	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP2	F-A, S-B	Category B	
2707	DIMETHYLDIOXANES	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
2707	DIMETHYLDIOXANES	3	–	III	223	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
2709	BUTYLBENZENES	3	– P	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP2	F-E, S-D	Category A	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
2717	CAMPHOR, synthetic	4.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-I	Category A	
2719	BARIUM BROMATE	5.1	6.1	II	–	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-H, S-Q	Category A	
2720	CHROMIUM NITRATE	5.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-Q	Category A	
2721	COPPER CHLORATE	5.1	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-H, S-Q	Category A	
2722	LITHIUM NITRATE	5.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-Q	Category A	
2723	MAGNESIUM CHLORATE	5.1	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-H, S-Q	Category A	
2724	MANGANESE NITRATE	5.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-Q	Category A	
2725	NICKEL NITRATE	5.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-Q	Category A	
2726	NICKEL NITRITE	5.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-Q	Category A	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
2733	AMINES, FLAMMABLE, CORROSIVE, N.O.S. or POLYAMINES, FLAMMABLE, CORROSIVE, N.O.S.	3	8	I	274	0	E0	P001	–	–	–	–	T14	TP1 TP27	F-E, S-C	Category D SW2	
2733	AMINES, FLAMMABLE, CORROSIVE, N.O.S. or POLYAMINES, FLAMMABLE, CORROSIVE, N.O.S.	3	8	II	274	1 L	E2	P001	–	IBC02	–	–	T11	TP1 TP27	F-E, S-C	Category B SW2	
2733	AMINES, FLAMMABLE, CORROSIVE, N.O.S. or POLYAMINES, FLAMMABLE, CORROSIVE, N.O.S.	3	8	III	223 274	5 L	E1	P001	–	IBC03	–	–	T7	TP1 TP28	F-E, S-C	Category A SW2	
2734	AMINES, LIQUID, CORROSIVE, FLAMMABLE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, FLAMMABLE, N.O.S.	8	3	I	274	0	E0	P001	–	–	–	–	T14	TP2 TP27	F-E, S-C	Category A	
2734	AMINES, LIQUID, CORROSIVE, FLAMMABLE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, FLAMMABLE, N.O.S.	8	3	II	274	1 L	E2	P001	–	IBC02	–	–	T11	TP2 TP27	F-E, S-C	Category A	
2735	AMINES, LIQUID, CORROSIVE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, N.O.S.	8	–	I	274	0	E0	P001	–	–	–	–	T14	TP2 TP27	F-A, S-B	Category A	
2735	AMINES, LIQUID, CORROSIVE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, N.O.S.	8	–	II	274	1 L	E2	P001	–	IBC02	–	–	T11	TP1 TP27	F-A, S-B	Category A	
2735	AMINES, LIQUID, CORROSIVE, N.O.S. or POLYAMINES, LIQUID, CORROSIVE, N.O.S.	8	–	III	223 274	5 L	E1	P001 LP01	–	IBC03	–	–	T7	TP1 TP28	F-A, S-B	Category A	
2738	*N*-BUTYLANILINE	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–	–	T7	TP2	F-A, S-A	Category A	
2739	BUTYRIC ANHYDRIDE	8	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-B	Category A	
2740	*n*-PROPYL CHLOROFORMATE	6.1	3/8	I	–	0	E0	P602	–	–	–	–	T20	TP2 TP13	F-E, S-C	Category B SW2	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
2742	CHLOROFORMATES, TOXIC, CORROSIVE, FLAMMABLE, N.O.S.	6.1	3/8	II	274	100 mL	E4	P001	–	IBC01	–	–	–	–	F-E, S-C	Category A SW1 SW2 H1 H2	
2743	*n*-BUTYL CHLOROFORMATE	6.1	3/8	II	–	100 mL	E0	P001	–	–	–	–	T20	TP2 TP13	F-E, S-C	Category A SW1 SW2 H1 H2	
2744	CYCLOBUTYL CHLOROFORMATE	6.1	3/8	II	–	100 mL	E4	P001	–	IBC01	–	–	T7	TP2 TP13	F-E, S-C	Category A SW1 SW2 H1 H2	
2745	CHLOROMETHYL CHLOROFORMATE	6.1	8	II	–	100 mL	E4	P001	–	IBC02	–	–	T7	TP2 TP13	F-A, S-B	Category A SW1 SW2 H1 H2	
2746	PHENYL CHLOROFORMATE	6.1	8	II	–	100 mL	E4	P001	–	IBC02	–	–	T7	TP2 TP13	F-A, S-B	Category A SW1 SW2 H1 H2	
2747	*tert*-BUTYLCYCLOHEXYL CHLOROFORMATE	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-A	Category A SW1 H1 H2	
2748	2-ETHYLHEXYL CHLOROFORMATE	6.1	8	II	–	100 mL	E4	P001	–	IBC02	–	–	T7	TP2 TP13	F-A, S-B	Category A SW1 SW2 H1 H2	
2749	TETRAMETHYLSILANE	3	–	I	–	0	E0	P001	–	–	–	–	T14	TP2	F-E, S-D	Category D	
2750	1,3-DICHLOROPROPANOL-2	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–	–	T7	TP2	F-A, S-A	Category A SW1 SW2 H2	
2751	DIETHYLTHIOPHOSPHORYL	8	–	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP2	F-A, S-B	Category D	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
2757	CARBAMATE PESTICIDE, SOLID, TOXIC	6.1	–	III	61 223 274	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A SW2	
2758	CARBAMATE PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flashpoint less than 23°C	3	6.1	I	61 274	0	E0	P001	–	–	–	–	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	
2758	CARBAMATE PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flashpoint less than 23°C	3	6.1	II	61 274	1 L	E2	P001	–	IBC02	–	–	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	
2759	ARSENICAL PESTICIDE, SOLID, TOXIC	6.1	–	I	61 274	0	E5	P002	–	IBC07	B1	–	T6	TP33	F-A, S-A	Category A SW2	
2759	ARSENICAL PESTICIDE, SOLID, TOXIC	6.1	–	II	61 274	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A SW2	
2759	ARSENICAL PESTICIDE, SOLID, TOXIC	6.1	–	III	61 223 274	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A SW2	
2760	ARSENICAL PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flashpoint less than 23°C	3	6.1	I	61 274	0	E0	P001	–	–	–	–	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	
2760	ARSENICAL PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flashpoint less than 23°C	3	6.1	II	61 274	1 L	E2	P001	–	IBC02	–	–	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	
2761	ORGANOCHLORINE PESTICIDE, SOLID, TOXIC	6.1	–	I	61 274	0	E5	P002	–	IBC07	B1	–	T6	TP33	F-A, S-A	Category A SW2	
2761	ORGANOCHLORINE PESTICIDE, SOLID, TOXIC	6.1	–	II	61 274	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A SW2	
2761	ORGANOCHLORINE PESTICIDE, SOLID, TOXIC	6.1	–	III	61 223 274	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A SW2	
2762	ORGANOCHLORINE PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flashpoint less than 23°C	3	6.1	I	61 274	0	E0	P001	–	–	–	–	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	
2762	ORGANOCHLORINE PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flashpoint less than 23°C	3	6.1	II	61 274	1 L	E2	P001	–	IBC02	–	–	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	
2763	TRIAZINE PESTICIDE, SOLID, TOXIC	6.1	–	I	61 274	0	E5	P002	–	IBC07	B1	–	T6	TP33	F-A, S-A	Category A SW2	
2763	TRIAZINE PESTICIDE, SOLID, TOXIC	6.1	–	II	61 274	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A SW2	
2763	TRIAZINE PESTICIDE, SOLID,	6.1	–	III	61	5 kg	E1	P002	–	IBC08	B3	–	T3	TP33	F-A, S-A	Category A	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
2772	THIOCARBAMATE PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flashpoint less than 23°C	3	6.1	I	61 274	0	E0	P001	–	–	–	–	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	
2772	THIOCARBAMATE PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flashpoint less than 23°C	3	6.1	II	61 274	1 L	E2	P001	–	IBC02	–	–	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	
2775	COPPER BASED PESTICIDE, SOLID, TOXIC	6.1	–	I	61 274	0	E5	P002	–	IBC07	B1	–	T6	TP33	F-A, S-A	Category A SW2	
2775	COPPER BASED PESTICIDE, SOLID, TOXIC	6.1	–	II	61 274	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A SW2	
2775	COPPER BASED PESTICIDE, SOLID, TOXIC	6.1	–	III	61 223 274	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A SW2	
2776	COPPER BASED PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flashpoint less than 23°C	3	6.1	I	61 274	0	E0	P001	–	–	–	–	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	
2776	COPPER BASED PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flashpoint less than 23°C	3	6.1	II	61 274	1 L	E2	P001	–	IBC02	–	–	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	
2777	MERCURY BASED PESTICIDE, SOLID, TOXIC	6.1	– P	I	61 274	0	E5	P002	–	IBC07	B1	–	T6	TP33	F-A, S-A	Category A SW2	
2777	MERCURY BASED PESTICIDE, SOLID, TOXIC	6.1	– P	II	61 274	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A SW2	
2777	MERCURY BASED PESTICIDE, SOLID, TOXIC	6.1	– P	III	61 223 274	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A SW2	
2778	MERCURY BASED PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flashpoint less than 23°C	3	6.1 P	I	61 274	0	E0	P001	–	–	–	–	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	
2778	MERCURY BASED PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flashpoint less than 23°C	3	6.1 P	II	61 274	1 L	E2	P001	–	IBC02	–	–	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	
2779	SUBSTITUTED NITROPHENOL PESTICIDE, SOLID, TOXIC	6.1	–	I	61 274	0	E5	P002	–	IBC07	B1	–	T6	TP33	F-A, S-A	Category A SW2	
2779	SUBSTITUTED NITROPHENOL PESTICIDE, SOLID, TOXIC	6.1	–	II	61 274	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A SW2	
2779	SUBSTITUTED NITROPHENOL PESTICIDE, SOLID, TOXIC	6.1	–	III	61 223 274	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A SW2	
2780	SUBSTITUTED NITROPHENOL	3	6.1	I	61	0	E0	P001	–	–	–	–	T14	TP2	F-E, S-D	Category B	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
2782	BIPYRIDILIUM PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flashpoint less than 23°C	3	6.1	I	61 274	0	E0	P001	–	–	–	–	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	
2782	BIPYRIDILIUM PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flashpoint less than 23°C	3	6.1	II	61 274	1 L	E2	P001	–	IBC02	–	–	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	
2783	ORGANOPHOSPHORUS PESTICIDE, SOLID, TOXIC	6.1	–	I	61 274	0	E5	P002	–	IBC07	B1	–	T6	TP33	F-A, S-A	Category A SW2	
2783	ORGANOPHOSPHORUS PESTICIDE, SOLID, TOXIC	6.1	–	II	61 274	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A SW2	
2783	ORGANOPHOSPHORUS PESTICIDE, SOLID, TOXIC	6.1	–	III	61 223 274	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A SW2	
2784	ORGANOPHOSPHORUS PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flashpoint less than 23°C	3	6.1	I	61 274	0	E0	P001	–	–	–	–	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	
2784	ORGANOPHOSPHORUS PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flashpoint less than 23°C	3	6.1	II	61 274	1 L	E2	P001	–	IBC02	–	–	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	
2785	4-THIAPENTANAL	6.1	–	III	–	5 L	E1	P001 LP01	PP31	IBC03	–	–	T4	TP1	F-A, S-A	Category D SW1	
2786	ORGANOTIN PESTICIDE, SOLID, TOXIC	6.1	– **P**	I	61 274	0	E5	P002	–	IBC07	B1	–	T6	TP33	F-A, S-A	Category A SW2	
2786	ORGANOTIN PESTICIDE, SOLID, TOXIC	6.1	– **P**	II	61 274	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A SW2	
2786	ORGANOTIN PESTICIDE, SOLID, TOXIC	6.1	– **P**	III	61 223 274	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A SW2	
2787	ORGANOTIN PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flashpoint less than 23°C	3	6.1 **P**	I	61 274	0	E0	P001	–	–	–	–	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	
2787	ORGANOTIN PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flashpoint less than 23°C	3	6.1 **P**	II	61 274	1 L	E2	P001	–	IBC02	–	–	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	
2788	ORGANOTIN COMPOUND, LIQUID, N.O.S.	6.1	– **P**	I	43 274	0	E5	P001	–	–	–	–	T14	TP2 TP13 TP27	F-A, S-A	Category A SW2	
2788	ORGANOTIN COMPOUND,	6.1		II	43	100 ml	E4	P001		IBC02			T11	TP2	F-A, S-A	Category A	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
2793	FERROUS METAL BORINGS, SHAVINGS, TURNINGS or CUTTINGS in a form liable to self-heating	4.2	–	III	223 931	0	E1	P003 LP02	PP20 PP100 L3	IBC08	B4 B6	–	BK2	–	F-G, S-J	Category A H1	
2794	BATTERIES, WET, FILLED WITH ACID, electric storage	8	–	–	295	1 L	E0	P801	–	–	–	–	–	–	F-A, S-B	Category A SW16	
2795	BATTERIES, WET, FILLED WITH ALKALI, electric storage	8	–	–	295	1 L	E0	P801	–	–	–	–	–	–	F-A, S-B	Category A SW16	
△ 2796	SULPHURIC ACID with not more than 51% acid or BATTERY FLUID, ACID	8	–	II	–	1 L	E2	P001	–	IBC02	B20	–	T8	TP2	F-A, S-B	Category B	
2797	BATTERY FLUID, ALKALI	8	–	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP2 TP28	F-A, S-B	Category A	
2798	PHENYLPHOSPHORUS DICHLORIDE	8	–	II	–	1 L	E0	P001	–	IBC02	–	–	T7	TP2	F-A, S-B	Category B SW2	
2799	PHENYLPHOSPHORUS THIODICHLORIDE	8	–	II	–	1 L	E0	P001	–	IBC02	–	–	T7	TP2	F-A, S-B	Category B SW2	
2800	BATTERIES, WET, NON-SPILLABLE, electric storage	8	–	–	238	1 L	E0	P003	PP16	–	–	–	–	–	F-A, S-B	Category A	
2801	DYE, LIQUID, CORROSIVE, N.O.S. or DYE INTERMEDIATE,	8	–	I	274	0	E0	P001	–	–	–	–	T14	TP2 TP27	F-A, S-B	Category A	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
2805	LITHIUM HYDRIDE, FUSED SOLID	4.3	–	II	–	500 g	E2	P410	PP31 PP40	IBC04	–	–	T3	TP33	F-G, S-N	Category E H1	
2806	LITHIUM NITRIDE	4.3	–	I	–	0	E0	P403	PP31	IBC04	B1	–	–	–	F-A, S-O	Category E	
2807	MAGNETIZED MATERIAL	9	–	–	960	–	–	–	–	–	–		–	–	–	–	
2809	MERCURY	8	6.1	III	365	5 kg	E0	P800	–	–	–	–	–	–	F-A, S-B	Category B SW2	
2810	TOXIC LIQUID, ORGANIC, N.O.S.	6.1	–	I	274 315	0	E5	P001	–	–	–	–	T14	TP2 TP13 TP27	F-A, S-A	Category B SW2	
2810	TOXIC LIQUID, ORGANIC, N.O.S.	6.1	–	II	274	100 mL	E4	P001	–	IBC02	–	–	T11	TP2 TP13 TP27	F-A, S-A	Category B SW2	
2810	TOXIC LIQUID, ORGANIC, N.O.S.	6.1	–	III	223 274	5 L	E1	P001 LP01	–	IBC03	–	–	T7	TP1 TP28	F-A, S-A	Category A SW2	
2811	TOXIC SOLID, ORGANIC, N.O.S.	6.1	–	I	274	0	E5	P002	–	IBC99	–	–	T6	TP33	F-A, S-A	Category B	
2811	TOXIC SOLID, ORGANIC, N.O.S.	6.1	–	II	274	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category B	
2811	TOXIC SOLID, ORGANIC, N.O.S.	6.1	–	III	223 274	5 kg	E1	P002	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A	
2812	SODIUM ALUMINATE, SOLID	8	–	–	960	–	–	–	–	–	–		–	–	–	–	
2813	WATER-REACTIVE SOLID, N.O.S.	4.3	–	I	274	0	E0	P403	PP31	IBC99	–	–	T9	TP7 TP33	F-G, S-N	Category E SW2 H1	
2813	WATER-REACTIVE SOLID, N.O.S.	4.3	–	II	274	500 g	E2	P410	PP31 PP40	IBC07	B4 B21	–	T3	TP33	F-G, S-N	Category E SW2 H1	
2813	WATER-REACTIVE SOLID, N.O.S.	4.3	–	III	223 274	1 kg	E1	P410	PP31	IBC08	B4	–	T1	TP33	F-G, S-N	Category E SW2 H1	
2814	INFECTIOUS SUBSTANCE, AFFECTING HUMANS	6.2	–	–	318 341	0	E0	P620	–	–	–	–	BK2	–	F-A, S-T	Category E SW2	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
2818	AMMONIUM POLYSULPHIDE SOLUTION	8	6.1	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP2 TP13	F-A, S-B	Category B SW1 SW2 H2	
2818	AMMONIUM POLYSULPHIDE SOLUTION	8	6.1	III	223	5 L	E1	P001	–	IBC03	–	–	T4	TP1 TP13	F-A, S-B	Category B SW1 SW2 H2	
2819	AMYL ACID PHOSPHATE	8	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-B	Category A	
2820	BUTYRIC ACID	8	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-B	Category A SW1 H2	
2821	PHENOL SOLUTION	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–	–	T7	TP2	F-A, S-A	Category A	
2821	PHENOL SOLUTION	6.1	–	III	223	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-A	Category A	
2822	2-CHLOROPYRIDINE	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–	–	T7	TP2	F-A, S-A	Category A SW2	
2823	CROTONIC ACID, SOLID	8	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3 B21	–	T1	TP33	F-A, S-B	Category A SW1 H2	
2826	ETHYL CHLOROTHIOFORMATE	8	3 P	II	–	0	E0	P001	–	–	–	–	T7	TP2	F-E, S-C	Category A SW2	
2829	CAPROIC ACID	8	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-B	Category A	
2830	LITHIUM FERROSILICON	4.3	–	II	–	500 g	E2	P410	PP31 PP40	IBC07	B4 B21	–	T3	TP33	F-G, S-N	Category E SW2 SW5 H1	
2831	1,1,1-TRICHLOROETHANE	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-A	Category A SW2	
2834	PHOSPHOROUS ACID	8	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-B	Category A SW1	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
2840	BUTYRALDOXIME	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
2841	DI-*n*-AMYLAMINE	3	6.1	III	–	5 L	E1	P001	–	IBC03	–	–	T4	TP1	F-E, S-D	Category A	
2842	NITROETHANE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
2844	CALCIUM MANGANESE SILICON	4.3	–	III	–	1 kg	E1	P410	PP31	IBC08	B4	–	T1	TP33	F-G, S-N	Category A SW5 H1	
2845	PYROPHORIC LIQUID, ORGANIC, N.O.S.	4.2	–	I	274	0	E0	P400	–	–	–	–	T22	TP2 TP7	F-G, S-M	Category D H1	
2846	PYROPHORIC SOLID, ORGANIC, N.O.S.	4.2	–	I	274	0	E0	P404	PP31	–	–	–	–	–	F-G, S-M	Category D H1	
2849	3-CHLOROPROPANOL-1	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-A	Category A	
2850	PROPYLENE TETRAMER	3	– P	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP2	F-E, S-E	Category A	
2851	BORON TRIFLUORIDE DIHYDRATE	8	–	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP2	F-A, S-B	Category B SW1 SW2 H2	
2852	DIPICRYL SULPHIDE, WETTED with not less than 10% water, by mass	4.1	–	I	28	0	E0	P406	PP24 PP31	–	–	–	–	–	F-B, S-J	Category D	
2853	MAGNESIUM FLUOROSILICATE	6.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A	
2854	AMMONIUM FLUOROSILICATE	6.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A	
2855	ZINC FLUOROSILICATE	6.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A	
2856	FLUOROSILICATES, N.O.S.	6.1	–	III	274	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
2861	AMMONIUM POLYVANADATE	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
2862	VANADIUM PENTOXIDE, non-fused form	6.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A	
2863	SODIUM AMMONIUM VANADATE	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
2864	POTASSIUM METAVANADATE	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
2865	HYDROXYLAMINE SULPHATE	8	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-B	Category A	
2869	TITANIUM TRICHLORIDE MIXTURE	8	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-B	Category A SW2	
2869	TITANIUM TRICHLORIDE MIXTURE	8	–	III	223	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-B	Category A SW2	
2870	ALUMINIUM BOROHYDRIDE	4.2	4.3	I	–	0	E0	P400	–	–	–	–	T21	TP7 TP33	F-G, S-M	Category D H1	
2870	ALUMINIUM BOROHYDRIDE IN DEVICES	4.2	4.3	I	–	0	E0	P002	PP13	–	–	–	–	–	F-G, S-M	Category D H1	
2871	ANTIMONY POWDER	6.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A	
2872	DIBROMOCHLOROPROPANES	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–	–	T7	TP2	F-A, S-A	Category A	
2872	DIBROMOCHLOROPROPANES	6.1	–	III	223	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-A	Category A	
2873	DIBUTYLAMINOETHANOL	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-A	Category A	
2874	FURFURYL ALCOHOL	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-A	Category A	
2875	HEXACHLOROPHENE	6.1		III		5 kg	E1	P002		IBC08	B3	–	T1	TP33	F-A, S-A	Category A	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
2880	CALCIUM HYPOCHLORITE, HYDRATED or CALCIUM HYPOCHLORITE, HYDRATED MIXTURE with not less than 5.5% but not more than 16% water	5.1	– P	II	314 322	1 kg	E2	P002	PP85	–	–	–	–	–	F-H, S-Q	Category D SW1 SW11	
2880	CALCIUM HYPOCHLORITE, HYDRATED or CALCIUM HYPOCHLORITE, HYDRATED MIXTURE with not less than 5.5% but not more than 16% water	5.1	– P	III	223 314	5 kg	E1	P002	PP85	–	–	–	–	–	F-H, S-Q	Category D SW1 SW11	
2881	METAL CATALYST, DRY	4.2	–	I	274	0	E0	P404	PP31	–	–	–	T21	TP7 TP33	F-G, S-M	Category C H1	
2881	METAL CATALYST, DRY	4.2	–	II	274	0	E0	P410	PP31	IBC06	B21	–	T3	TP33	F-G, S-M	Category C H1	
2881	METAL CATALYST, DRY	4.2	–	III	223 274	0	E1	P002 LP02	PP31 L4	IBC08	B4	–	T1	TP33	F-G, S-M	Category C H1	
2900	INFECTIOUS SUBSTANCE, AFFECTING ANIMALS only	6.2	–	–	318 341	0	E0	P620	–	–	–	–	BK2	–	F-A, S-T	Category E SW2 H1 H5	
2901	BROMINE CHLORIDE	2.3	5.1/8	–	–	0	E0	P200	–	–	–	–	–	–	F-C, S-W	Category D SW2	
2902	PESTICIDE, LIQUID, TOXIC, N.O.S.	6.1	–	I	61 274	0	E5	P001	–	–	–	–	T14	TP2 TP13 TP27	F-A, S-A	Category B SW2	
2902	PESTICIDE, LIQUID, TOXIC, N.O.S.	6.1	–	II	61 274	100 mL	E4	P001	–	IBC02	–	–	T11	TP2 TP13	F-A, S-A	Category B SW2	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
2904	CHLOROPHENOLATES, LIQUID or PHENOLATES, LIQUID	8	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	–	–	F-A, S-B	Category A	
2905	CHLOROPHENOLATES, SOLID or PHENOLATES, SOLID	8	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-B	Category A	
2907	ISOSORBIDE DINITRATE MIXTURE with not less than 60% lactose, mannose, starch, or calcium hydrogen phosphate	4.1	–	II	127	0	E0	P406	PP26 PP80	IBC06	B12 B21	–	–	–	F-A, S-J	Category E	
2908	RADIOACTIVE MATERIAL, EXCEPTED PACKAGE – EMPTY PACKAGING	7	See SP290	–	290 368	0	E0	See 4.1.9	See 4.1.9	See 4.1.9	See 4.1.9	–	–	–	F-I, S-S	Category A	
2909	RADIOACTIVE MATERIAL, EXCEPTED PACKAGE – ARTICLES MANUFACTURED FROM NATURAL URANIUM or DEPLETED URANIUM or NATURAL THORIUM	7	See SP290	–	290	0	E0	See 4.1.9	See 4.1.9	See 4.1.9	See 4.1.9	–	–	–	F-I, S-S	Category A	
2910	RADIOACTIVE MATERIAL, EXCEPTED PACKAGE – LIMITED QUANTITY OF MATERIAL	7	See SP290	–	290 368	0	E0	See 4.1.9	See 4.1.9	See 4.1.9	See 4.1.9	–	–	–	F-I, S-S	Category A	
2911	RADIOACTIVE MATERIAL, EXCEPTED PACKAGE – INSTRUMENTS or ARTICLES	7	See SP290	–	290	0	E0	See 4.1.9	See 4.1.9	See 4.1.9	See 4.1.9	–	–	–	F-I, S-S	Category A	
2912	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-I), non fissile or fissile-excepted	7	See SP172	–	172 317 325	0	E0	See 4.1.9	See 4.1.9	See 4.1.9	See 4.1.9	–	T5	TP4	F-I, S-S	Category A SW20 SW21	
2913	RADIOACTIVE MATERIAL, SURFACE CONTAMINATED OBJECTS (SCO-I, SCO-II or SCO-III), non fissile or fissile-excepted	7	See SP172	–	172 317 325	0	E0	See 4.1.9	See 4.1.9	See 4.1.9	See 4.1.9	–	T5	TP4	F-I, S-S	Category A	
2915	RADIOACTIVE MATERIAL, TYPE A PACKAGE, non-special form, non fissile or fissile-excepted	7	See SP172	–	172 317 325	0	E0	See 4.1.9	See 4.1.9	See 4.1.9	See 4.1.9	–	–	–	F-I, S-S	Category A SW20 SW21	
2916	RADIOACTIVE MATERIAL, TYPE B(U) PACKAGE, non fissile or fissile-excepted	7	See SP172	–	172 317 325	0	E0	See 4.1.9	See 4.1.9	See 4.1.9	See 4.1.9	–	–	–	F-I, S-S	Category A SW12	
2917	RADIOACTIVE MATERIAL, TYPE B(M) PACKAGE, non fissile or fissile-excepted	7	See SP172	–	172 317 325	0	E0	See 4.1.9	See 4.1.9	See 4.1.9	See 4.1.9	–	–	–	F-I, S-S	Category A SW12	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
2922	CORROSIVE LIQUID, TOXIC, N.O.S.	8	6.1	I	274	0	E0	P001	–	–	–	–	T14	TP2 TP13 TP27	F-A, S-B	Category B SW2	
2922	CORROSIVE LIQUID, TOXIC, N.O.S.	8	6.1	II	274	1 L	E2	P001	–	IBC02	–	–	T7	TP2	F-A, S-B	Category B SW2	
2922	CORROSIVE LIQUID, TOXIC, N.O.S.	8	6.1	III	223 274	5 L	E1	P001	–	IBC03	–	–	T7	TP1 TP28	F-A, S-B	Category B SW2	
2923	CORROSIVE SOLID, TOXIC, N.O.S.	8	6.1	I	274	0	E0	P002	–	IBC99	–	–	T6	TP33	F-A, S-B	Category B SW2	
2923	CORROSIVE SOLID, TOXIC, N.O.S.	8	6.1	II	274	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-B	Category B SW2	
2923	CORROSIVE SOLID, TOXIC, N.O.S.	8	6.1	III	223 274	5 kg	E1	P002	–	IBC08	B3	–	T1	TP33	F-A, S-B	Category B SW2	
2924	FLAMMABLE LIQUID, CORROSIVE, N.O.S.	3	8	I	274	0	E0	P001	–	–	–	–	T14	TP2	F-E, S-C	Category E SW2	
2924	FLAMMABLE LIQUID, CORROSIVE, N.O.S.	3	8	II	274	1 L	E2	P001	–	IBC02	–	–	T11	TP2 TP27	F-E, S-C	Category B SW2	
2924	FLAMMABLE LIQUID, CORROSIVE, N.O.S.	3	8	III	223 274	5 L	E1	P001	–	IBC03	–	–	T7	TP1 TP28	F-E, S-C	Category A SW2	
2925	FLAMMABLE SOLID, CORROSIVE, ORGANIC, N.O.S.	4.1	8	II	274	1 kg	E2	P002	–	IBC06	B21	–	T3	TP33	F-A, S-G	Category D SW2	
2925	FLAMMABLE SOLID, CORROSIVE, ORGANIC, N.O.S.	4.1	8	III	223 274	5 kg	E1	P002	–	IBC06	–	–	T1	TP33	F-A, S-G	Category D SW2	
2926	FLAMMABLE SOLID, TOXIC, ORGANIC, N.O.S.	4.1	6.1	II	274	1 kg	E2	P002	–	IBC06	B21	–	T3	TP33	F-A, S-G	Category B SW2	
2926	FLAMMABLE SOLID, TOXIC, ORGANIC, N.O.S.	4.1	6.1	III	223 274	5 kg	E1	P002	–	IBC06	–	–	T1	TP33	F-A, S-G	Category B SW2	
2927	TOXIC LIQUID, CORROSIVE, ORGANIC, N.O.S.	6.1	8	I	274 315	0	E5	P001	–	–	–	–	T14	TP2 TP13 TP27	F-A, S-B	Category B SW2	
2927	TOXIC LIQUID, CORROSIVE, ORGANIC, N.O.S.	6.1	8	II	274	100 mL	E4	P001	–	IBC02	–	–	T11	TP2 TP27	F-A, S-B	Category B SW2	
2928	TOXIC SOLID, CORROSIVE, ORGANIC, N.O.S.	6.1	8	I	274	0	E5	P002	–	IBC99	–	–	T6	TP33	F-A, S-B	Category B SW2	
2928	TOXIC SOLID, CORROSIVE, ORGANIC, N.O.S.	6.1	8	II	274	500 g	E4	P002	–	IBC06	B21	–	T3	TP33	F-A, S-B	Category B SW2	
2929	TOXIC LIQUID, FLAMMABLE, ORGANIC, N.O.S.	6.1	3	I	274 315	0	E5	P001	–	–	–	–	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
2935	ETHYL 2-CHLOROPROPIONATE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
2936	THIOLACTIC ACID	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–	–	T7	TP2	F-A, S-A	Category A	
2937	*alpha*-METHYLBENZYL ALCOHOL, LIQUID	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-A	Category A	
2940	9-PHOSPHABICYCLONONANES (CYCLOOCTADIENE-PHOSPHINES)	4.2	–	II	–	0	E2	P410	PP31	IBC06	B21	–	T3	TP33	F-A, S-J	Category A	
2941	FLUOROANILINES	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-A	Category A	
2942	2-TRIFLUOROMETHYLANILINE	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	–	–	F-A, S-A	Category A	
2943	TETRAHYDRO-FURFURYLAMINE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
2945	*N*-METHYLBUTYLAMINE	3	8	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP1	F-E, S-C	Category B SW2	
2946	2-AMINO-5-DIETHYLAMINO-PENTANE	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-A	Category A	
2947	ISOPROPYL CHLOROACETATE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
2948	3-TRIFLUOROMETHYLANILINE	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–	–	T7	TP2	F-A, S-A	Category A SW2	
2949	SODIUM HYDROSULPHIDE, HYDRATED with not less than 25% water of crystallization	8	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21	–	T7	TP2	F-A, S-B	Category A	
2950	MAGNESIUM GRANULES, COATED, particle size not less than 149 microns	4.3	–	III	920	1 kg	E1	P410	PP100	IBC08	B4	–	T1 BK2	TP33	F-G, S-O	Category A H1	
2956	5-*tert*-BUTYL-2,4,6-TRINITRO-*m*-XYLENE (MUSK XYLENE)	4.1	–	III	133	0	E0	P409	–	–	–	–	–	–	F-B, S-G	Category D SW1 SW2 H2 H3	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
2969	CASTOR BEANS or CASTOR MEAL or CASTOR POMACE or CASTOR FLAKE	9	–	II	141	5 kg	E2	P002	PP34	IBC08	B4 B21	–	T3 BK2	TP33	F-A, S-A	Category E SW2	
2977	RADIOACTIVE MATERIAL, URANIUM HEXAFLUORIDE, FISSILE	7	6.1/8	–	–	0	E0	See 4.1.9	See 4.1.9	See 4.1.9	See 4.1.9	–	–	–	F-I, S-S	Category B SW2 SW12	
2978	RADIOACTIVE MATERIAL, URANIUM HEXAFLUORIDE non fissile or fissile-excepted	7	6.1/8	–	317	0	E0	See 4.1.9	See 4.1.9	See 4.1.9	See 4.1.9	–	–	–	F-I, S-S	Category B SW2 SW12	
2983	ETHYLENE OXIDE AND PROPYLENE OXIDE MIXTURE with not more than 30% ethylene oxide	3	6.1	I	–	0	E0	P001	–	–	–	–	T14	TP2 TP7 TP13	F-E, S-D	Category E SW1 SW2	
2984	HYDROGEN PEROXIDE, AQUEOUS SOLUTION with not less than 8% but less than 20% hydrogen peroxide (stabilized as necessary)	5.1	–	III	65	5 L	E1	P504	–	IBC02	B5	–	T4	TP1 TP6 TP24	F-H, S-Q	Category B SW1	
2985	CHLOROSILANES, FLAMMABLE, CORROSIVE, N.O.S.	3	8	II	–	0	E0	P010	–	–	–	–	T14	TP2 TP7 TP13 TP27	F-E, S-C	Category B SW2	
2986	CHLOROSILANES, CORROSIVE, FLAMMABLE, N.O.S.	8	3	II	–	0	E0	P010	–	–	–	–	T14	TP2 TP7 TP13 TP27	F-E, S-C	Category C SW2	
2987	CHLOROSILANES, CORROSIVE, N.O.S.	8	–	II	–	0	E0	P010	–	–	–	–	T14	TP2 TP7 TP13 TP27	F-A, S-B	Category C SW2	
2988	CHLOROSILANES, WATER-REACTIVE, FLAMMABLE, CORROSIVE, N.O.S.	4.3	3/8	I	–	0	E0	P401	PP31	–	–	–	T14	TP2 TP7 TP13	F-G, S-N	Category D SW2 H1	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
2990	LIFE-SAVING APPLIANCES, SELF-INFLATING	9	–	–	296	0	E0	P905	–	–	–	–	–	–	F-A, S-V	Category A	
2991	CARBAMATE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	I	61 274	0	E5	P001	–	–	–	–	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	
2991	CARBAMATE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	II	61 274	100 mL	E4	P001	–	IBC02	–	–	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	
2991	CARBAMATE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	III	61 223 274	5 L	E1	P001 LP01	–	IBC03	–	–	T7	TP2 TP28	F-E, S-D	Category A SW2	
2992	CARBAMATE PESTICIDE, LIQUID, TOXIC	6.1	–	I	61 274	0	E5	P001	–	–	–	–	T14	TP2 TP13 TP27	F-A, S-A	Category B SW2	
2992	CARBAMATE PESTICIDE, LIQUID, TOXIC	6.1	–	II	61 274	100 mL	E4	P001	–	IBC02	–	–	T11	TP2 TP13 TP27	F-A, S-A	Category B SW2	
2992	CARBAMATE PESTICIDE, LIQUID, TOXIC	6.1	–	III	61 223 274	5 L	E1	P001 LP01	–	IBC03	–	–	T7	TP2 TP28	F-A, S-A	Category A SW2	
2993	ARSENICAL PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	I	61 274	0	E5	P001	–	–	–	–	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	
2993	ARSENICAL PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	II	61 274	100 mL	E4	P001	–	IBC02	–	–	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	
2993	ARSENICAL PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	III	61 223 274	5 L	E1	P001	–	IBC03	–	–	T7	TP2 TP28	F-E, S-D	Category A SW2	
2994	ARSENICAL PESTICIDE, LIQUID, TOXIC	6.1	–	I	61 274	0	E5	P001	–	–	–	–	T14	TP2 TP13 TP27	F-A, S-A	Category B SW2	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
2996	ORGANOCHLORINE PESTICIDE, LIQUID, TOXIC	6.1	–	I	61 274	0	E5	P001	–	–	–	–	T14	TP2 TP13 TP27	F-A, S-A	Category B SW2	
2996	ORGANOCHLORINE PESTICIDE, LIQUID, TOXIC	6.1	–	II	61 274	100 mL	E4	P001	–	IBC02	–	–	T11	TP2 TP13 TP27	F-A, S-A	Category B SW2	
2996	ORGANOCHLORINE PESTICIDE, LIQUID, TOXIC	6.1	–	III	61 223 274	5 L	E1	P001 LP01	–	IBC03	–	–	T7	TP2 TP28	F-A, S-A	Category A SW2	
2997	TRIAZINE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	I	61 274	0	E5	P001	–	–	–	–	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	
2997	TRIAZINE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	II	61 274	100 mL	E4	P001	–	IBC02	–	–	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	
2997	TRIAZINE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	III	61 223 274	5 L	E1	P001	–	IBC03	–	–	T7	TP2 TP28	F-E, S-D	Category A SW2	
2998	TRIAZINE PESTICIDE, LIQUID, TOXIC	6.1	–	I	61 274	0	E5	P001	–	–	–	–	T14	TP2 TP13 TP27	F-A, S-A	Category B SW2	
2998	TRIAZINE PESTICIDE, LIQUID, TOXIC	6.1	–	II	61 274	100 mL	E4	P001	–	IBC02	–	–	T11	TP2 TP13 TP27	F-A, S-A	Category B SW2	
2998	TRIAZINE PESTICIDE, LIQUID, TOXIC	6.1	–	III	61 223 274	5 L	E1	P001 LP01	–	IBC03	–	–	T7	TP2 TP28	F-A, S-A	Category A SW2	
3005	THIOCARBAMATE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	I	61 274	0	E5	P001	–	–	–	–	T14	TP2 TP13	F-E, S-D	Category B SW2	
3005	THIOCARBAMATE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	II	61 274	100 mL	E4	P001	–	IBC02	–	–	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	
3005	THIOCARBAMATE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	III	61 223 274	5 L	E1	P001	–	IBC03	–	–	T7	TP2 TP28	F-E, S-D	Category A SW2	
3006	THIOCARBAMATE PESTICIDE, LIQUID, TOXIC	6.1	–	I	61 274	0	E5	P001	–	–	–	–	T14	TP2 TP13	F-A, S-A	Category B SW2	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
3009	COPPER BASED PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	III	61 223 274	5 L	E1	P001	–	IBC03	–	–	T7	TP2 TP28	F-E, S-D	Category A SW2	
3010	COPPER BASED PESTICIDE, LIQUID, TOXIC	6.1	–	I	61 274	0	E5	P001	–	–	–	–	T14	TP2 TP13 TP27	F-A, S-A	Category B SW2	
3010	COPPER BASED PESTICIDE, LIQUID, TOXIC	6.1	–	II	61 274	100 mL	E4	P001	–	IBC02	–	–	T11	TP2 TP13 TP27	F-A, S-A	Category B SW2	
3010	COPPER BASED PESTICIDE, LIQUID, TOXIC	6.1	–	III	61 223 274	5 L	E1	P001 LP01	–	IBC03	–	–	T7	TP2 TP28	F-A, S-A	Category A SW2	
3011	MERCURY BASED PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3 **P**	I	61 274	0	E5	P001	–	–	–	–	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	
3011	MERCURY BASED PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3 **P**	II	61 274	100 mL	E4	P001	–	IBC02	–	–	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	
3011	MERCURY BASED PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3 **P**	III	61 223 274	5 L	E1	P001	–	IBC03	–	–	T7	TP2 TP28	F-E, S-D	Category A SW2	
3012	MERCURY BASED PESTICIDE, LIQUID, TOXIC	6.1	– **P**	I	61 274	0	E5	P001	–	–	–	–	T14	TP2 TP13 TP27	F-A, S-A	Category B SW2	
3012	MERCURY BASED PESTICIDE, LIQUID, TOXIC	6.1	– **P**	II	61 274	100 mL	E4	P001	–	IBC02	–	–	T11	TP2 TP13 TP27	F-A, S-A	Category B SW2	
3012	MERCURY BASED PESTICIDE, LIQUID, TOXIC	6.1	– **P**	III	61 223 274	5 L	E1	P001 LP01	–	IBC03	–	–	T7	TP2 TP28	F-A, S-A	Category A SW2	
3013	SUBSTITUTED NITROPHENOL PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	I	61 274	0	E5	P001	–	–	–	–	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	
3013	SUBSTITUTED NITROPHENOL PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less	6.1	3	II	61 274	100 mL	E4	P001	–	IBC02	–	–	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
3015	BIPYRIDILIUM PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	I	61 274	0	E5	P001	–	–	–	–	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	
3015	BIPYRIDILIUM PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	II	61 274	100 mL	E4	P001	–	IBC02	–	–	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	
3015	BIPYRIDILIUM PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	III	61 223 274	5 L	E1	P001	–	IBC03	–	–	T7	TP2 TP28	F-E, S-D	Category A SW2	
3016	BIPYRIDILIUM PESTICIDE, LIQUID, TOXIC	6.1	–	I	61 274	0	E5	P001	–	–	–	–	T14	TP2 TP13 TP27	F-A, S-A	Category B SW2	
3016	BIPYRIDILIUM PESTICIDE, LIQUID, TOXIC	6.1	–	II	61 274	100 mL	E4	P001	–	IBC02	–	–	T11	TP2 TP13 TP27	F-A, S-A	Category B SW2	
3016	BIPYRIDILIUM PESTICIDE, LIQUID, TOXIC	6.1	–	III	61 223 274	5 L	E1	P001 LP01	–	IBC03	–	–	T7	TP2 TP28	F-A, S-A	Category A SW2	
3017	ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	I	61 274	0	E5	P001	–	–	–	–	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	
3017	ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	II	61 274	100 mL	E4	P001	–	IBC02	–	–	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	
3017	ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	III	61 223 274	5 L	E1	P001	–	IBC03	–	–	T7	TP2 TP28	F-E, S-D	Category A SW2	
3018	ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC	6.1	–	I	61 274	0	E5	P001	–	–	–	–	T14	TP2 TP13 TP27	F-A, S-A	Category B SW2	
3018	ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC	6.1	–	II	61 274	100 mL	E4	P001	–	IBC02	–	–	T11	TP2 TP13 TP27	F-A, S-A	Category B SW2	
3018	ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC	6.1	–	III	61 223 274	5 L	E1	P001 LP01	–	IBC03	–	–	T7	TP2 TP28	F-A, S-A	Category A SW2	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
3020	ORGANOTIN PESTICIDE, LIQUID, TOXIC	6.1	– P	II	61 274	100 mL	E4	P001	–	IBC02	–	–	T11	TP2 TP13 TP27	F-A, S-A	Category B SW2	
3020	ORGANOTIN PESTICIDE, LIQUID, TOXIC	6.1	– P	III	61 223 274	5 L	E1	P001 LP01	–	IBC03	–	–	T7	TP2 TP28	F-A, S-A	Category A SW2	
3021	PESTICIDE, LIQUID, FLAMMABLE, TOXIC, N.O.S., flashpoint less than 23°C	3	6.1	I	61 274	0	E0	P001	–	–	–	–	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	
3021	PESTICIDE, LIQUID, FLAMMABLE, TOXIC, N.O.S., flashpoint less than 23°C	3	6.1	II	61 274	1 L	E2	P001	–	IBC02	–	–	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	
3022	1,2-BUTYLENE OXIDE, STABILIZED	3	–	II	386	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category C SW1	
3023	2-METHYL-2-HEPTANETHIOL	6.1	3	I	354	0	E0	P602	–	–	–	–	T20	TP2 TP13	F-E, S-D	Category D SW2	
3024	COUMARIN DERIVATIVE PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flashpoint less than 23°C	3	6.1	I	61 274	0	E0	P001	–	–	–	–	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	
3024	COUMARIN DERIVATIVE PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flashpoint less than 23°C	3	6.1	II	61 274	1 L	E2	P001	–	IBC02	–	–	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	
3025	COUMARIN DERIVATIVE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	I	61 274	0	E5	P001	–	–	–	–	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	
3025	COUMARIN DERIVATIVE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	II	61 274	100 mL	E4	P001	–	IBC02	–	–	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	
3025	COUMARIN DERIVATIVE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	III	61 223 274	5 L	E1	P001	–	IBC03	–	–	T7	TP1 TP28	F-E, S-D	Category A SW2	
3026	COUMARIN DERIVATIVE PESTICIDE, LIQUID, TOXIC	6.1	–	I	61 274	0	E5	P001	–	–	–	–	T14	TP2 TP13	F-A, S-A	Category B SW2	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
3028	BATTERIES, DRY, CONTAINING POTASSIUM HYDROXIDE, SOLID electric storage	8	–	III	295 304	5 kg	E0	P801	–	–	–	–	–	–	F-A, S-B	Category A	
3048	ALUMINIUM PHOSPHIDE PESTICIDE	6.1	–	I	153 930	0	E0	P002	PP31	IBC07	B1	–	T6	TP33	F-A, S-A	Category E SW2 SW5	
3054	CYCLOHEXYL MERCAPTAN	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A SW2	
3055	2-(2-AMINOETHOXY)ETHANOL	8	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-B	Category A	
3056	*n*-HEPTALDEHYDE	3	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T2	TP1	F-E, S-D	Category A	
3057	TRIFLUOROACETYL CHLORIDE	2.3	8	–	–	0	E0	P200	–	–	–	–	T50	TP21	F-C, S-U	Category D SW2	
3064	NITROGLYCERIN SOLUTION IN ALCOHOL with more than 1% but not more than 5% nitroglycerin	3	–	II	359	0	E0	P300	–	–	–	–	–	–	F-E, S-D	Category E	
3065	ALCOHOLIC BEVERAGES, with more than 70% alcohol by volume	3	–	II	–	5 L	E2	P001	PP2	IBC02	–	–	T4	TP1	F-E, S-D	Category A	
3065	ALCOHOLIC BEVERAGES, with more than 24% but not more than 70% alcohol by volume	3	–	III	144 145 247	5 L	E1	P001	PP2	IBC03	–	–	T2	TP1	F-E, S-D	Category A	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
3066	PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning or reducing compound)	8	–	III	163 223 367	5 L	E1	P001	–	IBC03	–	–	T4	TP1 TP29	F-A, S-B	Category A SW2	
3070	ETHYLENE OXIDE AND DICHLORODIFLUORO-METHANE MIXTURE with not more than 12.5% ethylene oxide	2.2	–	–	392	120 mL	E1	P200	–	–	–	–	T50	–	F-C, S-V	Category A	
3071	MERCAPTANS, LIQUID, TOXIC, FLAMMABLE, N.O.S. or MERCAPTAN MIXTURE, LIQUID, TOXIC, FLAMMABLE, N.O.S.	6.1	3	II	274	100 mL	E4	P001	–	IBC02	–	–	T11	TP2 TP13 TP27	F-E, S-D	Category C SW2	
3072	LIFE-SAVING APPLIANCES NOT SELF-INFLATING containing dangerous goods as equipment	9	–	–	296	0	E0	P905	–	–	–	–	–	–	F-A, S-V	Category A	
3073	VINYLPYRIDINES, STABILIZED	6.1	3/8	II	386	100 mL	E4	P001	–	IBC01	–	–	T7	TP2 TP13	F-E, S-C	Category C SW1 SW2	
3077	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.	9	–	III	274 335 966 967 969	5 kg	E1	P002 LP02	PP12	IBC08	B3	–	T1 BK1 BK2 BK3	TP33	F-A, S-F	Category A SW23	
3078	CERIUM, turnings or gritty powder	4.3	–	II	–	500 g	E2	P410	PP31 PP40	IBC07	B4 B21	–	T3	TP33	F-G, S-O	Category E H1	
3079	METHACRYLONITRILE, STABILIZED	6.1	3	I	354 386	0	E0	P602	–	–	–	–	T20	TP2 TP13	F-E, S-D	Category D SW1 SW2	
3080	ISOCYANATES, TOXIC, FLAMMABLE, N.O.S or ISOCYANATE SOLUTION, TOXIC,	6.1	3	II	274	100 mL	E4	P001	–	IBC02	–	–	T11	TP2 TP13 TP27	F-E, S-D	Category D SW1 SW2	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
3085	OXIDIZING SOLID, CORROSIVE, N.O.S.	5.1	8	I	274	0	E0	P503	–	–	–	–	–	–	F-A, S-Q	Category D H1	
3085	OXIDIZING SOLID, CORROSIVE, N.O.S.	5.1	8	II	274	1 kg	E2	P002	–	IBC06	B21	–	T3	TP33	F-A, S-Q	Category B H1	
3085	OXIDIZING SOLID, CORROSIVE, N.O.S.	5.1	8	III	223 274	5 kg	E1	P002	–	IBC08	B3	–	T1	TP33	F-A, S-Q	Category B H1	
3086	TOXIC SOLID, OXIDIZING, N.O.S.	6.1	5.1	I	274	0	E5	P002	–	–	–	–	T6	TP33	F-A, S-Q	Category C	
3086	TOXIC SOLID, OXIDIZING, N.O.S.	6.1	5.1	II	274	500 g	E4	P002	–	IBC06	B21	–	T3	TP33	F-A, S-Q	Category C	
3087	OXIDIZING SOLID, TOXIC, N.O.S.	5.1	6.1	I	274 900	0	E0	P503	–	–	–	–	–	–	F-A, S-Q	Category D	
3087	OXIDIZING SOLID, TOXIC, N.O.S.	5.1	6.1	II	274 900	1 kg	E2	P002	–	IBC06	B21	–	T3	TP33	F-A, S-Q	Category B	
3087	OXIDIZING SOLID, TOXIC, N.O.S.	5.1	6.1	III	223 274 900	5 kg	E1	P002	–	IBC08	B3	–	T1	TP33	F-A, S-Q	Category B	
3088	SELF-HEATING SOLID, ORGANIC, N.O.S.	4.2	–	II	274	0	E2	P410	PP31	IBC06	B21	–	T3	TP33	F-A, S-J	Category C	
3088	SELF-HEATING SOLID, ORGANIC, N.O.S.	4.2	–	III	223 274	0	E1	P002 LP02	PP31	IBC08	B3	–	T1	TP33	F-A, S-J	Category C	
3089	METAL POWDER, FLAMMABLE, N.O.S.	4.1	–	II	–	1 kg	E2	P002	PP100	IBC08	B4 B21	–	T3	TP33	F-G, S-G	Category B H1	
3089	METAL POWDER, FLAMMABLE, N.O.S.	4.1	–	III	223	5 kg	E1	P002	PP100	IBC08	B4 B21	–	T1	TP33	F-G, S-G	Category A H1	
3090	LITHIUM METAL BATTERIES (including lithium alloy batteries)	9	–	–	188 230 310 376 377	0	E0	P903 P908 P909 P910 P911	–	–	–	–	–	–	F-A, S-I	Category A SW19	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
3093	CORROSIVE LIQUID, OXIDIZING, N.O.S.	8	5.1	I	274	0	E0	P001	–	–	–	–	–	–	F-A, S-Q	Category C	
3093	CORROSIVE LIQUID, OXIDIZING, N.O.S.	8	5.1	II	274	1 L	E2	P001	–	IBC02	–	–	–	–	F-A, S-Q	Category C	
3094	CORROSIVE LIQUID, WATER-REACTIVE, N.O.S.	8	4.3	I	274	0	E0	P001	–	–	–	–	–	–	F-G, S-L	Category D H1	
3094	CORROSIVE LIQUID, WATER-REACTIVE, N.O.S.	8	4.3	II	274	500 mL	E2	P001	–	–	–	–	–	–	F-G, S-L	Category D H1	
3095	CORROSIVE SOLID, SELF-HEATING, N.O.S.	8	4.2	I	274	0	E0	P002	–	–	–	–	T6	TP33	F-A, S-N	Category D	
3095	CORROSIVE SOLID, SELF-HEATING, N.O.S.	8	4.2	II	274	1 kg	E2	P002	–	IBC06	B21	–	T3	TP33	F-A, S-N	Category D	
3096	CORROSIVE SOLID, WATER-REACTIVE, N.O.S.	8	4.3	I	274	0	E0	P002	–	–	–	–	T6	TP33	F-G, S-L	Category D H1	
3096	CORROSIVE SOLID, WATER-REACTIVE, N.O.S.	8	4.3	II	274	1 kg	E2	P002	PP100	IBC06	B21	–	T3	TP33	F-G, S-L	Category D H1	
3097	FLAMMABLE SOLID, OXIDIZING, N.O.S.	4.1	5.1	II	274 976	0	E0	P099	–	–	–	–	–	–	F-A, S-Q	–	
3097	FLAMMABLE SOLID, OXIDIZING, N.O.S.	4.1	5.1	III	274 976	0	E0	P099	–	–	–	–	T1	TP33	F-A, S-Q	–	
3098	OXIDIZING LIQUID, CORROSIVE, N.O.S.	5.1	8	I	274	0	E0	P502	–	–	–	–	–	–	F-A, S-Q	Category D H1	
3098	OXIDIZING LIQUID, CORROSIVE, N.O.S.	5.1	8	II	274	1 L	E2	P504	–	IBC01	–	–	–	–	F-A, S-Q	Category B H1	
3098	OXIDIZING LIQUID, CORROSIVE, N.O.S.	5.1	8	III	223 274	5 L	E1	P504	–	IBC02	–	–	–	–	F-A, S-Q	Category B H1	
3099	OXIDIZING LIQUID, TOXIC, N.O.S.	5.1	6.1	I	274	0	E0	P502	–	–	–	–	–	–	F-A, S-Q	Category D	
3099	OXIDIZING LIQUID, TOXIC, N.O.S.	5.1	6.1	II	274	1 L	E2	P504	–	IBC01	–	–	–	–	F-A, S-Q	Category B	
3099	OXIDIZING LIQUID, TOXIC, N.O.S.	5.1	6.1	III	223 274	5 L	E1	P504	–	IBC02	–	–	–	–	F-A, S-Q	Category B	
3100	OXIDIZING SOLID, SELF-HEATING, N.O.S.	5.1	4.2	I	274 976	0	E0	P099	–	–	–	–	–	–	F-A, S-Q	–	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
3104	ORGANIC PEROXIDE TYPE C, SOLID	5.2	–	–	122 195 274	100 g	E0	P520	–	–	–	–	–	–	F-J, S-R	Category D SW1	
3105	ORGANIC PEROXIDE TYPE D, LIQUID	5.2	–	–	122 274	125 mL	E0	P520	–	–	–	–	–	–	F-J, S-R	Category D SW1	
3106	ORGANIC PEROXIDE TYPE D, SOLID	5.2	–	–	122 274	500 g	E0	P520	–	–	–	–	–	–	F-J, S-R	Category D SW1	
3107	ORGANIC PEROXIDE TYPE E, LIQUID	5.2	–	–	122 274	125 mL	E0	P520	–	–	–	–	–	–	F-J, S-R	Category D SW1	
3108	ORGANIC PEROXIDE TYPE E, SOLID	5.2	–	–	122 274	500 g	E0	P520	–	–	–	–	–	–	F-J, S-R	Category D SW1	
3109	ORGANIC PEROXIDE TYPE F, LIQUID	5.2	–	–	122 274	125 mL	E0	P520	–	IBC520	–	–	T23	–	F-J, S-R	Category D SW1	
3110	ORGANIC PEROXIDE TYPE F, SOLID	5.2	–	–	122 274	500 g	E0	P520	–	IBC520	–	–	T23	TP33	F-J, S-R	Category D SW1	
3111	ORGANIC PEROXIDE TYPE B, LIQUID, TEMPERATURE CONTROLLED	5.2	See SP181	–	122 181 195 274 923	0	E0	P520	–	–	–	–	–	–	F-F, S-R	Category D SW1 SW3	
3112	ORGANIC PEROXIDE TYPE B, SOLID, TEMPERATURE CONTROLLED	5.2	See SP181	–	122 181 195 274 923	0	E0	P520	–	–	–	–	–	–	F-F, S-R	Category D SW1 SW3	
3113	ORGANIC PEROXIDE TYPE C, LIQUID, TEMPERATURE CONTROLLED	5.2	–	–	122 195 274	0	E0	P520	–	–	–	–	–	–	F-F, S-R	Category D SW1 SW3	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
3116	ORGANIC PEROXIDE TYPE D, SOLID, TEMPERATURE CONTROLLED	5.2	–	–	122 274 923	0	E0	P520	–	–	–	–	–	–	F-F, S-R	Category D SW1 SW3	
3117	ORGANIC PEROXIDE TYPE E, LIQUID, TEMPERATURE CONTROLLED	5.2	–	–	122 274 923	0	E0	P520	–	–	–	–	–	–	F-F, S-R	Category D SW1 SW3	
3118	ORGANIC PEROXIDE TYPE E, SOLID, TEMPERATURE CONTROLLED	5.2	–	–	122 274 923	0	E0	P520	–	–	–	–	–	–	F-F, S-R	Category D SW1 SW3	
3119	ORGANIC PEROXIDE TYPE F, LIQUID, TEMPERATURE CONTROLLED	5.2	–	–	122 274 923	0	E0	P520	–	IBC520	–	–	T23	–	F-F, S-R	Category D SW1 SW3	
3120	ORGANIC PEROXIDE TYPE F, SOLID, TEMPERATURE CONTROLLED	5.2	–	–	122 274 923	0	E0	P520	–	IBC520	–	–	T23	TP33	F-F, S-R	Category D SW1 SW3	
3121	OXIDIZING SOLID, WATER-REACTIVE, N.O.S.	5.1	4.3	I	274 976	0	E0	P099	–	–	–	–	–	–	F-G, S-L	H1	
3121	OXIDIZING SOLID, WATER-REACTIVE, N.O.S.	5.1	4.3	II	274 976	0	E0	P099	–	–	–	–	–	–	F-G, S-L	H1	
3122	TOXIC LIQUID, OXIDIZING, N.O.S.	6.1	5.1	I	274 315	0	E0	P001	–	–	–	–	–	–	F-A, S-Q	Category C	
3122	TOXIC LIQUID, OXIDIZING, N.O.S.	6.1	5.1	II	274	100 mL	E4	P001	–	IBC02	–	–	–	–	F-A, S-Q	Category C	
3123	TOXIC LIQUID, WATER-REACTIVE, N.O.S.	6.1	4.3	I	274 315	0	E0	P099	–	–	–	–	–	–	F-G, S-N	Category D SW2 H1	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
3126	SELF-HEATING SOLID, CORROSIVE, ORGANIC, N.O.S.	4.2	8	III	223 274	0	E1	P002	–	IBC08	B3	–	T1	TP33	F-A, S-J	Category C	
3127	SELF-HEATING SOLID, OXIDIZING, N.O.S.	4.2	5.1	II	274 976	0	E0	P099	–	–	–	–	T3	TP33	F-A, S-J	–	
3127	SELF-HEATING SOLID, OXIDIZING, N.O.S.	4.2	5.1	III	223 274 976	0	E0	P099	–	–	–	–	T1	TP33	F-A, S-J	–	
3128	SELF-HEATING SOLID, TOXIC, ORGANIC, N.O.S.	4.2	6.1	II	274	0	E2	P410	–	IBC05	B21	–	T3	TP33	F-A, S-J	Category C	
3128	SELF-HEATING SOLID, TOXIC, ORGANIC, N.O.S.	4.2	6.1	III	223 274	0	E1	P002	–	IBC08	B3	–	T1	TP33	F-A, S-J	Category C	
3129	WATER-REACTIVE LIQUID, CORROSIVE, N.O.S.	4.3	8	I	274	0	E0	P402	–	–	–	–	T14	TP2 TP7 TP13	F-G, S-N	Category D H1	
3129	WATER-REACTIVE LIQUID, CORROSIVE, N.O.S.	4.3	8	II	274	0	E0	P402	–	IBC01	–	–	T11	TP2 TP7	F-G, S-N	Category E SW5 H1	
3129	WATER-REACTIVE LIQUID, CORROSIVE, N.O.S.	4.3	8	III	223 274	0	E1	P001	–	IBC02	–	–	T7	TP2 TP7	F-G, S-N	Category E SW5 H1	
3130	WATER-REACTIVE LIQUID, TOXIC, N.O.S.	4.3	6.1	I	274	0	E0	P402	–	–	–	–	–	–	F-G, S-N	Category D H1	
3130	WATER-REACTIVE LIQUID, TOXIC, N.O.S.	4.3	6.1	II	274	0	E0	P402	–	IBC01	–	–	–	–	F-G, S-N	Category E SW5 H1	
3130	WATER-REACTIVE LIQUID, TOXIC, N.O.S.	4.3	6.1	III	223 274	0	E1	P001	–	IBC02	–	–	–	–	F-G, S-N	Category E SW5 H1	
3131	WATER-REACTIVE SOLID, CORROSIVE, N.O.S.	4.3	8	I	274	0	E0	P403	PP31	–	–	–	T9	TP7 TP33	F-G, S-L	Category D H1	
3131	WATER-REACTIVE SOLID, CORROSIVE, N.O.S.	4.3	8	II	274	0	E2	P410	PP31 PP40	IBC06	B21	–	T3	TP33	F-G, S-L	Category E SW5 H1	
3131	WATER-REACTIVE SOLID, CORROSIVE, N.O.S.	4.3	8	III	223 274	0	E1	P410	PP31	IBC08	B4	–	T1	TP33	F-G, S-L	Category E SW5 H1	
3132	WATER-REACTIVE SOLID, FLAMMABLE, N.O.S.	4.3	4.1	I	274	0	E0	P403	PP31	IBC99	–	–	–	–	F-G, S-N	Category D H1	
3132	WATER-REACTIVE SOLID, FLAMMABLE, N.O.S.	4.3	4.1	II	274	0	E2	P410	PP31 PP40	IBC04	–	–	T3	TP33	F-G, S-N	Category E SW5	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
3134	WATER-REACTIVE SOLID, TOXIC, N.O.S.	4.3	6.1	III	223 274	1 kg	E1	P410	PP31	IBC08	B4	–	T1	TP33	F-G, S-N	Category E SW5 H1	
3135	WATER-REACTIVE SOLID, SELF-HEATING, N.O.S.	4.3	4.2	I	274	0	E0	P403	PP31	–	–	–	–	–	F-G, S-N	Category D H1	
3135	WATER-REACTIVE SOLID, SELF-HEATING, N.O.S.	4.3	4.2	II	274	0	E2	P410	PP31	IBC05	B21	–	T3	TP33	F-G, S-N	Category E SW5 H1	
3135	WATER-REACTIVE SOLID, SELF-HEATING, N.O.S.	4.3	4.2	III	223 274	0	E1	P410	PP31	IBC08	B4	–	T1	TP33	F-G, S-N	Category E SW5 H1	
3136	TRIFLUOROMETHANE, REFRIGERATED LIQUID	2.2	–	–	–	120 mL	E1	P203	–	–	–	–	T75	TP5	F-C, S-V	Category D	
3137	OXIDIZING SOLID, FLAMMABLE, N.O.S.	5.1	4.1	I	274 976	0	E0	P099	–	–	–	–	–	–	F-G, S-Q	H1	
3138	ETHYLENE, ACETYLENE AND PROPYLENE MIXTURE, REFRIGERATED LIQUID containing at least 71.5% ethylene, with not more than 22.5% acetylene and not more than 6% propylene	2.1	–	–	–	0	E0	P203	–	–	–	–	T75	TP5	F-D, S-U	Category D SW2	
3139	OXIDIZING LIQUID, N.O.S.	5.1	–	I	274	0	E0	P502	–	–	–	–	–	–	F-A, S-Q	Category D	
3139	OXIDIZING LIQUID, N.O.S.	5.1	–	II	274	1 L	E2	P504	–	IBC02	–	–	–	–	F-A, S-Q	Category B	
3139	OXIDIZING LIQUID, N.O.S.	5.1	–	III	223 274	5 L	E1	P504	–	IBC02	–	–	–	–	F-A, S-Q	Category B	
3140	ALKALOIDS, LIQUID, N.O.S. or ALKALOIDS SALTS, LIQUID, N.O.S.	6.1	–	I	43 274	0	E5	P001	–	–	–	–	–	–	F-A, S-A	Category A	
3140	ALKALOIDS, LIQUID, N.O.S. or ALKALOIDS SALTS, LIQUID, N.O.S.	6.1	–	II	43 274	100 mL	E4	P001	–	IBC02	–	–	–	–	F-A, S-A	Category A	
3140	ALKALOIDS, LIQUID, N.O.S. or ALKALOIDS SALTS, LIQUID, N.O.S.	6.1	–	III	43 223 274	5 L	E1	P001 LP01	–	IBC03	–	–	–	–	F-A, S-A	Category A	
3141	ANTIMONY COMPOUND,	6.1	–	III	45	5 L	E1	P001	–	IBC03	–	–	–	–	F-A, S-A	Category A	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
3143	DYE, SOLID, TOXIC, N.O.S. or DYE INTERMEDIATE, SOLID, TOXIC, N.O.S.	6.1	–	III	223 274	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A	
3144	NICOTINE COMPOUND, LIQUID, N.O.S. or NICOTINE PREPARATION, LIQUID, N.O.S.	6.1	–	I	43 274	0	E5	P001	–	–	–	–	–	–	F-A, S-A	Category B SW2	
3144	NICOTINE COMPOUND, LIQUID, N.O.S. or NICOTINE PREPARATION, LIQUID, N.O.S.	6.1	–	II	43 274	100 mL	E4	P001	–	IBC02	–	–	–	–	F-A, S-A	Category B SW2	
3144	NICOTINE COMPOUND, LIQUID, N.O.S. or NICOTINE PREPARATION, LIQUID, N.O.S.	6.1	–	III	43 223 274	5 L	E1	P001 LP01	–	IBC03	–	–	–	–	F-A, S-A	Category B SW2	
3145	ALKYLPHENOLS, LIQUID, N.O.S. (including C_2–C_{12} homologues)	8	–	I	–	0	E0	P001	–	–	–	–	T14	TP2	F-A, S-B	Category B	
3145	ALKYLPHENOLS, LIQUID, N.O.S. (including C_2–C_{12} homologues)	8	–	II	–	1 L	E2	P001	–	IBC02	–	–	T11	TP2 TP27	F-A, S-B	Category B	
3145	ALKYLPHENOLS, LIQUID, N.O.S. (including C_2–C_{12} homologues)	8	–	III	223	5 L	E1	P001 LP01	–	IBC03	–	–	T7	TP1 TP28	F-A, S-B	Category A	
3146	ORGANOTIN COMPOUND, SOLID, N.O.S.	6.1	– P	I	43 274	0	E5	P002	–	IBC07	B1	–	T6	TP33	F-A, S-A	Category B SW2	
3146	ORGANOTIN COMPOUND, SOLID, N.O.S.	6.1	– P	II	43 274	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A SW2	
3146	ORGANOTIN COMPOUND, SOLID, N.O.S.	6.1	– P	III	43 223 274	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A SW2	
3147	DYE, SOLID, CORROSIVE, N.O.S. or DYE INTERMEDIATE, SOLID, CORROSIVE, N.O.S.	8	–	I	274	0	E0	P002	–	IBC07	B1	–	T6	TP33	F-A, S-B	Category A	
3147	DYE, SOLID, CORROSIVE, N.O.S. or DYE INTERMEDIATE, SOLID, CORROSIVE, N.O.S.	8	–	II	274	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-B	Category A	
3147	DYE, SOLID, CORROSIVE, N.O.S. or DYE INTERMEDIATE, SOLID, CORROSIVE, N.O.S.	8	–	III	223 274	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-B	Category A	
3148	WATER-REACTIVE LIQUID, N.O.S.	4.3	–	I	274	0	E0	P402	PP31	–	–	–	T13	TP2 TP7	F-G, S-N	Category E SW2 H1	
3148	WATER-REACTIVE LIQUID,	4.3	–	II	274	500 mL	E2	P402	PP31	IBC01	–	–	T7	TP2	F-G, S-N	Category E	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
3151	POLYHALOGENATED BIPHENYLS, LIQUID or HALOGENATED MONOMETHYL-DIPHENYLMETHANES, LIQUID or POLYHALOGENATED TERPHENYLS, LIQUID	9	– P	II	203 305	1 L	E2	P906	–	IBC02	–	–	–	–	F-A, S-A	Category A	
3152	POLYHALOGENATED BIPHENYLS, SOLID or HALOGENATED MONOMETHYL-DIPHENYLMETHANES, SOLID or POLYHALOGENATED TERPHENYLS, SOLID	9	– P	II	203 305 958	1 kg	E2	P906	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
3153	PERFLUORO(METHYL VINYL ETHER)	2.1	–	–	–	0	E0	P200	–	–	–	–	T50	–	F-D, S-U	Category E SW2	
3154	PERFLUORO(ETHYL VINYL ETHER)	2.1	–	–	–	0	E0	P200	–	–	–	–	–	–	F-D, S-U	Category E SW2	
3155	PENTACHLOROPHENOL	6.1	– P	II	43	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
3156	COMPRESSED GAS, OXIDIZING, N.O.S.	2.2	5.1	–	274	0	E0	P200	–	–	–	–	–	–	F-C, S-W	Category D	
3157	LIQUEFIED GAS, OXIDIZING, N.O.S.	2.2	5.1	–	274	0	E0	P200	–	–	–	–	–	–	F-C, S-W	Category D	
3158	GAS, REFRIGERATED LIQUID, N.O.S.	2.2	–	–	274	120 mL	E1	P203	–	–	–	–	T75	TP5	F-C, S-V	Category D	
3159	1,1,1,2-TETRAFLUOROETHANE (REFRIGERANT GAS R 134a)	2.2	–	–	–	120 mL	E1	P200	–	–	–	–	T50	–	F-C, S-V	Category A	
3160	LIQUEFIED GAS, TOXIC, FLAMMABLE, N.O.S.	2.3	2.1	–	274	0	E0	P200	–	–	–	–	–	–	F-D, S-U	Category D SW2	
3161	LIQUEFIED GAS, FLAMMABLE, N.O.S.	2.1	–	–	274	0	E0	P200	–	–	–	–	T50	–	F-D, S-U	Category D SW2	
3162	LIQUEFIED GAS, TOXIC, N.O.S.	2.3	–	–	274	0	E0	P200	–	–	–	–	–	–	F-C, S-U	Category D SW2	
3163	LIQUEFIED GAS, N.O.S.	2.2	–	–	274 392	120 mL	E1	P200	–	–	–	–	T50	–	F-C, S-V	Category A	
3164	ARTICLES, PRESSURIZED, PNEUMATIC or HYDRAULIC (containing non-flammable gas)	2.2	–	–	283 371	120 mL	E0	P003	PP32	–	–	–	–	–	F-C, S-V	Category A	
3165	AIRCRAFT HYDRAULIC POWER UNIT FUEL TANK (containing a mixture of anhydrous hydrazine and methylhydrazine) (M86 fuel)	3	6.1/8	I	–	0	E0	P301	–	–	–	–	–	–	F-E, S-C	Category D SW2	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
3169	GAS SAMPLE, NON-PRESSURIZED, TOXIC, N.O.S., not refrigerated liquid	2.3	–	–	209	0	E0	P201	–	–	–	–	–	–	F-C, S-U	Category D	
3170	ALUMINIUM SMELTING BY-PRODUCTS or ALUMINIUM REMELTING BY-PRODUCTS	4.3	–	II	244	500 g	E2	P410	PP31 PP40	IBC07	B4 B21	–	T3 BK2	TP33	F-G, S-P	Category B SW5 H1	
3170	ALUMINIUM SMELTING BY-PRODUCTS or ALUMINIUM REMELTING BY-PRODUCTS	4.3	–	III	223 244	1 kg	E1	P002	PP31	IBC08	B4	–	T1 BK2	TP33	F-G, S-P	Category B SW5 H1	
3171	BATTERY-POWERED VEHICLE or BATTERY-POWERED EQUIPMENT	9	–	–	388 961 962 971	–	–	–	–	–	–	–	–	–	F-A, S-I	Category A	
3172	TOXINS, EXTRACTED FROM LIVING SOURCES, LIQUID, N.O.S.	6.1	–	I	210 274	0	E5	P001	–	–	–	–	–	–	F-A, S-A	Category B	
3172	TOXINS, EXTRACTED FROM LIVING SOURCES, LIQUID, N.O.S.	6.1	–	II	210 274	100 mL	E4	P001	–	IBC02	–	–	–	–	F-A, S-A	Category B	
3172	TOXINS, EXTRACTED FROM LIVING SOURCES, LIQUID, N.O.S.	6.1	–	III	210 223 274	5 L	E1	P001 LP01	–	IBC03	–	–	–	–	F-A, S-A	Category A	
3174	TITANIUM DISULPHIDE	4.2	–	III	–	0	E1	P002 LP02	PP31	IBC08	B3	–	T1	TP33	F-A, S-J	Category A	
3175	SOLIDS CONTAINING FLAMMABLE LIQUID, N.O.S.	4.1	–	II	216 274	1 kg	E2	P002	PP9	IBC06	B21	–	T3 BK2	TP33	F-A, S-I	Category B	
3176	FLAMMABLE SOLID, ORGANIC, MOLTEN, N.O.S.	4.1	–	II	274	0	E0	–	–	–	–	–	T3	TP3 TP26	F-A, S-H	Category C	
3176	FLAMMABLE SOLID, ORGANIC, MOLTEN, N.O.S.	4.1	–	III	223 274	0	E0	–	–	–	–	–	T1	TP3 TP26	F-A, S-H	Category C	
3178	FLAMMABLE SOLID, INORGANIC, N.O.S.	4.1	–	II	274	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-G	Category B	
3178	FLAMMABLE SOLID, INORGANIC, N.O.S.	4.1	–	III	223 274	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-G	Category B	
3179	FLAMMABLE SOLID, TOXIC, INORGANIC, N.O.S.	4.1	6.1	II	274	1 kg	E2	P002	–	IBC06	B21	–	T3	TP33	F-A, S-G	Category B SW2	
3179	FLAMMABLE SOLID, TOXIC, INORGANIC, N.O.S.	4.1	6.1	III	223 274	5 kg	E1	P002	–	IBC06	–	–	T1	TP33	F-A, S-G	Category B SW2	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
3182	METAL HYDRIDES, FLAMMABLE, N.O.S.	4.1	–	III	223 274	5 kg	E1	P002	PP31	IBC04	–	–	T1	TP33	F-A, S-G	Category E	
3183	SELF-HEATING LIQUID, ORGANIC, N.O.S.	4.2	–	II	274	0	E2	P001	PP31	IBC02	–	–	–	–	F-A, S-J	Category C	
3183	SELF-HEATING LIQUID, ORGANIC, N.O.S.	4.2	–	III	223 274	0	E1	P001	PP31	IBC02	–	–	–	–	F-A, S-J	Category C	
3184	SELF-HEATING LIQUID, TOXIC, ORGANIC, N.O.S.	4.2	6.1	II	274	0	E2	P402	PP31	IBC02	–	–	–	–	F-A, S-J	Category C	
3184	SELF-HEATING LIQUID, TOXIC, ORGANIC, N.O.S.	4.2	6.1	III	223 274	0	E1	P001	PP31	IBC02	–	–	–	–	F-A, S-J	Category C	
3185	SELF-HEATING LIQUID, CORROSIVE, ORGANIC, N.O.S.	4.2	8	II	274	0	E2	P402	PP31	IBC02	–	–	–	–	F-A, S-J	Category C	
3185	SELF-HEATING LIQUID, CORROSIVE, ORGANIC, N.O.S.	4.2	8	III	223 274	0	E1	P001	PP31	IBC02	–	–	–	–	F-A, S-J	Category C	
3186	SELF-HEATING LIQUID, INORGANIC, N.O.S.	4.2	–	II	274	0	E2	P001	PP31	IBC02	–	–	–	–	F-A, S-J	Category C	
3186	SELF-HEATING LIQUID, INORGANIC, N.O.S.	4.2	–	III	223 274	0	E1	P001	PP31	IBC02	–	–	–	–	F-A, S-J	Category C	
3187	SELF-HEATING LIQUID, TOXIC, INORGANIC, N.O.S.	4.2	6.1	II	274	0	E2	P402	PP31	IBC02	–	–	–	–	F-A, S-J	Category C	
3187	SELF-HEATING LIQUID, TOXIC, INORGANIC, N.O.S.	4.2	6.1	III	223 274	0	E1	P001	PP31	IBC02	–	–	–	–	F-A, S-J	Category C	
3188	SELF-HEATING LIQUID, CORROSIVE, INORGANIC, N.O.S.	4.2	8	II	274	0	E2	P402	PP31	IBC02	–	–	–	–	F-A, S-J	Category C	
3188	SELF-HEATING LIQUID, CORROSIVE, INORGANIC, N.O.S.	4.2	8	III	223 274	0	E1	P001	PP31	IBC02	–	–	–	–	F-A, S-J	Category C	
3189	METAL POWDER, SELF-HEATING, N.O.S.	4.2	–	II	274	0	E2	P410	PP31	IBC06	B21	–	T3	TP33	F-G, S-J	Category C H1	
3189	METAL POWDER, SELF-HEATING, N.O.S.	4.2	–	III	223 274	0	E1	P002 LP02	PP31 L4	IBC08	B4	–	T1	TP33	F-G, S-J	Category C H1	
3190	SELF-HEATING SOLID, INORGANIC, N.O.S.	4.2	–	II	274	0	E2	P410	PP31	IBC06	B21	–	T3	TP33	F-A, S-J	Category C	
3190	SELF-HEATING SOLID, INORGANIC, N.O.S.	4.2	–	III	223 274	0	E1	P002 LP02	PP31	IBC08	B3	–	T1	TP33	F-A, S-J	Category C	
3191	SELF-HEATING SOLID, TOXIC,	4.2	6.1	II	274	0	E2	P410	–	IBC05	B21	–	T3	TP33	F-A, S-J	Category C	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
3205	ALKALINE EARTH METAL ALCOHOLATES, N.O.S.	4.2	–	III	183 223 274	0	E1	P002 LP02	PP31	IBC08	B3	–	T1	TP33	F-A, S-J	Category B	
3206	ALKALI METAL ALCOHOLATES, SELF-HEATING, CORROSIVE, N.O.S.	4.2	8	II	182 274	0	E2	P410	PP31	IBC05	B21	–	T3	TP33	F-A, S-J	Category B	
3206	ALKALI METAL ALCOHOLATES, SELF-HEATING, CORROSIVE, N.O.S.	4.2	8	III	182 223 274	0	E1	P002	PP31	IBC08	B3	–	T1	TP33	F-A, S-J	Category B	
3208	METALLIC SUBSTANCE, WATER-REACTIVE, N.O.S.	4.3	–	I	274	0	E2	P403	PP31	IBC99	–	–	–	–	F-G, S-N	Category E SW2 H1	
△ 3208	METALLIC SUBSTANCE, WATER-REACTIVE, N.O.S.	4.3	–	II	274	500 g	E2	P410	PP31 PP40	IBC07	B4 B21	–	T3	TP33	F-G, S-N	Category E SW2 H1	
3208	METALLIC SUBSTANCE, WATER-REACTIVE, N.O.S.	4.3	–	III	223 274	1 kg	E1	P410	PP31	IBC08	B4	–	T1	TP33	F-G, S-N	Category E SW2 H1	
3209	METALLIC SUBSTANCE, WATER-REACTIVE, SELF-HEATING, N.O.S.	4.3	4.2	I	274	0	E0	P403	PP31	–	–	–	–	–	F-G, S-N	Category E SW2 H1	
△ 3209	METALLIC SUBSTANCE, WATER-REACTIVE, SELF-HEATING, N.O.S.	4.3	4.2	II	274	0	E0	P410	PP31 PP40	IBC05	B21	–	T3	TP33	F-G, S-N	Category E SW2 H1	
3209	METALLIC SUBSTANCE, WATER-REACTIVE, SELF-HEATING, N.O.S.	4.3	4.2	III	223 274	0	E1	P410	PP31	IBC08	B4	–	T1	TP33	F-G, S-N	Category E SW2 H1	
3210	CHLORATES, INORGANIC, AQUEOUS SOLUTION, N.O.S.	5.1	–	II	274 351	1 L	E2	P504	–	IBC02	–	–	T4	TP1	F-H, S-Q	Category B	
3210	CHLORATES, INORGANIC, AQUEOUS SOLUTION, N.O.S.	5.1	–	III	223 274 351	5 L	E1	P504	–	IBC02	–	–	T4	TP1	F-H, S-Q	Category B	
3211	PERCHLORATES, INORGANIC, AQUEOUS SOLUTION, N.O.S.	5.1	–	II	–	1 L	E2	P504	–	IBC02	–	–	T4	TP1	F-H, S-Q	Category B	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
3213	BROMATES, INORGANIC, AQUEOUS SOLUTION, N.O.S.	5.1	–	II	274 350	1 L	E2	P504	–	IBC02	–	–	T4	TP1	F-H, S-Q	Category B	
3213	BROMATES, INORGANIC, AQUEOUS SOLUTION, N.O.S.	5.1	–	III	223 274 350	5 L	E1	P504	–	IBC02	–	–	T4	TP1	F-H, S-Q	Category B	
3214	PERMANGANATES, INORGANIC, AQUEOUS SOLUTION, N.O.S.	5.1	–	II	274 353	1 L	E2	P504	–	IBC02	–	–	T4	TP1	F-H, S-Q	Category D	
3215	PERSULPHATES, INORGANIC, N.O.S.	5.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-Q	Category A	
3216	PERSULPHATES, INORGANIC, AQUEOUS SOLUTION, N.O.S.	5.1	–	III	–	5 L	E1	P504	–	IBC02	–	–	T4	TP1 TP29	F-A, S-Q	Category A	
3218	NITRATES, INORGANIC, AQUEOUS SOLUTION, N.O.S.	5.1	–	II	270	1 L	E2	P504	–	IBC02	–	–	T4	TP1	F-A, S-Q	Category B	
3218	NITRATES, INORGANIC,	5.1	–	III	223	5 L	E1	P504	–	IBC02	–	–	T4	TP1	F-A, S-Q	Category B	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
3220	PENTAFLUOROETHANE (REFRIGERANT GAS R 125)	2.2	–	–	–	120 mL	E1	P200	–	–	–	–	T50	–	F-C, S-V	Category A	
3221	SELF-REACTIVE LIQUID TYPE B	4.1	See SP181	–	181 274	25 mL	E0	P520	PP21	–	–	–	–	–	F-J, S-G	Category D SW1	
3222	SELF-REACTIVE SOLID TYPE B	4.1	See SP181	–	181 274	100 g	E0	P520	PP21	–	–	–	–	–	F-J, S-G	Category D SW1	
3223	SELF-REACTIVE LIQUID TYPE C	4.1	–	–	274	25 mL	E0	P520	PP21 PP94 PP95	–	–	–	–	–	F-J, S-G	Category D SW1	
3224	SELF-REACTIVE SOLID TYPE C	4.1	–	–	274	100 g	E0	P520	PP21 PP94 PP95	–	–	–	–	–	F-J, S-G	Category D SW1	
3225	SELF-REACTIVE LIQUID TYPE D	4.1	–	–	274	125 mL	E0	P520	–	–	–	–	–	–	F-J, S-G	Category D SW1	
3226	SELF-REACTIVE SOLID TYPE D	4.1	–	–	274	500 g	E0	P520	–	–	–	–	–	–	F-J, S-G	Category D SW1	
3227	SELF-REACTIVE LIQUID TYPE E	4.1	–	–	274	125 mL	E0	P520	–	–	–	–	–	–	F-J, S-G	Category D SW1	
3228	SELF-REACTIVE SOLID TYPE E	4.1	–	–	274	500 g	E0	P520	–	–	–	–	–	–	F-J, S-G	Category D SW1	
3229	SELF-REACTIVE LIQUID TYPE F	4.1	–	–	274	125 mL	E0	P520	–	IBC99	–	–	T23	–	F-J, S-G	Category D SW1	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
3232	SELF-REACTIVE SOLID TYPE B, TEMPERATURE CONTROLLED	4.1	See SP181	–	181 194 274 923	0	E0	P520	PP21	–	–	–	–	–	F-F, S-K	Category D SW1 SW3	
3233	SELF-REACTIVE LIQUID TYPE C, TEMPERATURE CONTROLLED	4.1	–	–	194 274 923	0	E0	P520	PP21	–	–	–	–	–	F-F, S-K	Category D SW1 SW3	
3234	SELF-REACTIVE SOLID TYPE C, TEMPERATURE CONTROLLED	4.1	–	–	194 274 923	0	E0	P520	PP21	–	–	–	–	–	F-F, S-K	Category D SW1 SW3	
3235	SELF-REACTIVE LIQUID TYPE D, TEMPERATURE CONTROLLED	4.1	–	–	194 274 923	0	E0	P520	–	–	–	–	–	–	F-F, S-K	Category D SW1 SW3	
3236	SELF-REACTIVE SOLID TYPE D, TEMPERATURE CONTROLLED	4.1	–	–	194 274 923	0	E0	P520	–	–	–	–	–	–	F-F, S-K	Category D SW1 SW3	
3237	SELF-REACTIVE LIQUID TYPE E, TEMPERATURE CONTROLLED	4.1	–	–	194 274 923	0	E0	P520	–	–	–	–	–	–	F-F, S-K	Category D SW1 SW3	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
3240	SELF-REACTIVE SOLID TYPE F, TEMPERATURE CONTROLLED	4.1	–	–	194 274 923	0	E0	P520	–	–	–	–	T23	–	F-F, S-K	Category D SW1 SW3	
3241	2-BROMO-2-NITROPROPANE-1,3-DIOL	4.1	–	III	–	5 kg	E1	P520	PP22	IBC08	B3	–	–	–	F-J, S-G	Category C SW1 SW2 H2 H3	
3242	AZODICARBONAMIDE	4.1	–	II	215	500 g	E0	P409	–	–	–	–	T3	TP33	F-J, S-G	Category D	
3243	SOLIDS CONTAINING TOXIC LIQUID, N.O.S.	6.1	–	II	217 274	500 g	E4	P002	PP9	IBC02	–	–	T3 BK2	TP33	F-A, S-A	Category B SW2	
3244	SOLIDS CONTAINING CORROSIVE LIQUID, N.O.S.	8	–	II	218 274	1 kg	E2	P002	PP9	IBC05	–	–	T3 BK2	TP33	F-A, S-B	Category B SW2	
3245	GENETICALLY MODIFIED MICROORGANISMS or GENETICALLY MODIFIED ORGANISMS	9	–	–	219	0	E0	P904	–	IBC99	–	–	–	–	F-A, S-T	SW7	
3246	METHANESULPHONYL CHLORIDE	6.1	8	I	354	0	E0	P602	–	–	–	–	T20	TP2 TP13	F-A, S-B	Category D SW2	
3247	SODIUM PEROXOBORATE, ANHYDROUS	5.1	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-Q	Category A SW1 H1	
3248	MEDICINE, LIQUID, FLAMMABLE, TOXIC, N.O.S.	3	6.1	II	220 221	1 L	E2	P001	–	–	–	–	–	–	F-E, S-D	Category B SW2	
3248	MEDICINE, LIQUID, FLAMMABLE, TOXIC, N.O.S.	3	6.1	III	220 221 223	5 L	E1	P001	–	–	–	–	–	–	F-E, S-D	Category A	
3249	MEDICINE, SOLID, TOXIC, N.O.S.	6.1	–	II	221	500 g	E4	P002	–	–	–	–	T3	TP33	F-A, S-A	Category C SW2	
3249	MEDICINE, SOLID, TOXIC,	6.1	–	III	221	5 kg	E1	P002	–	–	–	–	T1	TP33	F-A, S-A	Category C	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
3254	TRIBUTYLPHOSPHANE	4.2	–	I	–	0	E0	P400	–	–	–	–	T21	TP2 TP7	F-A, S-M	Category D	
3255	*tert*-BUTYL HYPOCHLORITE	4.2	8	I	976	0	E0	P099	–	–	–	–	–	–	F-A, S-M	Category D	
3256	ELEVATED TEMPERATURE LIQUID, FLAMMABLE, N.O.S. with flashpoint above 60°C, at or above its flashpoint	3	–	III	274	0	E0	P099	–	IBC01	–	–	T3	TP3 TP29	F-E, S-D	Category A	
3257	ELEVATED TEMPERATURE LIQUID, N.O.S. at or above 100°C and below its flashpoint (including molten metals, molten salts, etc.)	9	–	III	232 274	0	E0	P099	–	IBC01	–	–	T3	TP3 TP29	F-A, S-P	Category A SW5	
3258	ELEVATED TEMPERATURE SOLID, N.O.S. at or above 240°C	9	–	III	232 274	0	E0	P099	–	–	–	–	–	–	F-A, S-P	Category A SW5	
3259	AMINES, SOLID, CORROSIVE, N.O.S. or POLYAMINES, SOLID, CORROSIVE, N.O.S.	8	–	I	274	0	E0	P002	–	IBC07	B1	–	T6	TP33	F-A, S-B	Category A	
3259	AMINES, SOLID, CORROSIVE, N.O.S. or POLYAMINES, SOLID, CORROSIVE, N.O.S.	8	–	II	274	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-B	Category A	
3259	AMINES, SOLID, CORROSIVE, N.O.S. or POLYAMINES, SOLID, CORROSIVE, N.O.S.	8	–	III	223 274	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-B	Category A	
3260	CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S.	8	–	I	274	0	E0	P002	–	IBC07	B1	–	T6	TP33	F-A, S-B	Category B	
3260	CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S.	8	–	II	274	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-B	Category B	
3260	CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S.	8	–	III	223 274	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-B	Category A	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
3263	CORROSIVE SOLID, BASIC, ORGANIC, N.O.S.	8	–	I	274	0	E0	P002	–	IBC07	B1	–	T6	TP33	F-A, S-B	Category B	
3263	CORROSIVE SOLID, BASIC, ORGANIC, N.O.S.	8	–	II	274	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-B	Category B	
3263	CORROSIVE SOLID, BASIC, ORGANIC, N.O.S.	8	–	III	223 274	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-B	Category A	
3264	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.	8	–	I	274	0	E0	P001	–	–	–	–	T14	TP2 TP27	F-A, S-B	Category B SW2	
3264	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.	8	–	II	274	1 L	E2	P001	–	IBC02	–	–	T11	TP2 TP27	F-A, S-B	Category B SW2	
3264	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.	8	–	III	223 274	5 L	E1	P001 LP01	–	IBC03	–	–	T7	TP1 TP28	F-A, S-B	Category A SW2	
3265	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.	8	–	I	274	0	E0	P001	–	–	–	–	T14	TP2 TP27	F-A, S-B	Category B SW2	
3265	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.	8	–	II	274	1 L	E2	P001	–	IBC02	–	–	T11	TP2 TP27	F-A, S-B	Category B SW2	
3265	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.	8	–	III	223 274	5 L	E1	P001 LP01	–	IBC03	–	–	T7	TP1 TP28	F-A, S-B	Category A SW2	
3266	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S.	8	–	I	274	0	E0	P001	–	–	–	–	T14	TP2 TP27	F-A, S-B	Category B SW2	
3266	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S.	8	–	II	274	1 L	E2	P001	–	IBC02	–	–	T11	TP2 TP27	F-A, S-B	Category B SW2	
3266	CORROSIVE LIQUID, BASIC, INORGANIC, N.O.S.	8	–	III	223 274	5 L	E1	P001 LP01	–	IBC03	–	–	T7	TP1 TP28	F-A, S-B	Category A SW2	
3267	CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S.	8	–	I	274	0	E0	P001	–	–	–	–	T14	TP2 TP27	F-A, S-B	Category B SW2	
3267	CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S.	8	–	II	274	1 L	E2	P001	–	IBC02	–	–	T11	TP2 TP27	F-A, S-B	Category B SW2	
3267	CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S.	8	–	III	223 274	5 L	E1	P001 LP01	–	IBC03	–	–	T7	TP1 TP28	F-A, S-B	Category A SW2	
3268	SAFETY DEVICES, electrically initiated	9	–	–	280 289	0	E0	P902 LP902	–	–	–	–	–	–	F-B, S-X	Category A	
3269	POLYESTER RESIN KIT, liquid base material	3	–	II	236 340	5 L	See SP340	P302	–	–	–	–	–	–	F-E, S-D	Category B	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
3272	ESTERS, N.O.S.	3	–	III	223 274	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1 TP29	F-E, S-D	Category A	
3273	NITRILES, FLAMMABLE, TOXIC, N.O.S.	3	6.1	I	274	0	E0	P001	–	–	–	–	T14	TP2 TP13 TP27	F-E, S-D	Category E SW2	
3273	NITRILES, FLAMMABLE, TOXIC, N.O.S.	3	6.1	II	274	1 L	E2	P001	–	IBC02	–	–	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	
3274	ALCOHOLATES SOLUTION, N.O.S. in alcohol	3	8	II	274	1 L	E2	P001	–	IBC02	–	–	–	–	F-E, S-C	Category B	
3275	NITRILES, TOXIC, FLAMMABLE, N.O.S.	6.1	3	I	274 315	0	E5	P001	–	–	–	–	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	
3275	NITRILES, TOXIC, FLAMMABLE, N.O.S.	6.1	3	II	274	100 mL	E4	P001	–	IBC02	–	–	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	
3276	NITRILES, LIQUID, TOXIC, N.O.S.	6.1	–	I	274 315	0	E5	P001	–	–	–	–	T14	TP2 TP13 TP27	F-A, S-A	Category B	
3276	NITRILES, LIQUID, TOXIC, N.O.S.	6.1	–	II	274	100 mL	E4	P001	–	IBC02	–	–	T11	TP2 TP27	F-A, S-A	Category B	
3276	NITRILES, LIQUID, TOXIC, N.O.S.	6.1	–	III	223 274	5 L	E1	P001 LP01	–	IBC03	–	–	T7	TP1 TP28	F-A, S-A	Category A	
3277	CHLOROFORMATES, TOXIC, CORROSIVE, N.O.S.	6.1	8	II	274	100 mL	E4	P001	–	IBC02	–	–	T8	TP2 TP13 TP28	F-A, S-B	Category A SW1 SW2 H1 H2	
3278	ORGANOPHOSPHORUS COMPOUND, LIQUID, TOXIC, N.O.S.	6.1	–	I	43 274 315	0	E5	P001	–	–	–	–	T14	TP2 TP13 TP27	F-A, S-A	Category B	
3278	ORGANOPHOSPHORUS COMPOUND, LIQUID, TOXIC, N.O.S.	6.1	–	II	43 274	100 mL	E4	P001	–	IBC02	–	–	T11	TP2 TP27	F-A, S-A	Category B	
3278	ORGANOPHOSPHORUS COMPOUND, LIQUID, TOXIC, N.O.S.	6.1	–	III	43 223 274	5 L	E1	P001 LP01	–	IBC03	–	–	T7	TP1 TP28	F-A, S-A	Category A	
3279	ORGANOPHOSPHORUS COMPOUND, TOXIC,	6.1	3	I	43 274	0	E5	P001	–	–	–	–	T14	TP2 TP13	F-E, S-D	Category B SW2	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
3281	METAL CARBONYLS, LIQUID, N.O.S.	6.1	–	II	274	100 mL	E4	P001	–	IBC02	–	–	T11	TP2 TP27	F-A, S-A	Category B SW2	
3281	METAL CARBONYLS, LIQUID, N.O.S.	6.1	–	III	223 274	5 L	E1	P001 LP01	–	IBC03	–	–	T7	TP1 TP28	F-A, S-A	Category B SW2	
3282	ORGANOMETALLIC COMPOUND, LIQUID, TOXIC, N.O.S.	6.1	–	I	274	0	E5	P001	–	–	–	–	T14	TP2 TP13 TP27	F-A, S-A	Category B	
3282	ORGANOMETALLIC COMPOUND, LIQUID, TOXIC, N.O.S.	6.1	–	II	274	100 mL	E4	P001	–	IBC02	–	–	T11	TP2 TP27	F-A, S-A	Category B	
3282	ORGANOMETALLIC COMPOUND, LIQUID, TOXIC, N.O.S.	6.1	–	III	223 274	5 L	E1	P001 LP01	–	IBC03	–	–	T7	TP1 TP28	F-A, S-A	Category A	
3283	SELENIUM COMPOUND, SOLID, N.O.S.	6.1	–	I	274	0	E5	P002	–	IBC07	B1	–	T6	TP33	F-A, S-A	Category B	
3283	SELENIUM COMPOUND, SOLID, N.O.S.	6.1	–	II	274	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category B	
3283	SELENIUM COMPOUND, SOLID, N.O.S.	6.1	–	III	223 274	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A	
3284	TELLURIUM COMPOUND, N.O.S.	6.1	–	I	274	0	E5	P002	–	IBC07	B1	–	T6	TP33	F-A, S-A	Category B	
3284	TELLURIUM COMPOUND, N.O.S.	6.1	–	II	274	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category B	
3284	TELLURIUM COMPOUND, N.O.S.	6.1	–	III	223 274	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A	
3285	VANADIUM COMPOUND, N.O.S.	6.1	–	I	274	0	E5	P002	–	IBC07	B1	–	T6	TP33	F-A, S-A	Category B	
3285	VANADIUM COMPOUND, N.O.S.	6.1	–	II	274	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category B	
3285	VANADIUM COMPOUND, N.O.S.	6.1	–	III	223 274	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A	
3286	FLAMMABLE LIQUID, TOXIC, CORROSIVE, N.O.S.	3	6.1/8	I	274	0	E0	P001	–	–	–	–	T14	TP2 TP13 TP27	F-E, S-C	Category E SW2	
3286	FLAMMABLE LIQUID, TOXIC, CORROSIVE, N.O.S.	3	6.1/8	II	274	1 L	E2	P001	–	IBC99	–	–	T11	TP2 TP13 TP27	F-E, S-C	Category B SW2	
3287	TOXIC LIQUID, INORGANIC, N.O.S.	6.1	–	I	274 315	0	E5	P001	–	–	–	–	T14	TP2 TP13 TP27	F-A, S-A	Category B SW2	
3287	TOXIC LIQUID, INORGANIC,	6.1	–	II	274	100 mL	E4	P001	–	IBC02	–	–	T11	TP2	F-A, S-A	Category B	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
3290	TOXIC SOLID, CORROSIVE, INORGANIC, N.O.S.	6.1	8	I	274	0	E5	P002	–	IBC99	–	–	T6	TP33	F-A, S-B	Category B SW2	
3290	TOXIC SOLID, CORROSIVE, INORGANIC, N.O.S.	6.1	8	II	274	500 g	E4	P002	–	IBC06	B21	–	T3	TP33	F-A, S-B	Category B SW2	
3291	CLINICAL WASTE, UNSPECIFIED, N.O.S. or (BIO) MEDICAL WASTE, N.O.S. or REGULATED MEDICAL WASTE, N.O.S.	6.2	–	–	–	0	E0	P621 LP621	–	IBC620	–	–	BK2	–	F-A, S-T	SW28	
3292	BATTERIES, CONTAINING SODIUM or CELLS, CONTAINING SODIUM	4.3	–	–	239	0	E0	P408	–	–	–	–	–	–	F-G, S-P	Category A H1	
3293	HYDRAZINE, AQUEOUS SOLUTION with not more than 37% hydrazine, by mass	6.1	–	III	223	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-A	Category A	
3294	HYDROGEN CYANIDE, SOLUTION IN ALCOHOL with not more than 45% hydrogen cyanide	6.1	3 P	I	900	0	E0	P601	–	–	–	–	T14	TP2 TP13	F-E, S-D	Category D SW2	
3295	HYDROCARBONS, LIQUID, N.O.S.	3	–	I	–	500 mL	E3	P001	–	–	–	–	T11	TP1 TP8 TP28	F-E, S-D	Category E	
3295	HYDROCARBONS, LIQUID, N.O.S.	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP1 TP8 TP28	F-E, S-D	Category B	
3295	HYDROCARBONS, LIQUID, N.O.S.	3	–	III	223	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1 TP29	F-E, S-D	Category A	
3296	HEPTAFLUOROPROPANE (REFRIGERANT GAS R 227)	2.2	–	–	–	120 mL	E1	P200	–	–	–	–	T50	–	F-C, S-V	Category A	
3297	ETHYLENE OXIDE AND CHLOROTETRAFLUORO-ETHANE MIXTURE with not more than 8.8% ethylene oxide	2.2	–	–	392	120 mL	E1	P200	–	–	–	–	T50	–	F-C, S-V	Category A	
3298	ETHYLENE OXIDE AND	2.2	–	–	392	120 mL	E1	P200	–	–	–	–	T50	–	F-C, S-V	Category A	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
3302	2-DIMETHYLAMINOETHYL ACRYLATE, STABILIZED	6.1	–	II	386	100 mL	E4	P001	–	IBC02	–	–	T7	TP2	F-A, S-A	Category D SW1	
3303	COMPRESSED GAS, TOXIC, OXIDIZING, N.O.S.	2.3	5.1	–	274	0	E0	P200	–	–	–	–	–	–	F-C, S-W	Category D SW2	
3304	COMPRESSED GAS, TOXIC, CORROSIVE, N.O.S.	2.3	8	–	274	0	E0	P200	–	–	–	–	–	–	F-C, S-U	Category D SW2	
3305	COMPRESSED GAS, TOXIC, FLAMMABLE, CORROSIVE, N.O.S.	2.3	2.1/8	–	274	0	E0	P200	–	–	–	–	–	–	F-D, S-U	Category D SW2	
3306	COMPRESSED GAS, TOXIC, OXIDIZING, CORROSIVE, N.O.S.	2.3	5.1/8	–	274	0	E0	P200	–	–	–	–	–	–	F-C, S-W	Category D SW2	
3307	LIQUEFIED GAS, TOXIC, OXIDIZING, N.O.S.	2.3	5.1	–	274	0	E0	P200	–	–	–	–	–	–	F-C, S-W	Category D SW2	
3308	LIQUEFIED GAS, TOXIC, CORROSIVE, N.O.S.	2.3	8	–	274	0	E0	P200	–	–	–	–	–	–	F-C, S-U	Category D SW2	
3309	LIQUEFIED GAS, TOXIC, FLAMMABLE, CORROSIVE, N.O.S.	2.3	2.1/8	–	274	0	E0	P200	–	–	–	–	–	–	F-D, S-U	Category D SW2	
3310	LIQUEFIED GAS, TOXIC, OXIDIZING, CORROSIVE, N.O.S.	2.3	5.1/8	–	274	0	E0	P200	–	–	–	–	–	–	F-C, S-W	Category D SW2	
3311	GAS, REFRIGERATED LIQUID, OXIDIZING, N.O.S.	2.2	5.1	–	274	0	E0	P203	–	–	–	–	T75	TP5 TP22	F-C, S-W	Category D	
3312	GAS, REFRIGERATED LIQUID, FLAMMABLE, N.O.S.	2.1	–	–	274	0	E0	P203	–	–	–	–	T75	TP5	F-D, S-U	Category D SW2	
3313	ORGANIC PIGMENTS, SELF-HEATING	4.2	–	II	–	0	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-J	Category C	
3313	ORGANIC PIGMENTS, SELF-HEATING	4.2	–	III	223	0	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-J	Category C	
3314	PLASTICS MOULDING COMPOUND in dough, sheet or extruded rope form, evolving flammable vapour	9	–	III	207 965	5 kg	E1	P002	PP14	IBC08	B3 B6	–	–	–	F-A, S-I	Category E SW1 SW6	
3315	CHEMICAL SAMPLE, TOXIC	6.1	–	I	250	0	E0	P099	–	–	–	–	–	–	F-A, S-A	Category D SW2	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
3318	AMMONIA SOLUTION, relative density less than 0.880 at 15°C in water, with more than 50% ammonia	2.3	8 P	–	23	0	E0	P200	–	–	–	–	T50	–	F-C, S-U	Category D SW2	
3319	NITROGLYCERIN MIXTURE, DESENSITIZED, SOLID, N.O.S. with more than 2% but not more than 10% nitroglycerin, by mass	4.1	–	II	272 274	0	E0	P099	–	–	–	–	–	–	F-B, S-J	Category E	
3320	SODIUM BOROHYDRIDE AND SODIUM HYDROXIDE SOLUTION with not more than 12% sodium borohydride and not more than 40% sodium hydroxide, by mass	8	–	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP2	F-A, S-B	Category A	
3320	SODIUM BOROHYDRIDE AND SODIUM HYDROXIDE SOLUTION with not more than 12% sodium borohydride and not more than 40% sodium hydroxide, by mass	8	–	III	223	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP2	F-A, S-B	Category A	
3321	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-II), non fissile or fissile-excepted	7	See SP172	–	172 317 325	0	E0	See 4.1.9	See 4.1.9	See 4.1.9	See 4.1.9	–	T5	TP4	F-I, S-S	Category A SW20 SW21	
3322	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-III), non fissile or fissile-excepted	7	See SP172	–	172 317 325	0	E0	See 4.1.9	See 4.1.9	See 4.1.9	See 4.1.9	–	T5	TP4	F-I, S-S	Category A SW21	
3323	RADIOACTIVE MATERIAL, TYPE C PACKAGE, non fissile or fissile–excepted	7	See SP172	–	172 317 325	0	E0	See 4.1.9	See 4.1.9	See 4.1.9	See 4.1.9	–	–	–	F-I, S-S	Category A SW12	
3324	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-II), FISSILE	7	See SP172	–	172 326	0	E0	See 4.1.9	See 4.1.9	See 4.1.9	See 4.1.9	–	–	–	F-I, S-S	Category A SW12 SW20 SW21	
3325	RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY, (LSA-III), FISSILE	7	See SP172	–	172 326	0	E0	See 4.1.9	See 4.1.9	See 4.1.9	See 4.1.9	–	–	–	F-I, S-S	Category A SW12 SW21	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
3330	RADIOACTIVE MATERIAL, TYPE C PACKAGE, FISSILE	7	See SP172	–	172 326	0	E0	See 4.1.9	See 4.1.9	See 4.1.9	See 4.1.9	–	–	–	F-I, S-S	Category A SW12	
3331	RADIOACTIVE MATERIAL, TRANSPORTED UNDER SPECIAL ARRANGEMENT, FISSILE	7	See SP172	–	172 326	0	E0	See 4.1.9	See 4.1.9	See 4.1.9	See 4.1.9	–	–	–	F-I, S-S	Category A SW13	
3332	RADIOACTIVE MATERIAL, TYPE A PACKAGE, SPECIAL FORM, non fissile or fissile-excepted	7	See SP172	–	172 317	0	E0	See 4.1.9	See 4.1.9	See 4.1.9	See 4.1.9	–	–	–	F-I, S-S	Category A	
3333	RADIOACTIVE MATERIAL, TYPE A PACKAGE, SPECIAL FORM, FISSILE	7	See SP172	–	172	0	E0	See 4.1.9	See 4.1.9	See 4.1.9	See 4.1.9	–	–	–	F-I, S-S	Category A SW12	
3334	AVIATION REGULATED LIQUID, N.O.S.	9	–	–	960	–	–	–	–	–	–	–	–	–	–	–	
3335	AVIATION REGULATED SOLID, N.O.S.	9	–	–	960	–	–	–	–	–	–	–	–	–	–	–	
3336	MERCAPTANS, LIQUID, FLAMMABLE, N.O.S. or MERCAPTAN MIXTURE, LIQUID, FLAMMABLE, N.O.S.	3	–	I	274	0	E0	P001	–	–	–	–	T11	TP2	F-E, S-D	Category E	
3336	MERCAPTANS, LIQUID, FLAMMABLE, N.O.S. or MERCAPTAN MIXTURE, LIQUID, FLAMMABLE, N.O.S.	3	–	II	274	1 L	E2	P001	–	IBC02	–	–	T7	TP1 TP8 TP28	F-E, S-D	Category B	
3336	MERCAPTANS, LIQUID, FLAMMABLE, N.O.S. or MERCAPTAN MIXTURE, LIQUID, FLAMMABLE, N.O.S.	3	–	III	223 274	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1 TP29	F-E, S-D	Category B	
3337	REFRIGERANT GAS R 404A	2.2	–	–	–	120 mL	E1	P200	–	–	–	–	T50	–	F-C, S-V	Category A	
3338	REFRIGERANT GAS R 407A	2.2	–	–	–	120 mL	E1	P200	–	–	–	–	T50	–	F-C, S-V	Category A	
3339	REFRIGERANT GAS R 407B	2.2	–	–	–	120 mL	E1	P200	–	–	–	–	T50	–	F-C, S-V	Category A	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
3342	XANTHATES	4.2	–	II	–	0	E2	P002	PP31	IBC06	B21	–	T3	TP33	F-A, S-J	Category D SW2	
3342	XANTHATES	4.2	–	III	223	0	E1	P002 LP02	PP31	IBC08	B3	–	T1	TP33	F-A, S-J	Category D SW2	
3343	NITROGLYCERIN MIXTURE, DESENSITIZED, LIQUID, FLAMMABLE, N.O.S. with not more than 30% nitroglycerin, by mass	3	–	–	274 278	0	E0	P099	–	–	–	–	–	–	F-E, S-Y	Category D	
3344	PENTAERYTHRITE TETRANITRATE (PENTAERYTHRITOL TETRANITRATE; PETN) MIXTURE, DESENSITIZED, SOLID, N.O.S. with more than 10% but not more than 20% PETN, by mass	4.1	–	II	272 274	0	E0	P406	PP26 PP80	–	–	–	–	–	F-B, S-J	Category E	
3345	PHENOXYACETIC ACID DERIVATIVE PESTICIDE, SOLID, TOXIC	6.1	–	I	61 274	0	E5	P002	–	IBC07	B1	–	T6	TP33	F-A, S-A	Category A SW2	
3345	PHENOXYACETIC ACID DERIVATIVE PESTICIDE, SOLID, TOXIC	6.1	–	II	61 274	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A SW2	
3345	PHENOXYACETIC ACID DERIVATIVE PESTICIDE, SOLID, TOXIC	6.1	–	III	61 223 274	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A SW2	
3346	PHENOXYACETIC ACID DERIVATIVE PESTICIDE, LIQUID, FLAMMABLE, TOXIC flashpoint less than 23°C	3	6.1	I	61 274	0	E0	P001	–	–	–	–	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	
3346	PHENOXYACETIC ACID DERIVATIVE PESTICIDE, LIQUID, FLAMMABLE, TOXIC flashpoint less than 23°C	3	6.1	II	61 274	1 L	E2	P001	–	IBC02	–	–	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	
3347	PHENOXYACETIC ACID DERIVATIVE PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint	6.1	3	I	61 274	0	E5	P001	–	–	–	–	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
3348	PHENOXYACETIC ACID DERIVATIVE PESTICIDE, LIQUID, TOXIC	6.1	–	III	61 223 274	5 L	E1	P001 LP01	–	IBC03	–	–	T7	TP2 TP28	F-A, S-A	Category A SW2	
3349	PYRETHROID PESTICIDE, SOLID, TOXIC	6.1	–	I	61 274	0	E5	P002	–	IBC07	B1	–	T6	TP33	F-A, S-A	Category A SW2	
3349	PYRETHROID PESTICIDE, SOLID, TOXIC	6.1	–	II	61 274	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A SW2	
3349	PYRETHROID PESTICIDE, SOLID, TOXIC	6.1	–	III	61 223 274	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A SW2	
3350	PYRETHROID PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flashpoint less than 23°C	3	6.1	I	61 274	0	E0	P001	–	–	–	–	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	
3350	PYRETHROID PESTICIDE, LIQUID, FLAMMABLE, TOXIC, flashpoint less than 23°C	3	6.1	II	61 274	1 L	E2	P001	–	IBC02	–	–	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	
3351	PYRETHROID PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	I	61 274	0	E5	P001	–	–	–	–	T14	TP2 TP13 TP27	F-E, S-D	Category B SW2	
3351	PYRETHROID PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	II	61 274	100 mL	E4	P001	–	IBC02	–	–	T11	TP2 TP13 TP27	F-E, S-D	Category B SW2	
3351	PYRETHROID PESTICIDE, LIQUID, TOXIC, FLAMMABLE, flashpoint not less than 23°C	6.1	3	III	61 223 274	5 L	E1	P001	–	IBC03	–	–	T7	TP2 TP28	F-E, S-D	Category A SW2	
3352	PYRETHROID PESTICIDE, LIQUID, TOXIC	6.1	–	I	61 274	0	E5	P001	–	–	–	–	T14	TP2 TP13 TP27	F-A, S-A	Category B SW2	
3352	PYRETHROID PESTICIDE, LIQUID, TOXIC	6.1	–	II	61 274	100 mL	E4	P001	–	IBC02	–	–	T11	TP2 TP27	F-A, S-A	Category B SW2	
3352	PYRETHROID PESTICIDE, LIQUID, TOXIC	6.1	–	III	61 223 274	5 L	E1	P001 LP01	–	IBC03	–	–	T7	TP2 TP28	F-A, S-A	Category A SW2	
3354	INSECTICIDE GAS, FLAMMABLE, N.O.S.	2.1	–	–	274	0	E0	P200	–	–	–	–	–	–	F-D, S-U	Category D	
3355	INSECTICIDE GAS, TOXIC, FLAMMABLE, N.O.S.	2.3	2.1	–	274	0	E0	P200	–	–	–	–	–	–	F-D, S-U	Category D SW2	
3356	OXYGEN GENERATOR, CHEMICAL	5.1	–	–	284	0	E0	P500	–	–	–	–	–	–	F-H, S-Q	Category D	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
3358	REFRIGERATING MACHINES containing flammable, non-toxic, liquefied gas	2.1	–	–	291	0	E0	P003	PP32	–	–	–	–	–	F-D, S-U	Category D	
3359	FUMIGATED CARGO TRANSPORT UNIT	9	–	–	302	0	E0	–	–	–	–	–	–	–	F-A, S-D	Category B SW2	
3360	FIBRES, VEGETABLE, DRY	4.1	–	–	29 123 299 973	0	E0	P003	PP19	–	–	–	–	–	F-A, S-I	Category A	
3361	CHLOROSILANES, TOXIC, CORROSIVE, N.O.S.	6.1	8	II	274	0	E0	P010	–	–	–	–	T14	TP2 TP7 TP13 TP27	F-A, S-B	Category C SW2	
3362	CHLOROSILANES, TOXIC, CORROSIVE, FLAMMABLE, N.O.S.	6.1	3/8	II	274	0	E0	P010	–	–	–	–	T14	TP2 TP7 TP13 TP27	F-E, S-C	Category C SW2	
3363	DANGEROUS GOODS IN ARTICLES or DANGEROUS GOODS IN MACHINERY or DANGEROUS GOODS IN APPARATUS	9	–	–	301	See SP301	E0	P907	–	–	–	–	–	–	F-A, S-P	Category A	
3364	TRINITROPHENOL (PICRIC ACID), WETTED with not less than 10% water, by mass	4.1	–	I	28	0	E0	P406	PP24 PP31	–	–	–	–	–	F-B, S-J	Category E	
3365	TRINITROCHLOROBENZENE (PICRYL CHLORIDE), WETTED with not less than 10% water, by mass	4.1	–	I	28	0	E0	P406	PP24 PP31	–	–	–	–	–	F-B, S-J	Category E	
3366	TRINITROTOLUENE (TNT), WETTED with not less than 10% water, by mass	4.1	–	I	28	0	E0	P406	PP24 PP31	–	–	–	–	–	F-B, S-J	Category E	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
3369	SODIUM DINITRO-*o*-CRESOLATE, WETTED with not less than 10% water, by mass	4.1	6.1 P	I	28	0	E0	P406	PP24 PP31	–	–	–	–	–	F-B, S-J	Category E	
3370	UREA NITRATE, WETTED with not less than 10% water, by mass	4.1	–	I	28	0	E0	P406	PP31 PP78	–	–	–	–	–	F-B, S-J	Category E	
3371	2-METHYLBUTANAL	3	–	II	–	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-D	Category B	
3373	BIOLOGICAL SUBSTANCE, CATEGORY B	6.2	–	–	319 341	0	E0	P650	–	–	–	–	T1 BK2	TP1	F-A, S-T	Category C SW2 SW18	
3374	ACETYLENE, SOLVENT FREE	2.1	–	–	–	0	E0	P200	–	–	–	–	–	–	F-D, S-U	Category D SW1 SW2	
3375	AMMONIUM NITRATE EMULSION or SUSPENSION or GEL, intermediate for blasting explosives	5.1	–	II	309	0	E2	P505	–	IBC02	B16	–	T1	TP1 TP9 TP17 TP32	F-H, S-Q	Category D SW1	
3376	4-NITROPHENYLHYDRAZINE, with not less than 30% water, by mass	4.1	–	I	28	0	E0	P406	PP26 PP31	–	–	–	–	–	F-B, S-J	Category E	
3377	SODIUM PERBORATE MONOHYDRATE	5.1	–	III	967	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1 BK2 BK3	TP33	F-A, S-Q	Category A SW1 SW23 H1	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
3380	DESENSITIZED EXPLOSIVE, SOLID, N.O.S.	4.1	–	I	274 311 394	0	E0	P099	–	–	–	–	–	–	F-B, S-J	Category D	
3381	TOXIC BY INHALATION LIQUID, N.O.S. with an LC_{50} lower than or equal to 200 mL/m³ and saturated vapour concentration greater than or equal to 500 LC_{50}	6.1	–	I	274	0	E0	P601	–	–	–	–	T22	TP2 TP13	F-A, S-A	Category D SW2	
3382	TOXIC BY INHALATION LIQUID, N.O.S. with an LC_{50} lower than or equal to 1000 m L/m³ and saturated vapour concentration greater than or equal to 10 LC_{50}	6.1	–	I	274	0	E0	P602	–	–	–	–	T20	TP2 TP13	F-A, S-A	Category D SW2	
3383	TOXIC BY INHALATION LIQUID, FLAMMABLE, N.O.S. with an LC_{50} lower than or equal to 200 mL/m³ and saturated vapour concentration greater than or equal to 500 LC_{50}	6.1	3	I	274	0	E0	P601	–	–	–	–	T22	TP2 TP13	F-E, S-D	Category D SW2	
3384	TOXIC BY INHALATION LIQUID, FLAMMABLE, N.O.S. with an LC_{50} lower than or equal to 1000 mL/m³ and saturated vapour concentration greater than or equal to 10 LC_{50}	6.1	3	I	274	0	E0	P602	–	–	–	–	T20	TP2 TP13	F-E, S-D	Category D SW2	
3385	TOXIC BY INHALATION LIQUID, WATER-REACTIVE, N.O.S. with an LC_{50} lower than or equal to 200 mL/m³ and saturated vapour concentration greater than or equal to 500 LC_{50}	6.1	4.3	I	274	0	E0	P601	–	–	–	–	T22	TP2 TP13	F-G, S-N	Category D SW2 H1	
3386	TOXIC BY INHALATION LIQUID, WATER-REACTIVE, N.O.S. with an LC_{50} lower than or equal to 1000 mL/m³ and saturated vapour concentration greater than or equal to 10 LC_{50}	6.1	4.3	I	274	0	E0	P602	–	–	–	–	T20	TP2 TP13	F-G, S-N	Category D SW2 H1	
3387	TOXIC BY INHALATION LIQUID, OXIDIZING, N.O.S. with an LC_{50} lower than or equal to 200 mL/m³ and saturated vapour concentration greater than or equal to 500 LC_{50}	6.1	5.1	I	274	0	E0	P601	–	–	–	–	T22	TP2 TP13	F-A, S-Q	Category D SW2	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
3390	TOXIC BY INHALATION LIQUID, CORROSIVE, N.O.S. with an LC_{50} lower than or equal to 1000 mL/m³ and saturated vapour concentration greater than or equal to 10 LC_{50}	6.1	8	I	274	0	E0	P602	–	–	–	–	T20	TP2 TP13	F-A, S-B	Category D SW2	
3391	ORGANOMETALLIC SUBSTANCE, SOLID, PYROPHORIC	4.2	–	I	274	0	E0	P404	PP86	–	–	–	T21	TP7 TP33 TP36	F-G, S-M	Category D H1	
3392	ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC	4.2	–	I	274	0	E0	P400	PP86	–	–	–	T21	TP2 TP7 TP36	F-G, S-M	Category D H1	
3393	ORGANOMETALLIC SUBSTANCE, SOLID, PYROPHORIC, WATER-REACTIVE	4.2	4.3	I	274	0	E0	P404	PP86	–	–	–	T21	TP7 TP33 TP36 TP41	F-G, S-M	Category D H1	
3394	ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER-REACTIVE	4.2	4.3	I	274	0	E0	P400	PP86	–	–	–	T21	TP2 TP7 TP36 TP41	F-G, S-M	Category D H1	
3395	ORGANOMETALLIC SUBSTANCE, SOLID, WATER-REACTIVE	4.3	–	I	274	0	E0	P403	PP31	–	–	–	T9	TP7 TP33 TP36 TP41	F-G, S-N	Category E SW2 H1	
3395	ORGANOMETALLIC SUBSTANCE, SOLID, WATER-REACTIVE	4.3	–	II	274	500 g	E2	P410	PP31	IBC04	–	–	T3	TP33 TP36 TP41	F-G, S-N	Category E SW2 H1	
3395	ORGANOMETALLIC SUBSTANCE, SOLID, WATER-REACTIVE	4.3	–	III	223 274	1 kg	E1	P410	PP31	IBC06	–	–	T1	TP33 TP36 TP41	F-G, S-N	Category E SW2 H1	
3396	ORGANOMETALLIC SUBSTANCE, SOLID, WATER-REACTIVE, FLAMMABLE	4.3	4.1	I	274	0	E0	P403	PP31	–	–	–	T9	TP7 TP33 TP36 TP41	F-G, S-N	Category E SW2 H1	
3396	ORGANOMETALLIC SUBSTANCE, SOLID, WATER-REACTIVE, FLAMMABLE	4.3	4.1	II	274	500 g	E2	P410	PP31	IBC04	–	–	T3	TP33 TP36 TP41	F-G, S-N	Category E SW2 H1	
3396	ORGANOMETALLIC SUBSTANCE, SOLID, WATER-REACTIVE, FLAMMABLE	4.3	4.1	III	223 274	1 kg	E1	P410	PP31	IBC06	–	–	T1	TP33 TP36 TP41	F-G, S-N	Category E SW2 H1	
3397	ORGANOMETALLIC SUBSTANCE, SOLID,	4.3	4.2	I	274	0	E0	P403	PP31	–	–	–	T9	TP7 TP33	F-G, S-N	Category E SW2	

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						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
3398	ORGANOMETALLIC SUBSTANCE, LIQUID, WATER-REACTIVE	4.3	–	II	274	500 mL	E2	P001	PP31	IBC01	–	–	T7	TP2 TP7 TP36 TP41	F-G, S-N	Category E SW2 H1	
3398	ORGANOMETALLIC SUBSTANCE, LIQUID, WATER-REACTIVE	4.3	–	III	223 274	1 L	E1	P001	PP31	IBC02	–	–	T7	TP2 TP7 TP36 TP41	F-G, S-N	Category E SW2 H1	
3399	ORGANOMETALLIC SUBSTANCE, LIQUID, WATER-REACTIVE, FLAMMABLE	4.3	3	I	274	0	E0	P402	PP31	–	–	–	T13	TP2 TP7 TP36 TP41	F-G, S-N	Category D SW2 H1	
3399	ORGANOMETALLIC SUBSTANCE, LIQUID, WATER-REACTIVE, FLAMMABLE	4.3	3	II	274	500 mL	E2	P001	PP31	IBC01	–	–	T7	TP2 TP7 TP36 TP41	F-G, S-N	Category D SW2 H1	
3399	ORGANOMETALLIC SUBSTANCE, LIQUID, WATER-REACTIVE, FLAMMABLE	4.3	3	III	223 274	1 L	E1	P001	PP31	IBC02	–	–	T7	TP2 TP7 TP36 TP41	F-G, S-N	Category E SW2 H1	
3400	ORGANOMETALLIC SUBSTANCE, SOLID, SELF-HEATING	4.2	–	II	274	500 g	E2	P410	–	IBC06	–	–	T3	TP33 TP36	F-A, S-J	Category C	
3400	ORGANOMETALLIC SUBSTANCE, SOLID, SELF-HEATING	4.2	–	III	223 274	1 kg	E1	P002	–	IBC08	–	–	T1	TP33 TP36	F-A, S-J	Category C	
3401	ALKALI METAL AMALGAM, SOLID	4.3	–	I	182	0	E0	P403	PP31	–	–	–	T9	TP7 TP33	F-G, S-N	Category D H1	
3402	ALKALINE EARTH METAL AMALGAM, SOLID	4.3	–	I	183	0	E0	P403	PP31	–	–	–	T9	TP7 TP33	F-G, S-N	Category D H1	
3403	POTASSIUM METAL ALLOYS, SOLID	4.3	–	I	–	0	E0	P403	PP31	–	–	–	T9	TP7 TP33	F-G, S-L	Category D H1	
3404	POTASSIUM SODIUM ALLOYS, SOLID	4.3	–	I	–	0	E0	P403	PP31	–	–	–	T9	TP7 TP33	F-G, S-L	Category D H1	
3405	BARIUM CHLORATE SOLUTION	5.1	6.1	II	–	1 L	E2	P504	–	IBC02	–	–	T4	TP1	F-H, S-Q	Category A	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
3406	BARIUM PERCHLORATE SOLUTION	5.1	6.1	II	–	1 L	E2	P504	–	IBC02	–	–	T4	TP1	F-H, S-Q	Category A	
3406	BARIUM PERCHLORATE SOLUTION	5.1	6.1	III	223	5 L	E1	P001	–	IBC02	–	–	T4	TP1	F-H, S-Q	Category A	
3407	CHLORATE AND MAGNESIUM CHLORIDE MIXTURE SOLUTION	5.1	–	II	–	1 L	E2	P504	–	IBC02	–	–	T4	TP1	F-H, S-Q	Category A	
3407	CHLORATE AND MAGNESIUM CHLORIDE MIXTURE SOLUTION	5.1	–	III	223	5 L	E1	P504	–	IBC02	–	–	T4	TP1	F-H, S-Q	Category A	
3408	LEAD PERCHLORATE SOLUTION	5.1	6.1 P	II	–	1 L	E2	P504	–	IBC02	–	–	T4	TP1	F-H, S-Q	Category A	
3408	LEAD PERCHLORATE SOLUTION	5.1	6.1 P	III	223	5 L	E1	P001	–	IBC02	–	–	T4	TP1	F-H, S-Q	Category A	
3409	CHLORONITROBENZENES, LIQUID	6.1	–	II	279	100 mL	E4	P001	–	IBC02	–	–	T7	TP2	F-A, S-A	Category A	
3410	4-CHLORO-o-TOLUIDINE	6.1	–	III	223	5 L	E1	P001	–	IBC03	–	–	T4	TP1	F-A, S-A	Category A	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
3413	POTASSIUM CYANIDE SOLUTION	6.1	– P	II	–	100 mL	E4	P001	PP31	IBC02	–	–	T11	TP2 TP13 TP27	F-A, S-A	Category B	
3413	POTASSIUM CYANIDE SOLUTION	6.1	– P	III	223	5 L	E1	P001 LP01	PP31	IBC03	–	–	T7	TP2 TP13 TP28	F-A, S-A	Category A	
3414	SODIUM CYANIDE SOLUTION	6.1	– P	I	–	0	E5	P001	PP31	–	–	–	T14	TP2 TP13	F-A, S-A	Category B	
3414	SODIUM CYANIDE SOLUTION	6.1	– P	II	–	100 mL	E4	P001	PP31	IBC02	–	–	T11	TP2 TP13 TP27	F-A, S-A	Category B	
3414	SODIUM CYANIDE SOLUTION	6.1	– P	III	223	5 L	E1	P001 LP01	PP31	IBC03	–	–	T7	TP2 TP13 TP28	F-A, S-A	Category A	
3415	SODIUM FLUORIDE SOLUTION	6.1	–	III	223	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-A	Category A	
3416	CHLOROACETOPHENONE, LIQUID	6.1	–	II	–	0	E0	P001	–	IBC02	–	–	T7	TP2 TP13	F-A, S-A	Category D SW1 SW2 H2	
3417	XYLYL BROMIDE, SOLID	6.1	–	II	–	0	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-G	Category D SW2	
3418	2,4-TOLUYLENEDIAMINE SOLUTION	6.1	–	III	223	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-A	Category A	
3419	BORON TRIFLUORIDE ACETIC ACID COMPLEX, SOLID	8	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-B	Category A	
3420	BORON TRIFLUORIDE PROPIONIC ACID COMPLEX, SOLID	8	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-B	Category A	
3421	POTASSIUM HYDROGEN DIFLUORIDE SOLUTION	8	6.1	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP2	F-A, S-B	Category A SW1 SW2	
3421	POTASSIUM HYDROGEN DIFLUORIDE SOLUTION	8	6.1	III	223	5 L	E1	P001	–	IBC03	–	–	T4	TP1	F-A, S-B	Category A SW1 SW2	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
3425	BROMOACETIC ACID, SOLID	8	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-B	Category A	
3426	ACRYLAMIDE SOLUTION	6.1	–	III	223	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-A	Category A SW1 H2	
3427	CHLOROBENZYL CHLORIDES, SOLID	6.1	– P	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A	
3428	3-CHLORO-4-METHYLPHENYL ISOCYANATE, SOLID	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category B SW2	
3429	CHLOROTOLUIDINES, LIQUID	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-A	Category A	
3430	XYLENOLS, LIQUID	6.1	–	II	–	100 mL	E4	P001	–	IBC02	–	–	T7	TP2	F-A, S-A	Category A	
3431	NITROBENZOTRIFLUORIDES, SOLID	6.1	– P	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A SW2	
3432	POLYCHLORINATED BIPHENYLS, SOLID	9	– P	II	305 958	1 kg	E2	P906	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
3434	NITROCRESOLS, LIQUID	6.1	–	III	–	5 L	E1	P001 LP01	–	IBC03	–	–	T4	TP1	F-A, S-A	Category A	
3436	HEXAFLUOROACETONE HYDRATE, SOLID	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category B SW2	
3437	CHLOROCRESOLS, SOLID	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A SW1 H2	
3438	*alpha*-METHYLBENZYL ALCOHOL, SOLID	6.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A	
3439	NITRILES, SOLID, TOXIC, N.O.S.	6.1	–	I	274	0	E5	P002	–	IBC07	B1	–	T6	TP33	F-A, S-A	Category B	
3439	NITRILES, SOLID, TOXIC, N.O.S.	6.1	–	II	274	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category B	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
3443	DINITROBENZENES, SOLID	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
3444	NICOTINE HYDROCHLORIDE, SOLID	6.1	–	II	43	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
3445	NICOTINE SULPHATE, SOLID	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
3446	NITROTOLUENES, SOLID	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
3447	NITROXYLENES, SOLID	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
3448	TEAR GAS SUBSTANCE, SOLID, N.O.S.	6.1	–	I	274	0	E0	P002	PP31	–	–	–	T6	TP33	F-A, S-A	Category D SW2	
3448	TEAR GAS SUBSTANCE, SOLID, N.O.S.	6.1	–	II	274	0	E0	P002	PP31	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category D SW2	
3449	BROMOBENZYL CYANIDES, SOLID	6.1	–	I	138	0	E5	P002	PP31	–	–	–	T6	TP33	F-A, S-A	Category D SW1 SW2 H2	
3450	DIPHENYLCHLOROARSINE, SOLID	6.1	– P	I	–	0	E0	P002	PP31	IBC07	B1	–	T6	TP33	F-A, S-A	Category D SW2	
3451	TOLUIDINES, SOLID	6.1	– P	II	279	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
3452	XYLIDINES, SOLID	6.1	–	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
3453	PHOSPHORIC ACID, SOLID	8	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-B	Category A	
3454	DINITROTOLUENES, SOLID	6.1	– P	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category A	
3455	CRESOLS, SOLID	6.1	8	II	–	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-B	Category B	
3456	NITROSYLSULPHURIC ACID, SOLID	8	–	II	–	1 kg	E2	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-B	Category D SW2	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
3460	*N*-ETHYLBENZYLTOLUIDINES, SOLID	6.1	–	III	–	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A	
3462	TOXINS, EXTRACTED FROM LIVING SOURCES, SOLID, N.O.S.	6.1	–	I	210 274	0	E5	P002	–	IBC07	B1	–	T6	TP33	F-A, S-A	Category B	
3462	TOXINS, EXTRACTED FROM LIVING SOURCES, SOLID, N.O.S.	6.1	–	II	210 274	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category B	
3462	TOXINS, EXTRACTED FROM LIVING SOURCES, SOLID, N.O.S.	6.1	–	III	210 223 274	5 kg	E1	P002	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A	
3463	PROPIONIC ACID, with not less than 90% acid by mass	8	3	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP2	F-E, S-C	Category A	
3464	ORGANOPHOSPHORUS COMPOUND, SOLID, TOXIC, N.O.S.	6.1	–	I	43 274	0	E5	P002	–	IBC07	B1	–	T6	TP33	F-A, S-A	Category B	
3464	ORGANOPHOSPHORUS COMPOUND, SOLID, TOXIC, N.O.S.	6.1	–	II	43 274	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category B	
3464	ORGANOPHOSPHORUS COMPOUND, SOLID, TOXIC, N.O.S.	6.1	–	III	43 223 274	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A	
3465	ORGANOARSENIC COMPOUND, SOLID, N.O.S.	6.1	–	I	274	0	E5	P002	–	IBC07	B1	–	T6	TP33	F-A, S-A	Category B	
3465	ORGANOARSENIC COMPOUND, SOLID, N.O.S.	6.1	–	II	274	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category B	
3465	ORGANOARSENIC COMPOUND, SOLID, N.O.S.	6.1	–	III	223 274	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category A	
3466	METAL CARBONYLS, SOLID, N.O.S.	6.1	–	I	274	0	E5	P002	–	IBC07	B1	–	T6	TP33	F-A, S-A	Category D SW2	
3466	METAL CARBONYLS, SOLID, N.O.S.	6.1	–	II	274	500 g	E4	P002	–	IBC08	B4 B21	–	T3	TP33	F-A, S-A	Category D SW2	
3466	METAL CARBONYLS, SOLID, N.O.S.	6.1	–	III	223 274	5 kg	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-A	Category D SW2	
3467	ORGANOMETALLIC COMPOUND, SOLID, TOXIC,	6.1	–	I	274	0	E5	P002	–	IBC07	B1	–	T6	TP33	F-A, S-A	Category B	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
3469	PAINT, FLAMMABLE, CORROSIVE (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL, FLAMMABLE, CORROSIVE (including paint thinning or reducing compound)	3	8	I	163 367	0	E0	P001	–	–	–	–	T11	TP2 TP27	F-E, S-C	Category E SW2	
3469	PAINT, FLAMMABLE, CORROSIVE (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL, FLAMMABLE, CORROSIVE (including paint thinning or reducing compound)	3	8	II	163 367	1 L	E2	P001	–	IBC02	–	–	T7	TP2 TP8 TP28	F-E, S-C	Category B SW2	
3469	PAINT, FLAMMABLE, CORROSIVE (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL, FLAMMABLE, CORROSIVE (including paint thinning or reducing compound)	3	8	III	163 223 367	5 L	E1	P001	–	IBC03	–	–	T4	TP1 TP29	F-E, S-C	Category A SW2	
3470	PAINT, CORROSIVE, FLAMMABLE (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL, CORROSIVE, FLAMMABLE (including paint thinning or reducing compound)	8	3	II	163 367	1 L	E2	P001	–	IBC02	–	–	T7	TP2 TP8 TP28	F-E, S-C	Category B SW2	
3471	HYDROGENDIFLUORIDES SOLUTION, N.O.S.	8	6.1	II	–	1 L	E2	P001	–	IBC02	–	–	T7	TP2	F-A, S-B	Category A SW1 SW2	
3471	HYDROGENDIFLUORIDES SOLUTION, N.O.S.	8	6.1	III	223	5 L	E1	P001	–	IBC03	–	–	T4	TP1	F-A, S-B	Category A SW1 SW2	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
3475	ETHANOL AND GASOLINE MIXTURE or ETHANOL AND MOTOR SPIRIT MIXTURE or ETHANOL AND PETROL MIXTURE, with more than 10% ethanol	3	–	II	333	1 L	E2	P001	–	IBC02	–	–	T4	TP1	F-E, S-E	Category E	
3476	FUEL CELL CARTRIDGES or FUEL CELL CARTRIDGES CONTAINED IN EQUIPMENT or FUEL CELL CARTRIDGES PACKED WITH EQUIPMENT, containing water-reactive substances	4.3	–	–	328 334	500 mL or 500 g	E0	P004	–	–	–	–	–	–	F-G, S-P	Category A H1	
3477	FUEL CELL CARTRIDGES or FUEL CELL CARTRIDGES CONTAINED IN EQUIPMENT or FUEL CELL CARTRIDGES PACKED WITH EQUIPMENT, containing corrosive substances	8	–	–	328 334	1 L or 1 kg	E0	P004	–	–	–	–	–	–	F-A, S-B	Category A	
3478	FUEL CELL CARTRIDGES or FUEL CELL CARTRIDGES CONTAINED IN EQUIPMENT or FUEL CELL CARTRIDGES PACKED WITH EQUIPMENT, containing liquefied flammable gas	2.1	–	–	328 338	120 mL	E0	P004	–	–	–	–	–	–	F-D, S-U	Category B	
3479	FUEL CELL CARTRIDGES or FUEL CELL CARTRIDGES CONTAINED IN EQUIPMENT or FUEL CELL CARTRIDGES PACKED WITH EQUIPMENT, containing hydrogen in metal hydride	2.1	–	–	328 339	120 mL	E0	P004	–	–	–	–	–	–	F-D, S-U	Category B	
3480	LITHIUM ION BATTERIES (including lithium ion polymer batteries)	9	–	–	188 230 310 348 376 377 384 387	0	E0	P903 P908 P909 P910 P911 LP903 LP904 LP905 LP906	–	–	–	–	–	–	F-A, S-I	Category A SW19	
3481	LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT	9	–	–	188 230	0	E0	P903 P908	–	–	–	–	–	–	F-A, S-I	Category A SW19	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
3484	HYDRAZINE AQUEOUS SOLUTION, FLAMMABLE with more than 37% hydrazine, by mass	8	3 6.1	I	–	0	E0	P001	–	–	–	–	T10	TP2 TP13	F-E, S-C	Category D SW2	
3485	CALCIUM HYPOCHLORITE, DRY, CORROSIVE or CALCIUM HYPOCHLORITE MIXTURE, DRY, CORROSIVE with more than 39% available chlorine (8.8% available oxygen)	5.1	8 P	II	314	1 kg	E2	P002	PP85	–	–	–	–	–	F-H, S-Q	Category D SW1 SW11	
3486	CALCIUM HYPOCHLORITE MIXTURE, DRY, CORROSIVE with more than 10% but not more than 39% available chlorine	5.1	8 P	III	314	5 kg	E1	P002	PP85	–	–	–	–	–	F-H, S-Q	Category D SW1 SW11	
3487	CALCIUM HYPOCHLORITE, HYDRATED, CORROSIVE or CALCIUM HYPOCHLORITE, HYDRATED MIXTURE, CORROSIVE with not less than 5.5% but not more than 16% water	5.1	8 P	II	314 322	1 kg	E2	P002	PP85	–	–	–	–	–	F-H, S-Q	Category D SW1 SW11	
3487	CALCIUM HYPOCHLORITE, HYDRATED, CORROSIVE or CALCIUM HYPOCHLORITE, HYDRATED MIXTURE, CORROSIVE with not less than 5.5% but not more than 16% water	5.1	8 P	III	223 314	5 kg	E1	P002	PP85	–	–	–	–	–	F-H, S-Q	Category D SW1 SW11	
3488	TOXIC BY INHALATION LIQUID, FLAMMABLE, CORROSIVE, N.O.S. with an LC_{50} lower than or	6.1	3 8	I	274	0	E0	P601	–	–	–	–	T22	TP2 TP13	F-E, S-D	Category D SW2	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
3491	TOXIC BY INHALATION LIQUID, WATER-REACTIVE, FLAMMABLE, N.O.S. with an LC_{50} lower than or equal to 1000 mL/m³ and saturated vapour concentration greater than or equal to 10 LC_{50}	6.1	4.3 3	I	274	0	E0	P602	–	–	–	–	T20	TP2 TP13	F-G, S-N	Category D SW2 H1	
3494	PETROLEUM SOUR CRUDE OIL, FLAMMABLE, TOXIC	3	6.1	I	343	0	E0	P001	–	–	–	–	T14	TP2 TP13	F-E, S-E	Category D SW2	
3494	PETROLEUM SOUR CRUDE OIL, FLAMMABLE, TOXIC	3	6.1	II	343	1 L	E2	P001	–	IBC02	–	–	T7	TP2	F-E, S-E	Category D SW2	
3494	PETROLEUM SOUR CRUDE OIL, FLAMMABLE, TOXIC	3	6.1	III	343	5 L	E1	P001	–	IBC03	–	–	T4	TP1	F-E, S-E	Category C SW2	
3495	IODINE	8	6.1	III	279	5 kg	E1	P002	–	IBC08	B3	–	T1	TP33	F-A, S-B	Category B SW2	
3496	BATTERIES, NICKEL-METAL HYDRIDE	9	–	–	117 963	0	E0	See SP963	–	IBC08	–	–	–	–	F-A, S-I	Category A SW1	
3497	KRILL MEAL	4.2	–	II	300	0	E2	P410	–	IBC06	B21	–	T3	TP33	F-A, S-J	Category B SW27	
3497	KRILL MEAL	4.2	–	III	223 300	0	E1	P002 LP02	–	IBC08	B3	–	T1	TP33	F-A, S-J	Category A	
3498	IODINE MONOCHLORIDE, LIQUID	8	–	II	–	1 L	E0	P001	–	IBC02	–	–	T7	TP2	F-A, S-B	Category D SW2	
3499	CAPACITOR, ELECTRIC DOUBLE LAYER (with an energy storage capacity greater than 0.3 Wh)	9	–	–	361	0	E0	P003	–	–	–	–	–	–	F-A, S-I	Category A	
3500	CHEMICAL UNDER PRESSURE, N.O.S.	2.2	–	–	274 362	0	E0	P206	PP97	–	–	–	T50	TP4 TP40	F-C, S-V	Category B	
3501	CHEMICAL UNDER PRESSURE, FLAMMABLE, N.O.S.	2.1	–	–	274 362	0	E0	P206	PP89	–	–	–	T50	TP4 TP40	F-D, S-U	Category D SW2	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
3507	URANIUM HEXAFLUORIDE, RADIOACTIVE MATERIAL, EXCEPTED PACKAGE, less than 0.1 kg per package, non-fissile or fissile-excepted	6.1	7/8	I	317 369	0	E0	P603	–	–	–	–	–	–	F-I, S-S	Category A SW12	
3508	CAPACITOR, ASYMMETRIC (with an energy storage capacity greater than 0.3Wh)	9	–	–	372	0	E0	P003	–	–	–	–	–	–	F-A, S-I	Category A	
3509	PACKAGINGS, DISCARDED, EMPTY, UNCLEANED	9	–	–	968	0	E0	–	–	–	–	–	–	–	–	–	
3510	ADSORBED GAS, FLAMMABLE, N.O.S.	2.1	–	–	274	0	E0	P208	–	–	–	–	–	–	F-D, S-U	Category D SW2	
3511	ADSORBED GAS, N.O.S.	2.2	–	–	274	0	E0	P208	–	–	–	–	–	–	F-C, S-V	Category A	
3512	ADSORBED GAS, TOXIC, N.O.S.	2.3	–	–	274	0	E0	P208	–	–	–	–	–	–	F-C, S-U	Category D SW2	
3513	ADSORBED GAS, OXIDIZING, N.O.S.	2.2	5.1	–	274	0	E0	P208	–	–	–	–	–	–	F-C, S-W	Category D	
3514	ADSORBED GAS, TOXIC, FLAMMABLE, N.O.S.	2.3	2.1	–	274	0	E0	P208	–	–	–	–	–	–	F-D, S-U	Category D SW2	
3515	ADSORBED GAS, TOXIC, OXIDIZING, N.O.S.	2.3	5.1	–	274	0	E0	P208	–	–	–	–	–	–	F-C, S-W	Category D SW2	
3516	ADSORBED GAS, TOXIC, CORROSIVE, N.O.S.	2.3	8	–	274 379	0	E0	P208	–	–	–	–	–	–	F-C, S-U	Category D SW2	
3517	ADSORBED GAS, TOXIC, FLAMMABLE, CORROSIVE, N.O.S.	2.3	2.1 8	–	274	0	E0	P208	–	–	–	–	–	–	F-D, S-U	Category D SW2	
3518	ADSORBED GAS, TOXIC, OXIDIZING, CORROSIVE, N.O.S.	2.3	5.1 8	–	274	0	E0	P208	–	–	–	–	–	–	F-C, S-W	Category D SW2	
3519	BORON TRIFLUORIDE, ADSORBED	2.3	8	–	–	0	E0	P208	–	–	–	–	–	–	F-C, S-U	Category D SW2	
3520	CHLORINE, ADSORBED	2.3	5.1	–	–	0	E0	P208	–	–	–	–	–	–	F-C, S-W	Category D	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
3525	PHOSPHINE, ADSORBED	2.3	2.1	–	–	0	E0	P208	–	–	–	–	–	–	F-D, S-U	Category D SW2	
3526	HYDROGEN SELENIDE, ADSORBED	2.3	2.1	–	–	0	E0	P208	–	–	–	–	–	–	F-D, S-U	Category D SW2	
△ 3527	POLYESTER RESIN KIT, solid base material	4.1	–	II	236 340	5kg	See SP340	P412	–	–	–	–	–	–	F-A, S-G	Category B	
△ 3527	POLYESTER RESIN KIT, solid base material	4.1	–	III	236 340	5kg	See SP340	P412	–	–	–	–	–	–	F-A, S-G	Category B	
3528	ENGINE, INTERNAL COMBUSTION, FLAMMABLE LIQUID POWERED or ENGINE, FUEL CELL, FLAMMABLE LIQUID POWERED or MACHINERY, INTERNAL COMBUSTION, FLAMMABLE LIQUID POWERED or MACHINERY, FUEL CELL, FLAMMABLE LIQUID POWERED	3	–	–	363 972	0	E0	P005	–	–	–	–	–	–	F-E, S-E	Category E SW29	
3529	ENGINE, INTERNAL COMBUSTION, FLAMMABLE GAS POWERED or ENGINE, FUEL CELL, FLAMMABLE GAS POWERED or MACHINERY, INTERNAL COMBUSTION, FLAMMABLE GAS POWERED or MACHINERY, FUEL CELL, FLAMMABLE GAS POWERED	2.1	–	–	356 363 972	0	E0	P005	–	–	–	–	–	–	F-D, S-U	Category E	
3530	ENGINE, INTERNAL COMBUSTION or MACHINERY, INTERNAL COMBUSTION	9	– P	–	363 972	0	E0	P005	–	–	–	–	–	–	F-A, S-F	Category A	
3531	POLYMERIZING SUBSTANCE, SOLID, STABILIZED, N.O.S.	4.1	–	III	274 386	0	E0	P002	PP92	IBC07	B18	–	T7	TP4 TP6 TP33	F-J, S-G	Category D SW1	
3532	POLYMERIZING SUBSTANCE, LIQUID, STABILIZED, N.O.S.	4.1	–	III	274 386	0	E0	P001	PP93	IBC03	B19	–	T7	TP4 TP6	F-J, S-G	Category D SW1	
3533	POLYMERIZING SUBSTANCE, SOLID, TEMPERATURE	4.1	–	III	274 386	0	E0	P002	PP92	IBC07	B18	–	T7	TP4 TP6	F-F, S-K	Category D SW1	

UN No.	Proper shipping name (PSN)	Class or division	Subsidiary hazard(s)	Packing group	Special provisions	Limited and excepted quantity provisions		Packing		IBC		Portable tanks and bulk containers			EmS	Stowage and handling	S
						Limited quantities	Excepted quantities	Instructions	Provisions	Instructions	Provisions		Tank instructions	Provisions			
(1)	(2) 3.1.2	(3) 2.0	(4) 2.0	(5) 2.0.1.3	(6) 3.3	(7a) 3.4	(7b) 3.5	(8) 4.1.4	(9) 4.1.4	(10) 4.1.4	(11) 4.1.4	(12)	(13) 4.2.5 4.3	(14) 4.2.5	(15) 5.4.3.4 7.8	(16a) 7.1 7.3–7.7	
3536	LITHIUM BATTERIES INSTALLED IN CARGO TRANSPORT UNIT lithium ion batteries or lithium metal batteries	9	–	–	389	0	E0	–	–	–	–	–	–	–	F-A, S-I	Category A	
3537	ARTICLES CONTAINING FLAMMABLE GAS, N.O.S.	2.1	See 2.0.6.6	–	274 391	0	E0	P006 LP03	–	–	–	–	–	–	F-D, S-U	Category D SW2	
△ 3538	ARTICLES CONTAINING NON-FLAMMABLE, NON-TOXIC GAS, N.O.S.	2.2	See 2.0.6.6	–	274 391 396	0	E0	P006 LP03	–	–	–	–	–	–	F-C, S-V	Category A	
3539	ARTICLES CONTAINING TOXIC GAS, N.O.S.	2.3	See 2.0.6.6	–	274 391	0	E0	–	–	–	–	–	–	–	F-C, S-U	–	
3540	ARTICLES CONTAINING FLAMMABLE LIQUID, N.O.S.	3	See 2.0.6.6	–	274 391	0	E0	P006 LP03	–	–	–	–	–	–	F-E, S-D	Category B	
3541	ARTICLES CONTAINING FLAMMABLE SOLID, N.O.S.	4.1	See 2.0.6.6	–	274 391	0	E0	P006 LP03	–	–	–	–	–	–	F-A, S-G	Category B	
3542	ARTICLES CONTAINING A SUBSTANCE LIABLE TO SPONTANEOUS COMBUSTION, N.O.S.	4.2	See 2.0.6.6	–	274 391	0	E0	–	–	–	–	–	–	–	*	–	
3543	ARTICLES CONTAINING A SUBSTANCE WHICH IN CONTACT WITH WATER EMITS FLAMMABLE GASES, N.O.S.	4.3	See 2.0.6.6	–	274 391	0	E0	–	–	–	–	–	–	–	F-G, S-N	–	
3544	ARTICLES CONTAINING OXIDIZING SUBSTANCE, N.O.S.	5.1	See 2.0.6.6	–	274 391	0	E0	–	–	–	–	–	–	–	F-A, S-Q	–	
3545	ARTICLES CONTAINING ORGANIC PEROXIDE, N.O.S.	5.2	See 2.0.6.6	–	274 391	0	E0	–	–	–	–	–	–	–	F-J, S-R	–	
3546	ARTICLES CONTAINING TOXIC SUBSTANCE, N.O.S.	6.1	See 2.0.6.6	–	274 391	0	E0	P006 LP03	–	–	–	–	–	–	F-A, S-A	Category B SW2 *	
3547	ARTICLES CONTAINING CORROSIVE SUBSTANCE, N.O.S.	8	See 2.0.6.6	–	274 391	0	E0	P006 LP03	–	–	–	–	–	–	F-A, S-B	Category B SW2	
3548	ARTICLES CONTAINING MISCELLANEOUS DANGEROUS GOODS, N.O.S.	9	See 2.0.6.6	–	274 391	0	E0	P006 LP03	–	–	–	–	–	–	F-A, S-P	Category A	
3549	MEDICAL WASTE, CATEGORY A, AFFECTING HUMANS, solid or MEDICAL WASTE, CATEGORY A, AFFECTING ANIMALS only, solid	6.2	–	–	395 975	0	E0	P622 LP622	–	–	–	–	–	–	F-A, S-T	Category E SW2 H1 H5	
■ 3550	COBALT DIHYDROXIDE	6.1	See			0	E5	P002		IBC07	R1		T6	TP33	F-A, S-A	Category D	

Chapter 3.3

Special provisions applicable to certain substances, materials or articles

3.3.1 When column 6 of the Dangerous Goods List indicates that a special provision is relevant to a dangerous good, the meaning and requirement(s) of that special provision are as set out below. Where a special provision includes a requirement for package marking, the provisions of 5.2.1.2.1 to .4 shall be met. If the required mark is in the form of specific wording indicated in quotation marks, such as "LITHIUM BATTERIES FOR DISPOSAL", the size of the mark shall be at least 12 mm, unless otherwise indicated in the special provision or elsewhere in this Code.

16 Samples of new or existing explosive substances or articles may be transported as directed by the competent authority for purposes including: testing, classification, research and development, quality control, or as a commercial sample. Explosive samples which are not wetted or desensitized shall be limited to 10 kg in small packages as specified by the competent authority. Explosive samples which are wetted or desensitized shall be limited to 25 kg.

23 Even though this substance has a flammability hazard, it only exhibits such hazard under extreme fire conditions in confined areas.

26 This substance is not permitted for transport in portable tanks, or intermediate bulk containers with a capacity exceeding 450 L, due to the potential initiation of an explosion when transported in large volumes.

28 This substance may be transported under the provisions of class 4.1 only if it is so packaged that the percentage of diluent will not fall below that stated, at any time during transport (see 2.4.2.4).

29 The packages, including bales, are exempt from labelling provided that they are marked with the appropriate class (e.g. "class 4.2").

32 When in any other form, this substance is not subject to the provisions of this Code.

37 When coated, this substance is not subject to the provisions of this Code.

38 This substance, when it contains not more than 0.1% calcium carbide, is not subject to the provisions of this Code.

39 This substance, when it contains less than 30% or not less than 90% silicon, is not subject to the provisions of this Code.

43 When offered for transport as pesticides, these substances shall be transported under the relevant pesticide entry and in accordance with the relevant pesticide provisions (see 2.6.2.3 and 2.6.2.4).

45 Antimony sulphides and oxides which contain not more than 0.5% of arsenic, calculated on the total mass, are not subject to the provisions of this Code.

47 Ferricyanides and ferrocyanides are not subject to the provisions of this Code.

59 These substances, when they contain not more than 50% magnesium, are not subject to the provisions of this Code.

61 The technical name, which shall supplement the proper shipping name, shall be the ISO common name, or other name listed in *The WHO Recommended Classification of Pesticides by Hazard and Guidelines to Classification* or the name of the active substance (see also 3.1.2.8.1.1).

62 This substance, when it contains not more than 4% sodium hydroxide, is not subject to the provisions of this Code.

63 The division of class 2 and the subsidiary hazards depend on the nature of the contents of the aerosol dispenser. The following provisions shall apply:

.1 Class 2.1 applies if the contents include 85% by mass or more flammable components and the chemical heat of combustion is 30 kJ/g or more;

.2 Class 2.2 applies if the contents contain 1% by mass or less flammable components and the heat of combustion is less than 20 kJ/g.

.3 Otherwise the product shall be classified as tested by the tests described in the *Manual of Tests and Criteria*, part III, section 31. Extremely flammable and flammable aerosols shall be classified in class 2.1; non-flammable in class 2.2;

.4 Gases of class 2.3 shall not be used as a propellant in an aerosol dispenser;

.5 Where the contents other than the propellant of aerosol dispensers to be ejected are classified as class 6.1 packing groups II or III or class 8 packing groups II or III, the aerosol shall have a subsidiary hazard of class 6.1 or class 8;

.6 Aerosols with contents meeting the criteria for packing group I for toxicity or corrosivity shall be prohibited from transport;

.7 Except for consignments transported in limited quantities (see chapter 3.4), packages containing aerosols shall bear labels for the primary hazard and for the subsidiary hazard(s), if any.

Flammable components are flammable liquids, flammable solids or flammable gases and gas mixtures as defined in notes 1 to 3 of subsection 31.1.3 of part III of the *Manual of Tests and Criteria*. This designation does not cover pyrophoric, self-heating or water-reactive substances. The chemical heat of combustion shall be determined by one of the following methods: ASTM D240, ISO/FDIS 13943:1999 (E/F) 86.1 to 86.3 or NFPA 30B.

65 Hydrogen peroxide aqueous solutions with less than 8% hydrogen peroxide are not subject to the provisions of this Code.

66 Cinnabar is not subject to the provisions of this Code.

105 Nitrocellulose meeting the descriptions of UN 2556 or UN 2557 may be classified in class 4.1.

113 The transport of chemically unstable mixtures is prohibited.

117 Only regulated when transported by sea.

119 Refrigerating machines and refrigerating-machinery components including machines or other appliances which have been designed for the specific purpose of keeping food or other items at a low temperature in an internal compartment, and air-conditioning units. Refrigerating machines and refrigerating-machine components are not subject to the provisions of this Code if they contain less than 12 kg of gas in class 2.2 or less than 12 L of ammonia solution (UN 2672).

122 The subsidiary hazard(s), the control and emergency temperatures, if any, and the generic entry number for each of the currently assigned organic peroxide formulations are given in 2.5.3.2.4, 4.1.4.2 packing instruction IBC520 and 4.2.5.2.6 portable tank instruction T23.

123 Only regulated when transported by air or by sea.

127 Other inert material or inert material mixture may be used at the discretion of the competent authority, provided this inert material has identical phlegmatizing properties.

131 The phlegmatized substance shall be significantly less sensitive than dry PETN.

133 If over-confined in packagings, this substance may exhibit explosive behaviour. Packagings authorized under packing instruction P409 are intended to prevent over-confinement. When a packaging other than those prescribed under packing instruction P409 is authorized by the competent authority of the country of origin in accordance with 4.1.3.7, the package shall bear an “EXPLOSIVE” subsidiary hazard label (Model No. 1, see 5.2.2.2.2) unless the competent authority of the country of origin has permitted this label to be dispensed with for the specific packaging employed because test data have proved that the substance in this packaging does not exhibit explosive behaviour (see 5.4.1.5.5.1). The provisions of 7.1.3.1, 7.1.4.4 and 7.2.3.3 shall also be considered.

135 The dihydrated sodium salt of dichloroisocyanuric acid does not meet the criteria for inclusion in class 5.1 and is not subject to the provisions of this Code unless meeting the criteria for inclusion in another class or division.

138 *p*-Bromobenzyl cyanide is not subject to the provisions of this Code.

141 Products which have undergone sufficient heat treatment so that they present no hazard during transport are not subject to the provisions of this Code.

142 Solvent-extracted soya bean meal containing not more than 1.5% oil and 11% moisture, being substantially free from flammable solvents, which is accompanied by a certificate from the shipper stating that the substance, as offered for shipment, meets this requirement is not subject to the provisions of this Code.

144 An aqueous solution containing not more than 24% alcohol by volume is not subject to the provisions of this Code.

145 Alcoholic beverages of packing group III, when transported in receptacles of 250 L or less, are not subject to the provisions of this Code.

152 The classification of this substance will vary with particle size and packaging, but borderlines have not been experimentally determined. Appropriate classifications shall be made as required by 2.1.3.

153 This entry applies only if it is demonstrated, on the basis of tests, that the substance, when in contact with water, is not combustible nor shows a tendency to auto-ignition and that the mixture of gases evolved is not flammable.

163 A substance specifically listed by name in the Dangerous Goods List shall not be transported under this entry. Materials transported under this entry may contain 20% or less nitrocellulose provided the nitrocellulose contains not more than 12.6% nitrogen (by dry mass).

168 Asbestos which is immersed or fixed in a natural or artificial binder (such as cement, plastics, asphalt, resins or mineral ore) in such a way that no escape of hazardous quantities of respirable asbestos fibres can occur during transport is not subject to the provisions of this Code. Manufactured articles containing asbestos and not meeting this provision are nevertheless not subject to the provisions of this Code when packaged so that no escape of hazardous quantities of respirable asbestos fibres can occur during transport.

169 Phthalic anhydride in the solid state and tetrahydrophthalic anhydride, with not more than 0.05% maleic anhydride, are not subject to the provisions of this Code. Phthalic anhydride molten at a temperature above its flashpoint, with not more than 0.05% maleic anhydride, shall be classified under UN 3256.

172 Where a radioactive material has (a) subsidiary hazard(s):

.1 The substance shall be allocated to packing group I, II or III, if appropriate, by application of the packing group criteria provided in part 2 corresponding to the nature of the predominant subsidiary hazard;

.2 Packages shall be labelled with subsidiary hazard labels corresponding to each subsidiary hazard exhibited by the material; corresponding placards shall be affixed to cargo transport units in accordance with the relevant provisions of 5.3.1;

.3 For the purposes of documentation and package marking, the proper shipping name shall be supplemented with the name of the constituents which most predominantly contribute to this (these) subsidiary hazard(s) and which shall be enclosed in parenthesis;

.4 The dangerous goods transport document shall indicate the class or division of the subsidiary hazard and, where assigned, the packing group as required by 5.4.1.4.1.4 and 5.4.1.4.1.5.

For packing, see also 4.1.9.1.5.

177 Barium sulphate is not subject to the provisions of this Code.

178 This entry shall be used only when no other appropriate entry exists in the list, and only with the approval of the competent authority of the country of origin.

181 Packages containing this type of substance shall bear the “EXPLOSIVE” subsidiary hazard label (Model No. 1, see 5.2.2.2.2) unless the competent authority of the country of origin has permitted this label to be dispensed with for the specific packaging employed because test data have proved that the substance in this packaging does not exhibit explosive behaviour (see 5.4.1.5.5.1). The provisions of 7.2.3.3 shall also be considered.

182 The group of alkali metals includes lithium, sodium, potassium, rubidium and caesium.

183 The group of alkaline earth metals includes magnesium, calcium, strontium and barium.

188 Cells and batteries offered for transport are not subject to other provisions of this Code if they meet the following:

.1 For a lithium metal or lithium alloy cell, the lithium content is not more than 1 g, and for a lithium-ion cell, the watt-hour rating is not more than 20 Wh;

.2 For a lithium metal or lithium alloy battery, the aggregate lithium content is not more than 2 g, and for a lithium-ion battery, the watt-hour rating is not more than 100 Wh. Lithium-ion batteries subject to this provision shall be marked with the watt-hour rating on the outside case, except those manufactured before 1 January 2009;

.3 Each cell or battery meets the provisions of 2.9.4.1, 2.9.4.5, 2.9.4.6 if applicable and 2.9.4.7;

.4 Cells and batteries, except when installed in equipment, shall be packed in inner packagings that completely enclose the cell or battery. Cells and batteries shall be protected so as to prevent short circuits. This includes protection against contact with electrically conductive material within the same packaging that could lead to a short circuit. The inner packagings shall be packed in strong outer packagings which conform to the provisions of 4.1.1.1, 4.1.1.2, and 4.1.1.5;

.5 Cells and batteries when installed in equipment shall be protected from damage and short circuit, and the equipment shall be equipped with an effective means of preventing accidental activation. This requirement does not apply to devices which are intentionally active in transport (radio frequency identification (RFID) transmitters, watches, sensors, etc.) and which are not capable of generating a dangerous evolution of heat. When batteries are installed in equipment, the equipment shall be packed in strong outer packagings constructed of suitable material of adequate strength and design in relation to the packaging's capacity and its intended use unless the battery is afforded equivalent protection by the equipment in which it is contained;

.6 Each package shall be marked with the appropriate lithium battery mark, as illustrated in 5.2.1.10;

⊗

△ **Note:** Packages containing lithium batteries packed in conformity with the provisions of part 4, chapter 11, packing instructions 965 or 968, Section IB of the ICAO Technical Instructions for the Safe Transport of Dangerous Goods by Air that bear the mark as shown in 5.2.1.10 (lithium battery mark) and the label shown in 5.2.2.2.2, Model No. 9A shall be deemed to meet the provisions of this special provision.

This requirement does not apply to:

.1 packages containing only button cell batteries installed in equipment (including circuit boards); and

.2 packages containing no more than four cells or two batteries installed in equipment, where there are not more than two packages in the consignment.

When packages are placed in an overpack, the lithium battery mark shall either be clearly visible or be reproduced on the outside of the overpack and the overpack shall be marked with the word "OVERPACK". The lettering of the "OVERPACK" mark shall be at least 12 mm high;

.7 Except when cells or batteries are installed in equipment, each package shall be capable of withstanding a 1.2 m drop test in any orientation without damage to cells or batteries contained therein, without shifting of the contents so as to allow battery to battery (or cell to cell) contact and without release of contents; and

.8 Except when cells or batteries are installed in or packed with equipment, packages shall not exceed 30 kg gross mass. As used in this special provision "equipment" means apparatus for which the lithium cells or batteries will provide electrical power for its operation.

As used above and elsewhere in this Code, "lithium content" means the mass of lithium in the anode of a lithium metal or lithium alloy cell.

Separate entries exist for lithium metal batteries and lithium ion batteries to facilitate the transport of these batteries for specific modes of transport and to enable the application of different emergency response actions.

A single cell battery as defined in part III, subsection 38.3.2.3 of the *Manual of Tests and Criteria* is considered a "cell" and shall be transported according to the requirements for "cells" for the purpose of this special provision.

190 Aerosol dispensers shall be provided with protection against inadvertent discharge. Aerosols with a capacity not exceeding 50 mL containing only non-toxic constituents are not subject to the provisions of this Code.

191 Receptacles with a capacity not exceeding 50 mL containing only non-toxic constituents are not subject to the provisions of this Code.

193 This entry may only be used for ammonium nitrate based compound fertilizers. They shall be classified in accordance with the procedure as set out in the *Manual of Tests and Criteria*, part III, section 39.

194 The control and emergency temperatures, if any, and the generic entry number for each of the currently assigned self-reactive substances are given in 2.4.2.3.2.3.

195 For certain organic peroxides types B or C, a smaller packaging than that allowed by packing methods OP5 or OP6 respectively has to be used (see 4.1.7 and 2.5.3.2.4).

196 Formulations which, in laboratory testing, neither detonate in the cavitated state nor deflagrate, which show no effect when heated under confinement and which exhibit no explosive power may be transported under this entry. The formulation must also be thermally stable (i.e. the SADT is 60°C or higher for a 50 kg package). Formulations not meeting these criteria shall be transported under the provisions of class 5.2 (see 2.5.3.2.4).

198 Nitrocellulose solutions containing not more than 20% nitrocellulose may be transported as paint, perfumery products or printing ink, as applicable. See UN Nos. 1210, 1263, 1266, 3066, 3469 and 3470.

199 Lead compounds which, when mixed in a ratio of 1:1000 with 0.07M hydrochloric acid and stirred for one hour at a temperature of 23°C ± 2°C, exhibit a solubility of 5% or less (see ISO 3711:1990, *Lead chromate pigments and lead chromate-molybdate pigments – Specifications and methods of test*) are considered insoluble and are not subject to the provisions of this Code unless they meet the criteria for inclusion in another hazard class.

201 Lighters and lighter refills shall comply with the provisions of the country in which they were filled. They shall be provided with protection against inadvertent discharge. The liquid portion of the gas shall not exceed 85% of the capacity of the receptacle at 15°C. The receptacles, including the closures, shall be capable of withstanding an internal pressure of twice the pressure of the liquefied petroleum gas at 55°C. The valve mechanisms and ignition devices shall be securely sealed, taped or otherwise fastened or designed to prevent operation or leakage of the contents during transport. Lighters shall not contain more than 10 g of liquefied petroleum gas. Lighter refills shall not contain more than 65 g of liquefied petroleum gas.

203 This entry shall not be used for polychlorinated biphenyls, UN 2315.

204 Articles containing smoke-producing substance(s) corrosive according to the criteria for class 8 shall be labelled with a “CORROSIVE” subsidiary hazard label (Model No. 8, see 5.2.2.2.2).

Articles containing smoke-producing substance(s) toxic by inhalation according to the criteria for class 6.1 shall be labelled with a “TOXIC” subsidiary hazard label (Model No. 6.1, see 5.2.2.2.2), except that those manufactured before 31 December 2016 may be transported until 1 January 2019 without a “TOXIC” subsidiary hazard label.

205 This entry shall not be used for PENTACHLOROPHENOL, UN 3155.

207 Plastics moulding compounds may be made from polystyrene, poly(methyl methacrylate) or other polymeric material.

208 The commercial grade of calcium nitrate fertilizer, when consisting mainly of a double salt (calcium nitrate and ammonium nitrate) containing not more than 10% ammonium nitrate and at least 12% water of crystallization, is not subject to the provisions of this Code.

209 The gas shall be at a pressure corresponding to ambient atmospheric pressure at the time the containment system is closed and this shall not exceed 105 kPa absolute.

210 Toxins from plant, animal or bacterial sources which contain infectious substances, or toxins that are contained in infectious substances, shall be classified under class 6.2.

215 This entry only applies to the technically pure substance or to formulations derived from it, having an SADT higher than 75°C, and, therefore, does not apply to formulations which are self-reactive substances (for self-reactive substances, see 2.4.2.3.2.3). Homogeneous mixtures containing not more than 35% by mass of azodicarbonamide and at least 65% of inert substance are not subject to this Code unless criteria of other classes are met.

216 Mixtures of solids which are not subject to the provisions of this Code and flammable liquids may be transported under this entry without first applying the classification criteria of class 4.1, provided there is no free liquid visible at the time the substance is loaded or at the time the packaging or cargo transport unit is closed. Each cargo transport unit shall be leakproof when used as a bulk container. Sealed packets and articles containing less than 10 mL of a packing group II or III flammable liquid absorbed into a solid material are not subject to the provisions of this Code provided there is no free liquid in the packet or article.

217 This entry shall only be used for mixtures of solids which are not subject to the provisions of this Code and toxic liquids may be transported under this entry without first applying the classification criteria of class 6.1, provided there is no free liquid visible at the time the substance is loaded or at the time the packaging or cargo transport unit is closed. Each cargo transport unit shall be leakproof when used as a bulk container. This entry shall not be used for solids containing a packing group I liquid.

218 This entry shall only be used for mixtures of solids which are not subject to the provisions of this Code and corrosive liquids may be transported under this entry without first applying the classification criteria of class 8, provided there is no free liquid visible at the time the substance is loaded or at the time the packaging or cargo transport unit is closed. Each cargo transport unit shall be leakproof when used as a bulk container. This entry shall not be used for solids containing a packing group I liquid.

219 Genetically modified microorganisms (GMMOs) and genetically modified organisms (GMOs) packed and marked in accordance with packing instruction P904 are not subject to any other provisions of this Code.

If GMMOs or GMOs meet the definition in chapter 2.6 of a toxic substance or an infectious substance and the criteria for inclusion in class 6.1 or 6.2, the provisions of this Code for transporting toxic substances or infectious substances apply.

220 The technical name of the flammable liquid component only of this solution or mixture shall be shown in parentheses immediately following the proper shipping name.

221 Substances included under this entry shall not be of packing group I.

223 If the chemical or physical properties of a substance covered by this description are such that, when tested, it does not meet the established defining criteria for the class or division listed in column 3, or any other class or division, it is not subject to the provisions of this Code except in the case of a marine pollutant where 2.10.3 applies.

224 Unless it can be demonstrated by testing that the sensitivity of the substance in its frozen state is no greater than in its liquid state, the substance shall remain liquid during normal transport conditions. It shall not freeze at temperatures above –15°C.

225 Fire extinguishers under this entry may include installed actuating cartridges (cartridges, power device of division 1.4C or 1.4S) without changing the classification of class 2.2 provided the total quantity of deflagrating (propellant) explosives does not exceed 3.2 g per extinguishing unit. Fire extinguishers shall be manufactured, tested, approved and labelled according to the provisions applied in the country of manufacture.

Note: "Provisions applied in the country of manufacture" means the provisions applicable in the country of manufacture or those applicable in the country of use.

Fire extinguishers under this entry include:

.1 portable fire extinguishers for manual handling and operation;

■ **Note:** This entry applies to portable fire extinguishers, even if some components that are necessary for their proper functioning (e.g. hoses and nozzles) are temporarily detached, as long as the safety of the pressurized extinguishing agent containers is not compromised and the fire extinguishers continue to be identified as portable fire extinguishers.

.2 fire extinguishers for installation in aircraft;

.3 fire extinguishers mounted on wheels for manual handling;

.4 fire extinguishing equipment or machinery mounted on wheels or wheeled platforms or units transported similar to (small) trailers; and

.5 fire extinguishers composed of a non-rollable pressure drum and equipment, and handled, e.g. by fork lift or crane when loaded or unloaded.

Note: Pressure receptacles which contain gases for use in the above-mentioned extinguishers or for use in stationary fire-fighting installations shall meet the requirements in chapter 6.2 and all requirements applicable to the relevant dangerous goods when these pressure receptacles are transported separately.

226 Formulations of these substances containing not less than 30% non-volatile, non-flammable phlegmatizer are not subject to the provisions of this Code.

227 When phlegmatized with water and inorganic inert material, the content of urea nitrate may not exceed 75% by mass and the mixture shall not be capable of being detonated by the series 1, type (a) test in the *Manual of Tests and Criteria*, part I.

228 Mixtures not meeting the criteria for flammable gases (class 2.1) shall be transported under UN 3163.

230 Lithium cells and batteries may be transported under this entry if they meet the provisions of 2.9.4.

232 This entry shall only be used when the substance does not meet the criteria of any other class. Transport in cargo transport units other than in tanks shall be in accordance with standards specified by the competent authority of the country of origin.

235 This entry applies to articles which contain class 1 explosive substances and which may also contain dangerous goods of other classes. These articles are used to enhance safety in vehicles, vessels or aircraft, e.g. air bag inflators, air bag modules, seat-belt pretensioners, and pyromechanical devices.

236 Polyester resin kits consist of two components: a base material (either class 3 or class 4.1, packing group II or III) and an activator (organic peroxide). The organic peroxide shall be type D, E, or F, not requiring temperature control. The packing group shall be II or III, according to the criteria of either class 3 or class 4.1, as appropriate, applied to the base material. The quantity limit shown in column 7a of the Dangerous Goods List of chapter 3.2 applies to the base material.

237 The membrane filters, including paper separators, coating or backing materials, etc., that are present in transport, shall not be liable to propagate a detonation as tested by one of the tests described in the *Manual of Tests and Criteria*, part I, test series 1(a).

In addition, the competent authority may determine, on the basis of the results of suitable burning rate tests taking account of the standard tests in the *Manual of Tests and Criteria*, part III, 33.2.1, that nitrocellulose membrane filters in the form in which they are to be transported are not subject to the provisions of this Code applicable to flammable solids in class 4.1.

238 .1 Batteries can be considered as non-spillable provided that they are capable of withstanding the vibration and pressure differential tests given below, without leakage of battery fluid:

Vibration test: The battery is rigidly clamped to the platform of a vibration machine and a simple harmonic motion having an amplitude of 0.8 mm (1.6 mm maximum total excursion) is applied. The frequency is varied at the rate of 1 Hz/min between the limits of 10 Hz and 55 Hz. The entire range of frequencies and return is traversed in 95 ± 5 minutes for each mounting position (direction of vibration) of the battery. The battery is tested in three mutually perpendicular positions (to include testing with fill openings and vents, if any, in an inverted position) for equal time periods.

Pressure differential test: Following the vibration test, the battery is stored for six hours at 24°C ± 4°C while subjected to a pressure differential of at least 88 kPa. The battery is tested in three mutually perpendicular positions (to include testing with fill openings and vents, if any, in an inverted position) for at least six hours in each position.

Non-spillable type batteries which are an integral part of and necessary for the operation of mechanical or electronic equipment shall be securely fastened in the battery holder on the equipment and protected in such a manner as to prevent damage and short circuits.

.2 Non-spillable batteries are not subject to the provisions of this Code if, at a temperature of 55°C, the electrolyte will not flow from a ruptured or cracked case and there is no free liquid to flow and if, when packaged for transport, the terminals are protected from short circuit.

239 Batteries or cells shall not contain dangerous goods other than sodium, sulphur or sodium compounds (e.g. sodium polysulphides and sodium tetrachloroaluminate). Batteries or cells shall not be offered for transport at a temperature such that liquid elemental sodium is present in the battery or cell, unless approved and under the conditions established by the competent authority.

Cells shall consist of hermetically sealed metal casings which fully enclose the dangerous goods and which are so constructed and closed as to prevent the release of the dangerous goods under normal conditions of transport.

Batteries shall consist of cells secured within and fully enclosed by a metal casing so constructed and closed as to prevent the release of the dangerous goods under normal conditions of transport.

240 *Deleted.*

241 The formulation shall be prepared so that it remains homogeneous and does not separate during transport. Formulations with low nitrocellulose contents and not showing dangerous properties when tested for their liability to detonate, deflagrate or explode when heated under defined confinement by tests of test series 1(a), 2(b) and 2(c) respectively in the *Manual of Tests and Criteria*, part I and not being a flammable solid when tested in accordance with test N.1 in the *Manual of Tests and Criteria*, part III, subsection 33.2.4 (chips, if necessary, crushed and sieved to a particle size of less than 1.25 mm) are not subject to the provisions of this Code.

242 Sulphur is not subject to the provisions of this Code when it has been formed to a specific shape (such as prills, granules, pellets, pastilles or flakes).

243 Gasoline, motor spirit and petrol for use in spark-ignition engines (e.g. in automobiles, stationary engines and other engines) shall be assigned to this entry regardless of variations in volatility.

244 This entry includes materials and substances such as aluminium dross, aluminium skimmings, spent cathodes, spent potliner and aluminium salt slags.

Before loading, these by-products shall be cooled to ambient temperature, unless they have been calcined to remove moisture. Cargo transport units containing bulk loads shall be adequately ventilated and protected against ingress of water throughout the journey.

247 Alcoholic beverages containing more than 24% alcohol but not more than 70% by volume, when transported as part of the manufacturing process, may be transported in wooden barrels with a capacity of more than 250 L and not more than 500 L meeting the general requirements of 4.1.1, as appropriate, on the following conditions:

.1 the wooden barrels shall be checked and tightened before filling;

.2 sufficient ullage (not less than 3%) shall be left to allow for the expansion of the liquid;

.3 the wooden barrels shall be transported with the bungholes pointing upwards;

.4 the wooden barrels shall be transported in containers meeting the provisions of the *International Convention for Safe Containers, 1972* (CSC Convention), as amended, and each wooden barrel shall be secured in custom-made cradles and be wedged by appropriate means to prevent it from being displaced in any way during transport; and

.5 when carried on board ships, the containers shall be stowed in open cargo spaces or in enclosed cargo spaces complying with the requirements for class 3 flammable liquids with a flashpoint of 23°C c.c. or less in regulation II-2/19 of SOLAS, 74, as amended or regulation II-2/54 of SOLAS 74, as amended by the resolutions indicated in II-2/1.2.1, as applicable.

249 Ferrocerium, stabilized against corrosion, with a minimum iron content of 10% is not subject to the provisions of this Code.

250 This entry may only be used for samples of chemicals taken for analysis in connection with the implementation of the Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction. The transport of substances under this entry shall be in accordance with the chain of custody and security procedures specified by the Organization for the Prohibition of Chemical Weapons.

The chemical sample may only be transported provided prior approval has been granted by the competent authority or the Director General of the Organization for the Prohibition of Chemical Weapons and providing the sample complies with the following conditions:

.1 it shall be packaged according to packing instruction 623 in the International Civil Aviation Organization's Technical Instructions for the Safe Transport of Dangerous Goods by Air; and

.2 during transport, it shall be accompanied by a copy of the document of approval for transport, showing the quantity limitations and the packing provisions.

251 The entry CHEMICAL KIT or FIRST AID KIT is intended to apply to boxes, cases, etc., containing small quantities of various dangerous goods which are used, for example, for medical, analytical, testing or repair purposes. Such kits shall only contain dangerous goods that are permitted as:

.1 excepted quantities not exceeding the quantity indicated by the code in column 7b of the Dangerous Goods List of chapter 3.2, provided that the net quantity per inner packaging and net quantity per package are as prescribed in 3.5.1.2 and 3.5.1.3; or

.2 limited quantities as indicated in column 7a of the Dangerous Goods List of chapter 3.2, provided that the net quantity per inner packaging does not exceed 250 mL or 250 g.

Components shall not react dangerously (see 4.1.1.6). The total quantity of dangerous goods in any one kit shall not exceed either 1 L or 1 kg.

For the purposes of completion of the dangerous goods transport document as set out in 5.4.1.4.1, the packing group shown on the document shall be the most stringent packing group assigned to any individual substance in the kit. Where the kit contains only dangerous goods to which no packing group is assigned, no packing group need be indicated on the dangerous goods transport document.

Kits which are carried on board vehicles for first-aid or operating purposes are not subject to the provisions of this Code.

Chemical kits and first aid kits containing dangerous goods in inner packagings which do not exceed the quantity limits for limited quantities applicable to individual substances as specified in column 7a of the Dangerous Goods List may be transported in accordance with chapter 3.4.

252 Provided the ammonium nitrate remains in solution under all conditions of transport, aqueous solutions of ammonium nitrate, with not more than 0.2% combustible material, in a concentration not exceeding 80%, are not subject to the provisions of this Code.

266 This substance, when containing less alcohol, water or phlegmatizer than specified, shall not be transported, unless specifically authorized by the competent authority.

267 Any explosives, blasting, type C containing chlorates shall be segregated from explosives containing ammonium nitrate or other ammonium salts.

270 Aqueous solutions of class 5.1 inorganic solid nitrate substances are considered as not meeting the criteria of class 5.1 if the concentration of the substances in solution at the minimum temperature encountered in transport is not greater than 80% of the saturation limit.

271 Lactose or glucose or similar materials may be used as a phlegmatizer provided that the substance contains not less than 90%, by mass, of phlegmatizer. The competent authority may authorize these mixtures to be classified under class 4.1 on the basis of series 6(c) tests of part I of the *Manual of Tests and Criteria* on at least three packages as prepared for transport. Mixtures containing at least 98%, by mass, of phlegmatizer are not subject to the provisions of this Code. Packages containing mixtures with not less than 90%, by mass, of phlegmatizer need not bear a "TOXIC" subsidiary hazard label.

272 This substance shall not be transported under the provisions of class 4.1 unless specifically authorized by the competent authority (see UN 0143 or UN 0150 as appropriate).

273 Maneb and maneb preparations stabilized against self-heating need not be classified in class 4.2 when it can be demonstrated by testing that a cubic volume of 1 m^3 of substance does not self-ignite and that the temperature at the centre of the sample does not exceed 200°C when the sample is maintained at a temperature of not less than 75°C ± 2°C for a period of 24 hours.

274 For the purposes of documentation and package marking, the proper shipping name shall be supplemented with the technical name (see 3.1.2.8.1).

For UN 3077 and UN 3082 only, the technical name may be a name shown in capital letters in column 2 of the Dangerous Goods List, provided that this name does not include "N.O.S." and that

special provision 274 is not assigned. The name which most appropriately describes the substance or mixture shall be used, e.g.:

UN 3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (PAINT)

UN 3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (PERFUMERY PRODUCTS).

277 For aerosols or receptacles containing toxic substances, the limited quantity value is 120 mL. For all other aerosols or receptacles, the limited quantity value is 1,000 mL.

278 These substances shall not be classified and transported unless authorized by the competent authority on the basis of results from series 2 tests and series 6(c) tests of part I of the *Manual of Tests and Criteria* on packages as prepared for transport (see 2.1.3.1). The competent authority shall assign the packing group on the basis of the chapter 2.3 criteria and the package type used for the series 6(c) tests.

279 The substance is assigned to this classification or packing group based on human experience rather than the strict application of classification criteria set out in this Code.

280 This entry applies to safety devices for vehicles, vessels or aircraft, e.g. air bag inflators, air bag modules, seat-belt pretensioners, and pyromechanical devices, which contain dangerous goods of class 1 or of other classes, when transported as component parts and if these articles as presented for transport have been tested in accordance with test series 6(c) of part I of the *Manual of Tests and Criteria*, with no explosion of the device, no fragmentation of device casing or pressure receptacle, and no projection hazard nor thermal effect which would significantly hinder fire-fighting or emergency response efforts in the immediate vicinity. This entry does not apply to life-saving appliances described in special provision 296 (UN Nos. 2990 and 3072).

281 Transport of hay, straw or bhusa when wet, damp or contaminated with oil is prohibited and when not wet or contaminated with oil is subject to the provisions of this Code.

283 Articles, containing gas, intended to function as shock absorbers, including impact-energy-absorbing devices or pneumatic springs, are not subject to the provisions of this Code provided:

.1 each article has a gas space capacity not exceeding 1.6 L and a charge pressure not exceeding 280 bar where the product of the capacity (litres) and charge pressure (bar) does not exceed 80 (i.e. 0.5 L gas space and 160 bar charge pressure, 1 L gas space and 80 bar charge pressure, 1.6 L gas space and 50 bar charge pressure, 0.28 L gas space and 280 bar charge pressure);

.2 each article has a minimum burst pressure of 4 times the charge pressure at 20°C for products not exceeding 0.5 L gas space capacity and 5 times charge pressure for products greater than 0.5 L gas space capacity;

.3 each article is manufactured from material which will not fragment upon rupture;

.4 each article is manufactured in accordance with a quality-assurance standard acceptable to the competent authority; and

.5 the design type has been subjected to a fire test demonstrating that pressure in the article is relieved by means of a fire-degradable seal or other pressure relief device, such that the article will not fragment and that the article does not rocket.

284 An oxygen generator, chemical, containing oxidizing substances shall meet the following conditions:

.1 the generator, when containing an explosive device, shall only be transported under this entry when excluded from class 1 in accordance with 2.1.3 of this Code;

.2 the generator, without its packaging, shall be capable of withstanding a 1.8 m drop test onto a rigid, non-resilient, flat and horizontal surface, in the position most likely to cause damage, without loss of its contents and without actuation; and

.3 when the generator is equipped with an actuating device, it shall have at least two positive means of preventing unintentional actuation.

286 Nitrocellulose membrane filters covered by this entry, each with a mass not exceeding 0.5 g, are not subject to the provisions of this Code when contained individually in an article or a sealed packet.

288 These substances shall not be classified and transported unless authorized by the competent authority on the basis of results from series 2 tests and a series 6(c) test of part I of the *Manual of Tests and Criteria* on packages as prepared for transport (see 2.1.3).

289 Safety devices, electrically initiated and safety devices, pyrotechnic installed in vehicles, vessels or aircraft or in completed components such as steering columns, door panels, seats, etc., are not subject to the provisions of this Code.

290 When this radioactive material meets the definitions and criteria of other classes or divisions as defined in part 2, it shall be classified in accordance with the following:

.1 where the substance meets the criteria for dangerous goods in excepted quantities as set out in chapter 3.5, the packagings shall be in accordance with 3.5.2 and meet the testing requirements

of 3.5.3. All other requirements applicable to radioactive material, excepted packages as set out in 1.5.1.5 shall apply without reference to the other class or division;

.2 where the quantity exceeds the limits specified in 3.5.1.2, the substance shall be classified in accordance with the predominant subsidiary hazard. The dangerous goods transport document shall describe the substance with the UN number and proper shipping name applicable to the other class supplemented with the name applicable to the radioactive excepted package according to column 2 in the Dangerous Goods List of chapter 3.2, and the substance shall be transported in accordance with the provisions applicable to that UN number. An example of the information shown on the dangerous goods transport document is:

UN 1993, Flammable liquid, N.O.S. (ethanol and toluene mixture), Radioactive material, excepted package – limited quantity of material, class 3, PG II.

In addition, the provisions of 2.7.2.4.1 shall apply;

.3 the provisions of chapter 3.4 for the transport of dangerous goods packed in limited quantities shall not apply to substances classified in accordance with subparagraph .2;

.4 when the substance meets a special provision that exempts this substance from all dangerous goods provisions of the other classes, it shall be classified in accordance with the applicable UN number of class 7 and all requirements specified in 1.5.1.5 shall apply.

291 Flammable liquefied gases shall be contained within refrigerating-machine components. These components shall be designed and tested to at least three times the working pressure of the machinery. The refrigerating machines and refrigerating-machine components shall be designed and constructed to contain the liquefied gas and preclude the risk of bursting or cracking of the pressure-retaining components during normal conditions of transport. Refrigerating machines and refrigerating-machine components are not subject to the provisions of this Code if they contain less than 12 kg of gas.

293 The following definitions apply to matches:

.1 *Fusee matches* are matches the heads of which are prepared with a friction-sensitive igniter composition and a pyrotechnic composition which burns with little or no flame, but with intense heat;

.2 *Safety matches* are matches that combined with or attached to the box, book or card that can be ignited by friction only on a prepared surface;

.3 *"Strike anywhere" matches* are matches that can be ignited by friction on a solid surface;

.4 *Wax 'Vesta' matches* are matches that can be ignited by friction either on a prepared surface or on a solid surface.

294 Safety matches and wax 'Vesta' matches in an outer packaging not exceeding 25 kg net mass are not subject to any other provision (except marking) of this Code when packaged in accordance with packing instruction P407.

295 Batteries need not be individually marked and labelled if the pallet bears the appropriate mark and label.

296 These entries apply to life-saving appliances such as liferafts, personal flotation devices and self-inflating slides. UN 2990 applies to self-inflating appliances. UN 3072 applies to life-saving appliances that are not self-inflating. Life-saving appliances may contain:

.1 signal devices (class 1) which may include smoke and illumination signal flares packed in packagings that prevent them from being inadvertently activated;

.2 for UN 2990 only, cartridges, power device of division 1.4, compatibility group S, may be contained for purposes of the self-inflating mechanism and provided that the quantity of explosives per appliance does not exceed 3.2 g;

.3 class 2.2 compressed or liquefied gases;

.4 electric storage batteries (class 8) and lithium batteries (class 9);

.5 first aid kits or repair kits containing small quantities of dangerous goods (e.g. classes 3, 4.1, 5.2, 8 or 9 substances); or

.6 "Strike anywhere" matches packed in packagings that prevent them from being inadvertently activated.

Life-saving appliances packed in strong rigid outer packagings with a total maximum gross mass of 40 kg, containing no dangerous goods other than class 2.2 compressed or liquefied gases with no subsidiary hazard in receptacles with a capacity not exceeding 120 mL, installed solely for the purpose of the activation of the appliance, are not subject to the provision of this Code.

299 Consignments of:

.1 Cotton, dry having a density not less than 360 kg/m^3;

.2 Flax, dry having a density not less than 400 kg/m^3;

.3 Sisal, dry having a density not less than 360 kg/m^3; and

.4 Tampico fibre, dry having a density not less than 360 kg/m^3,

according to ISO 8115:1986, are not subject to the provisions of this Code when transported in closed cargo transport units.

300 Fish meal, fish scrap and krill meal shall not be transported if the temperature at the time of loading exceeds 35°C or 5°C above the ambient temperature, whichever is higher.

301 This entry only applies to articles such as machinery, apparatus or devices containing dangerous goods as a residue or an integral element of the articles. It shall not be used for articles for which a proper shipping name already exists in the Dangerous Goods List. Articles transported under this entry shall only contain dangerous goods which are authorized to be transported in accordance with the provisions in chapter 3.4 (Limited quantities). The quantity of dangerous goods in articles shall not exceed the quantity specified in column 7a of the Dangerous Goods List for each item of dangerous goods contained. If the articles contains more than one item of dangerous goods, the individual dangerous goods shall be enclosed to prevent them reacting dangerously with one another during transport (see 4.1.1.6). When it is required to ensure liquid dangerous goods remain in their intended orientation, orientation arrows shall be displayed on at least two opposite vertical sides with the arrows pointing in the correct direction in accordance with 5.2.1.7.1.

302 Fumigated cargo transport units containing no other dangerous goods are only subject to the provisions of 5.5.2.

303 Receptacles shall be assigned to the class and, if any, subsidiary hazard of the gas or mixture of gases contained therein determined in accordance with the provisions of chapter 2.2.

304 This entry may only be used for the transport of non-activated batteries which contain dry potassium hydroxide and which are intended to be activated prior to use by the addition of an appropriate amount of water to the individual cells.

305 These substances are not subject to the provisions of this Code when in concentrations of not more than 50 mg/kg.

306 This entry may only be used for substances that are too insensitive for acceptance into class 1 when tested in accordance with test series 2 (see *Manual of Tests and Criteria*, part I).

307 This entry may only be used for ammonium nitrate based fertilizers. They shall be classified in accordance with the procedure as set out in the *Manual of Tests and Criteria*, part III, section 39.

308 Stabilization of fish meal shall be achieved to prevent spontaneous combustion by effective application of ethoxyquin, BHT (butylated hydroxytoluene) or tocopherols (also used in a blend with rosemary extract) at the time of production. The said application shall occur within twelve months prior to shipment. Fish scrap or fish meal shall contain at least 50 ppm (mg/kg) of ethoxyquin, 100 ppm (mg/kg) of BHT or 250 ppm (mg/kg) of tocopherol based antioxidant at the time of shipment.

309 This entry applies to non-sensitized emulsions, suspensions and gels consisting primarily of a mixture of ammonium nitrate and fuel, intended to produce a Type E blasting explosive only after further processing prior to use.

The mixture for emulsions typically has the following composition: 60–85% ammonium nitrate, 5–30% water, 2–8% fuel, 0.5–4% emulsifier agent, 0–10% soluble flame suppressants, and trace additives. Other inorganic nitrate salts may replace part of the ammonium nitrate.

The mixture for suspensions and gels typically has the following composition: 60–85% ammonium nitrate, 0–5% sodium or potassium perchlorate, 0–17% hexamine nitrate or monomethylamine nitrate, 5–30% water, 2–15% fuel, 0.5–4% thickening agent, 0–10% soluble flame suppressants, and trace additives. Other inorganic nitrate salts may replace part of the ammonium nitrate.

Substances shall satisfy the criteria for classification as an ammonium nitrate emulsion, suspension or gel, intermediate for blasting explosives (ANE) of Test Series 8 of the *Manual of Tests and Criteria*, part I, section 18 and be approved by the competent authority.

310 The testing requirements in the *Manual of Tests and Criteria*, part III, subsection 38.3 do not apply to production runs, consisting of not more than 100 cells or batteries, or to pre-production prototypes of cells or batteries when these prototypes are transported for testing when packaged in accordance with packing instruction P910 of 4.1.4.1 or LP905 of 4.1.4.3, as applicable.

The transport document shall include the following statement: “Transport in accordance with special provision 310”.

Damaged or defective cells, batteries, or cells and batteries contained in equipment shall be transported in accordance with special provision 376.

Cells, batteries or cells and batteries contained in equipment transported for disposal or recycling may be packaged in accordance with special provision 377 and packing instruction P909 of 4.1.4.1.

311 Substances shall not be transported under this entry unless approved by the competent authority on the basis of the results of appropriate tests according to part I of the *Manual of Tests and Criteria*. Packaging shall ensure that the percentage of diluent does not fall below that stated in the competent authority approval at any time during transport.

314 .1 These substances are liable to exothermic decomposition at elevated temperatures. Decomposition can be initiated by heat or by impurities (e.g. powdered metals (iron, manganese, cobalt, magnesium) and their compounds).

.2 During the course of transport, these substances shall be shaded from direct sunlight and all sources of heat and be placed in adequately ventilated areas.

315 This entry shall not be used for class 6.1 substances which meet the inhalation toxicity criteria for packing group I described in 2.6.2.2.4.3.

316 This entry applies only to calcium hypochlorite, dry, when transported in non-friable tablet form.

317 "Fissile-excepted" applies only to those fissile materials and packages containing fissile material which are excepted in accordance with 2.7.2.3.5.

318 For the purposes of documentation, the proper shipping name shall be supplemented with the technical name (see 3.1.2.8). Technical names need not be shown on the package. When the infectious substances to be transported are unknown, but suspected of meeting the criteria for inclusion in category A and assignment to UN 2814 or UN 2900, the words "suspected category A infectious substance" shall be shown, in parentheses, following the proper shipping name on the transport document, but not on the outer packagings.

319 Substances packed and packages marked in accordance with packing instruction P650 are not subject to any other provisions of this Code.

321 These storage systems shall always be considered as containing hydrogen.

322 When transported in non-friable tablet form, these goods are assigned to packing group III.

323 *Deleted.*

324 This substance needs to be stabilized when in concentrations of not more than 99%.

325 In the case of non-fissile or fissile-excepted uranium hexafluoride, the material shall be classified under UN 2978.

326 In the case of fissile uranium hexafluoride, the material shall be classified under UN 2977.

327 Waste aerosols and waste gas cartridges consigned in accordance with 5.4.1.4.3.3 may be transported under UN 1950 or UN 2037, as appropriate, for the purposes of reprocessing or disposal. They need not be protected against movement and inadvertent discharge provided that measures to prevent dangerous build-up of pressure and dangerous atmospheres are addressed. Waste aerosols, other than those leaking or severely deformed, shall be packed in accordance with packing instruction P207 and special provision PP87, or packing instruction LP200 and special packing provision L2. Waste gas cartridges, other than those leaking or severely deformed, shall be packed in accordance with packing instruction P003 and special packing provisions PP17 and PP96, or packing instruction LP200 and special packing provision L2. Leaking or severely deformed aerosols and gas cartridges shall be transported in salvage pressure receptacles or salvage packagings provided appropriate measures are taken to ensure there is no dangerous build-up of pressure. Waste aerosols and waste gas cartridges shall not be transported in closed freight containers.

Waste gas cartridges that were filled with gases of class 2.2 and have been pierced are not subject to this Code.

328 This entry applies to fuel cell cartridges, including when contained in equipment or packed with equipment. Fuel cell cartridges installed in or integral to a fuel cell system are regarded as contained in equipment. "Fuel cell cartridge" means an article that stores fuel for discharge into the fuel cell through a valve(s) that controls the discharge of fuel into the fuel cell. Fuel cell cartridges, including when contained in equipment, shall be designed and constructed to prevent fuel leakage under normal conditions of transport.

Fuel cell cartridge design types using liquids as fuels shall pass an internal pressure test at a pressure of 100 kPa (gauge) without leakage.

Except for fuel cell cartridges containing hydrogen in metal hydride, which shall be in compliance with special provision 339, each fuel cell cartridge design type shall be shown to pass a 1.2 m drop test onto an unyielding surface, in the orientation most likely to result in failure of the containment system, with no loss of contents.

When lithium metal or lithium ion batteries are contained in the fuel cell system, the consignment shall be consigned under this entry and under the appropriate entries for UN 3091 LITHIUM METAL BATTERIES CONTAINED IN EQUIPMENT or UN 3481 LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT.

332 Magnesium nitrate hexahydrate is not subject to the provisions of this Code.

333 Ethanol and gasoline, motor spirit or petrol mixtures for use in spark-ignition engines (e.g. in automobiles, stationary engines and other engines) shall be assigned to this entry regardless of variations in volatility.

334 A fuel cell cartridge may contain an activator provided it is fitted with two independent means of preventing unintended mixing with the fuel during transport.

335 Mixtures of solids which are not subject to the provisions of this Code and environmentally hazardous liquids assigned to UN 3082 may be classified and transported as UN 3077, provided there is no free liquid visible at the time the substance is loaded or at the time the packaging or cargo transport unit is closed. If free liquid is visible at the time the mixture is loaded or at the time the packaging or cargo transport unit is closed, the mixture shall be classified as UN 3082. Each cargo transport unit shall be leakproof when used as a bulk container. Sealed packets and articles containing less than 10 mL of an environmentally hazardous liquid assigned to UN 3082, absorbed into a solid material but with no free liquid in the packet or article, or containing less than 10 g of an environmentally hazardous solid assigned to UN 3077, are not subject to the provisions of this Code.

338 Each fuel cell cartridge transported under this entry and designed to contain a liquefied flammable gas shall:

.1 be capable of withstanding, without leakage or bursting, a pressure of at least two times the equilibrium pressure of the contents at 55°C;

.2 not contain more than 200 mL liquefied flammable gas, the vapour pressure of which shall not exceed 1 000 kPa at 55°C; and

.3 pass the hot water bath test prescribed in 6.2.4.1 of chapter 6.2.

339 Fuel cell cartridges containing hydrogen in a metal hydride transported under this entry shall have a water capacity less than or equal to 120 mL. The pressure in the fuel cell cartridge shall not exceed 5 MPa at 55°C. The design type shall withstand, without leaking or bursting, a pressure of two (2) times the design pressure of the cartridge at 55°C or 200 kPa more than the design pressure of the cartridge at 55°C, whichever is greater. The pressure at which this test is conducted is referred to in the Drop Test and the Hydrogen Cycling Test as the "minimum shell burst pressure".

Fuel cell cartridges shall be filled in accordance with procedures provided by the manufacturer. The manufacturer shall provide the following information with each fuel cell cartridge:

.1 Inspection procedures to be carried out before initial filling and before refilling of the fuel cell cartridge;

.2 Safety precautions and potential hazards to be aware of;

.3 Method for determining when the rated capacity has been achieved;

.4 Minimum and maximum pressure range;

.5 Minimum and maximum temperature range; and

.6 Any other requirements to be met for initial filling and refilling, including the type of equipment to be used for initial filling and refilling.

The fuel cell cartridges shall be designed and constructed to prevent fuel leakage under normal conditions of transport. Each cartridge design type, including cartridges integral to a fuel cell, shall be subjected to and shall pass the following tests:

Drop test

A 1.8 m drop test onto an unyielding surface in four different orientations:

.1 Vertically, on the end containing the shut-off valve assembly;

.2 Vertically, on the end opposite to the shut-off valve assembly;

.3 Horizontally, onto a steel apex with a diameter of 38 mm, with the steel apex in the upward position; and

.4 At a 45° angle on the end containing the shut-off valve assembly.

There shall be no leakage, determined by using a soap bubble solution or other equivalent means on all possible leak locations, when the cartridge is charged to its rated charging pressure. The fuel cell cartridge shall then be hydrostatically pressurized to destruction. The recorded burst pressure shall exceed 85% of the minimum shell burst pressure.

Fire test

A fuel cell cartridge filled to rated capacity with hydrogen shall be subjected to a fire engulfment test. The cartridge design, which may include a vent feature integral to it, is deemed to have passed the fire test if:

.1 The internal pressure vents to zero gauge pressure without rupture of the cartridge; or

.2 The cartridge withstands the fire for a minimum of 20 minutes without rupture.

Hydrogen cycling test

This test is intended to ensure that a fuel cell cartridge design stress limits are not exceeded during use.

The fuel cell cartridge shall be cycled from not more than 5% rated hydrogen capacity to not less than 95% rated hydrogen capacity and back to not more than 5% rated hydrogen capacity. The rated charging pressure shall be used for charging and temperatures shall be held within the operating temperature range. The cycling shall be continued for at least 100 cycles.

Following the cycling test, the fuel cell cartridge shall be charged and the water volume displaced by the cartridge shall be measured. The cartridge design is deemed to have passed the hydrogen cycling test if the water volume displaced by the cycled cartridge does not exceed the water volume displaced by an uncycled cartridge charged to 95% rated capacity and pressurized to 75% of its minimum shell burst pressure.

Production leak test

Each fuel cell cartridge shall be tested for leaks at 15°C ± 5°C, while pressurized to its rated charging pressure. There shall be no leakage, determined by using a soap bubble solution or other equivalent means on all possible leak locations.

Each fuel cell cartridge shall be permanently marked with the following information:

.1 The rated charging pressure in megapascals (MPa);

.2 The manufacturer's serial number of the fuel cell cartridges or unique identification number; and

.3 The date of expiry based on the maximum service life (year in four digits; month in two digits).

340 Chemical kits, first aid kits and polyester resin kits containing dangerous substances in inner packagings which do not exceed the quantity limits for excepted quantities applicable to individual substances as specified in column 7b of the Dangerous Goods List may be transported in accordance with chapter 3.5. Class 5.2 substances, although not individually authorized as excepted quantities in the Dangerous Goods List, are authorized in such kits and are assigned code E2 (see 3.5.1.2).

341 Bulk transport of infectious substances in BK2 bulk containers is only permitted for infectious substances contained in animal material as defined in 1.2.1 (see 4.3.2.4.1).

342 Glass inner receptacles (such as ampoules or capsules) intended only for use in sterilization devices, when containing less than 30 mL of ethylene oxide per inner packaging with not more than 300 mL per outer packaging, may be transported in accordance with the provisions in chapter 3.5, irrespective of the indication of "E0" in column 7b of the Dangerous Goods List provided that:

.1 After filling, each glass inner receptacle has been determined to be leak tight by placing the glass inner receptacle in a hot water bath at a temperature, and for a period of time, sufficient to ensure that an internal pressure equal to the vapour pressure of ethylene oxide at 55°C is achieved. Any glass inner receptacle showing evidence of leakage, distortion or other defect under this test shall not be transported under the terms of this special provision;

.2 In addition to the packaging required by 3.5.2, each glass inner receptacle is placed in a sealed plastics bag compatible with ethylene oxide and capable of containing the contents in the event of breakage or leakage of the glass inner receptacle; and

.3 Each glass inner receptacle is protected by a means of preventing puncture of the plastics bag (e.g. sleeves or cushioning) in the event of damage to the packaging (e.g. by crushing).

343 This entry applies to crude oil containing hydrogen sulphide in sufficient concentration that vapours evolved from the crude oil can present an inhalation hazard. The packing group assigned shall be determined by the flammability hazard and inhalation hazard, in accordance with the degree of danger presented.

344 The provisions of 6.2.4 shall be met.

345 This gas contained in open cryogenic receptacles with a maximum capacity of 1 L constructed with glass double walls having the space between the inner and outer wall evacuated (vacuum insulated) is not subject to the provisions of this Code provided each receptacle is transported in an outer packaging with suitable cushioning or absorbent materials to protect it from impact damage.

346 Open cryogenic receptacles conforming to the requirements of packing instruction P203 and containing no dangerous goods except for UN 1977, nitrogen, refrigerated liquid, which is fully absorbed in a porous material, are not subject to any other provisions of this Code.

347 This entry shall only be used if the results of test series 6(d) of part I of the *Manual of Tests and Criteria* have demonstrated that any hazardous effects arising from functioning are confined within the package.

348 Batteries manufactured after 31 December 2011 shall be marked with the Watt hour rating on the outside case.

349 Mixtures of a hypochlorite with an ammonium salt are not to be accepted for transport. UN 1791 hypochlorite solution is a substance of class 8.

350 Ammonium bromate and its aqueous solutions and mixtures of a bromate with an ammonium salt are not to be accepted for transport.

351 Ammonium chlorate and its aqueous solutions and mixtures of a chlorate with an ammonium salt are not to be accepted for transport.

352 Ammonium chlorite and its aqueous solutions and mixtures of a chlorite with an ammonium salt are not to be accepted for transport.

353 Ammonium permanganate and its aqueous solutions and mixtures of a permanganate with an ammonium salt are not to be accepted for transport.

354 This substance is toxic by inhalation.

355 Oxygen cylinders for emergency use transported under this entry may include installed actuating cartridges (cartridges, power device of class 1.4, compatibility group C or S), without changing the classification of class 2.2 provided the total quantity of deflagrating (propellant) explosives does not exceed 3.2 g per oxygen cylinder. The cylinders with the installed actuating cartridges as prepared for transport shall have an effective means of preventing inadvertent activation.

356 Metal hydride storage systems installed in vehicles, vessels, machinery, engines or aircraft or in completed components or intended to be installed in vehicles, vessels, machinery, engines or aircraft shall be approved by the competent authority before acceptance for transport. The transport document shall include an indication that the package was approved by the competent authority or a copy of the competent authority approval shall accompany each consignment.

357 Petroleum crude oil containing hydrogen sulphide in sufficient concentration that vapours evolved from the crude oil can present an inhalation hazard shall be consigned under the entry UN 3494 PETROLEUM SOUR CRUDE OIL, FLAMMABLE, TOXIC.

358 Nitroglycerin solution in alcohol with more than 1% but not more than 5% nitroglycerin may be classified in class 3 and assigned to UN 3064 provided all the requirements of packing instruction P300 are complied with.

359 Nitroglycerin solution in alcohol with more than 1% but not more than 5% nitroglycerin shall be classified in class 1 and assigned to UN 0144 if not all the requirements of packing instruction P300 are complied with.

360 Vehicles only powered by lithium metal batteries or lithium ion batteries shall be assigned to the entry UN 3171 BATTERY POWERED VEHICLE. Lithium batteries installed in cargo transport units, designed only to provide power external to the transport unit shall be assigned to entry UN 3536 LITHIUM BATTERIES INSTALLED IN CARGO TRANSPORT UNIT.

361 This entry applies to electric double layer capacitors with an energy storage capacity greater than 0.3 Wh. Capacitors with an energy storage capacity of 0.3 Wh or less are not subject to the provisions of this Code. Energy storage capacity means the energy held by a capacitor, as calculated using the nominal voltage and capacitance. All capacitors to which this entry applies, including capacitors containing an electrolyte that does not meet the classification criteria of any class or division of dangerous goods, shall meet the following conditions:

.1 Capacitors not installed in equipment shall be transported in an uncharged state. Capacitors installed in equipment shall be transported either in an uncharged state or protected against short circuit;

.2 Each capacitor shall be protected against a potential short circuit hazard in transport as follows:

.1 when a capacitor's energy storage capacity is less than or equal to 10 Wh or when the energy storage capacity of each capacitor in a module is less than or equal to 10 Wh , the capacitor or module shall be protected against short circuit or be fitted with a metal strap connecting the terminals; and

.2 when the energy storage capacity of a capacitor or a capacitor in a module is more than 10 Wh, the capacitor or module shall be fitted with a metal strap connecting the terminals;

.3 Capacitors containing dangerous goods shall be designed to withstand a 95 kPa pressure differential;

.4 Capacitors shall be designed and constructed to safely relieve pressure that may build up in use, through a vent or a weak point in the capacitor casing. Any liquid which is released upon venting shall be contained by the packaging or by the equipment in which a capacitor is installed; and

.5 Capacitors manufactured after 31 December 2013 shall be marked with the energy storage capacity in Wh.

Capacitors containing an electrolyte not meeting the classification criteria of any class or division of dangerous goods, including when installed in equipment, are not subject to other provisions of this Code.

Capacitors containing an electrolyte meeting the classification criteria of any class or division of dangerous goods, with an energy storage capacity of 10 Wh or less are not subject to other

provisions of this Code when they are capable of withstanding a 1.2 m drop test unpackaged on an unyielding surface without loss of contents.

Capacitors containing an electrolyte meeting the classification criteria of any class or division of dangerous goods that are not installed in equipment and with an energy storage capacity of more than 10 Wh are subject to the provisions of this Code.

Capacitors installed in the equipment and containing an electrolyte meeting the classification criteria of any class or division of dangerous goods, are not subject to other provisions of this Code provided the equipment is packaged in a strong outer packaging constructed of suitable material and of adequate strength and design, in relation to the packaging's intended use and in such a manner as to prevent accidental functioning of capacitors during transport. Large robust equipment containing capacitors may be offered for transport unpackaged or on pallets when capacitors are afforded equivalent protection by the equipment in which they are contained.

Note: Capacitors which by design maintain a terminal voltage (e.g. asymmetrical capacitors) do not belong to this entry.

362 This entry applies to liquids, pastes or powders, pressurized with a propellant which meets the definition of a gas in 2.2.1.1 and 2.2.1.2.1 or 2.2.1.2.2.

Note: A chemical under pressure in an aerosol dispenser shall be transported under UN 1950.

The following provisions shall apply:

.1 the chemical under pressure shall be classified based on the hazard characteristics of the components in the different states:

- the propellant;
- the liquid; or
- the solid.

If one of these components, which can be a pure substance or a mixture, needs to be classified as flammable, the chemical under pressure shall be classified as flammable in class 2.1. Flammable components are flammable liquids and liquid mixtures, flammable solids and solid mixtures or flammable gases and gas mixtures meeting the following criteria:

.1 a flammable liquid is a liquid having a flashpoint of not more than 93°C;

.2 a flammable solid is a solid which meets the criteria in 2.4.2.2 of this Code;

.3 a flammable gas is a gas which meets the criteria in 2.2.2.1 of this Code;

.2 gases of class 2.3 and gases with a subsidiary hazard of 5.1 shall not be used as a propellant in a chemical under pressure;

.3 where the liquid or solid components are classified as dangerous goods of class 6.1, packing groups II or III, or class 8, packing groups II or III, the chemical under pressure shall be assigned a subsidiary hazard of class 6.1 or class 8 and the appropriate UN number shall be assigned. Components classified in class 6.1, packing group I, or class 8, packing group I, shall not be used for transport under this proper shipping name;

.4 in addition, chemicals under pressure with components meeting the properties of: class 1, explosives; class 3, liquid desensitized explosives; class 4.1, self-reactive substances and solid desensitized explosives; class 4.2, substances liable to spontaneous combustion; class 4.3, substances which, in contact with water, emit flammable gases; class 5.1, oxidizing substances; class 5.2, organic peroxides; class 6.2, Infectious substances or class 7, Radioactive material, shall not be used for transport under this proper shipping name;

.5 substances to which PP86 or TP7 are assigned in column 9 and column 14 of the Dangerous Goods List in chapter 3.2 and therefore require air to be eliminated from the vapour space, shall not be used for transport under this UN number but shall be transported under their respective UN numbers as listed in the Dangerous Goods List of chapter 3.2.

363 This entry may only be used when the conditions of this special provision are met. No other provisions of this Code apply, except for special provision 972, chapter 5.4, part 7 and column 16a and 16b of the Dangerous Goods List.

.1 This entry applies to engines or machinery, powered by fuels classified as dangerous goods via internal combustion systems or fuel cells (e.g. combustion engines, generators, compressors, turbines, heating units, etc.), except those which are assigned under UN 3166 or UN 3363;

.2 Engines or machinery which are empty of liquid or gaseous fuels and which do not contain other dangerous goods, are not subject to this Code.

Note 1: An engine or machinery is considered to be empty of liquid fuel when the liquid fuel tank has been drained and the engine or machinery cannot be operated due to a lack of fuel. Engine or machinery components such as fuel lines, fuel filters and injectors do not need to be cleaned, drained or purged to be considered empty of liquid fuels. In addition, the liquid fuel tank does not need to be cleaned or purged.

Note 2: An engine or machinery is considered to be empty of gaseous fuels when the gaseous fuel tanks are empty of liquid (for liquefied gases), the positive pressure in the tanks does not exceed 2 bar and the fuel shut-off or isolation valve is closed and secured.

.3 Engines and machinery containing fuels meeting the classification criteria of class 3, shall be consigned under the entries UN No. 3528 ENGINE, INTERNAL COMBUSTION, FLAMMABLE LIQUID POWERED or UN 3528 ENGINE, FUEL CELL, FLAMMABLE LIQUID POWERED or UN 3528 MACHINERY, INTERNAL COMBUSTION, FLAMMABLE LIQUID POWERED or UN 3528 MACHINERY, FUEL CELL, FLAMMABLE LIQUID POWERED, as appropriate.

.4 Engines and machinery containing fuels meeting the classification criteria of class 2.1, shall be consigned under the entries UN 3529 ENGINE, INTERNAL COMBUSTION, FLAMMABLE GAS POWERED or UN 3529 ENGINE, FUEL CELL, FLAMMABLE GAS POWERED or UN 3529 MACHINERY, INTERNAL COMBUSTION, FLAMMABLE GAS POWERED or UN 3529 MACHINERY, FUEL CELL, FLAMMABLE GAS POWERED, as appropriate.

Engines and machinery powered by both a flammable gas and a flammable liquid shall be consigned under the appropriate UN 3529 entry.

.5 Engines and machinery containing liquid fuels meeting the classification criteria of 2.9.3 for environmentally hazardous substances and not meeting the classification criteria of any other class or division, shall be consigned under the entries UN 3530 ENGINE, INTERNAL COMBUSTION or UN 3530 MACHINERY, INTERNAL COMBUSTION, as appropriate.

.6 Engines or machinery may contain other dangerous goods than fuels (e.g. batteries, fire extinguishers, compressed gas accumulators or safety devices) required for their functioning or safe operation without being subject to any additional requirements for these other dangerous goods, unless otherwise specified in this Code.

.7 The engine or machinery, including the means of containment containing dangerous goods, shall be in compliance with the construction requirements specified by the competent authority.

.8 Any valves or openings (e.g. venting devices) shall be closed during transport.

.9 The engines or machinery shall be oriented to prevent inadvertent leakage of dangerous goods and secured by means capable of restraining the engines or machinery to prevent any movement during transport which would change the orientation or cause them to be damaged.

.10 For UN 3528 and UN 3530:

- where the engine or machinery contains more than 60 L of liquid fuel and has a capacity of not more than 450 L, the labelling requirements of 5.2.2 shall apply;
- where the engine or machinery contains more than 60 L of liquid fuel and has a capacity of more than 450 L but not more than 3,000 L, it shall be labelled on two opposing sides in accordance with 5.2.2;
- where the engine or machinery contains more than 60 L of liquid fuel and has a capacity of more than 3,000 L, it shall be placarded on two opposing sides. Placards shall correspond to the class indicated in column 3 of the Dangerous Goods List of chapter 3.2 and shall conform to the specifications given in 5.3.1.2.1;
- in addition to the above requirements, for UN 3530, where the engine or machinery contains more than 60 L of liquid fuel and the capacity does not exceed 3,000 L, the marking requirements of 5.2.1.6 apply; and where the engine or machinery contains more than 60 L of liquid fuel and the capacity exceeds 3,000 L, the marking requirements of 5.3.2.3.2 apply.

.11 For UN 3529:

- where the fuel tank of the engine or machinery has a water capacity of not more than 450 L, the labelling requirements of 5.2.2 shall apply;
- where the fuel tank of the engine or machinery has a water capacity of more than 450 L but not more than 1,000 L, it shall be labelled on two opposing sides in accordance with 5.2.2; and
- where the fuel tank of the engine or machinery has a water capacity of more than 1,000 L, it shall be placarded on two opposing sides. Placards shall correspond to the class indicated in Column 3 of the Dangerous Goods List in Chapter 3.2 and shall conform to the specifications given in 5.3.1.2.1.

.12 The transport document shall contain the following additional statement “Transport in accordance with special provision 363”.

.13 The requirements specified in packing instruction P005 of 4.1.4.1 shall be met.

364 This article may only be transported under the provisions of chapter 3.4 if, as presented for transport, the package is capable of passing the test in accordance with test series 6(d) of part I of the *Manual of Tests and Criteria* as determined by the competent authority.

365 For manufactured instruments and articles containing mercury, see UN 3506.

366 Manufactured instruments and articles containing not more than 1 kg of mercury are not subject to the provisions of this Code.

367 For the purposes of documentation and package marking:

The proper shipping name "PAINT RELATED MATERIAL" may be used for consignments of packages containing "PAINT" and "PAINT RELATED MATERIAL" in the same package;

The proper shipping name "PAINT RELATED MATERIAL, CORROSIVE, FLAMMABLE" may be used for consignments of packages containing "PAINT, CORROSIVE, FLAMMABLE" and "PAINT RELATED MATERIAL, CORROSIVE, FLAMMABLE" in the same package;

The proper shipping name "PAINT RELATED MATERIAL, FLAMMABLE, CORROSIVE" may be used for consignments of packages containing "PAINT, FLAMMABLE, CORROSIVE" and "PAINT RELATED MATERIAL, FLAMMABLE, CORROSIVE" in the same package; and

The proper shipping name "PRINTING INK RELATED MATERIAL" may be used for consignments of packages containing "PRINTING INK" and "PRINTING INK RELATED MATERIAL" in the same package.

368 In the case of non-fissile or fissile-excepted uranium hexafluoride, the material shall be classified under UN 3507 or UN 2978.

369 In accordance with 2.0.3.5, this radioactive material in an excepted package possessing toxic and corrosive properties is classified in class 6.1 with radioactivity and corrosivity subsidiary hazards.

Uranium hexafluoride may be classified under this entry only if the conditions of 2.7.2.4.1.2, 2.7.2.4.1.5, 2.7.2.4.5.2 and, for fissile-excepted material, of 2.7.2.3.5 are met.

In addition to the provisions applicable to the transport of class 6.1 substances with a corrosivity subsidiary hazard, the provisions of 5.1.3.2, 5.1.5.2.2, 5.1.5.4.1.2, 7.1.4.5.9, 7.1.4.5.10, 7.1.4.5.12, and 7.8.4.1 to 7.8.4.6 shall apply.

No class 7 label is required to be displayed.

370 This entry only applies to ammonium nitrate that meets one of the following criteria:

– ammonium nitrate with more than 0.2% combustible substances, including any organic substance calculated as carbon, to the exclusion of any added substance; or
– ammonium nitrate with not more than 0.2% combustible substances, including any organic substance calculated as carbon, to the exclusion of any added substance, that gives a positive result when tested in accordance with test series 2 (see *Manual of Tests and Criteria*, part I). See also UN 1942.

This entry shall not be used for ammonium nitrate for which a proper shipping name already exists in the Dangerous Goods List of chapter 3.2 including ammonium nitrate mixed with fuel oil (ANFO) or any of the commercial grades of ammonium nitrate.

371 .1 This entry also applies to articles, containing a small pressure receptacle with a release device. Such articles shall comply with the following requirements:

.1 the water capacity of the pressure receptacle shall not exceed 0.5 L and the working pressure shall not exceed 25 bar at 15°C;

.2 the minimum burst pressure of the pressure receptacle shall be at least four times the pressure of the gas at 15°C;

.3 each article shall be manufactured in such a way that unintentional firing or release is avoided under normal conditions of handling, packing, transport and use. This may be fulfilled by an additional locking device linked to the activator;

.4 each article shall be manufactured in such a way as to prevent hazardous projections of the pressure receptacle or parts of the pressure receptacle;

.5 each pressure receptacle shall be manufactured from material which will not fragment upon rupture;

.6 the design type of the article shall be subjected to a fire test. For this test, the provisions of paragraphs 16.6.1.2 except subparagraph (g), 16.6.1.3.1 to 16.6.1.3.6, 16.6.1.3.7(b) and 16.6.1.3.8 of the *Manual of Tests and Criteria* shall be applied. It shall be demonstrated that the article relieves its pressure by means of a fire degradable seal or other pressure relief device, in such a way that the pressure receptacle will not fragment and that the article or fragments of the article do not rocket more than 10 m; and

.7 the design type of the article shall be subjected to the following test. A stimulating mechanism shall be used to initiate one article in the middle of the packaging. There shall be no hazardous effects outside the package such as disruption of the package, metal fragments or a receptacle which passes through the packaging.

.2 The manufacturer shall produce technical documentation of the design type, manufacture as well as the tests and their results. The manufacturer shall apply procedures to ensure that articles produced in series are made of good quality, conform to the design type and are able to

meet the requirements in .1. The manufacturer shall provide such information to the competent authority on request.

372 This entry applies to asymmetric capacitors with an energy storage capacity greater than 0.3 Wh. Capacitors with an energy storage capacity of 0.3 Wh or less are not subject to the provisions of this Code.

Energy storage capacity means the energy stored in a capacitor, as calculated according to the following equation:

$$\text{Wh} = \frac{\frac{1}{2} C_N (U_R^2 - U_L^2)}{3{,}600}$$

using the nominal capacitance (C_N), rated voltage (U_R) and rated lower limit voltage (U_L).

All asymmetric capacitors to which this entry applies shall meet the following conditions:

.1 capacitors or modules shall be protected against short circuit;

.2 capacitors shall be designed and constructed to safely relieve pressure that may build up in use, through a vent or a weak point in the capacitor casing. Any liquid which is released upon venting shall be contained by packaging or by equipment in which a capacitor is installed;

.3 capacitors manufactured after 31 December 2015 shall be marked with the energy storage capacity in Wh;

.4 capacitors containing an electrolyte meeting the classification criteria of any class or division of dangerous goods shall be designed to withstand a 95 kPa pressure differential;

Capacitors containing an electrolyte not meeting the classification criteria of any class or division of dangerous goods, including when configured in a module or when installed in equipment are not subject to other provisions of this Code. Capacitors containing an electrolyte meeting the classification criteria of any class or division of dangerous goods, with an energy storage capacity of 20 Wh or less, including when configured in a module, are not subject to other provisions of this Code when the capacitors are capable of withstanding a 1.2 m drop test unpackaged on an unyielding surface without loss of contents.

Capacitors containing an electrolyte meeting the classification criteria of any class or division of dangerous goods that are not installed in equipment and with an energy storage capacity of more than 20 Wh are subject to this Code.

Capacitors installed in equipment and containing an electrolyte meeting the classification criteria of any class or division of dangerous goods, are not subject to other provisions of this Code provided that the equipment is packaged in a strong outer packaging constructed of suitable material, and of adequate strength and design, in relation to the packaging's intended use and in such a manner as to prevent accidental functioning of capacitors during transport. Large robust equipment containing capacitors may be offered for transport unpackaged or on pallets when capacitors are afforded equivalent protection by the equipment in which they are contained.

Note: Notwithstanding the provisions of this special provision, nickel-carbon asymmetric capacitors containing class 8 alkaline electrolytes shall be transported as UN 2795, BATTERIES, WET, FILLED WITH ALKALI, electric storage.

373 Neutron radiation detectors containing non-pressurized boron trifluoride gas may be transported under this entry provided that the following conditions are met:

.1 Each radiation detector shall meet the following conditions:

.1 the pressure in each detector shall not exceed 105 kPa absolute at 20°C;

.2 the amount of gas shall not exceed 13 g per detector;

.3 each detector shall be manufactured under a registered quality assurance programme;

Note: The application of ISO 9001:2008 may be considered acceptable for this purpose.

.4 each neutron radiation detector shall be of welded metal construction with brazed metal to ceramic feed through assemblies. These detectors shall have a minimum burst pressure of 1,800 kPa as demonstrated by design type qualification testing; and

.5 each detector shall be tested to a 1×10^{-10} cm^3/s leak tightness standard before filling.

.2 Radiation detectors transported as individual components shall be transported as follows:

.1 detectors shall be packed in a sealed intermediate plastics liner with sufficient absorbent or adsorbent material to absorb or adsorb the entire gas contents;

.2 they shall be packed in strong outer packaging. The completed package shall be capable of withstanding a 1.8 m drop test without leakage of gas contents from detectors; and

.3 the total amount of gas from all detectors per outer packaging shall not exceed 52 g.

.3 Completed neutron radiation detection systems containing detectors meeting the conditions of .1 shall be transported as follows:

.1 the detectors shall be contained in a strong sealed outer casing;

.2 the casing shall contain sufficient absorbent or adsorbent material to absorb or adsorb the entire gas contents; and

.3 the completed systems shall be packed in strong outer packagings capable of withstanding a 1.8 m drop test without leakage unless a system's outer casing affords equivalent protection.

Packing instruction P200 of 4.1.4.1 is not applicable.

The transport document shall include the statement "Transport in accordance with special provision 373".

Neutron radiation detectors containing not more than 1 g of boron trifluoride, including those with solder glass joints, are not subject to this Code provided they meet the requirements in paragraph .1 and are packed in accordance with paragraph .2. Radiation detection systems containing such detectors are not subject to this Code provided they are packed in accordance with paragraph .3.

Neutron radiation detectors shall be stowed in accordance with stowage Category A.

376 Lithium ion cells or batteries and lithium metal cells or batteries identified as being damaged or defective such that they do not conform to the type tested according to the applicable provisions of the *Manual of Tests and Criteria* shall comply with the requirements of this special provision.

For the purposes of this special provision, these may include, but are not limited to:

– Cells or batteries identified as being defective for safety reasons;
– Cells or batteries that have leaked or vented;
– Cells or batteries that cannot be diagnosed prior to transport; or
– Cells or batteries that have sustained physical or mechanical damage.

Note: In assessing a cell or battery as damaged or defective, an assessment or evaluation shall be performed based on safety criteria from the cell, battery or product manufacturer or by a technical expert with knowledge of the cell's or battery's safety features. An assessment or evaluation may include, but is not limited to, the following criteria:

.1 acute hazard, such as gas, fire or electrolyte leaking;

.2 the use or misuse of the cell or battery;

.3 signs of physical damage, such as deformation to cell or battery casing, or colours on the casing;

.4 external and internal short circuit protection, such as voltage or isolation measures;

.5 the condition of the cell or battery safety features; or

.6 damage to any internal safety components, such as the battery management system.

Cells and batteries shall be transported according to the provisions applicable to UN 3090, UN 3091, UN 3480 and UN 3481, except special provision 230 and as otherwise stated in this special provision.

Cells and batteries shall be packed in accordance with packing instructions P908 of 4.1.4.1 or LP904 of 4.1.4.3, as applicable.

Cells and batteries identified as damaged or defective and liable to rapidly disassemble, dangerously react, produce a flame or a dangerous evolution of heat or a dangerous emission of toxic, corrosive or flammable gases or vapours under normal conditions of transport shall be packed and transported in accordance with packing instruction P911 of 4.1.4.1 or LP906 of 4.1.4.3, as applicable. Alternative packing and/or transport conditions may be authorized by the competent authority.

Packages shall be marked "DAMAGED/DEFECTIVE" in addition to the proper shipping name, as stated in 5.2.1.

The transport document shall include the following statement "Transport in accordance with special provision 376".

If applicable, a copy of the competent authority approval shall accompany the transport.

377 Lithium ion and lithium metal cells and batteries and equipment containing such cells and batteries transported for disposal or recycling, either packed together with or packed without non-lithium batteries, may be packaged in accordance with packing instruction P909 of 4.1.4.1.

These cells and batteries are not subject to the requirements of section 2.9.4.

Packages shall be marked "LITHIUM BATTERIES FOR DISPOSAL" or "LITHIUM BATTERIES FOR RECYCLING".

Identified damaged or defective batteries shall be transported in accordance with special provision 376.

The transport document shall include the following statement: "Transport in accordance with special provision 377".

378 Radiation detectors containing this gas in non-refillable pressure receptacles not meeting the requirements of chapter 6.2 and packing instruction P200 of 4.1.4.1 may be transported under this entry provided:

.1 The working pressure in each receptacle does not exceed 50 bar;

.2 The receptacle capacity does not exceed 12 L;

.3 Each receptacle has a minimum burst pressure of at least 3 times the working pressure when a relief device is fitted and at least 4 times the working pressure when no relief device is fitted;

.4 Each receptacle is manufactured from material which will not fragment upon rupture;

.5 Each detector is manufactured under a registered quality assurance programme;

Note: ISO 9001:2008 may be used for this purpose.

.6 Detectors are transported in strong outer packagings. The complete package shall be capable of withstanding a 1.2 metre drop test without breakage of the detector or rupture of the outer packaging. Equipment that includes a detector shall be packed in a strong outer packaging unless the detector is afforded equivalent protection by the equipment in which it is contained; and

.7 The transport document includes the following statement "Transport in accordance with special provision 378".

Radiation detectors, including detectors in radiation detection systems, are not subject to any other requirements of this Code if the detectors meet the requirements in .1 to .6 above and the capacity of detector receptacles does not exceed 50 ml.

379 Anhydrous ammonia adsorbed on a solid or absorbed in a solid contained in ammonia dispensing systems or receptacles intended to form part of such systems are not subject to the other provisions of this Code if the following conditions are observed:

.1 The adsorption or absorption presents the following properties:

.1 the pressure at a temperature of 20°C in the receptacle is less than 0.6 bar;

.2 the pressure at a temperature of 35°C in the receptacle is less than 1 bar;

.3 the pressure at a temperature of 85°C in the receptacle is less than 12 bar;

.2 The adsorbent or absorbent material shall not have dangerous properties listed in classes 1 to 8;

.3 The maximum contents of a receptacle shall be 10 kg of ammonia; and

.4 Receptacles containing adsorbed or absorbed ammonia shall meet the following conditions:

.1 receptacles shall be made of a material compatible with ammonia as specified in ISO 11114-1:2012 + Amd 1:2017;

.2 receptacles and their means of closure shall be hermetically sealed and able to contain the generated ammonia;

.3 each receptacle shall be able to withstand the pressure generated at 85°C with a volumetric expansion no greater than 0.1%;

.4 each receptacle shall be fitted with a device that allows for gas evacuation once pressure exceeds 15 bar without violent rupture, explosion or projection; and

.5 each receptacle shall be able to withstand a pressure of 20 bar without leakage when the pressure relief device is deactivated.

When transported in an ammonia dispenser, the receptacles shall be connected to the dispenser in such a way that the assembly is guaranteed to have the same strength as a single receptacle.

The properties of mechanical strength mentioned in this special provision shall be tested using a prototype of a receptacle and/or dispenser filled to nominal capacity, by increasing the temperature until the specified pressures are reached.

The test results shall be documented, shall be traceable and shall be communicated to the relevant authorities upon request.

381 Large packagings conforming to the packing group III performance level used in accordance with packing instruction LP02 of 4.1.4.3, as prescribed in the IMDG Code (amendment 37-14), may be used until 31 December 2022.

382 Polymeric beads may be made from polystyrene, poly(methyl methacrylate) or other polymeric material. When it can be demonstrated that no flammable vapour, resulting in a flammable atmosphere, is evolved according to test U1 (Test method for substances liable to evolve flammable vapours) of part III, subsection 38.4.4 of the *Manual of Tests and Criteria*, polymeric beads, expandable, need not be classified under this UN number. This test should only be performed when declassification of a substance is considered.

383 Table tennis balls manufactured from celluloid are not subject to this Code where the net mass of each table tennis ball does not exceed 3.0 g and the total net mass of table tennis balls does not exceed 500 g per package.

384 The label to be used is Model No. 9A, see 5.2.2.2.2. However, for placarding of cargo transport units, the placard shall correspond to Model No. 9.

386 When substances are stabilized by temperature control, the provisions of 7.3.7 apply. When chemical stabilization is employed, the person offering the packaging, IBC or tank for transport shall ensure that the level of stabilization is sufficient to prevent the substance in the packaging, IBC or tank from dangerous polymerization at a bulk mean temperature of 50°C, or, in the case of a portable tank, 45°C. Where chemical stabilization becomes ineffective at lower temperatures within the anticipated duration of transport, temperature control is required. In making this determination factors to be taken into consideration include, but are not limited to, the capacity and geometry of the packaging, IBC or tank and the effect of any insulation present, the temperature of the substance when offered for transport, the duration of the journey and the ambient temperature conditions typically encountered in the journey (considering also the season of year), the effectiveness and other properties of the stabilizer employed, applicable operational controls imposed by regulation (e.g. requirements to protect from sources of heat, including other cargo transported at a temperature above ambient) and any other relevant factors.

387 Lithium batteries in conformity with 2.9.4.6 containing both primary lithium metal cells and rechargeable lithium ion cells shall be assigned to UN 3090 or 3091 as appropriate. When such batteries are transported in accordance with special provision 188, the total lithium content of all lithium metal cells contained in the battery shall not exceed 1.5 g and the total capacity of all lithium ion cells contained in the battery shall not exceed 10 Wh.

388 UN 3166 entries apply to vehicles powered by flammable liquid or gas internal combustion engines or fuel cells.

Vehicles powered by a fuel cell engine shall be assigned to the entries UN 3166 VEHICLE, FUEL CELL, FLAMMABLE GAS POWERED or UN 3166 VEHICLE, FUEL CELL, FLAMMABLE LIQUID POWERED, as appropriate. These entries include hybrid electric vehicles powered by both a fuel cell and an internal combustion engine with wet batteries, sodium batteries, lithium metal batteries or lithium ion batteries, transported with the battery(ies) installed.

Other vehicles which contain an internal combustion engine shall be assigned to the entries UN 3166 VEHICLE, FLAMMABLE GAS POWERED or UN 3166 VEHICLE, FLAMMABLE LIQUID POWERED, as appropriate. These entries include hybrid electric vehicles powered by both an internal combustion engine and wet batteries, sodium batteries, lithium metal batteries or lithium ion batteries, transported with the battery(ies) installed.

If a vehicle is powered by a flammable liquid and a flammable gas internal combustion engine, it shall be assigned to UN 3166 VEHICLE, FLAMMABLE GAS POWERED.

Entry UN 3171 only applies to vehicles powered by wet batteries, sodium batteries, lithium metal batteries or lithium ion batteries and equipment powered by wet batteries or sodium batteries transported with these batteries installed.

For the purpose of this special provision, vehicles are self-propelled apparatus designed to carry one or more persons or goods. Examples of such vehicles are cars, motorcycles, scooters, three- and four-wheeled vehicles or motorcycles, trucks, locomotives, bicycles (pedal cycles with a motor) and other vehicles of this type (e.g. self-balancing vehicles or vehicles not equipped with at least one seating position), wheelchairs, lawn tractors, self-propelled farming and construction equipment, boats and aircraft. This includes vehicles transported in a packaging. In this case some parts of the vehicle may be detached from its frame to fit into the packaging.

Examples of equipment are lawnmowers, cleaning machines or model boats and model aircraft. Equipment powered by lithium metal batteries or lithium ion batteries shall be assigned to the entries UN 3091 LITHIUM METAL BATTERIES CONTAINED IN EQUIPMENT or UN 3091 LITHIUM METAL BATTERIES PACKED WITH EQUIPMENT or UN 3481 LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT or UN 3481 LITHIUM ION BATTERIES PACKED WITH EQUIPMENT, as appropriate. Lithium ion batteries or lithium metal batteries installed in a cargo transport unit and designed only to provide power external to the cargo transport unit shall be assigned to the entry UN 3536 LITHIUM BATTERIES INSTALLED IN CARGO TRANSPORT UNIT lithium ion batteries or lithium metal batteries.

Dangerous goods, such as batteries, airbags, fire extinguishers, compressed gas accumulators, safety devices and other integral components of the vehicle that are necessary for the operation of the vehicle or for the safety of its operator or passengers, shall be securely installed in the vehicle and are not otherwise subject to this Code.

389 This entry only applies to lithium ion batteries or lithium metal batteries installed in a cargo transport unit and designed only to provide power external to the cargo transport unit. The lithium batteries shall meet the requirements of 2.9.4.1 to .7 and contain the necessary systems to prevent overcharge and overdischarge between the batteries.

The batteries shall be securely attached to the interior structure of the cargo transport unit (e.g. by means of placement in racks, cabinets, etc.) in such a manner as to prevent short circuits, accidental operation, and significant movement relative to the cargo transport unit under the shocks, loadings and vibrations normally incident to transport. Dangerous goods necessary for the safe and proper operation of the cargo transport unit (e.g. fire-extinguishing systems and air-conditioning systems), shall be properly secured to or installed in the cargo transport unit and are not otherwise subject to this Code. Dangerous goods not necessary for the safe and proper operation of the cargo transport unit shall not be transported within the cargo transport unit.

The batteries inside the cargo transport unit are not subject to marking or labelling requirements. The cargo transport unit shall display the UN number in accordance with 5.3.2.1.2 and be placarded on two opposing sides in accordance with 5.3.1.1.2.

390 When a package contains a combination of lithium batteries contained in equipment and lithium batteries packed with equipment, the following requirements apply for the purposes of package marking and documentation:

.1 the package shall be marked “UN 3091 Lithium metal batteries packed with equipment”, or “UN 3481 Lithium ion batteries packed with equipment”, as appropriate. If a package contains both lithium ion batteries and lithium metal batteries packed with and contained in equipment, the package shall be marked as required for both battery types. However, button cell batteries installed in equipment (including circuit boards) need not be considered.

.2 the transport document shall indicate “UN 3091 Lithium metal batteries packed with equipment” or “UN 3481 Lithium ion batteries packed with equipment”, as appropriate. If a package contains both lithium metal batteries and lithium ion batteries packed with and contained in equipment, then the transport document shall indicate both “UN 3091 Lithium metal batteries packed with equipment” and “UN 3481 Lithium ion batteries packed with equipment

391 Articles containing dangerous goods of class 2.3, or class 4.2, or class 4.3, or class 5.1, or class 5.2 or class 6.1 for substances of inhalation toxicity requiring packing group I and articles containing more than one of the hazards listed in 2.0.3.4.2 to 2.0.3.4.4 shall be transported under conditions approved by the competent authority.

392 For the transport of fuel gas containment systems designed and approved to be fitted in motor vehicles containing this gas, the provisions of subsection 4.1.4.1 and chapter 6.2 of this Code need not be applied when transported for disposal, recycling, repair, inspection, maintenance or from where they are manufactured to a vehicle assembly plant, provided the following conditions are met:

.1 The fuel gas containment systems shall meet the requirements of the standards or regulations for fuel tanks for vehicles, as applicable. Examples of applicable standards and regulations are:

LPG tanks	
ECE Regulation No. 67 Revision 2	Uniform provisions concerning: I. Approval of specific equipment of vehicles of category M and N using liquefied petroleum gases in their propulsion system; II. Approval of vehicles of category M and N fitted with specific equipment for the use of liquefied petroleum gases in their propulsion system with regard to the installation of such equipment
ECE Regulation No. 115	Uniform provisions concerning the approval of: I. Specific LPG (liquefied petroleum gases) retrofit systems to be installed in motor vehicles for the use of LPG in their propulsion systems; II. Specific CNG (compressed natural gas) retrofit systems to be installed in motor vehicles for the use of CNG in their propulsion system
CNG tanks	
ECE Regulation No. 110	Uniform provisions concerning the approval of: I. Specific components of motor vehicles using compressed natural gas (CNG) and/or liquefied natural gas (LNG) in their propulsion system; II. Vehicles with regard to the installation of specific components of an approved type for the use of compressed natural gas (CNG) and/or liquefied natural gas (LNG) in their propulsion system

ECE Regulation No. 115	(Uniform provisions concerning the approval of: I. Specific LPG (liquefied petroleum gases) retrofit systems to be installed in motor vehicles for the use of LPG in their propulsion systems; II. Specific CNG (compressed natural gas) retrofit systems to be installed in motor vehicles for the use of CNG in their propulsion system)
ISO 11439:2013	Gas cylinders – High pressure cylinders for the on-board storage of natural gas as a fuel for automotive vehicles
ISO 15500-Series	ISO 15500: Road vehicles – Compressed natural gas (CNG) fuel system components – several parts as applicable
ANSI NGV 2	Compressed natural gas vehicle fuel containers
CSA B51 Part 2: 2014	Boiler, pressure vessel, and pressure piping code Part 2 Requirements for high-pressure cylinders for on board storage of fuels for automotive vehicles
Hydrogen pressure tanks	
Global Technical Regulation (GTR) No. 13	Global technical regulation on hydrogen and fuel cell vehicles (ECE/TRANS/180/Add.13)
ISO/TS 15869:2009	Gaseous hydrogen and hydrogen blends – Land vehicle fuel tanks
Regulation (EC) No.79/2009	Regulation (EC) No. 79/2009 of the European Parliament and of the Council of 14 January 2009 on type approval of hydrogen-powered motor vehicles, and amending Directive 2007/46/EC
Regulation (EU) No. 406/2010	Commission Regulation (EU) No. 406/2010 of 26 April 2010 implementing Regulation (EC) No. 79/2009 of the European Parliament and of the Council on type-approval of hydrogen-powered motor vehicles.
ECE Regulation No. 134	Uniform provisions concerning the approval of motor vehicles and their components with regards to the safety-related performance of hydrogen-fuelled vehicles (HFCV)
CSA B51 Part 2: 2014	Boiler, pressure vessel, and pressure piping code Part 2 Requirements for high-pressure cylinders for on-board storage of fuels for automotive vehicles

Gas tanks designed and constructed in accordance with previous versions of relevant standards or regulations for gas tanks for motor vehicles, which were applicable at the time of the certification of the vehicles for which the gas tanks were designed and constructed may continue to be transported;

.2 The fuel gas containment systems shall be leakproof and shall not exhibit any signs of external damage which may affect their safety;

Note 1: Criteria may be found in standard ISO 11623:2015 *Gas cylinders – Composite construction – Periodic inspection and testing* (or ISO 19078:2013 *Gas cylinders – Inspection of the cylinder installation, and requalification of high pressure cylinders for the on-board storage of natural gas as a fuel for automotive vehicles*).

Note 2: If the fuel gas containment systems are not leakproof or are overfilled or if they exhibit damage that could affect their safety (e.g. in case of a safety-related recall), they shall only be carried in salvage pressure receptacles in conformity with this Code.

.3 If a fuel gas containment system is equipped with two valves or more integrated in line, the two valves shall be closed as to be gastight under normal conditions of transport. If only one valve exists or only one valve works, all openings with the exception of the opening of the pressure relief device shall be closed as to be gastight under normal conditions of transport;

.4 Fuel gas containment systems shall be transported in such a way as to prevent obstruction of the pressure relief device or any damage to the valves and any other pressurised part of the fuel gas containment systems and unintentional release of the gas under normal conditions of

transport. The fuel gas containment system shall be secured in order to prevent slipping, rolling or vertical movement;

.5 Valves shall be protected by one of the methods described in 4.1.6.1.8.1 to 4.1.6.1.8.5;

.6 Except for the case of fuel gas containment systems removed for disposal, recycling, repair, inspection or maintenance, they shall be filled with not more than 20% of their nominal filling ratio or nominal working pressure, as applicable;

.7 Notwithstanding the provisions of chapter 5.2, when fuel gas containment systems are consigned in a handling device, markings and labels may be affixed to the handling device; and

.8 Notwithstanding the provisions of 5.4.1.5, the information on the total quantity of dangerous goods may be replaced by the following information:

.1 the number of fuel gas containment systems; and

.2 in the case of liquefied gases the total net mass (kg) of gas of each fuel gas containment system and, in the case of compressed gases, the total water capacity (l) of each fuel gas containment system followed by the nominal working pressure.

Examples for information in the transport document:

Example 1: "UN 1971 natural gas, compressed, 2.1, 1 fuel gas containment system of 50 l in total, 200 bar".

Example 2: "UN 1965 hydrocarbon gas mixture, liquefied, n.o.s., 2.1, 3 fuel gas containment systems, each of 15 kg net mass of gas".

393 The nitrocellulose shall meet the criteria of the Bergmann-Junk test or methyl violet paper test in the *Manual of Tests and Criteria* Appendix 10. Tests of type 3 (c) need not be applied.

394 The nitrocellulose shall meet the criteria of the Bergmann-Junk test or methyl violet paper test in the *Manual of Tests and Criteria* Appendix 10.

395 This entry shall only be used for solid medical waste of category A transported for disposal.

■ 396 Large and robust articles may be transported with connected gas cylinders with the valves open regardless of 4.1.6.1.5 provided:

the gas cylinders contain nitrogen of UN 1066 or compressed gas of UN 1956 or compressed air of UN 1002;

the gas cylinders are connected with the article through pressure regulators and fixed piping in such a way that the pressure of the gas (gauge pressure) in the article does not exceed 35 kPa (0.35 bar);

the gas cylinders are properly secured so that they cannot move in relation to the article and are fitted with strong and pressure resistant hoses and pipes;

the gas cylinders, pressure regulators, piping and other components are protected from damage and impacts during transport by wooden crates or other suitable means;

the transport document includes the following statement: "Transport in accordance with special provision 396."; and

cargo transport units containing articles transported with cylinders with open valves containing a gas presenting a risk of asphyxiation are well ventilated and are marked in accordance with 5.5.3.6.

■ 397 Mixtures of nitrogen and oxygen containing not less than 19.5% and not more than 23.5% oxygen by volume may be transported under this entry when no other oxidizing gases are present. A division 5.1 subsidiary hazard label is not required for any concentrations within this limit.

■ 398 This entry applies to mixtures of butylenes, 1-butylene, *cis*-2-butylene and *trans*-2-butylene. For isobutylene, see UN 1055.

399 For articles that meet the definition for DETONATORS, ELECTRONIC as described in appendix B and assigned to UN Nos. 0511, 0512 and 0513, the entries for DETONATORS, ELECTRIC (UN Nos. 0030, 0255 and 0456) may continue to be used until 30 June 2025.

900 The transport of the following substances is prohibited:

AMMONIUM HYPOCHLORITE

AMMONIUM NITRATE liable to self-heating sufficient to initiate decomposition

AMMONIUM NITRITES and mixtures of an inorganic nitrite with an ammonium salt

CHLORIC ACID, AQUEOUS SOLUTION with more than 10% chloric acid

ETHYL NITRITE pure

HYDROCYANIC ACID, AQUEOUS SOLUTION (HYDROGEN CYANIDE, AQUEOUS SOLUTION) with more than 20% hydrogen cyanide

HYDROGEN CHLORIDE, REFRIGERATED LIQUID

HYDROGEN CYANIDE SOLUTION, IN ALCOHOL with more than 45% hydrogen cyanide

MERCURY OXYCYANIDE pure

METHYL NITRITE

PERCHLORIC ACID with more than 72% acid, by mass

SILVER PICRATE, dry or wetted with less than 30% water by mass

ZINC AMMONIUM NITRITE

See also special provisions 349, 350, 351, 352 and 353.

903 HYPOCHLORITE MIXTURES with 10% or less available CHLORINE are not subject to the provisions of this Code.

904 The provisions of this Code, except for the marine pollution aspects, do not apply to these substances if they are completely miscible with water, except when transported in receptacles with a capacity greater than 250 L and in tanks.

905 May only be shipped as an 80% solution in TOLUENE. The pure product is shock-sensitive and decomposes with explosive violence and the possibility of detonation when heated under confinement. Can be ignited by impact.

907 The consignment shall be accompanied by a certificate from a recognized authority stating:

- moisture content;
- fat content;
- details of anti-oxidant treatment for meals older than 6 months (for UN 2216 only);
- anti-oxidant concentration at the time of shipment, see special provision 308 (for UN 2216 only);
- packing, number of bags and total mass of the consignment;
- temperature of fish meal at the time of despatch from the factory;
- date of production.

No weathering/curing is required prior to loading. Fish meal under UN 1374 shall have been weathered for not less than 28 days before shipment.

When fish meal is packed into containers, the containers shall be packed in such a way that the free air space has been restricted to the minimum.

912 This entry also covers solutions in water with concentrations above 70%.

916 The provisions of this Code do not apply to this substance when:

- mechanically produced, with a particle size of 53 microns or greater; or
- chemically produced, with a particle size of 840 microns or greater.

917 Scrap with rubber content below 45% or exceeding 840 microns and fully vulcanized hard rubber are not subject to the provisions of this Code.

920 Bars, ingots or sticks are not subject to the provisions of this Code.

921 Zirconium, dry, 254 microns or thicker is not subject to the provisions of this Code.

922 LEAD PHOSPHITE, DIBASIC which is accompanied by the certificate from the shipper stating that the substance, as offered for shipment, has been stabilized in such a way that it does not possess the properties of class 4.1 is not subject to the provisions of this Code.

923 The temperature shall be checked regularly.

925 The provisions of this Code do not apply to:

- non-activated carbon blacks of mineral origin;
- a consignment of carbon if it passes the tests for self-heating substances as reflected in the *Manual of Tests and Criteria* (see 33.4.3.3), and is accompanied by a certificate from a laboratory accredited by the competent authority, stating that the product to be loaded has been correctly sampled by trained staff from that laboratory and that the sample was correctly tested and has passed the test; and
- carbons made by a steam activation process.

926 This substance shall preferably have been weathered for not less than one month before shipment unless a certificate from a person recognized by the competent authority of the country of shipment states a maximum moisture content of 5%.

927 *p*-Nitrosodimethylaniline, wetted with more than 50% water is not subject to the provisions of this Code.

928 The provisions of this Code shall not apply to:

- fish meal when acidified and wetted with more than 40% water, by mass, irrespective of other factors;
- consignments of fish meal which are accompanied by a certificate issued by a recognized competent authority of the country of shipment or other recognized authority stating that the product has no self-heating properties when transported in packaged form; or

– fish meal manufactured from “white” fish with a moisture content of not more than 12% and a fat content of not more than 5% by mass.

929 If satisfied, as a result of tests, that such relaxation is justified, the competent authority may permit:

– the seed cakes described as “SEED CAKE, containing vegetable oil (a) mechanically expelled seeds, containing more than 10% of oil or more than 20% of oil and moisture combined” to be transported under conditions governing “SEED CAKE, containing vegetable oil (b) solvent extractions and expelled seeds, containing not more than 10% of oil and, when the amount of moisture is higher than 10% not more than 20% of oil and moisture combined”, and

– the seed cakes described as “SEED CAKE, containing vegetable oil (b) solvent extractions and expelled seeds, containing not more than 10% of oil and, when the amount of moisture is higher than 10% not more than 20% of oil and moisture combined” to be transported under conditions governing SEED CAKE, UN 2217.

Certificates from the shipper shall state oil content and moisture content and shall accompany the shipment.

930 All pesticides can only be carried under the provisions of this class if accompanied by a certificate supplied by the shipper stating that, when in contact with water, it is not combustible and does not show tendency to autoignition, and that the mixture of gases evolved is not flammable. Otherwise, the provisions of class 4.3 shall be applicable.

931 A consignment of this substance which is accompanied by a declaration from the shipper stating that it has no self-heating properties is not subject to the provisions of this Code.

932 Requires a certificate from the maker or shipper, stating that the shipment was stored under cover, but in the open air, in the size in which it was packaged, for not less than 3 days prior to shipment.

934 Requires the percentage range of calcium carbide impurity to be shown on the shipping documents.

935 Substances which do not evolve flammable gases when wet, which are accompanied by a certificate from the shipper stating that the substance, as offered for shipment, does not evolve flammable gases when wet, are not subject to the provisions of this Code.

937 The solid hydrated form of this substance is not subject to the provisions of this Code.

939 A consignment of this substance that is accompanied by a shipper’s certificate stating that it does not contain more than 0.05% maleic anhydride is not subject to the provisions of this Code.

942 The concentration and temperature of the solution at the time of loading, its percentage of combustible material and of chlorides as well as the contents of free acid shall be certified.

943 Water-activated articles shall bear a subsidiary hazard label of class 4.3.

946 Requires certification from the shipper that the substance is not of class 4.2.

948 These substances may be transported in bulk in cargo transport units only if their melting point is 75°C or above.

952 UN 1942 may be transported in bulk container if approved by the competent authority.

954 The provisions of this Code shall not apply to consignments of compressed baled hay with a moisture content of less than 14% shipped in closed cargo transport units and accompanied by a certificate from the shipper stating that the product does not present any class 4.1, UN 1327, hazard in transport and that its moisture content is less than 14%.

955 If a viscous substance and its packaging fulfils the provisions of 2.3.2.5, the packing provisions of chapter 4.1, the marking and labelling provisions of chapter 5.2 and the package testing provisions of chapter 6.1 are not applicable.

958 This entry also covers articles, such as rags, cotton waste, clothing or sawdust, containing polychlorinated biphenyls, polyhalogenated biphenyls or polyhalogenated terphenyls where no free visible liquid is present.

959 Waste aerosols or waste gas cartridges authorized for transport under special provision 327 shall only be transported on short international voyages. Long international voyages are authorized only with the approval of the competent authority. Packagings shall be marked and labelled and cargo transport units shall be marked and placarded for appropriate sub-division of class 2 and, if applicable, the subsidiary hazard(s).

960 Not subject to the provisions of this Code but may be subject to provisions governing the transport of dangerous goods by other modes.

961 Vehicles are not subject to the provisions of this Code if any of the following conditions are met:

.1 vehicles are stowed on the vehicle, special category and ro-ro spaces or on the weather deck of a ro-ro ship or a cargo space designated by the Administration (flag State) in accordance with SOLAS 74, chapter II-2, regulation 20 as specifically designed and approved for the carriage of vehicles, and there are no signs of leakage from the battery, engine, fuel cell, compressed gas

cylinder or accumulator, or fuel tank when applicable. When packed in a cargo transport unit the exception does not apply to container cargo spaces of a ro-ro ship.

In addition, for vehicles powered solely by lithium batteries and hybrid electric vehicles powered by both an internal combustion engine and lithium metal or ion batteries, the lithium batteries shall meet the provisions of 2.9.4, except that 2.9.4.1 and 2.9.4.7 do not apply when pre-production prototype batteries or batteries of a small production run, consisting of not more than 100 batteries, are installed in the vehicle and the vehicle is manufactured and approved according to the provisions applied in the country of manufacture or country of use. Where a lithium battery installed in a vehicle is damaged or defective, the battery shall be removed.

.2 vehicles powered by a flammable liquid fuel with a flashpoint of 38°C or above, there are no leaks in any portion of the fuel system, the fuel tank(s) contains 450 L of fuel or less and installed batteries are protected from short-circuit;

.3 vehicles powered by a flammable liquid fuel with a flashpoint less than 38°C, the fuel tank(s) are empty and installed batteries are protected from short circuit. Vehicles are considered to be empty of flammable liquid fuel when the fuel tank has been drained and the vehicles cannot be operated due to a lack of fuel. Engine components such as fuel lines, fuel filters and injectors do not need to be cleaned, drained or purged to be considered empty. The fuel tank does not need to be cleaned or purged;

.4 vehicles powered by a flammable gas (liquefied or compressed), the fuel tank(s) are empty and the positive pressure in the tank does not exceed 2 bar, the fuel shut-off or isolation valve is closed and secured, and installed batteries are protected from short circuit;

.5 vehicles solely powered by a wet or dry electric storage battery or a sodium battery, and the battery is protected from short circuit.

962 Vehicles, not meeting the conditions of special provision 961 shall be assigned to class 9 and shall meet the following requirements:

.1 vehicles shall not show signs of leakage from batteries, engines, fuel cells, compressed gas cylinders or accumulators, or fuel tank(s) when applicable;

.2 for flammable liquid powered vehicles the fuel tank(s) containing the flammable liquid shall not be more than one fourth full and in any case the flammable liquid shall not exceed 250 L unless otherwise approved by the competent authority;

.3 for flammable gas powered vehicles, the fuel shut-off valve of the fuel tank(s) shall be securely closed;

.4 installed batteries shall be protected from damage, short circuit, and accidental activation during transport. Lithium batteries shall meet the provisions of 2.9.4, except that 2.9.4.1 and 2.9.4.7 do not apply when pre-production prototype batteries or batteries of a small production run, consisting of not more than 100 batteries, are installed in the vehicle and the vehicle is manufactured and approved according to the provisions applied in the country of manufacture or country of use. Where a lithium battery installed in a vehicle is damaged or defective, the battery shall be removed and transported according to SP 376, unless otherwise approved by the competent Authority.

The provisions of this Code relevant to marking, labelling, placarding and marine pollutants shall not apply.

963 Nickel-metal hydride cells or batteries packed with or contained in equipment and nickel-metal hydride button cells are not subject to the provisions of this Code.

All other nickel-metal hydride cells or batteries shall be securely packed and protected from short circuit. They are not subject to other provisions of this Code provided that they are loaded in a cargo transport unit in a total quantity of less than 100 kg gross mass. When loaded in a cargo transport unit in a total quantity of 100 kg gross mass or more, they are not subject to other provisions of this Code except those of 5.4.1, 5.4.3 and columns 16a and 16b of the Dangerous Goods List in chapter 3.2.

964 This substance is not subject to the provisions of this Code when transported in non-friable prills or granules form and if it passes the test for oxidizing solid substances as reflected in the *Manual of Tests and Criteria* (see 34.4.1) and is accompanied by a certificate from a laboratory accredited by a competent authority, stating that the product has been correctly sampled by trained staff from the laboratory and that the sample was correctly tested and has passed the test.

965 .1 When transported in cargo transport units, the cargo transport units shall provide an adequate exchange of air in the unit (e.g. by using a ventilated container, open-top container or container in one door off operation) to prevent the build-up of an explosive atmosphere. Alternatively, these entries shall be transported under temperature control in refrigerated cargo transport units that comply with the provisions of 7.3.7.6. When cargo transport units with venting devices are used, these devices shall be kept clear and operable. When mechanical devices are used

for ventilation, they shall be explosion-proof to prevent ignition of flammable vapours from the substances.

.2 The provisions of .1 do not apply if:

.1 the substance is packed in hermetically sealed packagings or IBCs, which conform to packing group II performance level for liquid dangerous goods according to the provisions of 6.1 or 6.5, respectively; and

.2 the marked hydraulic test pressure exceeds 1.5 times the total gauge pressure in the packagings or IBCs determined at 55°C for the respective filling goods according to 4.1.1.10.1.

.3 Where the substance is loaded in closed cargo transport units, the provisions of 7.3.6.1 shall be met.

.4 Cargo transport units shall be marked with a warning mark including the words “CAUTION – MAY CONTAIN FLAMMABLE VAPOUR” with lettering not less than 25 mm high. This mark shall be affixed at each access point in a location where it will be easily seen by persons prior to opening or entering the cargo transport unit and shall remain on the cargo transport unit until the following provisions are met:

.1 the cargo transport unit has been completely ventilated to remove any hazardous concentration of vapour or gas;

.2 the immediate vicinity of the cargo transport unit is clear of any source of ignition; and

.3 the goods have been unloaded.

966 Sheeted bulk containers (BK1) are only permitted in accordance with 4.3.3.

967 Flexible bulk containers (BK3) are only permitted in accordance with 4.3.4.

968 This entry shall not be used for sea transport. Discarded packaging shall meet the requirements of 4.1.1.11.

969 Substances classified in accordance to 2.9.3 are subject to the provisions for marine pollutants. Substances which are transported under UN 3077 and UN 3082 but which do not meet the criteria of 2.9.3 (see 2.9.2.2) are not subject to the provisions for marine pollutants. However for substances that are identified as marine pollutants in this Code (see Index) but which no longer meet the criteria of 2.9.3, the provisions of 2.10.2.6 apply.

971 Battery powered equipment may only be transported provided that the battery shows no sign of leakage and is protected from short-circuit. In this case, no other provisions of this Code apply.

972 Lithium batteries shall meet the provisions of 2.9.4, except that 2.9.4.1 and 2.9.4.7 do not apply when pre-production prototype batteries or batteries of a small production run, consisting of not more than 100 batteries, are installed in the engine or machinery. Where a lithium battery installed in an engine or machinery is damaged or defective, the battery shall be removed.

973 Packages, with the exception of bales, shall also display the proper shipping name and the UN number of the substance that they contain in accordance with 5.2.1. In any case, the packages, including bales, are exempt from class marking provided that they are loaded in a cargo transport unit and that they contain goods to which only one UN number has been assigned. The cargo transport units in which the packages, including bales, are loaded shall display any relevant labels, placards and marks in accordance with chapter 5.3.

974 These substances may be transported in IMO type 9 tanks.

975 MEDICAL WASTE, CATEGORY A, AFFECTING HUMANS, solid or MEDICAL WASTE, CATEGORY A, AFFECTING ANIMALS only, solid shall only be transported on short international voyages. Long international voyages are authorized only with the approval of the competent authorities of the port State of departure, port State of arrival and flag State.

976 The transport of this substance shall be prohibited except with the approval of the competent authorities of the port State of departure, port State of arrival and flag State.

Chapter 3.4

Dangerous goods packed in limited quantities

3.4.1 General

3.4.1.1 This chapter provides the provisions applicable to the transport of dangerous goods of certain classes packed in limited quantities. The applicable quantity limit for the inner packaging or article is specified for each substance in column 7a of the Dangerous Goods List of chapter 3.2. In addition, the quantity "0" has been indicated in this column for each entry not permitted to be transported in accordance with this chapter.

3.4.1.2 Limited quantities of dangerous goods packed in such limited quantities, meeting the provisions of this chapter, are not subject to any other provisions of this Code except the relevant provisions of:

.1 Part 1, chapters 1.1, 1.2 and 1.3;

.2 Part 2;

.3 Part 3, chapters 3.1, 3.2, 3.3;

.4 Part 4, 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8;

.5 Part 5, 5.1.1 except 5.1.1.6, 5.1.2.3, 5.2.1.7, 5.2.1.9, 5.3.2.4, and chapter 5.4;

.6 Part 6, construction requirements of 6.1.4, 6.2.1.2 and 6.2.4;

.7 Part 7, 7.1.3.2, 7.6.3.1 and 7.3 except 7.3.3.15 and 7.3.4.1.

3.4.2 Packing

3.4.2.1 Dangerous goods shall be packed only in inner packagings placed in suitable outer packagings. Intermediate packagings may be used. In addition, for articles of division 1.4, compatibility group S, the provisions of section 4.1.5 shall be fully complied with. The use of inner packagings is not necessary for the transport of articles such as aerosols or "receptacles, small, containing gas". The total gross mass of the package shall not exceed 30 kg.

3.4.2.2 Except for articles of division 1.4, compatibility group S, shrink-wrapped or stretch-wrapped trays meeting the conditions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8 are acceptable as outer packagings for articles or inner packagings containing dangerous goods transported in accordance with this chapter. Inner packagings that are liable to break or be easily punctured, such as those made of glass, porcelain, stoneware or certain plastics, shall be placed in suitable intermediate packagings meeting the provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8, and be so designed that they meet the construction requirements of 6.1.4. The total gross mass of the package shall not exceed 20 kg.

3.4.2.3 Liquid goods of class 8, packing group II in glass, porcelain or stoneware inner packagings shall be enclosed in a compatible and rigid intermediate packaging.

3.4.3 Stowage

Dangerous goods packed in limited quantity are allocated stowage category A as defined in 7.1.3.2. The other stowage provisions indicated in column 16a of the Dangerous Goods List are not applicable.

3.4.4 Segregation

3.4.4.1 Different dangerous substances in limited quantities may be packed in the same outer packaging, provided:

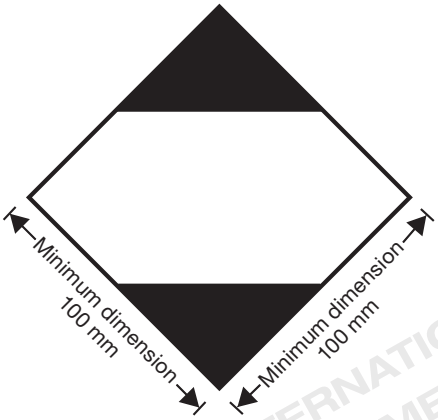
.1 the substances comply with the provisions of 7.2.6.1; and

.2 the segregation provisions of chapter 7.2, including the segregation provisions in column 16b of the Dangerous Goods List, are taken into account. However, notwithstanding the individual provisions specified in the Dangerous Goods List, substances in packing group III within the same class may be packed together subject to compliance with 3.4.4.1.1 of the IMDG Code. The following statement shall be included in the transport document: "Transport in accordance with 3.4.4.1.2 of the IMDG Code" (see 5.4.1.5.2.2).

3.4.4.2 The segregation provisions of chapter 7.2 to 7.7 including the segregation provisions in column 16b of the Dangerous Goods List are not applicable for packagings containing dangerous goods in limited quantities or in relation to other dangerous goods. However, articles of division 1.4, compatibility group S shall not be stowed in the same compartment or hold, or cargo transport unit with dangerous goods of class 1 of compatibility groups A and L.

3.4.5 Marking and placarding

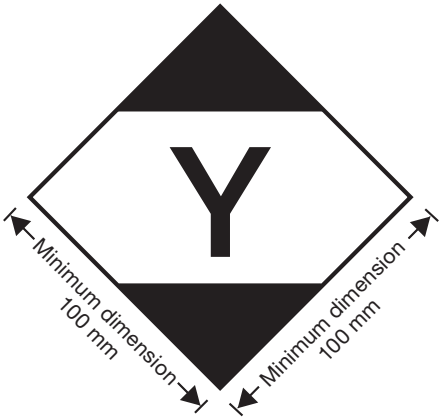
3.4.5.1 Except for air transport, packages containing dangerous goods in limited quantities shall bear the mark shown below:



Mark for packages containing limited quantities

The mark shall be readily visible, legible and able to withstand open weather exposure without a substantial reduction in effectiveness. The mark shall be in the form of a square set at an angle of 45° (diamond-shaped). The top and bottom portions and the surrounding line shall be black. The centre area shall be white or a suitable contrasting background. The minimum dimensions shall be 100 mm × 100 mm and the minimum width of the line forming the diamond shall be 2 mm. Where dimensions are not specified, all features shall be in approximate proportion to those shown. If the size of the package so requires, the minimum outer dimensions shown above may be reduced to be not less than 50 mm × 50 mm provided the mark remains clearly visible. The minimum width of the line forming the diamond may be reduced to a minimum of 1 mm.

3.4.5.2 Packages containing dangerous goods packed in conformity with the provisions of part 3, chapter 4 of the ICAO *Technical Instructions for the Safe Transport of Dangerous Goods by Air* may bear the mark shown below to certify conformity with these provisions:



Mark for packages containing limited quantities conforming to part 3, chapter 4 of the ICAO *Technical Instructions for the Safe Transport of Dangerous Goods by Air*

The mark shall be readily visible, legible and able to withstand open weather exposure without a substantial reduction in effectiveness. The mark shall be in the form of a square set at an angle of 45° (diamond-shaped). The top and bottom portions and the surrounding line shall be black. The centre area shall be white or a suitable contrasting background. The minimum dimensions shall be 100 mm × 100 mm and the minimum width of the line forming the diamond shall be 2 mm. The symbol "Y" shall be placed in the centre of the mark and shall be clearly visible. Where dimensions are not specified, all features shall be in approximate proportion to those shown. If the size of the package so requires, the minimum outer dimensions shown

above may be reduced to be not less than 50 mm × 50 mm provided the mark remains clearly visible. The minimum width of the line forming the diamond may be reduced to a minimum of 1 mm. The symbol "Y" shall remain in approximate proportion to that shown above.

3.4.5.3 Multimodal recognition of marks

3.4.5.3.1 Packages containing dangerous goods bearing the mark shown in 3.4.5.2 with or without the additional labels and marks for air transport shall be deemed to meet the provisions of section 3.4.2 and need not bear the mark shown in 3.4.5.1.

3.4.5.3.2 Packages containing dangerous goods in limited quantities bearing the mark shown in 3.4.5.1 and conforming with the provisions of the ICAO *Technical Instructions for the Safe Transport of Dangerous Goods by Air*, including all necessary marks and labels specified in parts 5 and 6, shall be deemed to meet the provisions of section 3.4.1 as appropriate and of section 3.4.2.

3.4.5.4 When packages containing dangerous goods packed in limited quantities are placed in an overpack or in a unit load, the overpack or the unit load shall be marked with the mark required by this chapter unless the marks representative of all dangerous goods in the overpack or the unit load are visible. In addition, an overpack shall be marked with the word "OVERPACK" unless marks representative of all dangerous goods, as required by this chapter, in the overpack are visible. The lettering of the "OVERPACK" mark shall be at least 12 mm high. The other provisions of 5.1.2.1 apply only if other dangerous goods which are not packed in limited quantities are contained in the overpack or in a unit load and only in relation to these other dangerous goods.

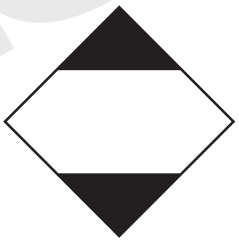
3.4.5.5 Placarding and marking of cargo transport units

3.4.5.5.1 Cargo transport units containing dangerous goods packed in limited quantities with no other dangerous goods shall not be placarded nor marked according to 5.3.2.0 and 5.3.2.1. However, they shall be suitably marked on the exterior with the mark in 3.4.5.5.4.

3.4.5.5.2 Cargo transport units containing dangerous goods and dangerous goods packed in limited quantities shall be placarded and marked according to the provisions applicable to the dangerous goods which are not packed in limited quantities. However, if no placard or mark is required for the dangerous goods not packed in limited quantities, the cargo transport units shall be marked with the mark in 3.4.5.5.4.

3.4.5.5.3 [Reserved]

3.4.5.5.4 When required in 3.4.5.5.1 or 3.4.5.5.2, the following mark shall be affixed on cargo transport units:



The mark shall be readily visible, legible and be such that this information will still be identifiable on cargo transport units surviving at least three months' immersion in the sea. In considering suitable marking methods, account shall be taken of ease with which the surface of the cargo transport unit can be marked. The top and bottom portions and the surrounding line shall be black. The centre area shall be white or a suitable contrasting background. The minimum dimensions shall be of 250 mm × 250 mm in locations indicated in 5.3.1.1.4.1.

3.4.6 Documentation

3.4.6.1 In addition to the provisions for documentation specified in chapter 5.4, the words "limited quantity" or "LTD QTY" shall be included on the dangerous goods transport document together with the description of the shipment.

Chapter 3.5

Dangerous goods packed in excepted quantities

3.5.1 Excepted quantities

3.5.1.1 Excepted quantities of dangerous goods of certain classes, other than articles, meeting the provisions of this chapter, are not subject to any other provisions of this Code except for:

.1 The training provisions in chapter 1.3;

.2 The classification procedures and packing group criteria in Part 2, Classification;

.3 The packaging provisions of 4.1.1.1, 4.1.1.2, 4.1.1.4, 4.1.1.4.1 and 4.1.1.6 in Part 4; and

.4 The provisions for documentation specified in chapter 5.4.

Note: In the case of radioactive material, the provisions for radioactive material in excepted packages in 1.5.1.5 apply.

3.5.1.2 Dangerous goods which may be carried as excepted quantities in accordance with the provisions of this chapter are shown in column 7b of the Dangerous Goods List by means of an alphanumeric code as follows:

Code	**Maximum net quantity per inner packaging** (in grams for solids and mL for liquids and gases)	**Maximum net quantity per outer packaging** (in grams for solids and mL for liquids and gases, or sum of grams and mL in the case of mixed packaging)
E0	Not permitted as excepted quantity	
E1	30	1,000
E2	30	500
E3	30	300
E4	1	500
E5	1	300

For gases, the volume indicated for inner packagings refers to the water capacity of the inner receptacle and the volume indicated for outer packagings refers to the combined water capacity of all inner packagings within a single outer packaging.

3.5.1.3 Where dangerous goods in excepted quantities for which different codes are assigned are packaged together, the total quantity per outer packaging shall be limited to that corresponding to the most restrictive code.

3.5.1.4 Excepted quantities of dangerous goods assigned to codes E1, E2, E4 and E5 are not subject to the provisions of this Code provided that:

.1 The maximum net quantity of material per inner packaging is limited to 1 mL for liquids and gases and 1 g for solids;

.2 The provisions of 3.5.2 are met, except that an intermediate packaging is not required if the inner packagings are securely packed in an outer packaging with cushioning material in such a way that, under normal conditions of transport, they cannot break, be punctured, or leak their contents; and for liquid dangerous goods, the outer packaging contains sufficient absorbent material to absorb the entire contents of the inner packagings;

.3 The provisions of 3.5.3 are complied with; and

.4 The maximum net quantity of dangerous goods per outer packaging does not exceed 100 g for solids or 100 mL for liquids and gases.

3.5.2 Packagings

3.5.2.1 Packagings used for the transport of dangerous goods in excepted quantities shall be in compliance with the following:

.1 There shall be an inner packaging and each inner packaging shall be constructed of plastic (when used for liquid dangerous goods it shall have a thickness of not less than 0.2 mm), or of glass, porcelain, stoneware, earthenware or metal (see also 4.1.1.2) and the closure of each inner packaging shall be held securely in place with wire, tape or other positive means; any receptacle having a neck with moulded screw threads shall have a leakproof threaded-type cap. The closure shall be resistant to the contents;

.2 Each inner packaging shall be securely packed in an intermediate packaging with cushioning material in such a way that, under normal conditions of transport, they cannot break, be punctured or leak their contents. For liquid dangerous goods, the intermediate or outer packaging shall contain sufficient absorbent material to absorb the entire contents of the inner packagings. When placed in the intermediate packaging, the absorbent material may be the cushioning material. Dangerous goods shall not react dangerously with cushioning, absorbent material and packaging material or reduce the integrity or function of the materials. Regardless of its orientation, the package shall completely contain the contents in case of breakage or leakage;

.3 The intermediate packaging shall be securely packed in a strong, rigid outer packaging (wooden, fibre-board or other equally strong material);

.4 Each package type shall be in compliance with the provisions in 3.5.3;

.5 Each package shall be of such a size that there is adequate space to apply all necessary marks; and

.6 Overpacks may be used and may also contain packages of dangerous goods or goods not subject to the provisions of this Code.

3.5.3 Tests for packages

3.5.3.1 The complete package as prepared for transport, with inner packagings filled to not less than 95% of their capacity for solids or 98% for liquids, shall be capable of withstanding, as demonstrated by testing which is appropriately documented, without breakage or leakage of any inner packaging and without significant reduction in effectiveness:

.1 Drops onto a rigid, non-resilient flat and horizontal surface from a height of 1.8 m:

(i) Where the sample is in the shape of a box, it shall be dropped in each of the following orientations:

- flat on the base;
- flat on the top;
- flat on the longest side;
- flat on the shortest side;
- on a corner

(ii) Where the sample is in the shape of a drum, it shall be dropped in each of the following orientations:

- diagonally on the top chime, with the centre of gravity directly above the point of impact;
- diagonally on the base chime;
- flat on the side.

Note: Each of the above drops may be performed on different but identical packages.

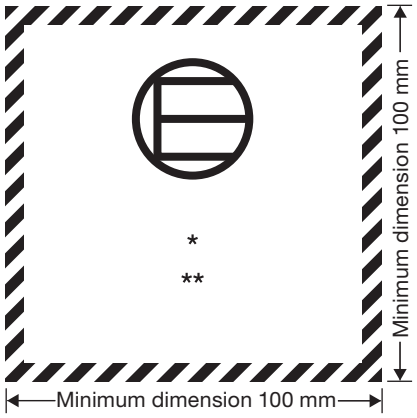
.2 A force applied to the top surface for a duration of 24 h, equivalent to the total weight of identical packages if stacked to a height of 3 m (including the sample).

3.5.3.2 For the purposes of testing, the substances to be transported in the packaging may be replaced by other substances except where this would invalidate the results of the tests. For solids, when another substance is used, it shall have the same physical characteristics (mass, grain size, etc.) as the substance to be carried. In the drop tests for liquids, when another substance is used, its relative density (specific gravity) and viscosity shall be similar to those of the substance to be transported.

3.5.4 Marking of packages

3.5.4.1 Packages containing excepted quantities of dangerous goods prepared in accordance with this chapter shall be durably and legibly marked with the mark shown below. The primary hazard class of each of the dangerous goods contained in the package shall be shown in the mark. Where the name of the consignor or consignee is not shown elsewhere on the package, this information shall be included within the mark.

3.5.4.2



Excepted quantities mark

* The class or, when assigned, the division number(s) shall be shown in this location.
** The name of the consignor or of the consignee shall be shown in this location if not shown elsewhere on the package.

The mark shall be in the form of a square. The hatching and symbol shall be of the same colour, black or red, on white or suitable contrasting background. The minimum dimensions shall be 100 mm × 100 mm. Where dimensions are not specified, all features shall be in approximate proportion to those shown.

3.5.4.3 When packages containing dangerous goods packed in excepted quantities are placed in an overpack or in a unit load, the overpack or the unit load shall be marked with the mark required by this chapter unless the marks representative of all dangerous goods in the overpack or the unit load are visible. In addition, an overpack shall be marked with the word “OVERPACK” unless marks representative of all dangerous goods, as required by this chapter, in the overpack are visible. The lettering of the “OVERPACK” mark shall be at least 12 mm high. The other provisions of 5.1.2.1 apply only if other dangerous goods which are not packed in excepted quantities are contained in the overpack or in a unit load and only in relation to these other dangerous goods.

3.5.5 Maximum number of packages in any cargo transport unit

3.5.5.1 The number of packages containing dangerous goods packed in excepted quantities in any cargo transport unit shall not exceed 1,000.

3.5.6 Documentation

3.5.6.1 In addition to the provisions for documentation specified in chapter 5.4, the words “dangerous goods in excepted quantities” and the number of packages shall be included on the dangerous goods transport document together with the description of the shipment.

3.5.7 Stowage

3.5.7.1 Dangerous goods packed in excepted quantity are allocated stowage category A as defined in 7.1.3.2. The other stowage provisions indicated in column 16a of the Dangerous Goods List are not applicable.

3.5.8 Segregation

3.5.8.1 The segregation provisions of chapters 7.2 to 7.7, including the segregation provisions in column 16b of the Dangerous Goods List, are not applicable for packagings containing dangerous goods packed in excepted quantities or in relation to other dangerous goods.

3.5.8.2 The segregation provisions of chapters 7.2 to 7.7, including the segregation provisions in column 16b of the Dangerous Goods List, are not applicable for different dangerous goods in excepted quantities in the same outer packaging provided that they do not react dangerously with each other (see 4.1.1.6).