

# **Economic Commission for Europe**

## **Inland Transport Committee**

### **Working Party on the Transport of Dangerous Goods**

## **European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR)\***

### **Draft amendments to annexes A and B of ADR**

At its 107th session, the Working Party on the Transport of Dangerous Goods requested the secretariat to prepare a consolidated list of all the amendments which it had adopted for entry into force on 1 January 2021 so that they could be made the subject of an official proposal in accordance with the procedure set out in article 14 of ADR, which, following usual practice, the Chair would be responsible for transmitting to the depositary through his Government. The notification would have to be issued no later than 1 July 2020, with a reference to 1 January 2021 as the scheduled date of entry into force (see ECE/TRANS/WP.15/248, paragraph 80).

This document contains the requested consolidated list of amendments adopted by the Working Party at its 105th, 106th and 107th sessions (see ECE/TRANS/WP.15/244, annex I, ECE/TRANS/WP.15/246, annex and ECE/TRANS/WP.15/248, annex I).

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\* *Note by the secretariat: On 1 January 2021, the “European Agreement concerning the international carriage of dangerous goods by road (ADR)” will become the “Agreement concerning the international carriage of dangerous goods by road (ADR)”.*

## Chapter 1.1

- 1.1.3.2 In paragraph (a), in the table in Note 1, add a reference to table note “<sup>a</sup>” after “Nm<sup>3</sup>” (twice). Add the following table note:
- “<sup>a</sup> 1 Nm<sup>3</sup> refers to a normal cubic metre: the amount of a gas occupying 1 m<sup>3</sup> under temperature and pressure conditions of 0 °C and 1.01325 bar (0.101325 MPa).”
- 1.1.3.6.2 In the first indent, replace “and 0500” by “, 0500, 0512 and 0513”.
- 1.1.3.6.3 In the table, for transport category 0, Class 6.2, replace “UN Nos. 2814 and 2900” by “UN Nos. 2814, 2900 and 3549”.
- 1.1.3.6.5 Replace “1.1.3.1 (a), (b) and (d)” by “1.1.3.1 (a) and (d)”.
- 1.1.3.7 (b) At the end, add “, except for equipment such as data loggers and cargo tracking devices attached to or placed in packages, overpacks, containers or load compartments which are only subject to the requirements in 5.5.4”.

## Chapter 1.2

- 1.2.1 Insert the following new definitions, in alphabetical order:
- “*Dose rate*” means the ambient dose equivalent or the directional dose equivalent, as appropriate, per unit time, measured at the point of interest.”
- “*IAEA Regulations for the Safe Transport of Radioactive Material*” means one of the editions of those Regulations, as follows:
- (a) For the 1985 and 1985 (as amended 1990) editions: IAEA Safety Series No. 6;
  - (b) For the 1996 edition: IAEA Safety Series No. ST-1;
  - (c) For the 1996 (revised) edition: IAEA Safety Series No. TS-R-1 (ST-1, Revised);
  - (d) For the 1996 (as amended 2003), 2005 and 2009 editions: IAEA Safety Standards Series No. TS-R-1;
  - (e) For the 2012 edition: IAEA Safety Standards Series No. SSR-6;
  - (f) For the 2018 edition: IAEA Safety Standards Series No. SSR-6 (Rev.1);”
- 1.2.1 Amend the definition of “*Self-accelerating decomposition temperature*” to read as follows:
- “*Self-accelerating decomposition temperature (SADT)*” means the lowest temperature at which self-accelerating decomposition may occur in a substance in the packaging, IBC or tank as offered for carriage. The SADT shall be determined in accordance with the test procedures given in Part II, Section 28 of the Manual of Tests and Criteria;”
- 1.2.1 Delete the definition of “*Radiation level*”.
- 1.2.1 In the definition of “*Self-accelerating polymerization temperature (SAPT)*”, in the first sentence, insert “self-accelerating” between “which” and “polymerization”.
- 1.2.1 Amend the definition of “*Transport index*” to read:
- “*Transport index (TI)*” assigned to a package, overpack or container, or to unpackaged LSA-I or SCO-I or SCO-III, for the carriage of radioactive material, means a number which is used to provide control over radiation exposure;”

- 1.2.1 In the definition of “GHS”, replace “seventh” by “eighth” and replace “ST/SG/AC.10/30/Rev.7” by “ST/SG/AC.10/30/Rev.8”.
- 1.2.1 In the definition of “Manual of Tests and Criteria”, replace “sixth” by “seventh”, delete “Recommendations on the Transport of Dangerous Goods,” and replace “ST/SG/AC.10/11/Rev.6 and Amend.1” by “ST/SG/AC.10/11/Rev.7”.
- 1.2.1 In the definition of “UN Model Regulations”, replace “twentieth” by “twenty-first” and replace “(ST/SG/AC.10/1/Rev.20)” by “(ST/SG/AC.10/1/Rev.21)”.
- 1.2.1 Amend the definition of “Tank-container/portable tank operator” to read:  
 “Tank-container or portable tank operator” means any enterprise in whose name the tank-container or portable tank is operated;”

## Chapter 1.4

- 1.4.3.3 (e) Delete “maximum” (twice).

## Chapter 1.6

- 1.6.1.1 Replace “2019” by “2021” and “2018” by “2020”.
- 1.6.1.22 Delete and add “1.6.1.22 (Deleted)”.
- 1.6.1.30 Delete and add “1.6.1.30 (Deleted)”.
- 1.6.1.36 Delete and add “1.6.1.36 (Deleted)”.
- 1.6.1.47 Delete and add “1.6.1.47 (Deleted)”.
- 1.6.2.16 Add the following new paragraph:  
 “1.6.2.16 The requirements of Note 3 of 6.2.3.5.1 applicable until 31 December 2020 may continue to be applied until 31 December 2022.”
- 1.6.3.100 Merge the two existing paragraphs under the title, renumber them as 1.6.3.100.1 and add the following new subparagraph 1.6.3.100.2:  
 “1.6.3.100.2 FRP tanks constructed before 1 July 2021 in accordance with the requirements in force up to 31 December 2020 but which do not, however, meet the requirements for the marking of the tank code of 6.9.6.1 applicable as from 1 January 2021 may continue to be marked in accordance with the requirements applicable up to 31 December 2020 until the next periodic inspection after 1 July 2021.”
- 1.6.5.21 Delete and add “1.6.5.21 (Deleted)”.
- 1.6.6.1 Amend to read as follows:  
**“1.6.6.1 Packages not requiring competent authority approval of design under the 1985, 1985 (as amended 1990), 1996, 1996 (revised), 1996 (as amended 2003), 2005, 2009 and 2012 editions of the IAEA Regulations for the Safe Transport of Radioactive Material**  
 Packages not requiring competent authority approval of design (excepted packages, Type IP-1, Type IP-2, Type IP-3 and Type A packages) shall meet the requirements of ADR in full, except that:  
 (a) Packages that meet the requirements of the 1985 or 1985 (as amended 1990) editions of the IAEA Regulations for the Safe Transport of Radioactive Material:  
 (i) May continue to be carried provided that they were prepared for carriage prior to 31 December 2003 and are subject to the requirements of 1.6.6.2.3, if applicable; or

- (ii) May continue to be used, provided that all the following conditions are met:
  - They were not designed to contain uranium hexafluoride;
  - The applicable requirements of 1.7.3 are applied;
  - The activity limits and classification in 2.2.7 are applied;
  - The requirements and controls for carriage in Parts 1, 3, 4, 5 and 7 are applied; and
  - The packaging was not manufactured or modified after 31 December 2003;
- (b) Packages that meet the requirements of the 1996, 1996 (revised), 1996 (as amended 2003), 2005, 2009 or 2012 editions of the IAEA Regulations for the Safe Transport of Radioactive Material:
  - (i) May continue to be carried provided that they were prepared for carriage prior to 31 December 2025 and are subject to the requirements of 1.6.6.2.3, if applicable; or
  - (ii) May continue to be used, provided that all the following conditions are met:
    - The applicable requirements of 1.7.3 are applied;
    - The activity limits and classification in 2.2.7 are applied;
    - The requirements and controls for carriage in Parts 1, 3, 4, 5 and 7 are applied; and
    - The packaging was not manufactured or modified after 31 December 2025.”

1.6.6.2 Amend the title to read:

**“1.6.6.2 Package designs approved under the 1985, 1985 (as amended 1990), 1996, 1996 (revised), 1996 (as amended 2003), 2005, 2009 and 2012 editions of the IAEA Regulations for the Safe Transport of Radioactive Material”**

1.6.6.2.1 Amend to read as follows:

“1.6.6.2.1 Packages requiring competent authority approval of the design shall meet the requirements of ADR in full except that:

- (a) Packagings that were manufactured to a package design approved by the competent authority under the provisions of the 1985 or 1985 (as amended 1990) editions of the IAEA Regulations for the Safe Transport of Radioactive Material may continue to be used provided that all of the following conditions are met:
  - (i) The package design is subject to multilateral approval;
  - (ii) The applicable requirements of 1.7.3 are applied;
  - (iii) The activity limits and classification in 2.2.7 are applied; and
  - (iv) The requirements and controls for carriage in Parts 1, 3, 4, 5 and 7 are applied;
  - (v) *(Reserved)*;
- (b) Packagings that were manufactured to a package design approved by the competent authority under the provisions of the 1996, 1996 (revised), 1996 (as amended 2003), 2005, 2009 or 2012 editions of the IAEA Regulations for the Safe Transport of Radioactive Material may continue to be used provided that all of the following conditions are met:

- (i) The package design is subject to multilateral approval after 31 December 2025;
- (ii) The applicable requirements of 1.7.3 are applied;
- (iii) The activity limits and material restrictions of 2.2.7 are applied;
- (iv) The requirements and controls for carriage in Parts 1, 3, 4, 5 and 7 are applied.”

1.6.6.2.2 Amend to read:

“1.6.6.2.2 No new manufacture of packagings to a package design meeting the provisions of the 1985 and 1985 (as amended 1990) editions of the IAEA Regulations for the Safe Transport of Radioactive Material shall be permitted to commence.”

1.6.6.2.3 Add the following new paragraph 1.6.6.2.3:

“1.6.6.2.3 No new manufacture of packagings of a package design meeting the provisions of the 1996, 1996 (revised), 1996 (as amended 2003), 2005, 2009 or 2012 editions of the IAEA Regulations for the Safe Transport of Radioactive Material shall be permitted to commence after 31 December 2028.”

1.6.6.3 Amend the title to read:

**“1.6.6.3 Packages excepted from the requirements for fissile materials under the 2011 and 2013 editions of ADR (2009 edition of the IAEA Regulations for the Safe Transport of Radioactive Material)”**

1.6.6.4 Amend the title to read as follows:

**“1.6.6.4 Special form radioactive material approved under the 1985, 1985 (as amended 1990), 1996, 1996 (revised), 1996 (as amended 2003), 2005, 2009 and 2012 editions of the IAEA Regulations for the Safe Transport of Radioactive Material”**

1.6.6.4 Amend the paragraph under the title to read as follows:

“Special form radioactive material manufactured to a design that had received unilateral approval by the competent authority under the 1985, 1985 (as amended 1990), 1996, 1996 (revised), 1996 (as amended 2003), 2005, 2009 and 2012 editions of the IAEA Regulations for the Safe Transport of Radioactive Material may continue to be used when in compliance with the mandatory management system in accordance with the applicable requirements of 1.7.3. There shall be no new manufacture of special form radioactive material to a design that had received unilateral approval by the competent authority under the 1985 or 1985 (as amended 1990) editions of the IAEA Regulations for the Safe Transport of Radioactive Material. No new manufacture of special form radioactive material to a design that had received unilateral approval by the competent authority under the 1996, 1996 (revised), 1996 (as amended 2003), 2005, 2009 and 2012 editions of the IAEA Regulations for the Safe Transport of Radioactive Material shall be permitted to commence after 31 December 2025.”

## Chapter 1.7

1.7.1, Note 1 In the first sentence, replace “In the event of accidents or incidents” by “In the event of a nuclear or radiological emergency” and “, emergency provisions, as established” by “, provisions as established”.

Amend the second sentence to read as follows: “This includes arrangements for preparedness and response established in accordance with the national

and/or international requirements and in a consistent and coordinated manner with the national and/or international emergency arrangements.”.

1.7.1, Note 2 Amend to read as follows:

**“NOTE 2:** The arrangements for preparedness and response shall be based on the graded approach and take into consideration the identified hazards and their potential consequences, including the formation of other dangerous substances that may result from the reaction between the contents of a consignment and the environment in the event of a nuclear or radiological emergency. Guidance for the establishment of such arrangements is contained in “Preparedness and Response for a Nuclear or Radiological Emergency”, IAEA Safety Standards Series No. GSR Part 7, IAEA, Vienna (2015); “Criteria for Use in Preparedness and Response for a Nuclear or Radiological Emergency”, IAEA Safety Standards Series No. GSG-2, IAEA, Vienna (2011); “Arrangements for Preparedness for a Nuclear or Radiological Emergency”, IAEA Safety Standards Series No. GS-G-2.1, IAEA, Vienna (2007), and “Arrangements for the Termination of a Nuclear or Radiological Emergency”, IAEA Safety Standards Series No. GSG-11, IAEA, Vienna (2018).”

1.7.1.1 In the first sentence, replace “to persons” by “to people”. Amend the second and third sentences to read “These standards 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).”.

1.7.1.2 In the first sentence, replace “persons” by “people” and replace “from the effects of radiation in the carriage” by “from harmful effects of ionizing radiation during the carriage”.

In (b), replace “radiation levels” by “dose rate”.

In the last sentence, replace “Finally” by “Thirdly” and add the following new sentence at the end: “Finally, further protection is provided by making arrangements for planning and preparing emergency response to protect people, property and the environment.”.

1.7.1.5.1 (a) After “5.2.1.10,” add “5.4.1.2.5.1 (f) (i) and (ii), 5.4.1.2.5.1 (i),” and after “CV33 (3.1)” add “, (4.3)”.

1.7.1.5.2 Delete the second sentence.

1.7.2.4 In the last sentence replace “individual monitoring or work place monitoring” by “workplace monitoring or individual monitoring”.

1.7.4.2 In the second sentence, replace “through alternative means” by “through means alternative to the other provisions of ADR,” and replace “for single or a planned series of multiple consignments” by “for a single consignment or a planned series of multiple consignments”. In the third sentence, at the end, after “applicable requirements” add “of ADR”.

1.7.6.1 Amend as follows:

In the introductory sentence, replace “radiation level” by “dose rate”.

In (a), replace “consignor, consignee, carrier,” by “consignor, carrier, consignee”.

In (b), at the beginning, replace “carrier, consignor or consignee” by “consignor, carrier, or consignee”. In (b) (iii), replace “similar circumstances” by “the causes and circumstances similar to those”. In (b) (iv), replace “on corrective or preventive actions” by “the corrective or preventive actions”.

## Chapter 1.8

- 1.8.5.1 After “carrier” add “, unloader”.
- 1.8.5.3 In the third sub-paragraph (b), replace “Schedule II of IAEA Safety Series No. 115 – “International Basic Safety Standards for Protection against Ionizing Radiation and for the safety of Radiation Sources”” by ““Radiation Protection and Safety of Radiation Sources: International Basic Safety Standards”, IAEA Safety Standards Series No. GSR Part 3, IAEA, Vienna (2014)”.
- 1.8.6.4.1 Replace “EN ISO/IEC 17025:2005” by “EN ISO/IEC 17025:2017 (except clause 8.1.3)”.
- 1.8.7.8 In the “References” column of the table, amend “EN 12972:2007” to read: “EN 12972:2018”.

## Chapter 1.10

Table 1.10.3.1.2

Amend as follows:

For Class 1, Division 1.4, in column “Substance or article”, replace “and 0500” by “, 0500, 0512 and 0513”.

Add the following new row after “Class 1, Division 1.5”:

Class	Division	Substance or article	Quantity		
			Tank (l) <sup>c</sup>	Bulk (kg) <sup>d</sup>	Packages (kg)
1	1.6	Explosives	a	a	0

For Class 6.2, in column “Substance or article”, at the end, add “and medical waste of Category A (UN No. 3549)”.

- 1.10.4 Replace “0456 and 0500” by “0456, 0500, 0512 and 0513”.
- 1.10.5 Replace “The Physical Protection of Nuclear Material and Nuclear Facilities” by “Nuclear Security Recommendations on Physical Protection of Nuclear Material and Nuclear Facilities”. In footnote 2, replace “INFCIRC/225/Rev.4 (corrected), IAEA Vienna (1999)” by “INFCIRC/225/Rev.5, IAEA, Vienna (2011)”.

## Chapter 2.1

- 2.1.3.4.3 Add the following new paragraph:
- “2.1.3.4.3 Used articles, e.g. transformers and condensers, containing a solution or mixture mentioned in 2.1.3.4.2 shall always be classified under the same entry of Class 9, provided:
- they do not contain any additional dangerous components, other than polyhalogenated dibenzodioxins and dibenzofurans of Class 6.1 or components of packing group III of Class 3, 4.1, 4.2, 4.3, 5.1, 6.1 or 8; and
  - they do not have the hazard characteristics as indicated in 2.1.3.5.3 (a) to (g) and (i).”
- 2.1.3.8 In the second sentence, after “Other substances meeting the criteria of no other class”, add “or of no other substance of Class 9”.
- 2.1.5 Amend the Note under the heading to read as follows:

*“NOTE: For articles which do not have a proper shipping name and which contain only dangerous goods within the permitted limited quantity amounts specified in Column (7a) of Table A of Chapter 3.2, UN No. 3363 and special provisions 301 and 672 of Chapter 3.3 may be applied.”*

- 2.1.5.4 At the end, add the following new sentence “However, this section applies to articles containing explosives which are excluded from Class 1 in accordance with 2.2.1.1.8.2.”.

## Chapter 2.2

- 2.2.1.1.7.2 In the first sentence, replace “and 0336” by “or 0336, and assignment of articles to UN No. 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 2.2.1.1.7.5.”.
- 2.2.1.1.8.2 (b)
- In the Note, delete “, such as described in ISO 12097-3” and add the following new second sentence: “*One such method is described in ISO 14451-2 using a heating rate of 80 K/min.*”
- 2.2.1.4 For “ARTICLES, EXPLOSIVE, EXTREMELY INSENSITIVE (ARTICLES, EEI)”, replace “Articles containing only extremely insensitive substances” by “Articles that predominantly contain extremely insensitive substances”.
- 2.2.1.4 After the definition for “DETONATORS, ELECTRIC for blasting”, add the following new definition:
- “DETONATORS, ELECTRONIC programmable for blasting: UN Nos. 0511, 0512, 0513
- Detonators with enhanced safety and security features, utilizing electronic components to transmit a firing signal with validated commands and secure communications. Detonators of this type cannot be initiated by other means.”.
- 2.2.2.1.5 For “Flammable gases” and for “Oxidizing gases”, replace “ISO 10156:2010” by “ISO 10156:2017”.
- 2.2.2.3 In the table for “Liquefied gases”, for classification code 2F, amend the name and description of UN No. 1010 to read as follows:
- “BUTADIENES, STABILIZED or BUTADIENES AND HYDROCARBON MIXTURE, STABILIZED, containing more than 40% butadienes”
- Delete the Note.
- 2.2.2.3 In the table for “Other articles containing gas under pressure”, for classification code “6F”, insert the following entry after UN No. 3150:
- “3358 REFRIGERATING MACHINES containing flammable, non-toxic, liquefied gas”
- 2.2.41.1.4 Replace “Part III, sub-section 33.2.1” by “Part III, sub-section 33.2”, twice.
- 2.2.41.1.5 Replace “Part III, sub-section 33.2.1” by “Part III, sub-section 33.2”.
- 2.2.41.1.6 Replace “Part III, sub-section 33.2.1” by “Part III, sub-section 33.2”.
- 2.2.41.1.8 Replace “Part III, sub-section 33.2.1” by “Part III, sub-section 33.2”.
- 2.2.41.1.10 Replace “aromatic sulphohydrazides” by “aromatic sulphonylhydrazides”.
- 2.2.42.1.4 Replace “Part III, Section 33.3” by “Part III, sub-section 33.4”, twice.
- 2.2.42.1.5 Replace “Part III, section 33.3” by “Part III, sub-section 33.4”.
- 2.2.42.1.7 Replace “Part III, section 33.3” by “Part III, sub-section 33.4”.



- 2.2.42.1.8 Replace “Part III, section 33.3” by “Part III, sub-section 33.4”.
- 2.2.43.1.4 Replace “Part III, Section 33.4” by “Part III, sub-section 33.5”.
- 2.2.43.1.5 Replace “Part III, Section 33.4” by “Part III, sub-section 33.5”.
- 2.2.43.1.7 Replace “Part III, Section 33.4” by “Part III, sub-section 33.5”.
- 2.2.43.1.8 Replace “Part III, section 33.4” by “Part III, sub-section 33.5”.
- 2.2.52.4 In the table, for “DI-(4-tert-BUTYLCYCLOHEXYL) PEROXYDICARBONATE”, for concentration “ $\leq 42$  as a paste”, in column “Packing Method”, replace “OP7” by “OP8” and in column “Number (Generic entry)”, replace “3116” by “3118”.
- 2.2.62.1.1 In the third sentence, delete “, rickettsiae”.
- 2.2.62.1.3 Amend the definition of “Medical or clinical wastes” to read as follows:  
*“Medical or clinical wastes”* are wastes derived from the veterinary treatment of animals, the medical treatment of humans or from bio-research;”
- 2.2.62.1.4 Replace “or 3373” by “, 3373 or 3549”.
- 2.2.62.1.4.1 In Note 3, delete “, mycoplasmas, rickettsia”.
- 2.2.62.1.5.9 (a)  
 In the parenthesis, replace “UN No. 3291” by “UN Nos. 3291 and 3549”.
- 2.2.62.1.11.1 Amend to read as follows:  
 “2.2.62.1.11.1 Medical or clinical waste containing:  
 (a) Category A infectious substances shall be assigned to UN No. 2814, UN No. 2900 or UN No. 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 No. 3549. The UN No. 3549 entry shall not be used for waste from bio-research or liquid waste;  
 (b) Category B infectious substances shall be assigned to UN No. 3291.  
**NOTE 1:** *The proper shipping name for UN No. 3549 is “MEDICAL WASTE, CATEGORY A, AFFECTING HUMANS, solid” or “MEDICAL WASTE, CATEGORY A, AFFECTING ANIMALS only, solid”.*”  
 Renumber existing Note as Note 2.
- 2.2.62.1.11.4 Delete and insert “2.2.62.1.11.4 (Deleted)”.
- 2.2.62.3 In the list of collective entries, for I3, add the following new entries:  
 “3549 MEDICAL WASTE, CATEGORY A, AFFECTING HUMANS, solid  
 or  
 3549 MEDICAL WASTE, CATEGORY A, AFFECTING ANIMALS only, solid”.

## Table 2.2.7.2.1.1

For UN 2913, in the “Proper shipping name and description” column, replace “SCO-I or SCO-II” by “SCO-I, SCO-II or SCO-III”.

## Table 2.2.7.2.1.1

For UN No. 3325, in the second column, delete the comma before “(LSA-III)”.

## Table 2.2.7.2.2.1

Add the following rows in proper order

Ba-135m	$2 \times 10^1$	$6 \times 10^{-1}$	$1 \times 10^2$	$1 \times 10^6$
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Ge-69	$1 \times 10^0$	$1 \times 10^0$	$1 \times 10^1$	$1 \times 10^6$
Ir-193m	$4 \times 10^1$	$4 \times 10^0$	$1 \times 10^4$	$1 \times 10^7$
Ni-57	$6 \times 10^{-1}$	$6 \times 10^{-1}$	$1 \times 10^1$	$1 \times 10^6$
Sr-83	$1 \times 10^0$	$1 \times 10^0$	$1 \times 10^1$	$1 \times 10^6$
Tb-149	$8 \times 10^{-1}$	$8 \times 10^{-1}$	$1 \times 10^1$	$1 \times 10^6$
Tb-161	$3 \times 10^1$	$7 \times 10^{-1}$	$1 \times 10^3$	$1 \times 10^6$

Table 2.2.7.2.2.1

In table note (b), at the end of the introductory sentence, add “(the activity to be taken into account is that of the parent nuclide only)”. After “Th-nat” and “U-nat”, insert a reference to footnote 5. The footnote reads: “<sup>5</sup> *In the case of Th-natural, the parent nuclide is Th-232, in the case of U-natural the parent nuclide is U-238.*”.

Table 2.2.7.2.2.1

In table note (c), replace “radiation level” by “dose rate”.

2.2.7.2.2.2 In (a), replace “the International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources, Safety Series No.115, IAEA, Vienna (1996)” by ““Radiation Protection and Safety of Radiation Sources: International Basic Safety Standards”, IAEA Safety Standards Series No. GSR Part 3, IAEA, Vienna (2014)”.

In (b), at the end, replace “the International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources, Safety Series No.115, IAEA, Vienna (1996)” by “GSR Part 3”.

2.2.7.2.2.3 Replace “daughter nuclide” by “progeny nuclide” (twice). At the end, replace “daughter nuclides” by “progeny nuclides”.

2.2.7.2.3.1.2 (c)

Delete “that meet the requirements of 2.2.7.2.3.1.3.”. Delete sub-paragraph (ii) and renumber sub-paragraph (iii) as (ii).

2.2.7.2.3.1.3 Delete and add “2.2.7.2.3.1.3 (Deleted)”.

2.2.7.2.3.2 In the introductory sentence before (a), replace “two” by “three”. Add the following new sub-paragraph (c):

“(c) SCO-III: A large solid object which, because of its size, cannot be carried in a type of package described in ADR and for which:

- (i) All openings are sealed to prevent release of radioactive material during conditions defined in 4.1.9.2.4 (e);
- (ii) The inside of the object is as dry as practicable;
- (iii) The non-fixed contamination on the external surfaces does not exceed the limits specified in 4.1.9.1.2; and
- (iv) The non-fixed contamination plus the fixed contamination on the inaccessible surface averaged over 300 cm<sup>2</sup> does not exceed  $8 \times 10^5$  Bq/cm<sup>2</sup> for beta and gamma emitters and low toxicity alpha emitters, or  $8 \times 10^4$  Bq/cm<sup>2</sup> for all other alpha emitters.”

2.2.7.2.3.3.5 (b)

After “a free drop of 1.4 kg”, replace “through 1 m” by “from a height of 1 m”.

2.2.7.2.3.3.5 (c)

After “a free vertical drop of 1.4 kg”, replace “through 1 m” by “from a height of 1 m”.

2.2.7.2.3.3.7 In sub-paragraph (b), replace “with specimen” by “and the specimen”. In sub-paragraph (e), replace “with the specimen” by “and the specimen”.

2.2.7.2.3.3.8 (a) (ii)

Replace “shall be heated” by “shall then be heated”.

2.2.7.2.3.4.1 (a)

Replace “radiation level” by “dose rate”.

2.2.7.2.3.5 (e)

Replace “limits provided in” by “the requirements of”.

2.2.7.2.3.6 At the beginning, replace “A fissile material” by “Fissile material”.

2.2.7.2.4.1.2 Replace “radiation level” by “dose rate”.

2.2.7.2.4.1.3 In (a), replace “radiation level” by “dose rate”. At the end of (c), delete “and”. At the end of (d), replace the full stop by a semicolon. Add additional sub-paragraphs (e) and (f) as follows:

“(e) *(Reserved)*;

(f) If the package contains fissile material, one of the provisions of 2.2.7.2.3.5 (a) to (f) applies.”

2.2.7.2.4.1.4 At the end of sub-paragraph (a), delete “and”. At the end of existing (b) (ii), replace “.” by “; and”. Add additional sub-paragraph (c):

“(c) If the package contains fissile material, one of the provisions of 2.2.7.2.3.5 (a) to (f) applies.”

2.2.7.2.4.1.7 At the end of (c) (ii), delete “and”. At the end of (d), replace “.” by “; and”. Add additional sub-paragraph (e):

“(e) If the packaging has contained fissile material, one of the provisions of 2.2.7.2.3.5 (a) to (f) or one of the provisions for exclusion in 2.2.7.1.3 applies.”

2.2.8, Note The amendment applies only to the French text.

2.2.8.1.1 The amendment applies only to the French text.

2.2.8.1.5.2 In the second sentence, replace “the assignment” by “classification” and replace “OECD Test Guideline 404<sup>5</sup> or 435<sup>6</sup>” by “OECD Test Guidelines<sup>6,7,8,9</sup>”.

In the third sentence replace “OECD Test Guideline 430<sup>7</sup> or 431<sup>8</sup>” by “OECD Test Guidelines<sup>6,7,8,9</sup>”.

Re-number existing footnotes 5 and 6 as 6 and 7. Re-number the current footnote 7 as 9. In the re-numbered footnote, add “*Method*” between “*Test*” and “(*TER*)”.

Modify footnote 8 to read as follows: “<sup>8</sup> *OECD Guideline for the testing of chemicals No. 431 “In vitro skin corrosion: reconstructed human epidermis (RHE) test method” 2016.*”.

At the end of the paragraph, add the following new sentence: “If the *in vitro* 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.”.

2.2.8.1.6.3.3 At the end, add the following new sentence: “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.”.

2.2.8.1.6.3.4 Delete the last sentence.

2.2.9 Renumber footnotes 9 to 15 as 10 to 16.

2.2.9.1.10.6 Replace “, not otherwise classified under ADR” by “that do not meet the classification criteria of any other class or another substance within Class 9”.

2.2.9.1.14, Note

In existing footnote 15 (renumbered 16), remove “used as coolant”.

2.2.9.3 For M11, “Other substances and articles presenting a danger during carriage...”, after “3359 FUMIGATED CARGO TRANSPORT UNIT”, add “3363 DANGEROUS GOODS IN ARTICLES or”.

## Chapter 2.3

2.3.2 In the heading, amend “Class 4.1” to read “Class 1 and Class 4.1”.

2.3.2.1 Amend to read as follows:

“2.3.2.1 In order to determine the criteria of the nitrocellulose, the Bergmann-Junk test or the methyl violet paper test in the Manual of Tests and Criteria Appendix 10 shall be performed (see Chapter 3.3, special provisions 393 and 394). If there is doubt that the ignition temperature of the nitrocellulose is considerably higher than 132 °C in the case of the Bergmann-Junk test or higher than 134.5 °C in the case of the methyl violet paper test, the ignition temperature test described in 2.3.2.5 should be carried out before these tests are performed. If the ignition temperature of nitrocellulose mixtures is higher than 180 °C or the ignition temperature of plasticized nitrocellulose is higher than 170 °C, the Bergmann-Junk test or the methyl violet paper test can be carried out safely.”

2.3.2.2 Delete.

2.3.2.3 Delete.

2.3.2.4 Delete.

2.3.2.5 Delete.

2.3.2.6 2.3.2.6 becomes 2.3.2.2. In the text, amend “2.3.2.9 and 2.3.2.10” to read “2.3.2.5”.

2.3.2.7 2.3.2.7 becomes 2.3.2.3. Replace “Before being dried as prescribed in 2.3.2.6 above, substances conforming to 2.3.2.2 shall” by “Before being dried as prescribed in 2.3.2.2 above, plasticized nitrocellulose shall”.

2.3.2.8 2.3.2.8 becomes 2.3.2.4. Replace “Weakly nitrated nitrocellulose conforming to 2.3.2.1 shall first undergo preliminary drying as prescribed in 2.3.2.7 above;” by “Weakly nitrated nitrocellulose shall first undergo preliminary drying as prescribed in 2.3.2.3 above”.

2.3.2.9 Delete.

2.3.2.10 2.3.2.10 becomes 2.3.2.5. In the heading, delete “and 2.3.2.2”.

## Chapter 3.1

3.1.2.8.1.4 Add the following new paragraph 3.1.2.8.1.4:

“3.1.2.8.1.4 For UN Nos. 3077 and 3082 only, the technical name may be a name shown in capital letters in column 2 of Table A of Chapter 3.2, 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).”

### Chapter 3.2, Table A

Add the following new entries in proper order:

(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7a)	(7b)	(8)	(9a)	(9b)	(10)-(14)	(15)	(16)	(17)	(18)	(19)	(20)
0511	DETONATORS, ELECTRONIC programmable for blasting	1	1.1B		1		0	E0	P131		MP23		1 (B1000C)	V2		CV1 CV2 CV3	S1	
0512	DETONATORS, ELECTRONIC programmable for blasting	1	1.4B		1.4		0	E0	P131		MP23		2 (E)	V2		CV1 CV2 CV3	S1	
0513	DETONATORS, ELECTRONIC programmable for blasting	1	1.4S		1.4	347	0	E0	P131		MP23		4 (E)			CV1 CV2 CV3	S1	
3549	MEDICAL WASTE, CATEGORY A, AFFECTING HUMANS, solid or MEDICAL WASTE, CATEGORY A, AFFECTING ANIMALS only, solid	6.2	I3		6.2	395	0	E0	P622 LP622		MP2		0 (-)	V1		CV13 CV25 CV26 CV28	S3 S9 S15	

For UN Nos. 0005, 0007, 0012, 0014, 0033, 0037, 0136, 0167, 0180, 0238, 0240, 0242, 0279, 0291, 0294, 0295, 0324, 0326, 0327, 0330, 0338, 0339, 0348, 0369, 0371, 0413, 0414, 0417, 0426, 0427, 0453, 0457, 0458, 0459 and 0460, add “LP101” in column (8) under “P130”.

For UN Nos. 0340, 0341, 0342 and 0343, insert “393” in column (6).

For UN Nos. 1002, 1006, 1013, 1046, 1056, 1058, 1065, 1066, 1080, 1952, 1956, 2036, 3070, 3163, 3297, 3298 and 3299, in column (6), delete “660” and add “392”.

For UN No. 1010, amend the name and description in column (2) to read as follows: “BUTADIENES, STABILIZED or BUTADIENES AND HYDROCARBON MIXTURE, STABILIZED, containing more than 40% butadienes”.

For UN No. 2037 (all entries) In column (6) insert “327”. In column (8) add “LP200”. In column (9a) insert “PP96” against “P003” and insert “L2” against “LP200”.

For UN Nos. 2211 and 3314, in column (6), insert “675”.

For UN No. 2383, in column (6), delete “386”. In column (16), delete “V8” and in column (19) delete “S4”.

For UN No. 2522, in column (2), add “, STABILIZED” at the end and in column (6) add “386”. In column (16), insert “V8” and in column (19) insert “S4”.

For UN Nos. 2555, 2556, 2557 and 3380, insert “394” in column (6).

For UN No. 2683, in column (20), replace “86” by “836”.

For UN Nos. 2794, 2795, 2800 and 3028, delete “P801a” in column (8).

- For UN No. 2800, add “P801” in column (8).
- For UN No. 2913, in column (2), replace “(SCO-I or SCO-II)” by “(SCO-I, SCO-II or SCO-III)”.
- For UN Nos. 3091 and 3481, insert “390” in column (6).
- For UN 3164, in column (9a), add “PP32”.
- For UN No. 3291, in column (4), delete “II”. (twice)
- For UN No. 3325, delete the comma before “(LSA-III)” in column (2).
- For UN No. 3363, in column (2), at the beginning of the description, add “DANGEROUS GOODS IN ARTICLES or”.
- For UN No. 3500, in column (9a), insert “PP97”.
- For UN Nos. 3537 to 3548, in column (6), delete “667”.

### Chapter 3.3

- Special provision (SP) 188            In paragraphs (g) and (h), replace “when batteries” by “when cells or batteries”.
- SP 237            Replace “sub-section 33.2.1” by “sub-section 33.2”.
- SP 241            Replace “sub-section 33.2.1.4” by “sub-section 33.2.4”.
- SP 301            In the first sentence, replace “applies to machinery or apparatus” by “applies to articles such as machinery, apparatus or devices”. In the first, second, third, fourth and fifth sentences, replace “machinery or apparatus” or “machinery and apparatus” by “articles”. In the fifth sentence, replace “contains” by “contain”.
- SP 301            Delete the Note.
- SP 309            In the last paragraph, replace “satisfactorily pass Tests 8(a), (b) and (c)” by “satisfy the criteria for classification as an ammonium nitrate emulsion, suspension or gel, intermediate for blasting explosives (ANE)”.
- SP 327            In the first sentence, replace “Waste aerosols consigned” by “Waste aerosols and waste gas cartridges consigned” and “carried under this entry for” by “carried under UN Nos. 1950 or 2037, as appropriate, for”.
- After the third sentence insert the following new sentence: “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.”.
- In the next sentence, replace “aerosols shall be carried in salvage packagings” by “aerosols and gas cartridges shall be carried in salvage pressure receptacles or salvage packagings”.
- In the Note replace “Waste aerosols shall not” by “Waste aerosols and waste gas cartridges shall not”.
- Add the following new paragraph at the end:
- “Waste gas cartridges that were filled with non-flammable, non-toxic gases of Class 2, group A or O and have been pierced are not subject to ADR.”
- SP 356            After “in vehicles, wagons, vessels” add “, machinery, engines”.
- SP 360            Replace “classified under” by “assigned to” and add the following sentence at the end:

“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 lithium ion batteries or lithium metal batteries.”

- SP 363 (I) Amend the second indent to read as follows:
- “- For carriage that includes passage through restricted tunnels, the transport unit shall display orange-coloured plates according to 5.3.2 and the tunnel restrictions according to 8.6.4 apply.”
- SP 370 Amend the introductory sentence to read as follows: “This entry only applies to ammonium nitrate that meets one of the following criteria:” and at the end of the first indent, replace “and” by “or”.
- Number the first indent as (a) and the second indent as (b).
- Insert the following new paragraph at the end:
- “This entry shall not be used for ammonium nitrate for which a proper shipping name already exists in Table A of Chapter 3.2 including ammonium nitrate mixed with fuel oil (ANFO) or any of the commercial grades of ammonium nitrate.”
- SP 376 Amend the Note to read as follows:
- “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:*
- (a) *Acute hazard, such as gas, fire, or electrolyte leaking;*
  - (b) *The use or misuse of the cell or battery;*
  - (c) *Signs of physical damage, such as deformation to cell or battery casing, or colours on the casing;*
  - (d) *External and internal short circuit protection, such as voltage or isolation measures;*
  - (e) *The condition of the cell or battery safety features; or*
  - (f) *Damage to any internal safety components, such as the battery management system.”*
- SP 379 (d) (i) Replace “ISO 11114-1:2012” by “ISO 11114-1:2012 + A1:2017”.
- SP 386 In the first sentence, replace “2.2.41.1.17” by “2.2.41.1.21”.
- SP 388 At the end of the seventh paragraph, add the following sentence:
- “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.”
- SP 556 Delete and insert “556 (Deleted)”.
- SP 653 In the first indent, replace “for construction and testing” by “for construction, testing and filling”.
- SP 660 Delete and insert “660 (Deleted)”.
- SP 667 In paragraphs (a), (b) and (b) (ii), replace “engine, machinery or article” by “engine or machinery”.

In paragraph (b) (i), replace “engines, machinery or article” by “engines or machinery”.

In paragraph (c), replace “engines, machinery or articles” by “engines or machinery”.

SP 671 At the end, add the following new paragraph:

“Kits containing only dangerous goods to which no packing group is assigned shall be allocated to transport category 2 for completion of transport documents and the exemption related to quantities carried per transport unit (see 1.1.3.6).”

Add the following new special provisions:

“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:

(a) the package shall be marked “UN 3091” or “UN 3481”, 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;

(b) 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”.”

“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 carried for disposal.”

“675 For packages containing these dangerous goods, mixed loading with substances and articles of Class 1, with the exception of 1.4S, shall be prohibited.”

Special provisions 391 and 396-499 are reserved.

## Chapter 4.1

4.1, Note under the title

The amendment applies only to the French text.

4.1.1 In the note, replace “(Class 6.2)” by “(Class 6.2, UN Nos. 2814 and 2900)”. In the note, amend the text in parentheses at the end of the sentence to read “(P201, P207 and LP02 for Class 2 and P620, P621, P622, IBC620, LP621 and LP622 for Class 6.2)”.

4.1.1.3 Add a new heading to read “**4.1.1.3 Design type**”. Renumber current 4.1.1.3 as 4.1.1.3.1 and delete the last sentence. Add a new 4.1.1.3.2 to read as follows:



- “4.1.1.3.2 Packagings, including IBCs and large packagings, may conform to one or more than one successfully tested design type and may bear more than one mark.”
- 4.1.1.10 The amendment applies only to the French text.
- 4.1.1.21.6 In Table 4.1.1.21.6, for UN No. 1790, in column (2b), replace “hydrofluoric acid” by “hydrogen fluoride”.
- 4.1.1.21.6 In Table 4.1.1.21.6, for UN No. 3291, in column (4), delete “II”.
- 4.1.3.1 In the line for “L”, replace “specific to ADR” by “specific to RID and ADR”.
- 4.1.4.1, P001 For “Composite packagings”, in the last entry, replace “solid plastics or expanded plastics” by “expanded plastics or solid plastics”.
- 4.1.4.1, P002 For “Composite packagings”, in the last entry, replace “solid plastics or expanded plastics packaging (6PH2 or 6PH1 °)” by “expanded plastics or solid plastics packaging (6PH1 or 6PH2 °)”.
- 4.1.4.1, P003 For special packing provision PP16, in Note 2, replace “P801a” by “P801”.
- 4.1.4.1, P003 For special packing provision PP32, after “3358”, add “and robust articles consigned under UN No. 3164”.
- 4.1.4.1, P003 Add the following new special packing provision:  
 “**PP96** For UN No. 2037 waste gas cartridges carried in accordance with special provision 327 of Chapter 3.3, the packagings shall be adequately ventilated to prevent the creation of dangerous atmospheres and the build-up of pressure.”
- 4.1.4.1, P200 (5) (a)  
 Before “special packing provision "o"”, insert “(10),”.
- 4.1.4.1, P200 (5) (b)  
 In the second sub-paragraph, before “special packing provision "o"”, insert “(10),”.
- 4.1.4.1, P200 (5) (b) (i)  
 Before “special packing provision "r"”, insert “(10),”.
- 4.1.4.1, P200 (11)  
 Delete the row for “(7) (a) ISO 24431:2006”. In the line for “(7) EN ISO 24431:2016”, replace “EN ISO 24431:2016” by “ISO 24431:2016” and add the following Note in column “Title of document”: “**NOTE:** *The EN version of this ISO standard fulfils the requirements and may also be used.*”.
- 4.1.4.1, P200 (13) 2.4  
 Replace “EN ISO 11114-1:2012” by “EN ISO 11114-1:2012 + A1:2017” and replace “EN 11114-2:2013” by “EN ISO 11114-2:2013”.
- 4.1.4.1, P200 In table 2, replace the values of column “LC<sub>50</sub> in ml/m<sup>3</sup>” as follows:  
 For UN No. 1859 replace “450” by “922”.  
 For UN No. 2188 replace “20” by “178”.  
 For UN No. 2202 replace “2” by “51”.  
 For UN No. 2534 replace “600” by “2810”.  
 For UN No. 2676 replace “20” by “178”.
- 4.1.4.1, P206 In the title of the last row of the packing instruction, replace “Special packing provision” by “Special packing provisions”.  
 Add the following new special packing provision:

“**PP97** For fire extinguishing agents assigned to UN No. 3500 the maximum test period for periodic inspection shall be 10 years. They may be carried in tubes of a maximum water capacity of 450 l conforming to the applicable requirements of Chapter 6.2.”

4.1.4.1, P207 In special packing provision PP87, replace “flammable atmosphere” by “dangerous atmospheres”.

4.1.4.1, P301 In the last sentence of (1) and (2) replace “unit” by “primary containment”.

4.1.4.1, P400 In (2) and (3):

First sentence: delete “threaded”.

After the first sentence insert the following new sentence: “Inner packagings shall have threaded closures or closures physically held in place by any means capable of preventing back-off or loosening of the closure by impact or vibration during carriage.”.

4.1.4.1, P404 In (1), under “Inner packagings”:

First paragraph: delete “and have threaded closures”.

Second paragraph: delete “threaded”.

Add the following new third paragraph before the last sentence (“Outer packagings shall have a maximum net mass of 125 kg.”):

“Inner packagings shall have threaded closures or closures physically held in place by any means capable of preventing back-off or loosening of the closure by impact or vibration during carriage.”

4.1.4.1, P404 In (2) insert “, 1B2” between “, 1B1” and “, 1N1”.

4.1.4.1, P410 Amend table note d to read as follows:

“<sup>d</sup> For packing group II substances, these packagings may only be used when carried in a closed vehicle or container.”

4.1.4.1, P410 For “Composite packagings”, in the last entry, replace “solid or expanded plastics” by “expanded or solid plastics”.

4.1.4.1, P501 For “Composite packagings”, in the last entry, replace “solid or expanded plastics” by “expanded or solid plastics”.

4.1.4.1, P502 For “Composite packagings”, in the last entry, replace “solid or expanded plastics” by “expanded or solid plastics”.

4.1.4.1, P504 The amendment for “Single packagings” applies only to the French text. For “Composite packagings”, in the last entry, replace “solid or expanded plastics” by “expanded or solid plastics”.

4.1.4.1, P905 The amendment applies only to the French text.

## 4.1.4.1 Add the following new packing instruction P622:

P622	PACKING INSTRUCTION		P622
This instruction applies to waste of UN No. 3549 carried for disposal.			
The following packagings are authorized provided the general provisions of 4.1.1 and 4.1.3 are met:			
Inner packagings	Intermediate packagings	Outer packagings	
metal plastics	metal plastics	<b>Boxes</b> steel (4A) aluminium (4B) other metal (4N) plywood (4D) fibreboard (4G) plastics, solid (4H2) <b>Drums</b> steel (1A2) aluminium (1B2) other metal (1N2) plywood (1D) fibre (1G) plastics (1H2) <b>Jerricans</b> steel (3A2) aluminium (3B2) plastics (3H2)	
The outer packaging shall conform to the packing group I performance level for solids.			
<b>Additional requirements:</b>			
<ol style="list-style-type: none"> <li>1. Fragile articles shall be contained in either a rigid inner packaging or a rigid intermediate packaging.</li> <li>2. Inner packagings containing sharp objects such as broken glass and needles shall be rigid and resistant to puncture.</li> <li>3. The inner packaging, the intermediate packaging, and the outer packaging shall be capable of retaining liquids. Outer packagings that are not capable of retaining liquids by design shall be fitted with a liner or suitable measure of retaining liquids.</li> <li>4. The inner packaging and/or the intermediate packaging may be flexible. When flexible packagings are used, they shall be capable of passing the impact resistance test of at least 165 g according to ISO 7765-1:1988 "Plastics film and sheeting – Determination of impact resistance by the free-falling dart method – Part 1: Staircase methods" and the tear resistance test of at least 480 g in both parallel and perpendicular planes with respect to the length of the bag in accordance with ISO 6383-2:1983 "Plastics – Film and sheeting – Determination of tear resistance – Part 2: Elmendorf method". The maximum net mass of each flexible inner packaging shall be 30 kg.</li> <li>5. Each flexible intermediate packaging shall contain only one inner packaging.</li> <li>6. Inner packagings containing a small amount of free liquid may be included in intermediate packaging provided that there is sufficient absorbent or solidifying material in the inner or intermediate packaging to absorb or solidify all the liquid content present. Suitable absorbent material which withstands the temperatures and vibrations liable to occur under normal conditions of carriage shall be used.</li> <li>7. Intermediate packagings shall be secured in outer packagings with suitable cushioning and/or absorbent material.</li> </ol>			

4.1.4.1, P801 Amend to read as follows:

P801	PACKING INSTRUCTION	P801
This instruction applies to UN Nos. 2794, 2795 and 3028 and used batteries of UN No. 2800.		
The following packagings are authorized, provided that the provisions of 4.1.1.1, 4.1.1.2, 4.1.1.6, and 4.1.3 are met:		
(1) Rigid outer packagings, wooden slatted crates or pallets.		
Additionally, the following conditions shall be met:		
(a) Battery stacks shall be in tiers separated by a layer of electrically non-conductive material;		
(b) Battery terminals shall not support the weight of other superimposed elements;		
(c) Batteries shall be packaged or secured to prevent inadvertent movement;		
(d) Batteries shall not leak under normal conditions of carriage or appropriate measures shall be taken to prevent the release of electrolyte from the package (e.g. individually packaging batteries or other equally effective methods); and		
(e) Batteries shall be protected against short circuits.		
(2) Stainless steel or plastics bins may also be used to carry used batteries.		
Additionally, the following conditions shall be met:		
(a) The bins shall be resistant to the electrolyte that was contained in the batteries;		
(b) The bins shall not be filled to a height greater than the height of their sides;		
(c) The outside of the bins shall be free of residues of electrolyte contained in the batteries;		
(d) Under normal conditions of carriage, no electrolyte shall leak from the bins;		
(e) Measures shall be taken to ensure that filled bins cannot lose their content;		
(f) Measures shall be taken to prevent short circuits (e.g. batteries are discharged, individual protection of the battery terminals, etc.); and		
(g) The bins shall be either:		
(i) covered; or		
(ii) carried in closed or sheeted vehicles or containers.		

4.1.4.1, P801a

Delete and insert "P801a (*Deleted*)".

4.1.4.1, P903 Add the following note under paragraph (4):

*"NOTE: For carriage in a transport chain including air carriage, these devices, when active, shall meet defined standards for electromagnetic radiation to ensure that the operation of the devices does not interfere with aircraft systems."*

4.1.4.1, P903 Add the following new paragraph (5):

"(5) For packagings containing both cells or batteries packed with equipment and contained in equipment:

- (a) For cells and batteries, packagings that completely enclose the cells or batteries, then placed with equipment in a packaging conforming to the requirements in paragraph (1) of this packing instruction; or
- (b) Packagings conforming to the requirements in paragraph (1) of this packing instruction, then placed with the equipment in a strong outer packaging constructed of suitable material, and of adequate strength and design in relation to the packaging capacity and its intended use. The outer packaging shall be constructed in such a manner as to prevent accidental operation during carriage and need not meet the requirements of 4.1.1.3.

The equipment shall be secured against movement within the outer packaging.

Devices such as radio frequency identification (RFID) tags, watches and temperature loggers, which are not capable of generating a dangerous evolution of heat, may be carried when intentionally active in strong outer packagings.

*NOTE: For carriage in a transport chain including air carriage, these devices, when active, shall meet defined standards for electromagnetic radiation to ensure that the operation of the devices does not interfere with aircraft systems.*

- 4.1.4.1, P907 Replace the introductory sentence by: “This instruction applies to articles, such as machinery, apparatus or devices of UN No. 3363.”.

In the text after this introductory sentence, in the first sentence, replace “machinery or apparatus” by “article”. In the second sentence, replace “machinery or apparatus” by “an article”. In the fifth sentence, replace “machinery or apparatus” by “article” (twice). In the sixth sentence, replace “machinery or apparatus” by “article”.

- 4.1.4.2, IBC520

For UN No. 3119, insert the two following new entries in proper order:

tert-Amyl peroxyvalate, not more than 42% as a stable dispersion in water	31HA1	1 000	0 °C	+10 °C
tert-Butyl peroxyvalate, not more than 42% in a diluent type A	31HA1 31A	1 000 1 250	+10 °C +10 °C	+15 °C +15 °C

- 4.1.4.3, LP01

In column “Large outer packagings”, replace “Fibreboard” by “Rigid fibreboard”.

- 4.1.4.3, LP02

In column “Large outer packagings”, replace “Fibreboard” by “Rigid fibreboard”.

- 4.1.4.3, LP101

In the heading of the third column, replace “Large packagings” by “Large outer packagings”. In the third column, replace “Fibreboard” by “Rigid fibreboard”.

- 4.1.4.3, LP102

In the heading of the third column, replace “Outer packaging” by “Large outer packagings”. In the third column, replace “Fibreboard” by “Rigid fibreboard”.

- 4.1.4.3, LP200

In the introductory sentence, replace “UN No. 1950” by “UN Nos. 1950 and 2037”.

In the next paragraph, replace “are authorized for aerosols” by “are authorized for aerosols and gas cartridges”.

In the first sentence of special packing provision L2, after “dangerous movement” delete “of the aerosols”. Amend the last sentence to read: “For waste aerosols and waste gas cartridges carried in accordance with special provision 327, the large packagings shall be adequately ventilated to prevent the creation of dangerous atmospheres and the build-up of pressure.”.

## 4.1.4.3 Add the following new packing instruction LP622:

LP622	PACKING INSTRUCTION		LP622
This instruction applies to waste of UN No. 3549 carried for disposal.			
The following large packagings are authorized provided the general provisions of 4.1.1 and 4.1.3 are met:			
Inner packagings	Intermediate packagings	Outer packagings	
metal plastics	metal plastics	steel (50A) aluminium (50B) metal other than steel or aluminium (50N) plywood (50D) rigid fibreboard (50G) rigid plastics (50H)	
The outer packaging shall conform to the packing group I performance level for solids.			
<b>Additional requirements:</b>			
<ol style="list-style-type: none"> <li>1. Fragile articles shall be contained in either a rigid inner packaging or a rigid intermediate packaging.</li> <li>2. Inner packagings containing sharp objects such as broken glass and needles shall be rigid and resistant to puncture.</li> <li>3. The inner packaging, the intermediate packaging and the outer packaging shall be capable of retaining liquids. Outer packagings that are not capable of retaining liquids by design shall be fitted with a liner or suitable measure of retaining liquids.</li> <li>4. The inner packaging and/or the intermediate packaging may be flexible. When flexible packagings are used, they shall be capable of passing the impact resistance test of at least 165 g according to ISO 7765-1:1988 "Plastics film and sheeting – Determination of impact resistance by the free-falling dart method – Part 1: Staircase methods" and the tear resistance test of at least 480 g in both parallel and perpendicular planes with respect to the length of the bag in accordance with ISO 6383-2:1983 "Plastics – Film and sheeting – Determination of tear resistance – Part 2: Elmendorf method". The maximum net mass of each flexible inner packaging shall be 30 kg.</li> <li>5. Each flexible intermediate packaging shall contain only one inner packaging.</li> <li>6. Inner packagings containing a small amount of free liquid may be included in intermediate packaging provided that there is sufficient absorbent or solidifying material in the inner or intermediate packaging to absorb or solidify all the liquid content present. Suitable absorbent material which withstands the temperatures and vibrations liable to occur under normal conditions of carriage shall be used.</li> <li>7. Intermediate packagings shall be secured in outer packagings with suitable cushioning and/or absorbent material.</li> </ol>			

## 4.1.6.15, in the table:

- For "4.1.6.2", in the second column, replace "ISO 11114-2:2013" by "EN ISO 11114-2:2013".
- For "4.1.6.4", in the second column, replace "ISO 11621:1997" by "ISO 11621:1997 or EN ISO 11621:2005". Delete the note in the third column.
- For "4.1.6.8 Valves with inherent protection": In the first row, delete the note in the third column. In the last row, second column, replace "EN ISO 17879:2017" by "Annex A of EN ISO 17879:2017".
- For "4.1.6.8 (b) and (c)", Replace "ISO 11117:1998 or ISO 11117:2008 + Cor 1:2009" by "ISO 11117:1998 or EN ISO 11117:2008 + Cor 1:2009".

4.1.9.1.4 Add at the end the following new sentence: "This requirement does not apply to the internal surfaces of containers being used as packagings, either loaded or empty."

4.1.9.1.8 Add additional sub-paragraph (e):

"(e) For packages intended to be used for shipment after storage, it shall be ensured that all packaging components and radioactive contents have been maintained during storage in a manner such that all the requirements specified in the relevant provisions of ADR and in the applicable certificates of approval have been fulfilled."

4.1.9.1.11 Replace "radiation level" by "dose rate".

- 4.1.9.1.12 Replace “radiation level” by “dose rate”.
- 4.1.9.2.1 Replace “radiation level” by “dose rate”.
- 4.1.9.2.4 In the introductory sentence, replace “and SCO-I” by “, SCO-I and SCO-III”. At the end of (d), replace “.” by “; and”. Add the following new sub-paragraph (e):
- “(e) For SCO-III:
- (i) Carriage shall be under exclusive use;
  - (ii) Stacking shall not be permitted;
  - (iii) All activities associated with the shipment, including radiation protection, emergency response and any special precautions or special administrative or operational controls that are to be employed during carriage shall be described in a transport plan. The transport plan shall demonstrate that the overall level of safety in carriage is at least equivalent to that which would be provided if the requirements of 6.4.7.14 (only for the test specified in 6.4.15.6, preceded by the tests specified in 6.4.15.2 and 6.4.15.3) had been met;
  - (iv) The requirements of 6.4.5.1 and 6.4.5.2 for a Type IP-2 package shall be satisfied, except that the maximum damage referred to in 6.4.15.4 may be determined based on provisions in the transport plan, and the requirements of 6.4.15.5 are not applicable;
  - (v) The object and any shielding are secured to the conveyance in accordance with 6.4.2.1;
  - (vi) The shipment shall be subject to multilateral approval.”
- 4.1.10.4, MP12
- In the penultimate sentence, replace “Packagings” by “Packages”.

## Chapter 4.2

- 4.2.3.7.3 Add the following paragraph:
- “4.2.3.7.3 The date at which the actual holding time ends shall be entered in the transport document (see 5.4.1.2.2 (d)).”
- 4.2.5.3, TP19 Amend to read as follows:
- “**TP19** At the time of construction, the minimum shell thickness determined according to 6.7.3.4 shall be increased by 3 mm as a corrosion allowance. Shell thickness shall be verified ultrasonically at intervals midway between periodic hydraulic tests and shall never be lower than the minimum shell thickness determined according to 6.7.3.4.”
- 4.2.5.2.6 The amendment applies only to the French text.

## Chapter 4.3

- 4.3.4.2.2 The amendment applies only to the French text.

## Chapter 5.1

- 5.1.5.1.2 Transfer the “and” from the end of sub-paragraph (b) to the end of sub-paragraph (c). Add additional sub-paragraphs (d) and (e):

“(d) *(Reserved)*

(e) the shipment of SCO-III.”

5.1.5.1.4 (b) At the end, replace “in the hands” by “in the possession”.

5.1.5.3.1 In the introductory sentence, replace “or SCO-I” by “, SCO-I or SCO-III”. In (a), replace “radiation level” by “dose rate” (twice) and replace “and SCO-I” by “, SCO-I or SCO-III”. In (a), in the second sentence, delete “and the resulting number is the transport index”. In (b) replace “and SCO-I” by “, SCO-I and SCO-III”. At the end of (c), add “and the resulting number is the TI value”.

Table 5.1.5.3.1

In the title replace “and SCO-I” by “, SCO-I and SCO-III”.

5.1.5.3.2 Amend to read as follows:

“5.1.5.3.2 The TI for each rigid overpack, container or vehicle shall be determined as the sum of the TIs of all the packages contained therein. For a shipment from a single consignor, the consignor may determine the TI by direct measurement of dose rate.

The TI for a non-rigid overpack shall be determined only as the sum of the TIs of all the packages within the overpack.”

5.1.5.3.4 (a) Replace “radiation level” by “dose rate” (twice).

5.1.5.3.4 (b) Replace “transport index” by “TI”.

5.1.5.3.4 (c) Replace “radiation level” by “dose rate”.

Table 5.1.5.3.4

Replace “radiation level” by “dose rate”.

## Chapter 5.2

5.2.1.1 Amend the second sentence to read as follows: “The UN number and the letters “UN” shall be at least 12 mm high, except for packages of 30 l capacity or less or of 30 kg maximum net mass and for cylinders of 60 l water capacity or less when they shall be at least 6 mm in height and except for packages of 5 l capacity or less or of 5 kg maximum net mass when they shall be of an appropriate size”.

5.2.1.7.6 Add the following sentence at the end:

“Any mark on the package made in accordance with the requirements of 5.2.1.7.4 (a) and (b) and 5.2.1.7.5 (c) relating to the package type that does not relate to the UN number and proper shipping name assigned to the consignment shall be removed or covered.”

5.2.1.9.1 After “special provision 188”, add “of Chapter 3.3”.

5.2.1.9.2 In Figure 5.2.1.9.2, replace “120 mm” by “100 mm” and “110 mm” by “100 mm”.

In the last paragraph:

First sentence: replace “a rectangle” by “a rectangle or a square”.

Second sentence: replace “120 mm wide x 110 mm high” by “100 mm wide x 100 mm high”.

Fifth sentence: delete “/line thickness” and replace “105 mm wide x 74 mm high” by “100 mm wide x 70 mm high”.



- 5.2.2.1.11.2 In (d), replace “(no transport index entry is required for category I-WHITE)” by “(except for category I-WHITE)”.
- 5.2.2.1.12.1 The amendment applies only to the French text.

### Chapter 5.3

- 5.3.2.3.2 After the entry for “X83”, insert the following new entry:  
 “836 Corrosive or slightly corrosive substance, flammable (flash-point between 23°C and 60°C, inclusive) and toxic”

### Chapter 5.4

- 5.4.1.1.1 (f) The amendment applies only to the French text.
- 5.4.1.1.1 (k) Amend to read as follows:  
 “(k) for carriage that includes passage through tunnels with restrictions for carriage of dangerous goods, the tunnel restriction code given in Column (15) of Table A of Chapter 3.2, in capitals within parenthesis, or the mention ‘(–)’.”
- 5.4.1.2.2 (d) After “tank-containers”, add “or portable tanks”.
- 5.4.1.2.5.1 Amend sub-paragraphs (d) and (e) to read:  
 “(d) The category of the package, overpack or container, as assigned per 5.1.5.3.4, i.e. I-WHITE, II-YELLOW, III-YELLOW;  
 (e) The TI as determined per 5.1.5.3.1 and 5.1.5.3.2 (except for category I-WHITE);”
- 5.4.1.2.5.1 In sub-paragraph (j), replace “SCO-I and SCO-II” by “SCO-I, SCO-II and SCO-III”.
- 5.4.2 In the second paragraph, at the end of the first sentence, delete “one to the other”.
- 5.4.2, footnote 6  
 At the beginning, replace “(Amendment 38-16)” by “(Amendment 39-18)”.

### Chapter 5.5

- 5.5.3 In the heading, after “applicable to”, add “the carriage of dry ice (UN 1845) and to”.
- At the end of the heading, in the text in parentheses, after “(UN 1951)”, add “or nitrogen”.
- Add the following new Note after the heading:  
 “**NOTE:** *In the context of this section the term “conditioning” may be used in a broader scope and includes protection.*”
- 5.5.3.2.1 After “containers”, add “in which dry ice (UN 1845) is carried or”.
- 5.5.3.2.4 After “containers”, add “in which dry ice (UN 1845) is carried or”.
- 5.5.3.3 In the title, after “Packages containing”, add “dry ice (UN 1845) or”.
- 5.5.3.3.3 After “Packages containing”, add “dry ice (UN 1845) or”.
- 5.5.3.4 In the title, after “Packages containing”, add “dry ice (UN 1845) or”.

- 5.5.3.4.1 At the beginning of the first sentence, replace “Packages” by “Packages containing dry ice (UN 1845) as a consignment shall be marked "CARBON DIOXIDE, SOLID" or "DRY ICE"; packages”.
- 5.5.3.6.1 After “containers containing”, add “dry ice (UN 1845) or”.
- 5.5.3.6.1 (a) After “harmful concentrations of”, add “dry ice (UN 1845) or”.
- 5.5.3.6.1 (b) Replace “The cooled” by “The dry ice (UN 1845) or cooled”.
- 5.5.3.6.2 In Figure 5.5.3.6.2, amend the title to read “Asphyxiation warning mark for vehicles and containers”. Delete the reference to note \*\* and the corresponding note. In note \*, at the beginning, replace “of the coolant/conditioner” by “or the name of the asphyxiant gas used as the coolant/conditioner”. At the end of note \* add “Additional information such as “AS COOLANT” or “AS CONDITIONER” may be added.”.
- 5.5.3.7.1 After “having contained”, add “dry ice (UN 1845) or”.
- 5.5.3.7.1 (b) After “Chapter 3.2 followed”, add “, where appropriate,”. After “"AS CONDITIONER"”, remove “as appropriate”.
- 5.5.4 Add a new section 5.5.4 to read as follows:
- “5.5.4 Dangerous goods contained in equipment in use or intended for use during carriage, attached to or placed in packages, overpacks, containers or load compartments**
- 5.5.4.1 Dangerous goods (e.g. lithium batteries, fuel cell cartridges) contained in equipment such as data loggers and cargo tracking devices, attached to or placed in packages, overpacks, containers or load compartments are not subject to any provisions of ADR other than the following:
- (a) the equipment shall be in use or intended for use during carriage;
  - (b) the contained dangerous goods (e.g. lithium batteries, fuel cell cartridges) shall meet the applicable construction and test requirements specified in ADR; and
  - (c) the equipment shall be capable of withstanding the shocks and loadings normally encountered during carriage.
- 5.5.4.2 When such equipment containing dangerous goods is carried as a consignment, the relevant entry of Table A of Chapter 3.2 shall be used and all applicable provisions of ADR shall apply.”

## Chapter 6.1

- 6.1.1.1 (b) Replace “packing instruction P621” by “packing instructions P621 and P622”.
- 6.1.3.1 Amend the third sentence to read as follows:
- “Letters, numerals and symbols shall be at least 12 mm high, except for packagings of 30 l capacity or less or of 30 kg maximum net mass, when they shall be at least 6 mm in height and except for packagings of 5 l capacity or less or of 5 kg maximum net mass when they shall be of an appropriate size.”
- 6.1.3.1 (e) In the text of the note explaining the asterisk, after the clock, replace the second sentence with the following:
- “In such a case and when the clock is placed adjacent to the UN design type mark, the indication of the year in the mark may be waived. However, when the clock is not placed adjacent to the UN design type mark, the two digits of the year in the mark and in the clock shall be identical.”

Add the following new 6.1.3.14:

“6.1.3.14 Where a packaging conforms to one or more than one tested packaging design type, including one or more than one tested IBC or large packaging design type, the packaging may bear more than one mark to indicate the relevant performance test requirements that have been met. Where more than one mark appears on a packaging, the marks shall appear in close proximity to one another and each mark shall appear in its entirety.”

Renumber current 6.1.3.14 as 6.1.3.15.

Add the following new 6.1.4.2.6:

“6.1.4.2.6 If materials used for body, heads, closures and fittings are not in themselves compatible with the contents to be carried, suitable internal protective coatings or treatments shall be applied. These coatings or treatments shall retain their protective properties under normal conditions of carriage.”

Renumber the existing 6.1.4.2.6 and 6.1.4.2.7 as 6.1.4.2.7 and 6.1.4.2.8.

Add the following new 6.1.4.3.6:

“6.1.4.3.6 If materials used for body, heads, closures and fittings are not in themselves compatible with the contents to be carried, suitable internal protective coatings or treatments shall be applied. These coatings or treatments shall retain their protective properties under normal conditions of carriage.”

Renumber the existing 6.1.4.3.6 and 6.1.4.3.7 as 6.1.4.3.7 and 6.1.4.3.8.

## Chapter 6.2

6.2.2.1.1 In the table, in the rows for “ISO 11119-3:2002” and “ISO 11119-3:2013” add the following new Note in the second column:

“**NOTE:** This standard shall not be used for linerless cylinders manufactured from two parts joined together.”

6.2.2.1.1 In the table, after “ISO 11119-3:2013”, add the following new row:

ISO 11119-4: 2016	Gas cylinders – Refillable composite gas cylinders – Design, construction and testing – Part 4: Fully wrapped fibre reinforced composite gas cylinders up to 150 l with load-sharing welded metallic liners	Until further notice
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6.2.2.1.2 In the table, in the row containing “ISO 11119-3:2013”, add the following new Note in the central column:

“**NOTE:** This standard shall not be used for linerless tubes manufactured from two parts joined together.”

6.2.2.1.3 In the table under “For the cylinder shell”, add the following two new rows at the end:

ISO 4706:2008	Gas cylinders – Refillable welded steel cylinders – Test pressure 60 bar and below	Until further notice
ISO 7866:2012 + Cor 1:2014	Gas cylinders – Refillable seamless aluminium alloy gas cylinders – Design, construction and testing <b>NOTE:</b> Aluminium alloy 6351A or equivalent shall not be used.	Until further notice

6.2.2.1.3 Amend the headline of the second table to read as follows: “For the acetylene cylinder including the porous material:”

6.2.2.2, 6.2.2.7.4 (p) and 6.2.2.9.2 (j)

Replace “ISO 11114-1:2012” by “ISO 11114-1:2012 + A1:2017”.

- 6.2.2.3 In the first table, for ISO 10297:2014, in the column “Applicable for manufacture”, replace “Until further notice” by “Until 31 December 2022”. After the row for ISO 10297:2014 insert the following new row:

ISO 10297:2014 + A1:2017	Gas cylinders – Cylinder valves – Specification and type testing	Until further notice
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- 6.2.2.3 In the first table, for ISO 14246:2014, in the column “Applicable for manufacture”, replace “Until further notice” with “Until 31 December 2024”. Insert the following new row after ISO 14246:2014:

ISO 14246:2014 + A1:2017	Gas cylinders – Cylinder valves – Manufacturing tests and examinations	Until further notice
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- 6.2.2.3 In the first table, insert the following new row at the end:

ISO 17879:2017	Gas cylinders – Self-closing cylinder valves – Specification and type testing <i>NOTE: This standard shall not be applied to self-closing valves in acetylene cylinders.</i>	Until further notice
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- 6.2.2.4 Delete the row for ISO 10462:2005.

Add a new row at the end of the first table immediately after the row for ISO 22434:2006 as follows:

ISO 20475:2018	Gas cylinders – Cylinder bundles – Periodic inspection and testing	Until further notice
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- 6.2.2.7.2 (c) Amend the Note to read:

**“NOTE:** For the purpose of this mark the country of approval means the country of the competent authority that authorized the initial inspection and test of the individual receptacle at the time of manufacture.”

- 6.2.2.9.2 (c) Amend the Note to read:

**“NOTE:** For the purpose of this mark the country of approval means the country of the competent authority that authorized the initial inspection and test of the individual system at the time of manufacture.”

- 6.2.2.10.2 The amendment applies only to the French text.

- 6.2.2.11 After the table, add the following paragraph:

“For refillable pressure receptacles, the conformity assessment of valves and other demountable accessories having a direct safety function may be carried out separately from that of the pressure receptacles.”

- 6.2.3.5.1 Replace NOTE 3 with the following text:

**“NOTE 3:** *The check of 6.2.1.6.1 (b) and the hydraulic pressure test of 6.2.1.6.1 (d) may be replaced by ultrasonic examination carried out in accordance with EN ISO 18119:2018 for cylinders and tubes of seamless steel or seamless aluminium alloy. Notwithstanding clause B.1 of this standard, all cylinders and tubes whose wall thickness is less than the minimum design wall thickness shall be rejected.*”

- 6.2.4.1 In the table, under “for design and construction”:

- In column (2), insert the following note against the references to directives 84/525/EEC, 84/526/EEC and 84/527/EEC:

**“NOTE:** *Notwithstanding the repeal of the directives 84/525/EEC, 84/526/EEC and 84/527/EEC as published in the Official Journal of the European Communities No. L300 of 19.11.1984 the annexes of these*

*directives remain applicable as standards for design, construction and initial inspection and test for gas cylinders. These annexes may be found at: <https://eur-lex.europa.eu/oj/direct-access.html>.”.*

- For “EN 12807:2008”, in column (4), replace the existing text with “Between 1 January 2009 and 31 December 2022”. After the existing row for “EN 12807:2008” add the following new entry:

EN 12807:2019	LPG equipment and accessories - Transportable refillable brazed steel cylinders for liquefied petroleum gas (LPG) - Design and construction	6.2.3.1 and 6.2.3.4	Until further notice	
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- For “EN ISO 9809-1:2010”, in column (4), replace “Until further notice” by “Between 1 January 2013 and 31 December 2022”. After the row for “EN ISO 9809-1:2010”, insert the following row:

EN ISO 9809-1:2019	Gas cylinders - Design, construction and testing of refillable seamless steel gas cylinders and tubes - Part 1: Quenched and tempered steel cylinders and tubes with tensile strength less than 1100 MPa	6.2.3.1 and 6.2.3.4	Until further notice	
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- For “EN ISO 9809-2:2010”, in column (4), replace “Until further notice” by “Between 1 January 2013 and 31 December 2022”. After the row for “EN ISO 9809-2:2010”, insert the following row:

EN ISO 9809-2:2019	Gas cylinders - Design, construction and testing of refillable seamless steel gas cylinders and tubes - Part 2: Quenched and tempered steel cylinders and tubes with tensile strength greater than or equal to 1100 MPa	6.2.3.1 and 6.2.3.4	Until further notice	
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- For “EN ISO 9809-3:2010”, in column (4), replace “Until further notice” by “Between 1 January 2013 and 31 December 2022”. After the row for “EN ISO 9809-3:2010”, insert the following row:

EN ISO 9809-3:2019	Gas cylinders - Design, construction and testing of refillable seamless steel gas cylinders and tubes - Part 3: Normalized steel cylinders and tubes	6.2.3.1 and 6.2.3.4	Until further notice	
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6.2.4.1 In the table, under “for closures”:

- For “EN ISO 17871:2015”, in column (4), replace the existing text with “Between 1 January 2017 and 31 December 2021”.
- After the existing row for “EN ISO 17871:2015” add the following new entry:

EN ISO 17871:2015 + A1:2018	Gas cylinders – Quick-release cylinder valves – Specification and type testing	6.2.3.1, 6.2.3.3 and 6.2.3.4	Until further notice	
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6.2.4.2 In the table, under “Periodic inspection and test”:

- For “EN 1968:2002 +A1:2005 (except annex B)”, in column (3), replace the existing text with “Until 31 December 2022”.
- For “EN 1802:2002 (except annex B)”, in column (3), replace the existing text with “Until 31 December 2022”.
- After the existing row for “EN 1802:2002 (except annex B)”, add the following new entry:

EN ISO 18119:2018	Gas cylinders - Seamless steel and seamless aluminium-alloy gas cylinders and tubes - Periodic inspection and testing <i>NOTE: Notwithstanding clause B.1 of this standard, all cylinders and tubes whose wall thickness is less than the minimum design wall thickness shall be rejected.</i>	Mandatorily from 1 January 2023
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- For “EN 1440:2016 (except annex C)”, in column (3), replace the existing text with “Until 31 December 2021”.
- After the existing row for “EN 1440:2016 (except annex C)”, add the following new entry:

EN 1440:2016 + A1:2018 (except Annex C)	LPG equipment and accessories – Transportable refillable traditional welded and brazed steel Liquefied Petroleum Gas (LPG) cylinders – Periodic inspection	Mandatorily from 1 January 2022
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- For “EN 16728:2016 (except clause 3.5, Annex F and Annex G)”, in column (3), replace the existing text with “Until 31 December 2021”.
- After the existing row for “EN 16728:2016 (except clause 3.5, Annex F and Annex G)”, add the following new entry:

EN 16728:2016 + A1:2018	LPG equipment and accessories – Transportable refillable LPG cylinders other than traditional welded and brazed steel cylinders – Periodic inspection	Mandatorily from 1 January 2022
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- For “EN ISO 10462:2013”, in column (3), replace “Until further notice” by “Until 31 December 2022”.
- After the row for “EN ISO 10462:2013”, insert the following row:

EN ISO 10462:2013 + A1:2019	Gas cylinders - Acetylene cylinders - Periodic inspection and maintenance - Amendment 1 (ISO 10462:2013 + A1:2019)	Mandatorily from 1 January 2023
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- For “EN 1803:2002 (except Annex B)”, in column (3), replace “Until further notice” by “Until 31 December 2022”.
- After the row for “EN 1803:2002 (except Annex B)”, insert the following row:

EN ISO 10460:2018	Gas cylinders - Welded aluminium-alloy, carbon and stainless steel gas cylinders - Periodic inspection and testing	Mandatorily from 1 January 2023
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6.2.5 After the second paragraph, add the following new paragraph:

“As soon as a standard newly referenced in 6.2.2 or 6.2.4 can be applied, the competent authority shall withdraw its recognition of the relevant technical code. A transitional period ending no later than the date of entry into force of the next edition of ADR may be applied.”

At the end of the first sentence of the now fourth paragraph (previously third paragraph), add “and shall update the list if it changes”.

6.2.6.1.5 Amend the first sentence to read as follows: “The internal pressure of aerosol dispensers at 50 °C shall exceed neither two-thirds of the test pressure nor 1.2 MPa (12 bar) when using flammable liquefied gases, 1.32 MPa (13.2 bar) when using non-flammable liquefied gases, and 1.5 MPa (15 bar) when using non-flammable compressed or dissolved gases.”.

## Chapter 6.3

In the title of Chapter 6.3, at the end, add “(UN Nos. 2814 and 2900)”.

- 6.3.1.1 At the end, add “, UN Nos. 2814 and 2900”.
- 6.3.4.1 Amend the third sentence to read as follows:  
 “Letters, numerals and symbols shall be at least 12 mm high, except for packagings of 30 l capacity or less or of 30 kg maximum net mass, when they shall be at least 6 mm in height and except for packagings of 5 l capacity or less or of 5 kg maximum net mass when they shall be of an appropriate size.”
- 6.3.5.2.2 In “*Explanation for use of the table*”, at the end of the first paragraph, delete “five times after conditioning”.
- 6.3.5.3.1 Add the following new title to this paragraph: “*Drop height and target*”.
- 6.3.5.3.2 Add the following new title to this paragraph: “*Number of test samples and drop orientation*”. Renumber the text under this paragraph as “6.3.5.3.2.1”.
- 6.3.5.3.3 Renumber as 6.3.5.3.2.2.  
 Renumber paragraphs 6.3.5.3.4, 6.3.5.3.5, 6.3.5.3.6, 6.3.5.3.6.1, 6.3.5.3.6.2 and 6.3.5.3.6.3 as 6.3.5.3.3, 6.3.5.3.4, 6.3.5.3.5, 6.3.5.3.5.1, 6.3.5.3.5.2 and 6.3.5.3.5.3, respectively. Adapt the cross references accordingly as follows:  
 In 6.3.5.2.2, in the table and under “*Explanation for the use of the table*”, replace “6.3.5.3.6.1”, “6.3.5.3.6.2” and “6.3.5.3.6.3” by “6.3.5.3.5.1”, “6.3.5.3.5.2” and “6.3.5.3.5.3”, respectively.  
 In 6.3.5.3.6.3 (renumbered 6.3.5.3.5.3), replace “6.3.5.3.6.1” and “6.3.5.3.6.2” by “6.3.5.3.5.1” and “6.3.5.3.5.2”, respectively. At the end, replace “in 6.3.5.3.2” by “in 6.3.5.3.2.1 or in 6.3.5.3.2.2, as appropriate.”.

## Chapter 6.4

- 6.4.2.4 Delete “and finished”.
- 6.4.2.8 Insert the following new paragraph to read as follows:  
 “6.4.2.8 The design of the package shall take into account ageing mechanisms.”
- In 6.4.2, renumber subsequent paragraphs accordingly.
- 6.4.2.11 (renumbered 6.4.2.12)  
 Replace “radiation level” by “dose rate”.
- 6.4.4 Amend the sentence after the heading to read as follows:  
 “An excepted package shall be designed to meet the requirements specified in 6.4.2.1 to 6.4.2.13 and, in addition, the requirements of 6.4.7.2 if it contains fissile material allowed by one of the provisions of 2.2.7.2.3.5 (a) to (f).”
- 6.4.5.2 (b) Replace “radiation level” by “dose rate”.
- 6.4.5.4.1 (c) (ii)  
 Replace “radiation level” by “dose rate”.
- 6.4.5.4.2 (c) Replace “radiation level” by “dose rate”.
- 6.4.5.4.3 Delete “liquids and gases” in the first sentence.
- 6.4.5.4.3 (c) Replace “radiation level” by “dose rate”.
- 6.4.5.4.4 (c) (ii)  
 Replace “radiation level” by “dose rate”.

- 6.4.5.4.5 (b) (ii) Replace “radiation level” by “dose rate”.
- 6.4.6.2 Replace “it would meet” by “the package would meet” in the introductory sentence.
- 6.4.7.9 Replace “it shall be capable” by “the containment system shall be capable”.
- 6.4.7.14 (b) Replace “radiation level” by “dose rate”.
- 6.4.7.17 Amend to read as follows:  
“6.4.7.17 A Type A package designed for gases shall prevent loss or dispersal of the radioactive contents if the package were subjected to the tests specified in 6.4.16, except for a Type A package designed for tritium gas or for noble gases.”
- 6.4.8.2 In subparagraph (a), replace “Alter the arrangement” by “Alteration of the arrangement”. In subparagraph (b), replace “Lessen the efficiency” by “Lessening of the efficiency”. Amend subparagraph (c) to read “(c) Acceleration of corrosion when combined with moisture.”.
- 6.4.8.8 In the first indent after the sub-paragraphs, replace “radiation level” by “dose rate”. In the last sentence, add “non-fixed” before “contamination limits”.
- 6.4.9.1 Delete “Notwithstanding,” at the beginning of the second sentence.
- 6.4.10.3 (b) (i) Replace “radiation level” by “dose rate”.
- 6.4.11.2 In sub-paragraph (c) (iv), replace “maximum mass” with “total mass”.  
In sub-paragraph (d) replace “their total concentration” by “the total concentration of these materials”.
- 6.4.11.8 (b) (i) After “between the valve” add “or the plug” and, at the end, after “the valves” add “and the plug”.
- 6.4.12.1 (a) At the beginning, delete “LSA-III material, or”.
- 6.4.13 Amend the introductory sentence to read as follows:  
“After each test or group of tests or sequence of the applicable tests, as appropriate, specified in 6.4.15 to 6.4.21:”
- 6.4.15.4 (a) Replace “of drop” by “of the drop” and add commas before “measured” and after “of the target”.
- 6.4.15.6 (b) Replace “of drop” by “of the drop” and add commas before “measured” and after “of the specimen”.
- 6.4.17.2 (b) In the third sentence, replace “section” by “cross-section”.
- 6.4.17.3 (b) Replace “are everywhere decreasing” by “are decreasing in all parts of the specimen”.
- 6.4.23.2 Add a new heading to read “**6.4.23.2 Applications for approval of shipment**”. Renumber current 6.4.23.2 as 6.4.23.2.1.
- 6.4.23.2 Add a new paragraph 6.4.23.2.2 to read as follows:  
“6.4.23.2.2 An application for approval of SCO-III shipments shall include:  
(a) A statement of the respects in which, and of the reasons why, the consignment is considered SCO-III;  
(b) Justification for choosing SCO-III by demonstrating that:



- (i) No suitable packaging currently exists;
  - (ii) Designing and/or constructing a packaging or segmenting the object is not practically, technically or economically feasible;
  - (iii) No other viable alternative exists;
- (c) A detailed description of the proposed radioactive contents with reference to their physical and chemical states and the nature of the radiation emitted;
- (d) A detailed statement of the design of the SCO-III, including complete engineering drawings and schedules of materials and methods of manufacture;
- (e) All information necessary to satisfy the competent authority that the requirements of 4.1.9.2.4 (e) and the requirements of 7.5.11, CV33 (2), if applicable, are satisfied;
- (f) A transport plan;
- (g) A specification of the applicable management system as required in 1.7.3.”
- 6.4.23.4 Insert an additional sub-paragraph (f) to read as follows:
- “(f) If the package is to be used for shipment after storage, a justification of considerations to ageing mechanisms in the safety analysis and within the proposed operating and maintenance instructions;”
- Renumber subsequent sub-paragraphs accordingly.
- At the end of new sub-paragraph (i) (current (h)), delete "and". At the end of new sub-paragraph (j) (current (i)), replace "." by "; and".
- Add a new sub-paragraph (k) to read as follows:
- “(k) For packages which are to be used for shipment after storage, a gap analysis programme describing a systematic procedure for a periodic evaluation of changes of applicable regulations, changes in technical knowledge and changes of the state of the package design during storage.”
- 6.4.23.8 (c) Replace “calculative methods” by “calculations”.
- 6.4.23.10 (c) Replace “radiation levels” by “dose rates”.
- 6.4.23.10 (f) Replace “radiation levels” by “dose rates”.
- 6.4.23.10 (h) Replace “International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources, Safety Series No.115, IAEA, Vienna (1996)” by “Radiation Protection and Safety of Radiation Sources: International Basic Safety Standards, IAEA Safety Standards Series No. GSR Part 3, IAEA, Vienna (2014)”.
- 6.4.23.11 Delete sub-paragraph (d).
- 6.4.23.12 (a) Replace “6.4.23.11 (a), (b), (c) and (d)” by “6.4.23.11 (a), (b) and (c)” and delete “including, if applicable, the symbol “-96”,”. At the end of the first sentence of (a), replace “identification marks” by “identification mark”.
- 6.4.23.15 In sub-paragraph (k) (iii), replace “contents” with “package”.
- 6.4.23.17 In sub-paragraph (n) (iv), replace “contents” with “package”.
- Insert a new sub-paragraph (p) after 6.4.23.17 (o) and renumber subsequent sub-paragraphs accordingly:
- “(p) For package designs subject to the transitional provisions in 1.6.6.2.1, a statement specifying those requirements of ADR applicable as from 1 January 2021 with which the package does not conform;”

## Chapter 6.5

6.5.1.4.3 The amendment applies only to the French text.

Add the following new paragraph 6.5.2.1.3:

“6.5.2.1.3 Where an IBC conforms to one or more than one tested IBC design type, including one or more than one tested packaging or large packaging design type, the IBC may bear more than one mark to indicate the relevant performance test requirements that have been met. Where more than one mark appears on an IBC, the marks shall appear in close proximity to one another and each mark shall appear in its entirety.”

6.5.2.2.1 Delete the last row in the table (Maximum permitted stacking load) and the corresponding table note b.

6.5.2.2.2 In the first sentence, delete “when the IBC is in use”.

6.5.2.2.4 Amend the last sentence of the first paragraph to read as follows:

“They shall be durable, legible and placed in a location so as to be readily accessible for inspection after assembling the inner receptacle in the outer casing. When the marks on the inner receptacle are not readily accessible for inspection due to the design of the outer casing, a duplicate of the required marks on the inner receptacle shall be placed on the outer casing preceded by the wording “Inner receptacle”. This duplicate shall be durable, legible and placed in a location so as to be readily accessible for inspection.”

In the second paragraph, amend the second sentence to read as follows: “In such a case, the date may be waived from the remainder of the marks.”.

6.5.5.1.6 Insert a new introductory sentence as follows:

“Metal IBCs with a capacity of more than 1500 l shall comply with the following minimum wall thickness requirement:”

Amend the table under (a) to read as follows:

Wall thickness (T) in mm			
Types 11A, 11B, 11N		Types 21A, 21B, 21N, 31A, 31B, 31N	
Unprotected	Protected	Unprotected	Protected
$T = C/2000 + 1.5$	$T = C/2000 + 1.0$	$T = C/1000 + 1.0$	$T = C/2000 + 1.5$

## Chapter 6.6

6.6.3.3 In the first sentence, delete “when the large packaging is in use”.

Add the following new paragraph 6.6.3.4:

“6.6.3.4 Where a large packaging conforms to one or more than one tested large packaging design type, including one or more than one tested packaging or IBC design type, the large packaging may bear more than one mark to indicate the relevant performance test requirements that have been met. Where more than one mark appears on a large packaging, the marks shall appear in close proximity to one another and each mark shall appear in its entirety.”

## Chapter 6.7

6.7.2.4.8 The amendment applies only to the French text.

6.7.2.12.2.1 and 6.7.3.8.1.1

Amend the definition of factor “U” to read:

“U = heat transfer coefficient of the insulation, in kW·m<sup>-2</sup>·K<sup>-1</sup>, at 38 °C”

- 6.7.2.18.1 The amendment applies only to the French text.
- 6.7.2.19.6 Add a new heading to read: “6.7.2.19.6 *Inspection and test of portable tanks and filling after the date of expiry of the last periodic inspection and test*”. Renumber existing paragraph as 6.7.2.19.6.1.
- 6.7.2.19.6 Add a new paragraph 6.7.2.19.6.2 to read as follows:  
 “6.7.2.19.6.2 Except as provided for in 6.7.2.19.6.1, portable tanks which have missed the timeframe for their scheduled 5 year or 2.5-year periodic inspection and test may only be filled and offered for carriage if a new 5-year periodic inspection and test is performed according to 6.7.2.19.4.”.
- 6.7.3.2.12 (b) Replace “thermal conductance” by “heat transfer coefficient”.
- 6.7.3.4.1 After (b), add the following new paragraph:  
 “In addition, any relevant portable tank special provision indicated in Column (11) of Table A of Chapter 3.2 and described in 4.2.5.3 shall be taken into account.”
- 6.7.3.4.5 The amendment applies only to the French text.
- 6.7.3.5.5 The amendment applies only to the French text.
- 6.7.3.14.1 The amendment applies only to the French text.
- 6.7.3.15.6 Add a new heading to read: “6.7.3.15.6 *Inspection and test of portable tanks and filling after the date of expiry of the last periodic inspection and test*”.
- Renumber existing paragraph 6.7.3.15.6 as 6.7.3.15.6.1.
- 6.7.3.15.6 Add a new 6.7.3.15.6.2 to read as follows:  
 “6.7.3.15.6.2 Except as provided for in 6.7.3.15.6.1, portable tanks which have missed the timeframe for their scheduled 5 year or 2.5-year periodic inspection and test may only be filled and offered for carriage if a new 5-year periodic inspection and test is performed according to 6.7.3.15.4.”
- 6.7.4.4.7 The amendment applies only to the French text.
- 6.7.4.13.1 The amendment applies only to the French text.
- 6.7.4.14.6 Add a new heading to read: “6.7.4.14.6 *Inspection and test of portable tanks and filling after the date of expiry of the last periodic inspection and test*”.
- Renumber existing paragraph 6.7.4.14.6 as 6.7.4.14.6.1.
- Add a new 6.7.4.14.6.2 to read as follows:  
 “6.7.4.14.6.2 Except as provided for in 6.7.4.14.6.1, portable tanks which have missed the timeframe for their scheduled 5 year or 2.5-year periodic inspection and test may only be filled and offered for carriage if a new 5-year periodic inspection and test is performed according to 6.7.4.14.4.”
- 6.7.5.2.3 In the first sentence, after “seamless steel” insert “or composite construction”.
- 6.7.5.2.4 (a) Replace “ISO 11114-1:2012” by “ISO 11114-1:2012 + A1:2017”.
- 6.7.5.11.1 The amendment applies only to the French text.

## Chapter 6.8

- 6.8.2.1.11 Replace “welded tanks” by “welded shells”.

6.8.2.1.18 Add the following sentences at the end of footnote 3:

“However, the cross section of shells according to 6.8.2.1.14 (a) may contain recesses or protrusions such as sumps, cut-outs or recessed manhole constructions. They may be constructed of flat or shaped (concave or convex) sheet metal. Dents and other unintended deformations shall not be regarded as recesses or protrusions. See the “Guideline for the application of footnote 3 of ADR 6.8.2.1.18” on the website of the ECE secretariat (<http://www.unece.org/trans/danger/danger.html>).”

6.8.2.1.20 (b) 1.

In the second indent, replace “Volume contained” by “Capacity”.

6.8.2.5.1 In the ninth indent, replace "test" by "inspection" (six times).

In the tenth indent, replace "tests" by "inspection".

6.8.2.6.1 Amend the table as follows:

Under “**for design and construction of tanks**”:

- For “EN 14025:2013+A1:2016 (except Annex B)”, in column (4), replace the existing text with “Between 1 January 2017 and 31 December 2021”.
- After the existing row for “EN 14025:2013+A1:2016 (except Annex B)”, add the following new entries:

EN 14025:2018	Tanks for the transport of dangerous goods – Metallic pressure tanks – Design and construction <i>NOTE: Materials of shells shall at least be attested by a type 3.1 certificate issued in accordance with standard EN 10204.</i>	6.8.2.1 and 6.8.3.1	Until further notice	
EN 12972:2018	Tanks for transport of dangerous goods – Testing, inspection and marking of metallic tanks	6.8.2.3	Mandatorily from 1 January 2022	

- For “EN 12493:2013+A1:2014+AC:2015 (except Annex C)”, in column (4), replace the existing text with “Between 1 January 2017 and 31 December 2022”.
- After the existing row for “EN 12493:2013+A1:2014+AC:2015 (except annex C)”, add the following new entry:

EN 12493:2013+A2:2018 (except Annex C)	LPG equipment and accessories - Welded steel pressure vessels for LPG road tankers - Design and manufacture <i>NOTE: Road tanker is to be understood in the meaning of "fixed tanks" and "demountable tanks" as per ADR.</i>	6.8.2.1, 6.8.2.5 6.8.3.1, 6.8.3.5 6.8.5.1 to 6.8.5.3	Until further notice	
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Under “**For equipment**”:

- For “EN 13317:2002+A1:2006”, in column (4), replace the existing text with “Between 1 January 2009 and 31 December 2021”.
- After the existing row for “EN 13317:2002+A1:2006” add the following new entry:

EN 13317:2018	Tanks for transport of dangerous goods - Service equipment for tanks - Manhole cover assembly	6.8.2.2 and 6.8.2.4.1	Until further notice	
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- 6.8.2.6.2 For “EN 12972:2007”, in column (4), replace the existing text with “Until 30 June 2021”. Add the following new entry to the table after the entry for “EN 12972:2007”:

EN 12972:2018	Tanks for transport of dangerous goods – Testing, inspection and marking of metallic tanks	6.8.2.4 6.8.3.4	Mandatorily from 1 July 2021
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- 6.8.2.7 After the first paragraph, insert the following new paragraph:  
 “As soon as a standard newly referenced in 6.8.2.6 can be applied, the competent authority shall withdraw its recognition of the relevant technical code. A transitional period ending no later than the date of entry into force of the next edition of ADR may be applied.”  
 At the end of the first sentence of the now third paragraph (previously second paragraph), add “and shall update the list if it changes”.
- 6.8.3.4.12 Replace “6.8.3.4.6” by “6.8.2.4.2 and 6.8.2.4.3”.
- 6.8.3.5.10 In the seventh indent, replace “test” by “inspection” (twice).  
 In the eighth indent, replace “tests” by “inspection”.
- 6.8.3.7 After the first paragraph, insert the following new paragraph:  
 “As soon as a standard newly referenced in 6.8.3.6 can be applied, the competent authority shall withdraw its recognition of the relevant technical code. A transitional period ending no later than the date of entry into force of the next edition of ADR may be applied.”  
 At the end of the first sentence of the now fourth paragraph (previously third paragraph), add “and shall update the list if it changes”.
- 6.8.4 (d), TT6  
 Amend the text in the left-hand column to read “The periodic inspection shall be carried out at least every 3 years.”
- 6.8.4 (d), TT8  
 In the first sub-paragraph, replace “test” by “inspection”.
- 6.8.4 (d), TT11  
 In the paragraph after the Table, replace “EN 14025:2013 + A1:2016” by “EN 14025:2018” and replace “EN 12493:2013+A1:2014+AC:2015” by “EN 12493:2013+A2:2018”.

## Chapter 6.9

- 6.9.6.1 At the end of the second indent, replace “.” with “;” and add a new third indent to read as follows:  
 “- where a tank code is required in accordance with 6.8.2.5.2, the second part of the tank code shall indicate the highest value of the calculation pressure for the substance(s) permitted for carriage according to the type approval certificate.”

## Chapter 6.10

- 6.10.3.8 (a) Add a new note to read as follows:  
 “**NOTE:** This requirement may, for example, be complied with by the use of a vertical pipe or a low-level outlet with a connection which allows, when necessary, attachment of a hose.”

- 6.10.4 Replace “tests” by “inspection”.

## Chapter 6.11

- 6.11.4.1 In the note, replace “the UIC leaflets 591, 592 and 592- 2 to 592-4” by “IRS 50591 (Roller units for horizontal transshipment – Technical conditions governing their use in international traffic)<sup>1</sup> and IRS 50592 (Intermodal Transport Units (other than semi-trailers) for vertical transshipment and suitable for carriage on wagons – Minimum requirements)<sup>2</sup> published by UIC”.

Footnotes 1 and 2 read as follows:

“<sup>1</sup> First edition of IRS (International Railway Solution) applicable as from 1 January 2020.

<sup>2</sup> First edition of IRS (International Railway Solution) applicable as from 1 January 2019.”

- 6.11.5.5.1 (e) Renumber footnote 1 as footnote 3.

## Chapter 7.1

- 7.1.3 Replace “UIC leaflets 591 (status at 01.10.2007, 3rd edition), 592 (status at 01.10.2013, 2nd edition), 592-2 (status at 01.10.2004, 6th edition), 592-3 (status at 01.01.1998, 2nd edition) and 592-4 (status at 01.05.2007, 3rd edition)” by “IRS 50591 (Roller units for horizontal transshipment – Technical conditions governing their use in international traffic)<sup>1</sup> and IRS 50592 (Intermodal Transport Units (other than semi-trailers) for vertical transshipment and suitable for carriage on wagons – Minimum requirements)<sup>2</sup> published by UIC”. At the end, replace “UIC leaflets 591, 592 and 592-2 to 592-4” by “IRS 50591 and IRS 50592 of UIC”.

Footnotes 1 and 2 read as follows:

“<sup>1</sup> First edition of IRS (International Railway Solution) applicable as from 1 January 2020.

<sup>2</sup> First edition of IRS (International Railway Solution) applicable as from 1 January 2019.”

- 7.1.7.3.6 The amendment applies only to the French text.

## Chapter 7.5

- 7.5.11, CV4 The amendment applies only to the French text.

- 7.5.11, CV33 (2)

Add the following new sentence after the first sentence: “For SCO-III, the limits in Table C below may be exceeded provided that the transport plan contains precautions which are to be employed during carriage to obtain an overall level of safety at least equivalent to that which would be provided if the limits had been applied.”.

- 7.5.11, CV33 (3) (3.3)

Amend sub-paragraph (b) to read as follows:

“(b) The dose rate under routine conditions of carriage shall not exceed 2 mSv/h at any point on the external surface of the vehicle or container, and 0.1 mSv/h at 2 m from the external surface of the vehicle or container, except for consignments carried under exclusive use for which the dose rate limits around the vehicle are set forth in (3.5) (b) and (c).”

7.5.11, CV33 (3.5), (5.1) and (5.4) (twice)

Replace “radiation level” by “dose rate”.

7.5.11, CV33 (5.1)

In the last sentence, replace “persons” by “people,”.

7.5.11, CV33 (5.5)

At the beginning, delete “, tank, intermediate bulk container”.

7.5.11, CV36 Amend the second sentence to read as follows:

“If this is not feasible and packages are carried in other closed vehicles or containers, gas exchange between the load compartment and the driver’s cab shall be prevented and the cargo doors of the vehicles or containers shall be marked with the following in letters not less than 25 mm high:

“WARNING

NO VENTILATION

OPEN WITH CAUTION”.”

## Chapter 8.2

8.2.2.8.6 Amend to read as follows:

“8.2.2.8.6 Contracting Parties shall provide the ECE secretariat with an example of the national model for any certificate intended for issue in accordance with this section. Contracting Parties shall also provide explanatory notes to enable the verification of conformity of certificates against the examples provided. The secretariat shall make this information available on its website.”

## Chapter 8.5

8.5, S1 (6) In the second paragraph under the list, replace “substances and articles shall be supervised at all times in order to prevent” by “substances and articles, when subject to the provisions in 1.10.3, shall be supervised in accordance with the security plan in 1.10.3.2 at all times to prevent”.

8.5, S16 Replace the second paragraph by “In addition, vehicles carrying more than 500 kg of these substances shall, when subject to the provisions in 1.10.3, be supervised in accordance with the security plan in 1.10.3.2 at all times to prevent any malicious act and to alert the driver and competent authorities in the event of loss or fire.”.

8.5, S21 Delete the second sentence. After the sub-paragraphs, add a new paragraph to read: “In addition, these goods shall, when subject to the provisions in 1.10.3, be supervised in accordance with the security plan in 1.10.3.2 at all times to prevent any malicious act and to alert the driver and the competent authorities in the event of loss or fire.”.

## Chapter 9.1

9.1.3.4 Add a new paragraph after the first paragraph to read as follows:

“The vehicle shall not be used for the carriage of dangerous goods after the nominal expiry date until the vehicle has a valid certificate of approval.”

**Corrigendum**

1. **Chapter 1.1, amendment to 1.1.3.6.3**  
Not applicable to English.
2. **Chapter 1.7, 1.7.1, Note 1, first amendment**  
Not applicable to English.
3. **Chapter 4.1, 4.1.1, amendment to the note**  
*For LP02 read LP200*
4. **Chapter 4.1, amendment to 4.1.4.1, P200 (11)**  
For the existing text, *substitute*  
Delete the row for “(7) (a) ISO 24431:2006”.
5. **Chapter 4.1, 4.1.6.15, in the table, amendment for “4.1.6.8 (b) and (c)”**  
For the existing text, *substitute*
  - For “4.1.6.8 (b) and (c)”, Replace “ISO 11117:1998 or ISO 11117:2008 + Cor 1:2009” by “ISO 11117:1998 or EN ISO 11117:2008 + Cor 1:2009 or EN ISO 11117:2019”.
6. **Chapter 6.2, 6.2.2.3**  
Not applicable to English.
7. **Chapter 6.2, 6.2.4.2, amendment related to standard EN 1440:2016 + A1:2018 (new entry)**  
*For EN 1440:2016 + A1:2018 (except Annex C) read EN 1440:2016 + A1:2018 + A2:2020 (except Annex C)*
8. **Chapter 6.2, 6.2.4.2, amendment related to standard EN 16728:2016 + A1:2018 (new entry)**  
*For EN 16728:2016 + A1:2018 read EN 16728:2016 + A1:2018 + A2:2020*
9. **Chapter 6.2, 6.2.4.2, amendment related to standard EN ISO 10462:2013 + A1:2019 (new entry), in the second column**  
*Delete (ISO 10462:2013 + A1:2019)*
10. **Chapter 6.8, amendment to 6.8.2.1.18, footnote 3**  
*For ECE read UNECE*
11. **Chapter 6.8, 6.8.2.6.1, amendment related to standard EN 14025:2018 (new entry)**  
*For EN 14025:2018 read EN 14025:2018 + AC:2020.*
12. **Chapter 6.10, amendment to 6.10.3.8 (a)**  
For the existing text, *substitute*  
Add the following new note under this subparagraph:  
“**NOTE:** *This requirement may, for example, be complied with by the use of a vertical pipe discharging at the top, or a low-level outlet with a connection which allows attachment of a hose.*”



**13. Chapter 6.11, amendment to 6.11.4.1, footnotes 1 and 2**

For the existing text, *substitute*

“<sup>1</sup> First edition of IRS (International Railway Solution) applicable as from 1 June 2020.

<sup>2</sup> Second edition of IRS (International Railway Solution) applicable as from 1 December 2020.”

**14. Chapter 7.1, amendment to 7.1.3, footnotes 1 and 2**

For the existing text, *substitute*

“<sup>1</sup> First edition of IRS (International Railway Solution) applicable as from 1 June 2020.

<sup>2</sup> Second edition of IRS (International Railway Solution) applicable as from 1 December 2020.”

**15. Chapter 8.2, amendment to 8.2.2.8.6**

*For ECE read UNECE*

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**Addendum**

The Chair and Vice-Chair of the Working Party on the Transport of Dangerous Goods requested the secretariat to circulate an additional list of amendments for which the entry into force is scheduled for 1 January 2021 in the form of an addendum to document ECE/TRANS/WP.15/249, which the Chair will transmit to Contracting Parties through his Government for acceptance in accordance with the procedure set out in article 14 of ADR (see ECE/TRANS/WP.15/248, paragraph 80) provided these amendments are also adopted by the RID Contracting States.

Owing to the coronavirus pandemic (COVID-19), the 108th session of the Working Party was postponed to 9-13 November 2020. Therefore, these amendments were circulated to the Working Party participants in writing and the Working Party participants did not raise objection. This document contains in Annex the requested additional list of amendments:

- Part I lists amendments necessary to ensure harmonisation of ADR with the United Nations Recommendations on the Transport of Dangerous Goods or needed as consequential amendments or to update some transitional measures.
- Part II lists additional amendments adopted by the Working Group on Tanks of the Joint Meeting.
- Part III lists additional amendments to consider the updating of some standards referenced in RID and ADR adopted by the Working Group on Standards of the Joint Meeting.

## Annex

[Original: English, French and Russian]

### I. Draft amendments for harmonisation of ADR with the United Nations Recommendations on the Transport of Dangerous Goods, consequential amendments, corrections and updates

#### Chapter 1.6

1.6.1 Add the following new 1.6.1.48:

“1.6.1.48 Certificates of approval for vehicles carrying certain dangerous goods conforming to the model in 9.1.3.5 applicable until 31 December 2020, issued before 1 July 2021, may still be used.”

1.6.5.4 Replace the text by “(Reserved)”.

#### Chapter 2.2

2.2.41.1.10 The amendment applies only to the French text.

#### Chapter 3.3

Special provision 241

In the second sentence, replace “test No. 1” by “test N.1”.

Special provision 310

In the last but one paragraph, delete “and packaged in accordance with packing instructions P908 of 4.1.4.1 or LP904 of 4.1.4.3, as applicable”.

Special provision 377

In the last paragraph, delete “and packaged in accordance with packing instruction P908 of 4.1.4.1 or packing instruction LP904 of 4.1.4.3, as applicable”.

Special provision 672

At the beginning, replace “Machinery and apparatus” by “Articles, such as machinery, apparatus or devices”. In the second indent, replace “machinery or apparatus” by “article”.

#### Chapter 4.3

4.3.4.2.2 In the second sentence, replace “shells” by “tank”.

#### Chapter 6.3

6.3.5.3.3 (renumbered 6.3.5.3.2.2)

In the introductory sentence after “in the shape of a drum”, insert “or a jerrican”. In sub-paragraphs (a) and (b), replace “chime” by “edge”. In sub-paragraph (c), replace “side” by “body or side”.

#### Chapter 6.4

6.4.23.12 (a) Replace “A/132/B(M)F-96” by “A/132/B(M)F”. Replace “A/132/B(M)F-96T” by “A/132/B(M)FT”. Replace “A/139/IF-96” by “A/139/IF”. Replace “A/145/H(U)-96” by “A/145/H(U)”.

6.4.23.12 (b) Replace “A/132/B(M)F-96” by “A/132/B(M)F” and replace “CH/28/B(M)F-96” by “CH/28/B(M)F”.

- 6.4.23.12 (c) Replace “A/132/B(M)F-96 (Rev.2)” by “A/132/B(M)F (Rev.2)” and replace “A/132/B(M)F-96(Rev.0)” by “A/132/B(M)F (Rev.0)”.
- 6.4.23.12 (d) Replace “A/132/B(M)F-96(SP503)” by “A/132/B(M)F (SP503)”.

### **Chapter 9.1**

- 9.1.3.4 In the last paragraph, replace “this provision shall not” by “these provisions shall not”.
- 9.1.3.5 In the Model for certificate of approval for vehicles carrying certain dangerous goods, in the sentence under the heading of the certificate, delete “European”.

## **II. Draft amendments proposed by the Working group on tanks**

### **Chapter 1.4**

- 1.4.2.2.1 (d) Replace “test” by “inspection”.
- 1.4.3.3 (b) Replace “test” by “inspection”.
- 1.4.3.4 (a) Replace “tests” by “inspections and tests”.
- 1.4.3.4 (b) The amendment applies only to the French text.

### **Chapter 1.6**

- 1.6.3.2 Replace “tests” by “inspections”.
- 1.6.3.8 Replace “test” by “inspection”.
- 1.6.3.16 Amend to read as follows:  
“1.6.3.16 For fixed tanks (tank-vehicles), demountable tanks and battery-vehicles constructed before 1 January 2007 which do not conform to the requirements of 4.3.2, 6.8.2.3, 6.8.2.4 and 6.8.3.4 concerning the tank record, the retention of files for the tank record shall start at the latest at the first periodic inspection after 30 June 2007.”
- 1.6.3.33 The amendment applies only to the French text.
- 1.6.4.5 Replace “test” by “inspection”.
- 1.6.4.18 Amend to read as follows:  
“1.6.4.18 For tank-containers and MECGs constructed before 1 January 2007 which do not conform to the requirements of 4.3.2, 6.8.2.3, 6.8.2.4 and 6.8.3.4 concerning the tank record, the retention of files for the tank record shall start at the latest at the first periodic inspection after 30 June 2007.”
- 1.6.4.32 The amendment applies only to the French text.

### **Chapter 4.3**

- 4.3.1.4 Replace “tests” by “inspections and tests”.

### **Chapter 4.7**

- NOTE 2* Replace “tests” by “inspections and tests”.

### **Chapter 6.8**

- 6.8.2.1.23 Amend the first three sentences to read as follows:  
“The inspection body performing inspections in accordance with 6.8.2.4.1 or 6.8.2.4.4, shall verify and confirm the ability of the manufacturer or the maintenance

or repair shop to perform welding operations and the operation of a weld quality assurance system.”

Amend the last paragraph to read as follows:

“Where there are doubts regarding the quality of welds, including the welds made to repair any defects revealed by the non-destructive checks, additional checks of the welds may be required.”

- 6.8.2.3.1 In the last paragraph, replace in the first sentence “valves and other service equipment” by “service equipment”, and replace in the second sentence “the valves and other service equipment are fit for the intended use” by “the service equipment is fit for the intended use”.
- 6.8.2.4.1 The amendment applies only to the French text.
- 6.8.2.5.1 In the ninth indent, delete “leakproofness”.
- 6.8.2.6 In the heading, replace “and tested” by “, inspected and tested”.
- 6.8.2.7 In the heading, replace “and tested” by “, inspected and tested”.
- 6.8.3.6 In the heading, replace “and tested” by “, inspected and tested”.
- 6.8.3.7 In the heading, replace “and tested” by “, inspected and tested”.

### **III. Draft amendments proposed by the Working group on standards**

#### **Chapter 3.3**

Special Provision 658

Replace “EN ISO 9994:2006 + A1:2008” by “EN ISO 9994:2019”.

#### **Chapter 4.1**

4.1.4.1, P200 (11)

- In the line for “(7) (a) and (10) (p) ISO 11372:2011”, replace “ISO 11372:2011” by “EN ISO 11372:2011” and delete the Note in column “Title of document”.
- In the line for “(7) (a) and (10) (p) ISO 13088:2011”, replace “ISO 13088:2011” by “EN ISO 13088:2011” and delete the Note in column “Title of document”.

4.1.4.1, P200 (12) 3.4

Replace “EN ISO 14245:2010 or EN ISO 15995:2010” by “EN ISO 14245:2010, EN ISO 14245:2019, EN ISO 15995:2010 or EN ISO 15995:2019”.

4.1.6.15, in the table, for “4.1.6.8 Valves with inherent protection”:

- In the fourth row, second column, replace “EN ISO 14245:2010” by “EN ISO 14245:2010 or EN ISO 14245:2019”. Delete “(ISO 14245:2006)” in the third column.
- In the fifth row, second column, replace “EN ISO 15995:2010” by “EN ISO 15995:2010 or EN ISO 15995:2019”. Delete “(ISO 15995:2006)” in the third column.

#### **Chapter 6.2**

6.2.4.1 In the table, under “for design and construction”:

- For “EN ISO 10961:2012”, in column (4), replace “Until further notice” by “Between 1 January 2013 and 31 December 2022”. After the row for “EN ISO 10961:2012”, insert the following row:

EN ISO 10961:2019	Gas cylinders – Cylinder bundles – Design, manufacture, testing and inspection	6.2.3.1 and 6.2.3.4	Until further notice	
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- For “EN ISO 7866:2012 + AC:2014”, “EN ISO 9809-1:2010”, “EN ISO 9809-2:2010”, “EN ISO 9809-3:2010”, delete the reference to the ISO standard in column (2).

6.2.4.1 In the table, under “for closures”:

- For “EN ISO 14245:2010”, in column (2), delete “(ISO 14245:2006)” and in column (4), replace “Until further notice” by “Between 1 January 2013 and 31 December 2022”. After the row for “EN ISO 14245:2010”, insert the following row:

EN ISO 14245:2019	Gas cylinders – Specifications and testing of LPG cylinder valves – Self-closing	6.2.3.1 and 6.2.3.3	Until further notice	
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- For “EN ISO 15995:2010”, in column (2), delete “(ISO 15995:2006)” and in column (4), replace “Until further notice” by “Between 1 January 2013 and 31 December 2022”. After the row for “EN ISO 15995:2010”, insert the following row:

EN ISO 15995:2019	Gas cylinders – Specifications and testing of LPG cylinder valves – Manually operated	6.2.3.1 and 6.2.3.3	Until further notice	
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- For “EN 13175:2014”, in column (4), replace “Until further notice” by “Between 1 January 2017 and 31 December 2022”. After the row for “EN 13175:2014”, insert the following row:

EN 13175:2019 (except clause 6.1.6)	LPG Equipment and accessories – Specification and testing for Liquefied Petroleum Gas (LPG) pressure vessel valves and fittings	6.2.3.1 and 6.2.3.3	Until further notice	
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- For “EN ISO 17871:2015”, in column (2), delete “(ISO 17871:2015)”.
- For “EN ISO 14246:2014”, in column (2), delete “(ISO 14246:2014)”.
- At the end add the following new row:

EN 14129:2014 (except the note in clause 3.11)	LPG Equipment and accessories – Pressure relief valves for LPG pressure vessels <i>NOTE: This standard is applicable to pressure drums.</i>	6.2.3.1, 6.2.3.3 and 6.2.3.4	Until further notice	
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6.2.4.2 In column (2) of the table, delete “(ISO 10462:2013)” and “(ISO 22434:2006)”.

## Chapter 6.8

6.8.2.6.1 Amend the table as follows:

Under “**For equipment**”:

- For “EN 13175:2014”, in column (4), replace “Until further notice” by “Between 1 January 2017 and 31 December 2022”. After the row for “EN ISO 13175:2014”, insert the following row:

EN 13175:2019 (except clause 6.1.6)	LPG Equipment and accessories – Specification and testing for Liquefied Petroleum Gas (LPG) pressure vessel valves and fittings	6.8.2.1.1, 6.8.2.2, 6.8.2.4.1 and 6.8.3.2.3	Until further notice	
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