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## Economic Commission for Europe

### Inland Transport Committee

### Working Party on the Transport of Dangerous Goods

#### Joint Meeting of the RID Committee of Experts and the Working Party on the Transport of Dangerous Goods

Geneva, 13–23 September 2011

Item 4 of the provisional agenda

#### Harmonization with the United Nations Recommendations on the Transport of Dangerous Goods

### Report of the Ad Hoc Working Group on the Harmonization of RID/ADR/ADN with the United Nations Recommendations on the Transport of Dangerous Goods

#### Note by the secretariat

#### Addendum

#### Draft proposal of amendments to RID/ADR/ADN

## Chapter 1.1

1.1.3.3 (RID only:) Amend to read as follows:

"1.1.3.3 Exemptions related to the carriage of liquid fuels

The requirements of RID do not apply to the carriage of:

(a) *(Reserved)*

(b) Fuel contained in fuel tanks of a means of transport where it is destined for its propulsion or the operation of any of its equipment (e.g. cooling systems). The fuel cock between the engine and the fuel tank of motorcycles and pedal cycles with an auxiliary engine, whose tanks contain fuel, shall be closed during carriage. In addition, these motorcycles and pedal cycles with an auxiliary engine shall be loaded upright and secured against falling."

1.1.3.3 Insert the following new sub-paragraph:

"(c) Liquid fuels of UN Nos. 1202, 1203, 1223, 1268, 1863 and 3475 above the quantity specified in Column (7a) of Table A of Chapter 3.2 in means of containment (other than wagons/vehicles) integral to equipment or machinery (e.g. generators, compressors, heating units, etc) as part of their original design type, provided they meet the following requirements:

- (i) The means of containment are in compliance with the construction requirements of the competent authority of the country of manufacture\*;
- (ii) Any valves or openings (e.g. venting devices) in the means of containment containing dangerous goods are closed during carriage;
- (iii) The machinery or equipment are loaded in an orientation to prevent inadvertent leakage of dangerous goods and secured by means capable of restraining the machinery or equipment to prevent any movement during carriage which would change the orientation or cause it to be damaged;
- (iv) Where the means of containment has a capacity of not more than 450 litres, the labelling requirements of 5.2.2 are applied and where the capacity is greater than 450 litres but not more than 1 500 litres the machinery or equipment is labelled on all four external sides in accordance with 5.2.2;
- (v) Where the means of containment has a capacity greater than 1 500 litres, the machinery or equipment is placarded on all four external sides in accordance with 5.3.1.1.1; and
- (vi) The requirement of 5.4.1 applies."

*Consequential amendment: In the French text, amend the heading of 1.1.3.3 to read "Exemptions relatives au transport des combustibles liquides".*

(RID:) Insert the following new sub-section:

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\* For example, compliance with the relevant provisions of Directive 2006/42/EC of the European Parliament and of the Council of 17 May 2006 on machinery, and amending Directive 95/16/EC (Official Journal of the European Union No. L 157 of 9 June 2006, pp. 0024-0086).

**1.1.3.9 Exemptions related to dangerous goods used as a coolant or conditioner during carriage**

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

(ADR:) Insert the following new sub-sections:

"1.1.3.8 (Reserved)

**1.1.3.9 Exemptions related to dangerous goods used as a coolant or conditioner during carriage**

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

(ADN:) Insert the following new sub-sections:

"1.1.3.8 (Reserved)

**1.1.3.9 Exemptions related to dangerous goods used as a coolant or conditioner during carriage**

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

Insert a new section 1.1.5 to read as follows:

**1.1.5 Application of standards**

Where the application of a standard is required and there is any conflict between the standard and the provisions of RID/ADR/ADN, the provisions of RID/ADR/ADN take precedence."

## Chapter 1.2

1.2.1 At the end of the definition for "Bulk container", add ", flexible bulk containers".

1.2.1 In the NOTE to the definition for "Cargo transport unit", replace "of Chapter 5.5" with "of 5.5.2".

1.2.1 In the definition for "Pressure receptacle", replace "and bundles of cylinders" with ", bundles of cylinders and salvage pressure receptacles".

1.2.1 In the definition of "GHS", replace "third" with "fourth" and "ST/SG/AC.10/30/Rev.3" with "ST/SG/AC.10/30/Rev.4".

1.2.1 In the definition of "Manual of Tests and Criteria", amend the text in the parentheses to read "ST/SG/AC.10/11/Rev.5 as amended by document ST/SG/AC.10/11/Rev.5/Amend.1".

1.2.1 In the definition of "Maximum permissible gross mass", in (a), amend the text in parentheses to read "for IBCs".

1.2.1 Delete the definition of "Maximum permissible load".

1.2.1 In the definition of "UN Model Regulations", replace "sixteenth" with "seventeenth" and "(ST/SG/AC.10/1/Rev.16)" with "(ST/SG/AC.10/1/Rev.17)".

1.2.1 Add the following new definitions:

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

"*Salvage pressure receptacle* means a pressure receptacle with a water capacity not exceeding 1 000 litres into which are placed damaged, defective, leaking or non-conforming pressure receptacle(s) for the purpose of carriage e.g. for recovery or disposal;".

## Chapter 1.6

1.6.4 Add the following new transitional measure:

"1.6.4.43 Portable tanks and MECGs manufactured before 1 January 2014 need not comply with the requirements of 6.7.2.13.1 (f), 6.7.3.9.1 (e), 6.7.4.8.1 (e) and 6.7.5.6.1 (d) concerning the marking of the pressure relief devices.".

## Chapter 1.10

1.10.3.1 Amend to read as follows:

### "1.10.3.1 *Definition of high consequence dangerous goods*

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

1.10.3.1.2 High consequence dangerous goods in classes other than Class 7 are those listed in Table 1.10.3.1.2 below and carried in quantities greater than those indicated therein.

[Insert existing Table 1.10.5 renumbered 1.10.3.1.2, but without the entry for Class 7.]

1.10.3.1.3 For dangerous goods of Class 7, high consequence radioactive material is that with an activity equal to or greater than a transport security threshold of 3 000 A<sub>2</sub> per single package (see also 2.2.7.2.2.1) except for the following radionuclides where the transport security threshold is given in Table 1.10.3.1.3 below.

Table 1.10.3.1.3

### Transport security thresholds for specific radionuclides

<i>Element</i>	<i>Radionuclide</i>	<i>Transport security threshold (TBq)</i>
Americium	Am-241	0.6
Gold	Au-198	2
Cadmium	Cd-109	200
Californium	Cf-252	0.2
Curium	Cm-244	0.5
Cobalt	Co-57	7
Cobalt	Co-60	0.3
Cesium	Cs-137	1
Iron	Fe-55	8000
Germanium	Ge-68	7

<i>Element</i>	<i>Radionuclide</i>	<i>Transport security threshold (TBq)</i>
Gadolinium	Gd-153	10
Iridium	Ir-192	0.8
Nickel	Ni-63	600
Paladium	Pd-103	900
Promethium	Pm-147	400
Polonium	Po-210	0.6
Plutonium	Pu-238	0.6
Plutonium	Pu-239	0.6
Radium	Ra-226	0.4
Ruthenium	Ru-106	3
Selenium	Se-75	2
Strontium	Sr-90	10
Thallium	Tl-204	200
Thulium	Tm-170	200
Ytterbium	Yb-169	3

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

This calculation can be made with the formula:

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

Where:

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

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

1.10.3.1.5 When radioactive material possess subsidiary risks of other classes, the criteria of table 1.10.3.1.2 shall also be taken into account (see also 1.7.5)

*Consequential amendments:*

1.10.3.2.1 and 1.10.3.3 (twice) Replace "high consequence dangerous goods (see Table 1.10.5)" with "high consequence dangerous goods (see Table 1.10.3.1.2) or high consequence radioactive material (see 1.10.3.1.3)".

1.10.5 Delete. Renumber 1.10.6 as 1.10.5.

1.10.6 (renumbered 1.10.5) In footnote 2, delete the last sentence ("See also "Guidance and Considerations for the Implementation of INFCIRC/225/Rev.4, the Physical Protection of Nuclear Material and Nuclear Facilities, IAEA-TECDOC-967/Rev.1".").

1.10.4 After "and 0500" insert "and except for UN Nos. 2910 and 2911 if the activity level exceeds the  $A_2$  value". Add the following new sentence at the end "In addition the provisions of this Chapter do not apply to the carriage of UN No. 2912 RADIOACTIVE MATERIAL, LOW SPECIFIC ACTIVITY (LSA-I) and UN No. 2913 RADIOACTIVE MATERIAL, SURFACE CONTAMINATED OBJECTS (SCO-I)".

*Consequential amendment:*

1.1.3.6.2 In the first indent, at the end, add "and except for Class 7 excepted packages of UN Nos. 2910 and 2911 if the activity level exceeds the A<sub>2</sub> value".

## Chapter 2.1

2.1.3.3 In the first sentence, add "meeting the classification criteria of RID/ADR/ADN" after "A solution or mixture".

2.1.3.5 Add "meeting the classification criteria of RID/ADR/ADN and" after "solutions or mixtures".

## Chapter 2.2

2.2.1.1.5 For Division 1.6, delete "detonating".

2.2.1.1.6 In the description for compatibility group N, delete "detonating".

2.2.1.1.8 Transfer the text of 2.2.1.1.8 in a new sub-section 2.2.1.4 with the following modifications:

In the definition for "ARTICLES, EXPLOSIVE, EXTREMELY INSENSITIVE (ARTICLES, EED)", delete "detonating" and "(EIDS)".

[Add a new definition for "CARTRIDGES FOR TOOLS, BLANK"]

*Consequential amendment: In 2.2.1.1.3, replace "2.2.1.1.8" with "2.2.1.4".*

Add a new 2.2.1.1.8 to read as follows:

"2.2.1.1.8 *Exclusion from Class 1*

2.2.1.1.8.1 An article or a substance may be excluded from Class 1 by virtue of test results and the Class 1 definition [with the competent authority approval].

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

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

(b) No rupture or fragmentation of the external casing or movement of the article or detached parts thereof of more than one metre in any direction;

*NOTE: Where the integrity of the article may be affected in the event of an external fire these criteria shall be examined by a fire test, such as described in ISO 12097-3.*

(c) No audible report exceeding 135 dB(C) peak at a distance of one metre;

(d) No flash or flame capable of igniting a material such as a sheet of 80 ± 10 g/m<sup>2</sup> paper in contact with the article; and

(e) No production of smoke, fumes or dust in such quantities that the visibility in a one cubic metre chamber equipped with appropriately sized blow out panels is reduced more than 50% as measured by a calibrated light (lux) meter or radiometer located one metre from a constant light source located at the midpoint on opposite walls. The general guidance on Optical Density Testing in ISO 5659-1 and the general guidance

on the Photometric System described in Section 7.5 in ISO 5659-2 may be used or similar optical density measurement methods designed to accomplish the same purpose may also be employed. A suitable hood cover surrounding the back and sides of the light meter shall be used to minimize effects of scattered or leaking light not emitted directly from the source.

**NOTE 1:** *If during the tests addressing criteria (a), (b), (c) and (d) no or very little smoke is observed the test described in (e) may be waived.*

[**NOTE 2:** *The competent authority may require testing in packaged form if it is determined that, as packaged for transport, the article may pose a greater risk.*].

2.2.2.1.5 Under "Flammable gases", replace "ISO 10156:1996" with "ISO 10156:2010".

2.2.2.1.5 Under "Oxidizing gases", replace "ISO 10156:1996 or ISO 10156-2:2005" with "ISO 10156:2010".

2.2.3.1.2 Replace "F Flammable liquids, without subsidiary risk:" with "F Flammable liquids, without subsidiary risk and articles containing such substances:" and add the following new entry under this heading:

"F3 Articles containing flammable liquids".

2.2.3.3 Amend "Flammable liquids" to read "Flammable liquids and articles containing such substances".

In the list of collective entries, for Flammable liquids without subsidiary risk F, insert a new entry to read:

<u>articles</u>	F3	3269 POLYESTER RESIN KIT 3473 FUEL CELL CARTRIDGES or 3473 FUEL CELL CARTRIDGES CONTAINED IN EQUIPMENT or 3473 FUEL CELL CARTRIDGES PACKED WITH EQUIPMENT
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For F1, delete the entry for UN No. 3269 POLYESTER RESIN KIT.

*Consequential amendment:*

*In Table A of Chapter 3.2, for UN Nos. 3269 ((RID:) thrice / (ADR/ADN:) twice) and 3473, in column (3b) replace "F1" with "F3".*

2.2.52.4 In the table, amend the entries listed below as follows:

<i>Organic peroxide</i>	<i>Column</i>	<i>Amendment</i>
DIISOPROPYL PEROXYDICARBONATE	(last row) Concentration	Replace " $\leq 28$ " with " $\leq 32$ "
DIISOPROPYL PEROXYDICARBONATE	(last row) Diluent type A	Replace " $\geq 72$ " with " $\geq 68$ "
DI-(3,5,5-TRIMETHYLHEXANOYL) PEROXIDE (concentration > 38-82)	(first row) Concentration	Replace "> 38-82" with "> 52-82"

2.2.52.4 Insert the following new entries:

	(2)	(3)	(4)	(5)	(6)	(7)	ADR only: (8)	ADR only: (9)	(10)	(11)
<i>Organic peroxide</i>										
([3R-(3R,5aS,6S,8aS,9R,10R,12S,12aR**)]-DECAHYDRO-10-METHOXY-3,6,9-TRIMETHYL-3,12-EPOXY-12H-PYRANO[4,3-j]-1,2-BENZODIOXEPIN)	≤ 100					OP7			3106	
3,6,9-TRIETHYL-3,6,9-TRIMETHYL-1,4,7-TRIPEROXONANE	≤ 17	≥ 18		≥ 65		OP8			3110	
DI-(3,5,5-TRIMETHYLHEXANOYL) PEROXIDE	> 38-52	≥ 48				OP8	+10	+15	3119	

[2.2.62.1.5.3 Add the following new Note at the end:

**"NOTE:** *Medical equipment which has been drained of free liquid is deemed to meet the requirements of this paragraph and is not subject to the provisions of RID/ADR/ADN."* .]

*(Correction to the 17th revised edition of the United Nations Recommendations on the Transport of Dangerous Goods, Model regulations. See ST/SG/AC.10/C.3/78, Annex I)*

Add a new paragraph 2.2.62.1.5.7 to read as follows:

"2.2.62.1.5.7 Except for:

- (a) Medical waste (UN No. 3291);
- (b) Medical devices or equipment contaminated with or containing infectious substances in Category A (UN No. 2814 or UN No. 2900); and
- (c) Medical devices or equipment contaminated with or containing other dangerous goods that meet the definition of another hazard class,

medical devices or equipment potentially contaminated with or containing infectious substances which are being carried for disinfection, cleaning, sterilization, repair, or equipment evaluation are not subject to provisions of RID/ADR/ADN other than those of this paragraph if packed in packagings designed and constructed in such a way that, under normal conditions of carriage, they cannot break, be punctured or leak their contents. Packagings shall be designed to meet the construction requirements listed in 6.1.4 or 6.6.5 (ADN: of ADR).

These packagings shall meet the general packing requirements of 4.1.1.1 and 4.1.1.2 (ADN: of ADR) and be capable of retaining the medical devices and equipment when dropped from a height of 1.2 m.

The packagings shall be marked "USED MEDICAL DEVICE" or "USED MEDICAL EQUIPMENT". When using overpacks, these shall be marked in the same way, except when the inscription remains visible."

*(Replaces the amendment to 2.2.62.1.5 in ECE/TRANS/WP.15/AC.1/120, Annex II)*

2.2.8.1.6 Add the following table at the end:

"Table 2.2.8.1.6

**Table summarizing the criteria in 2.2.8.1.6**

Packing Group	Exposure Time	Observation Period	Effect
I	≤ 3 min	≤ 60 min	Full thickness destruction of intact skin



II	> 3 min ≤ 1 h	≤ 14 d	Full thickness destruction of intact skin
III	> 1 h ≤ 4 h	≤ 14 d	Full thickness destruction of intact skin
III	-	-	Corrosion rate on either steel or aluminium surfaces exceeding 6.25 mm a year at a test temperature of 55 °C when tested on both materials

".

2.2.9.1.7 Amend to read as follows:

*"Lithium batteries*

2.2.9.1.7 Cells and batteries, cells and batteries contained in equipment, or cells and batteries packed with equipment, containing lithium in any form shall be assigned to UN Nos. 3090, 3091, 3480 or 3481 as appropriate. They may be carried under these entries if they meet the following provisions:

(a) Each cell or battery is of the type proved to meet the requirements of each test of the *Manual of Tests and Criteria*, Part III, sub-section 38.3;

**NOTE:** *Batteries shall be of a design type proved to meet the testing requirements of the Manual of test and criteria, part III, sub-section 38.3, irrespective of whether the cells of which they are composed are of a tested design type.*

(b) Each cell and battery incorporates a safety venting device or is designed to preclude a violent rupture under normal conditions of carriage;

(c) Each cell and battery is equipped with an effective means of preventing external short circuits;

(d) Each battery containing cells or series of cells connected in parallel is equipped with effective means as necessary to prevent dangerous reverse current flow (e.g., diodes, fuses, etc.);

(e) Cells and batteries shall be manufactured under a quality management programme that includes:

- (i) A description of the organizational structure and responsibilities of personnel with regard to design and product quality;
- (ii) The relevant inspection and test, quality control, quality assurance, and process operation instructions that will be used;
- (iii) Process controls that should include relevant activities to prevent and detect internal short circuit failure during manufacture of cells;
- (iv) Quality records, such as inspection reports, test data, calibration data and certificates. Test data shall be kept and made available to the competent authority upon request;
- (v) Management reviews to ensure the effective operation of the quality management programme;
- (vi) A process for control of documents and their revision;
- (vii) A means for control of cells or batteries that are not conforming to the type tested as mentioned in (a) above;

- (viii) Training programmes and qualification procedures for relevant personnel; and
- (ix) Procedures to ensure that there is no damage to the final product.

**NOTE:** *In house quality management programmes may be accepted. Third party certification is not required, but the procedures listed in (i) to (ix) above shall be properly recorded and traceable. A copy of the quality management programme shall be made available to the competent authority upon request.*

Lithium batteries are not subject to the provisions of RID/ADR/ADN if they meet the requirements of special provision 188 of Chapter 3.3.

**NOTE:** *The entry UN 3171 Battery-powered vehicle or UN 3171 Battery-powered equipment only applies to vehicles powered by wet batteries, sodium batteries, lithium metal batteries or lithium ion batteries and equipment powered by wet batteries or sodium batteries transported with these batteries installed.*

*For the purpose of this UN number, vehicles are self-propelled apparatus designed to carry one or more persons or goods. Examples of such vehicles are electrically-powered cars, motorcycles, scooters, three- and four-wheeled vehicles or motorcycles, e-bikes, wheel-chairs, lawn tractors, boats and aircraft.*

*Examples of equipment are lawnmowers, cleaning machines or model boats and model aircraft. Equipment powered by lithium metal batteries or lithium ion batteries shall be consigned under the entries UN 3091 LITHIUM METAL BATTERIES CONTAINED IN EQUIPMENT or UN 3091 LITHIUM METAL BATTERIES PACKED WITH EQUIPMENT or UN 3481 LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT or UN 3481 LITHIUM ION BATTERIES PACKED WITH EQUIPMENT, as appropriate.*

*Hybrid electric vehicles powered by both an internal combustion engine and wet batteries, sodium batteries, lithium metal batteries or lithium ion batteries, transported with the battery(ies) installed shall be classified under the entries UN 3166 vehicle, flammable gas powered or UN 3166 vehicle, flammable liquid powered, as appropriate. Vehicles which contain a fuel cell shall be classified under the entries UN 3166 vehicle, fuel cell, flammable gas powered or UN 3166 vehicle, fuel cell, flammable liquid powered, as appropriate."*

*(For sub-paragraph (a), correction to the 17th revised edition of the United Nations Recommendations on the Transport of Dangerous Goods, Model regulations. See ST/SG/AC.10/C.3/78, Annex I)*

*Consequential amendment:*

*Add a new transitional measure to read as follows:*

*"1.6.1.24 Lithium cells and batteries manufactured before 1 January 2014 which had been tested in accordance with the requirements applicable until 31 December 2012 but which had not been tested in accordance with the requirements applicable as from 1 January 2013, and appliances containing such lithium cells or batteries, may continue to be carried if all the other applicable requirements are fulfilled."*

2.2.9.1.14 Add the following new entry in the list before the Note:

"Electric double layer capacitors (with an energy storage capacity greater than 0.3 Wh)".

In the Note, after "3171 battery-powered equipment (wet battery)" insert "(see also the NOTE at the end of 2.2.9.1.7)".

2.2.9.3 For M11, add the following new entry at the end:

"3499 CAPACITOR, electric double layer (with an energy storage capacity greater than 0.3 Wh)".

## Chapter 3.1

3.1.3.2 In the first sentence, add "meeting the classification criteria of RID/ADR/ADN" after "A solution or mixture".

3.1.3.3 Add "meeting the classification criteria of RID/ADR/ADN" after "A solution or mixture".

## Chapter 3.2

### 3.2.1 Table A

UN Nos. 0012, 0014 and 0055: Insert "364" in column (6) and replace "0" with "5 kg" in column (7a).

UN No. 0014: In column (2), after "CARTRIDGES, SMALL ARMS, BLANK", insert "or CARTRIDGES FOR TOOLS, BLANK" and amend Table B accordingly.

UN No. 0144: Insert "358" and delete "500" in column (6).

UN Nos. 1162, 1196, 1250, 1298, 1305, 1724, 1728, 1747, 1753, 1762, 1763, 1766, 1767, 1769, 1771, 1781, 1784, 1799, 1800, 1801, 1804, 1816, 1818, 2434, 2435, 2437, 2985, 2986, 2987, 3361 and 3362: Amend the code to read "E0" in column (7b).

For all entries of UN Nos. 1202, 1203, 1223, 1268, 1863 and 3475: Insert "363" in column (6).

UN Nos. 1334, 1350, 1454, 1474, 1486, 1498, 1499, 1942, 2067, 2213, 3077, 3377 and 3378, entries of Packing Group III: Add "BK3" in column (10).

UN No. 1792:

Add ", SOLID" at the end of the name in column (2) and amend Table B accordingly.

In column (3b), replace "C1" with "C2".

In column (7a), replace "1 L" with "1 kg"

In column (8), replace "P001 IBC02" with "P002 IBC08".

In column (9a), add "B4"

In column (9b), replace "MP15" with "MP10".

In column (12), insert [SGAN].

In column (16), add "V11"/"W11".

UN No. 1950: Replace "P003" with "P207" in column (8) and delete "PP17" in column (9a) (twelve times).

UN Nos. 2208 and 3486: Add "L3" against "LP02" in column (9a).

UN No. 2381:

Insert "+6.1" in column (5). Replace "T4" with "T7" in column (10) and replace "TP1" with "TP2 TP39" in column (11).

Amend the classification code in column (3b) to read "FT1".

In column (8), delete "R001"

[In column (12), replace "LGBF" with "L4BH" and in column (13), add "TU15".]

In column (18), add "CW13 CW28"/"CV13 CV28".

(ADR only:) In column (19), replace "S20" with "S22".

In column (20), amend the code to read "336".

*(Correction to the 17th revised edition of the United Nations Recommendations on the Transport of Dangerous Goods, Model regulations. See ST/SG/AC.10/C.3/78, Annex I)*

UN No. 2590: In column (7a), replace "0" with "5 kg".

*(Correction to the 17th revised edition of the United Nations Recommendations on the Transport of Dangerous Goods, Model regulations. See ST/SG/AC.10/C.3/78, Annex I)*

UN No. 2809:

Insert "+6.1" in column (5) and "365" in column (6). Delete "599" in column (6).

Amend the classification code in column (3b) to read "CT1".

In column (18), add "CW13 CW28"/"CV13 CV28".

In column (20), amend the code to read "86".

UN No. 3064: Insert "359" in column (6).

UN Nos. 3091 and 3481: Insert "360" in column (6).

UN No. 3129, Packing Group II, and UN No. 3148, Packing Group II: Insert "TP7" in column (11).

UN No. 3129, Packing Group III, and UN No. 3148, Packing Group III: Replace "TP1" with "TP2 TP7" in column (11).

UN No. 3148, Packing Group I: Replace "T9" with "T13" in column (10) and insert "TP38" in column (11).

UN Nos. 3381 to 3390 and 3488 to 3491: Replace "with an inhalation toxicity" with "with an LC<sub>50</sub>" in column (2) and amend Table B and the list of collective entries in 2.2.61.3 accordingly.

UN Nos. 3492 and 3493: Delete these entries and amend Table B and the list of collective entries in 2.2.61.3 accordingly.

For the following entries, amend the name and description in column (2) as indicated below and amend Table B and the list of collective entries in 2.2.61.3 accordingly:

<i>UN No.</i>	<i>Name and description</i>
3276	NITRILES, LIQUID, TOXIC, N.O.S.
3278	ORGANOPHOSPHORUS COMPOUND, LIQUID, TOXIC, N.O.S.
3282	ORGANOMETALLIC COMPOUND, LIQUID, TOXIC, N.O.S.
3439	NITRILES, SOLID, TOXIC, N.O.S.
3464	ORGANOPHOSPHORUS COMPOUND, SOLID, TOXIC, N.O.S.

3467

ORGANOMETALLIC COMPOUND, SOLID, TOXIC, N.O.S.

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Add the following new entries and amend Table Band the list of collective entries 2.2.xy.3 accordingly:

(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7a)	(7b)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
3496	Batteries, nickel-metal hydride	9	M11	NOT SUBJECT TO RID/ADR/ADN																		
3497	KRILL MEAL	4.2	S2	II	4.2	300	0	E2	P410 IBC06		MP14	T3	TP33	SGAN	-	AT	2 ADR: (D/E)	W1/ V1	-	-	-	40
3497	KRILL MEAL	4.2	S2	III	4.2	300	0	E1	P002 IBC08 LP02 R001	B3	MP14	T1	TP33	SGAV	-	AT	3 ADR: (E)	W1/ V1	VW4/ VV4	-	RID: CE10	40
3498	IODINE MONOCHLORIDE, LIQUID (same data as for UN 1792 in RID/ADR 2011)	8	C1	II	8	-	1 L	E2	P001 IBC02	-	MP15	T7	TP2	L4BN	-	AT	2 ADR: (E)	-	-	-	RID: CE11	80
3499	CAPACITOR, electric double layer (with an energy storage capacity greater than 0.3 Wh)	9	M11	-	9	361	0	E0	P003	-	-	-	-	-	-	-	4 ADR: (E)	-	-	-	RID: CE10	RID: 90
3500	CHEMICAL UNDER PRESSURE, N.O.S.	2	8A	-	2.2	274 659	0	E0	P206	-	MP9	T50	TP4 TP40			AT	3 ADR: (C/E)	-	-	CW9 CW10 CW12 CW36 / CV9 CV10 CV12 CV36	RID: CE2	20
3501	CHEMICAL UNDER PRESSURE, FLAMMABLE, N.O.S.	2	8F	-	2.1	274 659	0	E0	P206	PP89	MP9	T50	TP4 TP40			FL	2 ADR: (B/D)	-	-	CW9 CW10 CW12 CW36 / CV9 CV10 CV12 CV36	RID: CE2 ADR: S2	23

(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7a)	(7b)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
3502	CHEMICAL UNDER PRESSURE, TOXIC, N.O.S.	2	8T	-	2.2 +6.1	274 659	0	E0	P206	PP89	MP9	T50	TP4 TP40			AT	1 ADR: (C/D)	-	-	CW9 CW10 CW12 CW28 CW36 / CV9 CV10 CV12 CV28 CV36	RID: CE2	26
3503	CHEMICAL UNDER PRESSURE, CORROSIVE, N.O.S.	2	8C	-	2.2 +8	274 659	0	E0	P206	PP89	MP9	T50	TP4 TP40			AT	1 ADR: (C/D)	-	-	CW9 CW10 CW12 CW36 / CV9 CV10 CV12 CV36	RID: CE2	28
3504	CHEMICAL UNDER PRESSURE, FLAMMABLE, TOXIC, N.O.S.	2	8TF	-	2.1 +6.1	274 659	0	E0	P206	PP89	MP9	T50	TP4 TP40			FL	1 ADR: (B/D)	-	-	CW9 CW10 CW12 CW28 CW36 / CV9 CV10 CV12 CV28 CV36	RID: CE2 ADR: S2	263
3505	CHEMICAL UNDER PRESSURE, FLAMMABLE, CORROSIVE, N.O.S.	2	8FC	-	2.1 +8	274 659	0	E0	P206	PP89	MP9	T50	TP4 TP40			FL	1 ADR: (B/D)	-	-	CW9 CW10 CW12 CW36 / CV9 CV10 CV12 CV36	RID: CE2 ADR: S2	238

(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7a)	(7b)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
3506	MERCURY CONTAINED IN MANUFACTURED ARTICLES	8	CT3	III	8 +6.1	366	5 kg	E0	P003	PP90	[MP15]	-	-	-	-	-	3 ADR: (E)	-	-	CW13 [CW28]/ CV13 [CV28]	RID: CE11	RID: 86

*(For UN No. 3497, packing group III, correction to the 17th revised edition of the United Nations Recommendations on the Transport of Dangerous Goods, Model regulations. See ST/SG/AC.10/C.3/78, Annex I)*



*Consequential amendments for chemicals under pressure:*

1.1.3.6.3 For transport category 1, in column (2), for Class 2, add the following new line at the end:

"chemicals under pressure: UN Nos. 3502, 3503, 3504 and 3505".

For transport category 2, in column (2), for Class 2, add the following new line at the end:

"chemicals under pressure: UN No. 3501".

For transport category 3, in column (2), for Class 2, add the following new line at the end:

"chemicals under pressure: UN No. 3500".

2.2.2.1.2 Insert a new subdivision at the end to read as follows:

"8. Chemicals under pressure: liquids, pastes or powders, pressurized with a propellant that meets the definition of a compressed or liquefied gas."

2.2.2.1.3 At the beginning, replace "(except aerosols)" with "(except aerosols and chemicals under pressure)".

In NOTE 2, at the end, add the following new sentence "For chemicals under pressure (UN Nos. 3500 to 3505), see 2.2.2.1.7."

2.2.2.1.5 At the beginning, replace "(except aerosols)" with "(except aerosols and chemicals under pressure)".

Add a new 2.2.2.1.7 to read as follows:

"2.2.2.1.7 *Chemicals under pressure*

Chemicals under pressure (UN Nos. 3500 to 3505) are assigned to one of the following groups according to their hazardous properties, as follows:

- A asphyxiant;
- F flammable;
- T toxic;
- C corrosive;
- FC flammable, corrosive;
- TF toxic, flammable.

The classification depends on the hazard characteristics of the components in the different states:

The propellant;

The liquid; or

The solid.

**NOTE 1:** *Gases, which meet the definition of toxic gases or of oxidizing gases according to 2.2.2.1.5 or of pyrophoric gases according to packing instruction P200 in 4.1.4.1, shall not be used as a propellant in chemicals under pressure.*

**NOTE 2:** *Chemicals under pressure with contents meeting the criteria for packing group I for toxicity or corrosivity or with contents meeting both the criteria for packing*

group II or III for toxicity and for packing group II or III for corrosivity shall not be accepted for carriage under these UN numbers.

**NOTE 3:** Chemicals under pressure with components meeting the properties of Class 1; liquid desensitized explosives of Class 3; self-reactive substances and solid desensitized explosives of Class 4.1; Class 4.2; Class 4.3; Class 5.1; Class 5.2; Class 6.2; or Class 7, shall not be used for carriage under these UN numbers.

**NOTE 4:** A chemical under pressure in an aerosol dispenser shall be carried under UN No. 1950.

The following criteria shall apply:

(a) Assignment to group A shall apply when the contents do not meet the criteria for any other group according to sub-paragraphs (b) to (e) below;

(b) Assignment to group F shall apply if one of the components, which can be a pure substance or a mixture, needs to be classified as flammable. Flammable components are flammable liquids and liquid mixtures, flammable solids and solid mixtures or flammable gases and gas mixtures meeting the following criteria:

(i) A flammable liquid is a liquid having a flashpoint of not more than 93 °C;

(ii) A flammable solid is a solid which meets the criteria in 2.2.41.1 ;

(iii) A flammable gas is a gas which meets the criteria in 2.2.2.1.5 ;

(c) Assignment to group T shall apply when the contents, other than the propellant, are classified as Class 6.1, packing groups II or III;

(d) Assignment to group C shall apply when the contents, other than the propellant, meet the criteria for Class 8, packing groups II or III;

(e) When the criteria for two groups amongst groups F, T, and C are met, assignment to groups FC or TF shall apply, as relevant."

2.2.2.3 Add the following new table at the end:

<b>Chemicals under pressure</b>		
<b>Classification code</b>	<b>UN No.</b>	<b>Name of the substance or article</b>
8A	3500	CHEMICAL UNDER PRESSURE, N.O.S.
8F	3501	CHEMICAL UNDER PRESSURE, FLAMMABLE, N.O.S.
8T	3502	CHEMICAL UNDER PRESSURE, TOXIC, N.O.S.
8C	3503	CHEMICAL UNDER PRESSURE, CORROSIVE, N.O.S.
8TF	3504	CHEMICAL UNDER PRESSURE, FLAMMABLE, TOXIC, N.O.S.
8FC	3505	CHEMICAL UNDER PRESSURE, FLAMMABLE, CORROSIVE, N.O.S.

(ADR only:)

5.3.2.3.2 Insert the following new lines:

"28 gas, corrosive"

"238 gas, flammable corrosive"

*Consequential amendment for capacitors:*

1.1.3.6.3 For transport category 4, in column (2), for Class 9, replace "UN No. 3268" with "UN Nos. 3268 and 3499".

*Consequential amendments for UN No. 3506:*

2.2.8.1.2 Replace "C1-C10 Corrosive substances without subsidiary risk:" with "C1-C11 Corrosive substances without subsidiary risk and articles containing such substances:" and transfer the entry for C11 under this heading.

Amend the heading for CT to read "Corrosive substances, toxic and articles containing corrosive substances, toxic".

Under this heading, insert a new subdivision CT3 to read as follows:

"CT3 Articles".

2.2.8.3 Amend the headings of the tables as follows:

Replace "Corrosive substances without subsidiary risk" with "Corrosive substances without subsidiary risk and articles containing such substances".

Replace "Corrosive substances with subsidiary risk(s)" with "Corrosive substances with subsidiary risk(s) and articles containing such substances".

In the first table, for Articles, C11, insert the following new entries:

1774	FIRE EXTINGUISHER CHARGES, corrosive liquid
2028	BOMBS, SMOKE, NON-EXPLOSIVE with corrosive liquid, without initiating device
3477	FUEL CELL CARTRIDGES containing corrosive substances, or
3477	FUEL CELL CARTRIDGES CONTAINED IN EQUIPMENT, containing corrosive substances, or
3477	FUEL CELL CARTRIDGES PACKED WITH EQUIPMENT, containing corrosive substances

In the second table, for CT, insert a new entry to read:

articles CT3 **3506 MERCURY CONTAINED IN MANUFACTURED ARTICLES**

### Chapter 3.3

3.3.1

**SP188 (b)** At the end, add ", except those manufactured before 1 January 2009".

*Consequential amendment: In Table A of Chapter 3.2, for UN Nos. 3090, 3091, 3480 and 3481, delete "656" in column (6). In Chapter 3.3, amend SP 656 to read "656 (Deleted)".*

**SP188 (c)** Amend to read as follows:

"(c) Each cell or battery meets the provisions of 2.2.9.1.7 (a) and (e);".

**SP188 (e)** Insert the following new second sentence: "This requirement does not apply to devices which are intentionally active in transport (radio frequency identification (RFID) transmitters, watches, sensors, etc.) and which are not capable of generating a dangerous evolution of heat".

**SP230** Amend to read as follows:

"**230** Lithium cells and batteries may be carried under this entry if they meet the provisions of 2.2.9.1.7".

**SP239** In the first sentence, replace, "sodium, sulphur and/or polysulphides" with "sodium, sulphur or sodium compounds (e.g. sodium polysulphides and sodium tetrachloroaluminate)".

**SP240** Amend to read as follows:

"**240** See the NOTE in 2.2.9.1.7."

*Consequential amendment:*

*In Table A of Chapter 3.2, for UN No. 3171, after "NOT SUBJECT TO RID/ADR/ADN" insert ", see also special provision 240 in Chapter 3.3."*

**SP272** In the text in parentheses, at the end, add "or UN No. 0150 as appropriate".

**SP280** Replace "pressure vessel" with "pressure receptacle".

**SP289** Replace "installed in conveyances or in completed conveyance components" with "installed in vehicles, wagons, vessels or aircraft or in completed components".

**SP296 (c)** Insert "or liquefied" after "compressed".

**SP296** Add the following new paragraph at the end:

"Life-saving appliances packed in strong rigid outer packagings with a total maximum gross mass of 40 kg, containing no dangerous goods other than compressed or liquefied gases of Class 2, group A or group O, in receptacles with a capacity not exceeding 120 ml, installed solely for the purpose of the activation of the appliance, are not subject to the requirements of RID/ADR/ADN .".

**SP300** Replace "Fish meal or fish scrap" with "Fish meal, fish scrap and krill meal".

**SP327** In the third sentence, replace "P003" with "P207".

**SP328** Add the following new paragraph at the end:

"When lithium metal or lithium ion batteries are contained in the fuel cell system, the consignment shall be consigned under this entry and under the appropriate entries for UN 3091 LITHIUM METAL BATTERIES CONTAINED IN EQUIPMENT or UN 3481 LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT.".

**SP338** Amend paragraph (b) to read as follows:

"(b) Not contain more than 200 ml liquefied flammable gas, the vapour pressure of which shall not exceed 1 000 kPa at 55 °C; and".

**SP356** Amend the first sentence to read as follows: "Metal hydride storage systems installed in vehicles, wagons, vessels or aircraft or in completed components or intended to be installed in vehicles, wagons, vessels or aircraft shall be approved by the competent authority of the country of manufacture<sup>1</sup> before acceptance for carriage.".

The text of footnote 1 is unchanged.

Add the following new special provisions:

"**123** (*Reserved*)".

"**358** Nitroglycerin solution in alcohol with more than 1% but not more than 5% nitroglycerin may be classified in Class 3 and assigned to UN 3064 provided all the requirements of packing instruction P300 of 4.1.4.1 (ADN: of ADR) are complied with.".

*Consequential amendment: In Table A of Chapter 3.2, for UN No. 0144, delete "500" in column (6). In Chapter 3.3, amend special provision 500 to read "500 (Deleted)".*

"**359** Nitroglycerin solution in alcohol with more than 1% but not more than 5% nitroglycerin shall be classified in Class 1 and assigned to UN 0144 if not all the requirements of packing instruction P300 of 4.1.4.1 [ADN: of ADR] are complied with.".

"**360** Vehicles only powered by lithium metal batteries or lithium ion batteries shall be classified under the entry UN 3171 battery-powered vehicle."

"**361** This entry applies to electric double layer capacitors with an energy storage capacity greater than 0.3 Wh. Capacitors with an energy storage capacity of 0.3 Wh or less are not subject to RID/ADR/ADN. Energy storage capacity means the energy held by a capacitor, as calculated using the nominal voltage and capacitance. All capacitors to which this entry applies, including capacitors containing an electrolyte that does not meet the classification criteria of any class of dangerous goods, shall meet the following conditions:

(a) Capacitors not installed in equipment shall be carried in an uncharged state. Capacitors installed in equipment shall be carried either in an uncharged state or protected against short circuit;

(b) Each capacitor shall be protected against a potential short circuit hazard in carriage as follows:

- (i) When a capacitor's energy storage capacity is less than or equal to 10Wh or when the energy storage capacity of each capacitor in a module is less than or equal to 10 Wh , the capacitor or module shall be protected against short circuit or be fitted with a metal strap connecting the terminals; and
- (ii) When the energy storage capacity of a capacitor or a capacitor in a module is more than 10 Wh, the capacitor or module shall be fitted with a metal strap connecting the terminals;

(c) Capacitors containing dangerous goods shall be designed to withstand a 95 kPa pressure differential;

(d) Capacitors shall be designed and constructed to safely relieve pressure that may build up in use, through a vent or a weak point in the capacitor casing. Any liquid which is released upon venting shall be contained by the packaging or by the equipment in which a capacitor is installed; and

(e) Capacitors shall be marked with the energy storage capacity in Wh.

Capacitors containing an electrolyte not meeting the classification criteria of any class of dangerous goods, including when installed in equipment, are not subject to other provisions of RID/ADR/ADN.

Capacitors containing an electrolyte meeting the classification criteria of any class of dangerous goods, with an energy storage capacity of 10 Wh or less are not subject to other provisions of RID/ADR/ADN when they are capable of withstanding a 1.2 metre drop test unpackaged on an unyielding surface without loss of contents.

Capacitors containing an electrolyte meeting the classification criteria of any class of dangerous goods that are not installed in equipment and with an energy storage capacity of more than 10 Wh are subject to RID/ADR/ADN.

Capacitors installed in equipment and containing an electrolyte meeting the classification criteria of any class of dangerous goods, are not subject to other provisions of RID/ADR/ADN provided the equipment is packaged in a strong outer packaging constructed of suitable material and of adequate strength and design, in relation to the packaging's intended use and in such a manner as to prevent accidental functioning of capacitors during carriage. Large robust equipment containing capacitors may be offered for carriage unpackaged or on pallets when capacitors are afforded equivalent protection by the equipment in which they are contained.

*NOTE: Capacitors which by design maintain a terminal voltage (e.g. asymmetrical capacitors) do not belong to this entry."*

"362 (Reserved)".

"363 See 1.1.3.3 (c)."

"364 This article may only be carried under the provisions of Chapter 3.4 if, as presented for carriage, the package is capable of passing the test in accordance with Test Series 6(d) of Part I of the *Manual of Tests and Criteria* as determined by the competent authority."

"365 For manufactured instruments and articles containing mercury, see UN 3506."

"366 Manufactured instruments and articles containing not more than 1 kg of mercury are not subject to RID/ADR/ADN."

*Consequential amendment: In Table A of Chapter 3.2, for UN No. 2809, delete "599" in column (6). In Chapter 3.3, amend SP 599 to read "599 (Deleted)".*

"659 Substances to which PP86 or TP7 are assigned in Column (9a) and Column (11) of Table A in Chapter 3.2 and therefore require air to be eliminated from the vapour space, shall not be used for carriage under this UN number but shall be carried under their respective UN numbers as listed in Table A of Chapter 3.2.

*NOTE: See also 2.2.2.1.7."*

3.3.1 Replace "358-499 (Reserved)" with "367-499 (Reserved)".

## Chapter 3.4

[3.4.1 (g) Before "7.5.7" insert "7.5.2.4, ".]

3.4.2 Amend to read as follows:

"3.4.2 Dangerous goods shall be packed only in inner packagings placed in suitable outer packagings. Intermediate packagings may be used. In addition, for articles of Division 1.4, Compatibility Group S, the provisions of section 4.1.5 (ADN: of ADR) shall be fully complied with. The use of inner packagings is not necessary for the carriage of articles such as aerosols or "receptacles, small, containing gas". The total gross mass of the package shall not exceed 30 kg."

3.4.3 Add the following text at the beginning: "Except for articles of Division 1.4, Compatibility Group S...".

## Chapter 3.5

3.5.1 Insert a new sub-section 3.5.1.4 to read as follows:

"3.5.1.4 Excepted quantities of dangerous goods assigned to codes E1, E2, E4 and E5 with a maximum net quantity of dangerous goods per inner packaging limited to 1 ml for liquids and gases and 1 g for solids and a maximum net quantity of dangerous goods per outer packaging which does not exceed 100 g for solids or 100 ml for liquids and gases are only subject to:

(a) The provisions of 3.5.2, except that an intermediate packaging is not required if the inner packagings are securely packed in an outer packaging with cushioning material in such a way that, under normal conditions of carriage, they cannot break, be punctured, or leak their contents; and for liquid dangerous goods, the outer packaging

contains sufficient absorbent material to absorb the entire contents of the inner packagings;  
and

- (b) The provisions of 3.5.3."

## Chapter 4.1

Insert a new 4.1.1.16 to read as follows and renumber following sub-sections accordingly:

"4.1.1.16 Where ice is used as a coolant it shall not affect the integrity of the packaging."

*Consequential amendment: In 4.1.8.2, replace "4.1.1.16" with "4.1.1.17".*

Insert a new sub-section 4.1.1.20 to read as follows:

### **4.1.1.20 Use of salvage pressure receptacles**

4.1.1.20.1 In the case of damaged, defective, leaking or non-conforming pressure receptacles, salvage pressure receptacles according to 6.2.3.11 may be used.

**NOTE:** A salvage pressure receptacle may be used as an overpack in accordance with 5.1.2. When used as an overpack, markings shall be in accordance with 5.1.2.1 instead of 5.2.1.3.

4.1.1.20.2 Pressure receptacles shall be placed in salvage pressure receptacles of suitable size. More than one pressure receptacle may be placed in the same salvage pressure receptacle only if the contents are known and do not react dangerously with each other (see 4.1.1.6). Measures shall be taken to prevent movement of the pressure receptacles within the salvage pressure receptacle e.g. by partitioning, securing or cushioning.

4.1.1.20.3 A pressure receptacle may only be placed in a salvage pressure receptacle if:

(a) The salvage pressure receptacle is in accordance with 6.2.3.11 and a copy of the approval certificate is available;

(b) Parts of the salvage pressure receptacle which are, or are likely to be in direct contact with the dangerous goods will not be affected or weakened by those dangerous goods and will not cause a dangerous effect (e.g. catalyzing reaction or reacting with the dangerous goods); and

(c) The contents of the contained pressure receptacle(s) is limited in pressure and volume so that if totally discharged into the salvage pressure receptacle, the pressure in the salvage pressure receptacle at 65 °C will not exceed the test pressure of the salvage pressure receptacle (for gases, see packing instruction in P200 (3) in 4.1.4.1). The reduction of the useable water capacity of the salvage pressure receptacle, e.g. by any contained equipment and cushioning, shall be taken into account.

4.1.1.20.4 The proper shipping name, the UN Number preceded by the letters "UN" and label(s) as required for packages in Chapter 5.2 applicable to the dangerous goods inside the contained pressure receptacle(s) shall be applied to the salvage pressure receptacle for carriage.

4.1.1.20.5 Salvage pressure receptacles shall be cleaned, purged and visually inspected internally and externally after each use. They shall be periodically inspected and tested in accordance with [6.2.1.6.1] and [6.2.3.5] at least once every five years."

*Consequential amendments:*

*The sub-section on chemical compatibility 4.1.1.19 is renumbered 4.1.1.21.*

1.6.1.7 *Replace "4.1.1.19" with "4.1.1.21".*

4.1.1.2 *In the Note, replace "4.1.1.19" with "4.1.1.21".*

6.1.5.2.6 *In the first paragraph, replace "4.1.1.19" with "4.1.1.21".*

6.1.5.2.7 *In the first sentence, replace "4.1.1.19" with "4.1.1.21". In the last sentence, replace "4.1.1.19.2" with "4.1.1.21.2".*

6.5.6.3.5 *In the first paragraph, replace "4.1.1.19" with "4.1.1.21".*

6.5.6.3.6 *In the last sentence, replace "4.1.1.19.2" with "4.1.1.21.2".*

4.1.3.6.1 Replace "and bundles of cylinders" with ", bundles of cylinders and salvage pressure receptacles".

4.1.4.1

**P001** For "Combination packagings", under "Outer packagings", amend the entries for "Drums" to read as follows (the values for Maximum capacity/Net mass remain unchanged):

steel (1A1, 1A2)
aluminium (1B1, 1B2)
other metal (1N1, 1N2)
plastics (1H1, 1H2)
plywood (1D)
fibre (1G)

**P001** For "Combination packagings", under "Outer packagings", "Boxes", after "aluminium (4B)", insert the following row:

other metal (4N)	250 kg	400 kg	400 kg
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**P001** For "Combination packagings", under "Outer packagings", amend the entries for "Jerricans" to read as follows (the values for Maximum capacity/Net mass remain unchanged):

steel (3A1, 3A2)
aluminium (3B1, 3B2)
plastics (3H1, 3H2)

**P002** For "Combination packagings", under "Outer packagings", amend the entries for "Drums" to read as follows (the values for Maximum net mass remain unchanged):

steel (1A1, 1A2)
aluminium (1B1, 1B2)
other metal (1N1, 1N2)
plastics (1H1, 1H2)
plywood (1D)
fibre (1G)

**P002** For "Combination packagings", "Outer packagings", "Boxes", after "aluminium (4B)", insert the following row:



other metal (4N)	400 kg	400 kg	400 kg
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**P002** For "Combination packagings", under "Outer packagings", amend the entries for "Jerricans" to read as follows (the values for Maximum net mass remain unchanged):

steel (3A1, 3A2)
aluminium (3B1, 3B2)
plastics (3H1, 3H2)

**P002** For "Single packagings", "Boxes", after "aluminium (4B)<sup>e</sup>", insert the following row:

other metal (4N) <sup>e</sup>	Not allowed	400 kg	400 kg
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**P003** In special packing provision PP17, replace "UN Nos. 1950 and" with "UN No.". Delete special packing provision PP87. In special packing provision RR6 specific to RID and ADR, replace "UN 1950 and" with "UN No.".

**P003** Insert the following new special packing provision PP90:

"PP90 For UN No. 3506, sealed inner liners or bags of strong leak-proof and puncture resistant material impervious to mercury which will prevent escape of the substance from the package irrespective of the position of the package shall be used. "

**P004** Amend to read as follows:

<b>P004</b>	<b>PACKING INSTRUCTION</b>	<b>P004</b>
This instruction applies to UN Nos. 3473, 3476, 3477, 3478 and 3479.		
The following packagings are authorized:		
(1)	For fuel cell cartridges, provided that the general provisions of <b>4.1.1.1, 4.1.1.2, 4.1.1.3, 4.1.1.6</b> and <b>4.1.3</b> are met: Drums (1A2, 1B2, 1N2, 1H2, 1D, 1G); Boxes (4A, 4B, 4N, 4C1, 4C2, 4D, 4F, 4G, 4H1, 4H2); Jerricans (3A2, 3B2, 3H2). Packagings shall conform to the packing group II performance level.	
(2)	For fuel cell cartridges packed with equipment: strong outer packagings which meet the general provisions of <b>4.1.1.1, 4.1.1.2, 4.1.1.6</b> and <b>4.1.3</b> . When fuel cell cartridges are packed with equipment, they shall be packed in inner packagings or placed in the outer packaging with cushioning material or divider(s) so that the fuel cell cartridges are protected against damage that may be caused by the movement or placement of the contents within the outer packaging. The equipment shall be secured against movement within the outer packaging. For the purpose of this packing instruction, "equipment" means apparatus requiring the fuel cell cartridges with which it is packed for its operation.	
(3)	For fuel cell cartridges contained in equipment: strong outer packagings which meet the general provisions of <b>4.1.1.1, 4.1.1.2, 4.1.1.6</b> and <b>4.1.3</b> . Large robust equipment (see 4.1.3.8) containing fuel cell cartridges may be carried unpackaged. For fuel cell cartridges contained in equipment, the entire system shall be protected against short circuit and inadvertent operation.	

**P010** For "Combination packagings", under "Outer packagings":

- Under "Drums", for "steel", insert "1A1," before "1A2";
- Under "Drums", for "plastics", insert "1H1," before "1H2";

**P010** At the end, add the following new row:

**Steel pressure receptacles**, provided that the general provisions of 4.1.3.6 are met.

**P111** For "Inner packagings and arrangements", after the entries for bags, insert two new rows to read:

**"Receptacles**  
wood".

**P111** For "Outer packagings and arrangements ", "Boxes", after "aluminium (4B)", insert a new row to read: "other metal (4N)".

**P111** Amend the entries under "Outer packagings and arrangements ", "Drums" to read:

steel (1A1, 1A2)  
aluminium (1B1, 1B2)  
other metal (1N1, 1N2)  
plywood (1D)  
fibre (1G)  
plastics (1H1, 1H2)

**P111** Amend special packing provision PP43 to read as follows:

"PP43 For UN 0159, inner packagings are not required when metal (1A1, 1A2, 1B1, 1B2, 1N1 or 1N2) or plastics (1H1 or 1H2) drums are used as outer packagings."  
*(Correction to the 17th revised edition of the United Nations Recommendations on the Transport of Dangerous Goods, Model regulations. See ST/SG/AC.10/C.3/78, Annex I)*

**P112(a)** For "Inner packagings and arrangements ", "Receptacles", insert a new line to read: "wood".

**P112(a)** For "Intermediate packagings and arrangements ", "Receptacles", insert a new row to read: "wood".

**P112(a)** For "Outer packagings and arrangements ", "Boxes", after "aluminium (4B)", insert a new row to read: "other metal (4N)".

**P112(a)** Amend the entries under "Outer packagings and arrangements ", "Drums" to read:

steel (1A1, 1A2)  
aluminium (1B1, 1B2)  
other metal (1N1, 1N2)  
plywood (1D)  
fibre (1G)  
plastics (1H1, 1H2)

**P112(b)** For "Outer packagings and arrangements", "Boxes", after "aluminium (4B)", insert a new row to read: "other metal (4N)".

Amend the entries under "Outer packagings and arrangements ", "Drums" to read:

steel (1A1, 1A2) aluminium (1B1, 1B2) other metal (1N1, 1N2) plywood (1D) fibre (1G) plastics (1H1, 1H2)
---

**P112(c)** For "Intermediate packagings and arrangements", "Receptacles", insert a new row to read: "wood".

**P112(c)** Amend the entries under "Outer packagings and arrangements", "Boxes" to read:

steel (4A) aluminium (4B) other metal (4N) natural wood, ordinary (4C1) natural wood, sift-proof (4C2) plywood (4D) reconstituted wood (4F) fibreboard (4G) plastics, solid (4H2)
---

**P112(c)** Amend the entries under "Outer packagings and arrangements", "Drums" to read:

steel (1A1, 1A2) aluminium (1B1, 1B2) other metal (1N1, 1N2) plywood (1D) fibre (1G) plastics (1H1, 1H2)
---

**P113** Amend the entries under "Outer packagings and arrangements", "Boxes" to read:

steel (4A) aluminium (4B) other metal (4N) natural wood, ordinary (4C1) natural wood, sift-proof walls (4C2) plywood (4D) reconstituted wood (4F) fibreboard (4G) plastics, solid (4H2)
---

**P113** Amend the entries under "Outer packagings and arrangements", "Drums" to read:

steel (1A1, 1A2) aluminium (1B1, 1B2) other metal (1N1, 1N2) plywood (1D) fibre (1G) plastics (1H1, 1H2)
---

**P114(a)** For "Inner packagings and arrangements", "Receptacles", insert a new line to read: "wood".

**P114(a)** For "Intermediate packagings and arrangements", insert two new lines to read:

**"Dividing partitions**  
wood".

**P114(a)** For "Outer packagings and arrangements", "Boxes", after "steel (4A)", insert a new row to read: "metal, other than steel or aluminium (4N)".

**P114(a)** Amend the entries under "Outer packagings and arrangements", "Drums" to read:

steel (1A1, 1A2) aluminium (1B1, 1B2) other metal (1N1, 1N2) fibre (1G) plastics (1H1, 1H2)
---

**P114(a)** In special packing provisions PP43, replace "1A2 or 1B2" with "1A2, 1B2 or 1N2".

**P114(a)** Amend special packing provision PP43 to read as follows:

"PP43 For UN 0342, inner packagings are not required when metal (1A1, 1A2, 1B1, 1B2, 1N1 or 1N2) or plastics (1H1 or 1H2) drums are used as outer packagings."

*(Correction to the 17th revised edition of the United Nations Recommendations on the Transport of Dangerous Goods, Model regulations. See ST/SG/AC.10/C.3/78, Annex I)*

**P114(b)** For "Inner packagings and arrangements", "Receptacles", insert a new line to read: "wood".

**P114(b)** Amend the entries under "Outer packagings and arrangements", "Drums" to read:

steel (1A1, 1A2) aluminium (1B1, 1B2) other metal (1N1, 1N2) plywood (1D) fibre (1G) plastics (1H1, 1H2)
---

**P114(b)** In special packing provisions PP52, replace "1A2 or 1B2" with "1A1, 1A2, 1B1, 1B2, 1N1 or 1N2".

**P115** For "Inner packagings and arrangements", "Receptacles", insert a new line to read: "wood".

**P115** For "Intermediate packagings and arrangements", insert two new rows to read:

**"Receptacles"**  
wood".

**P115** Amend the entries under "Outer packagings and arrangements", "Drums" to read:

steel (1A1, 1A2)
aluminium (1B1, 1B2)
other metal (1N1, 1N2)
plywood (1D)
fibre (1G)
plastics (1H1, 1H2)

**P115** Amend special packing provision PP60 to read as follows:

"PP60 For UN No. 0144, aluminium drums (1B1 and 1B2) and metal, other than steel or aluminium, drums (1N1 and 1N2) shall not be used."

**P116** For "Outer packagings and arrangements", "Boxes", after "aluminium (4B)", insert a new row to read: "other metal (4N)".

**P116** Amend the entries under "Outer packagings and arrangements", "Drums" and "Jerricans" to read:

<b>Drums</b>
steel (1A1, 1A2)
aluminium (1B1, 1B2)
other metal (1N1, 1N2)
plywood (1D)
fibre (1G)
plastics (1H1, 1H2)
<b>Jerricans</b>
steel (3A1, 3A2)
plastics (3H1, 3H2)

**P130** For "Outer packagings and arrangements", "Boxes", after "aluminium (4B)", insert a new row to read: "other metal (4N)".

**P130** Amend the entries under "Outer packagings and arrangements", "Drums" to read:

steel (1A1, 1A2)
aluminium (1B1, 1B2)
other metal (1N1, 1N2)
plywood (1D)
fibre (1G)
plastics (1H1, 1H2)

**P131** For "Outer packagings and arrangements", "Boxes", after "aluminium (4B)", insert a new row to read: "other metal (4N)".

**P131** Amend the entries under "Outer packagings and arrangements", "Drums" to read:

steel (1A1, 1A2)  
 aluminium (1B1, 1B2)  
 other metal (1N1, 1N2)  
 plywood (1D)  
 fibre (1G)  
 plastics (1H1, 1H2)

**P132(a)** For "Outer packagings and arrangements", "Boxes", after "aluminium (4B)", insert a new row to read: "other metal (4N)".

**P132(b)** For "Inner packagings and arrangements", "Receptacles", insert a new line to read: "wood".

**P132(b)** For "Outer packagings and arrangements", "Boxes", after "aluminium (4B)", insert "other metal (4N)".

**P133** For "Outer packagings and arrangements", "Boxes", after "aluminium (4B)", insert a new row to read: "other metal (4N)".

**P134** For "Outer packagings and arrangements", "Boxes", after "aluminium (4B)", insert a new row to read: "other metal (4N)".

**P134** Amend the entries under "Outer packagings and arrangements", "Drums" to read:

steel (1A1, 1A2)  
 aluminium (1B1, 1B2)  
 other metal (1N1, 1N2)  
 plywood (1D)  
 fibre (1G)  
 plastics (1H1, 1H2)

**P135** For "Outer packagings and arrangements", "Boxes", after "aluminium (4B)", insert "other metal (4N)".

**P135** Amend the entries under "Outer packagings", "Drums" to read:

steel (1A1, 1A2)  
 aluminium (1B1, 1B2)  
 other metal (1N1, 1N2)  
 plywood (1D)  
 fibre (1G)  
 plastics (1H1, 1H2)

**P136** For "Outer packagings and arrangements", "Boxes", after "aluminium (4B)", insert "other metal (4N)".

**P136** Amend the entries under "Outer packagings and arrangements", "Drums" to read:

steel (1A1, 1A2)

aluminium (1B1, 1B2)
other metal (1N1, 1N2)
plywood (1D)
fibre (1G)
plastics (1H1, 1H2)

**P137** For "Inner packagings and arrangements", "Boxes", insert a new row to read: "wood".

**P137** For "Outer packagings and arrangements", "Boxes", after "aluminium (4B)", insert "other metal (4N)".

**P137** Amend the entries under "Outer packagings and arrangements", "Drums" to read:

steel (1A1, 1A2)
aluminium (1B1, 1B2)
other metal (1N1, 1N2)
plywood (1D)
fibre (1G)
plastics (1H1, 1H2)

**P138** For "Outer packagings and arrangements", "Boxes", after "aluminium (4B)", insert a new row to read: "other metal (4N)".

**P138** Amend the entries under "Outer packagings and arrangements", "Drums" to read:

steel (1A1, 1A2)
aluminium (1B1, 1B2)
other metal (1N1, 1N2)
plywood (1D)
fibre (1G)
plastics (1H1, 1H2)

**P139** For "Outer packagings and arrangements", "Boxes", after "aluminium (4B)", insert a new row to read: "other metal (4N)".

**P139** Amend the entries under "Outer packagings and arrangements", "Drums" to read:

steel (1A1, 1A2)
aluminium (1B1, 1B2)
other metal (1N1, 1N2)
plywood (1D)
fibre (1G)
plastics (1H1, 1H2)

**P140** For "Inner packagings and arrangements", after the entries for bags, insert two new rows to read:

**"Receptacles**  
wood".

**P140** For "Outer packagings and arrangements", "Boxes", after "aluminium (4B)", insert a new row to read: "other metal (4N)".

**P140** Amend the entries under "Outer packagings and arrangements", "Drums" to read:

steel (1A1, 1A2) aluminium (1B1, 1B2) other metal (1N1, 1N2) plywood (1D) fibre (1G) plastics (1H1, 1H2)
---

**P140** In special packing provision PP75, replace "steel or aluminium" with "steel, aluminium or other metal".

**P141** For "Outer packagings and arrangements", "Boxes", after "aluminium (4B)", insert a new row to read: "other metal (4N)".

**P141** Amend the entries under "Outer packagings and arrangements", "Drums" to read:

steel (1A1, 1A2) aluminium (1B1, 1B2) other metal (1N1, 1N2) plywood (1D) fibre (1G) plastics (1H1, 1H2)
---

**P142** For "Outer packagings and arrangements", "Boxes", after "aluminium (4B)", insert a new row to read: "other metal (4N)".

**P142** Amend the entries under "Outer packagings and arrangements", "Drums" to read:

steel (1A1, 1A2) aluminium (1B1, 1B2) other metal (1N1, 1N2) plywood (1D) fibre (1G) plastics (1H1, 1H2)
---

**P143** For "Inner packagings and arrangements", "Receptacles", insert a new line to read: "wood".

**P143** For "Outer packagings and arrangements", "Boxes", after "aluminium (4B)", insert "other metal (4N)".

**P143** Amend the entries under "Outer packagings and arrangements", "Drums" to read:

steel (1A1, 1A2) aluminium (1B1, 1B2) other metal (1N1, 1N2) plywood (1D) fibre (1G)
--



plastics (1H1, 1H2)

**P144** For "Inner packagings and arrangements", "Receptacles", insert a new line to read: "wood".

**P144** For "Outer packagings and arrangements ", "Boxes", after "aluminium (4B)", insert a new row to read "other metal (4N)".

**P144** Amend the entries under "Outer packagings and arrangements", "Drums" to read:

steel (1A1, 1A2)  
 aluminium (1B1, 1B2)  
 other metal (1N1, 1N2)  
 plastics (1H1, 1H2)

**P200**, Paragraph (10): At the beginning, delete "Keys for the column "Special packing provisions"".

**P200**, Paragraph (10): Amend the first heading reading "Material compatibility (for gases see ISO 11114-1:1997 and ISO 11114-2:2000" to read "Material compatibility".

**P200**, Paragraph (10): Amend special packing provision a to read:

"a: Aluminium alloy pressure receptacles shall not be used."

**P200**, Paragraph (10): Amend special packing provision d to read:

"d: When steel pressure receptacles are used, only those bearing the "H" mark in accordance with 6.2.2.7.4 (p) are permitted."

**P200**, Table 2: For UN Nos. 1008, 1076, 1741, 1859, 2189 and 2418, insert "a" in column "Special packing provisions".

**P200**, Table 3: For UN No. 1052, insert "a" in column "Special packing provisions".

**P201** Amend to read as follows:

<b>P201</b>	<b>PACKING INSTRUCTION</b>	<b>P201</b>
This instruction applies to UN Nos. 3167, 3168 and 3169.		
The following packagings are authorized:		
(1) Cylinders, tubes and pressure drums conforming to the construction, testing and filling requirements approved by the competent authority.		
(2) The following combination packagings provided that the general provisions of <b>4.1.1</b> and <b>4.1.3</b> are met:		
Outer packagings:		
Drums (1A1, 1A2, 1B1, 1B2, 1N1, 1N2, 1H1, 1H2, 1D, 1G);		
Boxes (4A, 4B, 4N, 4C1, 4C2, 4D, 4F, 4G, 4H1, 4H2);		
Jerricans (3A1, 3A2, 3B1, 3B2, 3H1, 3H2).		
Inner packagings:		
(a) For non-toxic gases, hermetically sealed inner packagings of glass or metal with a maximum capacity of 5 litres per package;		
(b) For toxic gases, hermetically sealed inner packagings of glass or metal with a maximum capacity of 1 litre per package.		
Packagings shall conform to the packing group III performance level.		

**P203** Under "Requirements for closed cryogenic receptacles", add a new paragraph (8) to read as follows:

"(8) Periodic inspection

The periodic inspection and test frequencies of pressure relief valves in accordance with 6.2.1.6.3 shall not exceed five years."

**P301** Replace "vessel" with "receptacle" (eight times).

**P302** Amend to read as follows:

<b>P302</b>	<b>PACKING INSTRUCTION</b>	<b>P302</b>
This instruction applies to UN No. 3269.		
The following combination packagings are authorized, provided that the general provisions of <b>4.1.1</b> and <b>4.1.3</b> are met:		
Outer packagings:		
Drums (1A1, 1A2, 1B1, 1B2, 1N1, 1N2, 1H1, 1H2, 1D, 1G);		
Boxes (4A, 4B, 4N, 4C1, 4C2, 4D, 4F, 4G, 4H1, 4H2)		
Jerricans (3A1, 3A2, 3B1, 3B2, 3H1, 3H2);		
Inner packagings:		
The activator (organic peroxide) shall have a maximum quantity of 125 ml per inner packaging if liquid, and 500 g per inner packaging if solid.		
The base material and the activator shall be each separately packed in inner packagings.		
The components may be placed in the same outer packaging provided that they will not interact dangerously in the event of a leakage.		
Packagings shall conform to the packing group II or III performance level according to the criteria for Class 3 applied to the base material.		

**P400 (2)** In the first sentence, insert ", 4N" after "4B" and replace "drums (1A2, 1B2, 1N2, 1D or 1G) or jerricans (3A2 or 3B2)" with "drums (1A1, 1A2, 1B1, 1B2, 1N1, 1N2, 1D or 1G) or jerricans (3A1, 3A2, 3B1 or 3B2)".

**P400 (3)** In the first sentence, replace "4A or 4B" with "4A, 4B or 4N" and replace "Steel, aluminium or metal drums (1A2, 1B2 or 1N2), jerricans (3A2 or 3B2)" with "Steel, aluminium or metal drums (1A1, 1A2, 1B1, 1B2, 1N1 or 1N2), jerricans (3A1, 3A2, 3B1 or 3B2)".

**P401** Amend paragraph (2) to read as follows:

"(2) Combination packagings:

Outer packagings:

Drums (1A1, 1A2, 1B1, 1B2, 1N1, 1N2, 1H1, 1H2, 1D, 1G);

Boxes (4A, 4B, 4N, 4C1, 4C2, 4D, 4F, 4G, 4H1, 4H2);

Jerricans (3A1, 3A2, 3B1, 3B2, 3H1, 3H2).

Inner packagings:

Glass, metal or plastics which have threaded closures with a maximum capacity of 1 litre.

Each inner packaging shall be surrounded by inert cushioning and absorbent material in a quantity sufficient to absorb the entire contents.

The maximum net mass per outer packaging shall not exceed 30 kg."

**P402** Amend paragraph (2) to read as follows:

"(2) Combination packagings:

Outer packagings:

Drums (1A1, 1A2, 1B1, 1B2, 1N1, 1N2, 1H1, 1H2, 1D, 1G);

Boxes (4A, 4B, 4N, 4C1, 4C2, 4D, 4F, 4G, 4H1, 4H2);

Jerricans (3A1, 3A2, 3B1, 3B2, 3H1, 3H2).

Inner packagings with a maximum net mass as follows:

Glass 10 kg

Metal or plastics 15 kg

Each inner packaging shall be fitted with threaded closures.

Each inner packaging shall be surrounded by inert cushioning and absorbent material in a quantity sufficient to absorb the entire contents.

The maximum net mass per outer packaging shall not exceed 125 kg."

**P403** For "Combination packagings", under "Outer packagings", amend the entries for "Drums" to read as follows (the values for Maximum net mass remain unchanged):

steel (1A1, 1A2)
aluminium (1B1, 1B2)
other metal (1N1, 1N2)
plastics (1H1, 1H2)
plywood (1D)
fibre (1G)

**P403** For "Combination packagings", "Outer packagings", "Boxes", after "aluminium (4B)", insert the following row:

other metal (4N)	400 kg
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**P403** For "Combination packagings", under "Outer packagings", amend the entries for "Jerricans" to read as follows (the values for Maximum net mass remain unchanged):

steel (3A1, 3A2)
aluminium (3B1, 3B2)
plastics (3H1, 3H2)

**P404 (1)** Amend the text in parentheses for "Outer packagings" to read "(1A1, 1A2, 1B1, 1B2, 1N1, 1N2, 1H1, 1H2, 1D, 4A, 4B, 4N, 4C1, 4C2, 4D, 4F or 4H2)".

**P405 (1)(a)** Insert ", 4N" after "4B".

**P406 (1)** For "Outer packagings" replace "1H2 or 3H2" with "1H1, 1H2, 3H1 or 3H2".

**P406 (2)** Insert ", 4N" after "4B".

**P407** Amend to read as follows:

<b>P407</b>	<b>PACKING INSTRUCTION</b>	<b>P407</b>
This instruction applies to UN Nos. 1331, 1944, 1945 and 2254.		
The following packagings are authorized, provided that the general provisions of <b>4.1.1</b> and <b>4.1.3</b> are met:		
Outer packagings:		
Drums (1A1, 1A2, 1B1, 1B2, 1N1, 1N2, 1H1, 1H2, 1D, 1G);		
Boxes (4A, 4B, 4N, 4C1, 4C2, 4D, 4F, 4G, 4H1, 4H2);		
Jerricans (3A1, 3A2, 3B1, 3B2, 3H1, 3H2).		
Inner packagings:		
Matches shall be tightly packed in securely closed inner packagings to prevent accidental ignition under normal conditions of carriage.		
The maximum gross mass of the package shall not exceed 45 kg except for fibreboard boxes which shall not exceed 30 kg.		
Packagings shall conform to the packing group III performance level.		
<b>Special packing provision:</b>		
<b>PP27</b> [Unchanged]		

**P408** Amend to read as follows:

<b>P408</b>	<b>PACKING INSTRUCTION</b>	<b>P408</b>
This instruction applies to UN No. 3292.		
The following packagings are authorized, provided that the general provisions of <b>4.1.1</b> and <b>4.1.3</b> are met:		
(1) For cells:		
Drums (1A2, 1B2, 1N2, 1H2, 1D, 1G);		
Boxes (4A, 4B, 4N, 4C1, 4C2, 4D, 4F, 4G, 4H1, 4H2);		
Jerricans (3A2, 3B2, 3H2).		
There shall be sufficient cushioning material to prevent contact between cells and between cells and the internal surfaces of the outer packaging and to ensure that no dangerous movement of the cells within the outer packaging occurs in carriage.		
Packagings shall conform to the packing group II performance level.		
(2) Batteries may be carried unpacked or in protective enclosures (e.g. fully enclosed or wooden slatted crates). The terminals shall not support the weight of other batteries or materials packed with the batteries.		
Packagings need not meet the requirements of 4.1.1.3.		
<b>Additional requirement:</b>		
Cells and batteries shall be protected against short circuit and shall be isolated in such a manner as to prevent short circuits.		

**P410** For "Combination packagings", under "Outer packagings", amend the entries for "Drums" to read as follows (the values for Maximum net mass remain unchanged):

steel (1A1, 1A2)
aluminium (1B1, 1B2)
other metal (1N1, 1N2)
plastics (1H1, 1H2)

plywood (1D) fibre (1G) <sup>a</sup>
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**P410** For "Combination packagings", "Outer packagings", "Boxes", after "aluminium (4B)", insert the following row:

other metal (4N)	400 kg	400 kg
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**P410** For "Combination packagings", under "Outer packagings", amend the entries for "Jerricans" to read as follows (the values for Maximum net mass remain unchanged):

steel (3A1, 3A2) aluminium (3B1, 3B2) plastics (3H1, 3H2)
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**P410** For "Single packagings", "Boxes", after "aluminium (4B)<sup>c</sup>", insert the following row:

other metal (4N) <sup>c</sup>	400 kg	400 kg
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**P411** Amend to read as follows:

<b>P411</b>	<b>PACKING INSTRUCTION</b>	<b>P411</b>
This instruction applies to UN No. 3270.		
The following packagings are authorized, provided that the general provisions of <b>4.1.1</b> and <b>4.1.3</b> are met:		
<ul style="list-style-type: none"> <li>Drums (1A2, 1B2, 1N2, 1H2, 1D, 1G);</li> <li>Boxes (4A, 4B, 4N, 4C1, 4C2, 4D, 4F, 4G, 4H1, 4H2);</li> <li>Jerricans (3A2, 3B2, 3H2);</li> </ul>		
provided that explosion is not possible by reason of increased internal pressure.		
The maximum net mass shall not exceed 30 kg.		

**P500** Amend to read as follows:

<b>P500</b>	<b>PACKING INSTRUCTION</b>	<b>P500</b>
This instruction applies to UN No. 3356.		
The following packagings are authorized, provided that the general provisions of <b>4.1.1</b> and <b>4.1.3</b> are met:		
<ul style="list-style-type: none"> <li>Drums (1A2, 1B2, 1N2, 1H2, 1D, 1G);</li> <li>Boxes (4A, 4B, 4N, 4C1, 4C2, 4D, 4F, 4G, 4H1, 4H2);</li> <li>Jerricans (3A2, 3B2, 3H2).</li> </ul>		
Packagings shall conform to the packing group II performance level.		
The generator(s) shall be carried in a package which meets the following requirements when one generator in the package is actuated:		
<ul style="list-style-type: none"> <li>(a) Other generators in the package will not be actuated;</li> <li>(b) Packaging material will not ignite; and</li> <li>(c) The outside surface temperature of the completed package shall not exceed 100 °C.</li> </ul>		

**P501** In the text for "Combination packagings", (1), insert ", 4N" after "4B" and replace "drums (1A2, 1B2, 1N2, 1H2, 1D) or jerricans (3A2, 3B2, 3H2)" with "drums (1A1, 1A2, 1B1, 1B2, 1N1, 1N2, 1H1, 1H2, 1D) or jerricans (3A1, 3A2, 3B1, 3B2, 3H1, 3H2)".

**P502** Amend the entries under "Outer packagings", "Drums" to read:

steel (1A1, 1A2)
aluminium (1B1, 1B2)
other metal (1N1, 1N2)
plywood (1D)
fibre (1G)
plastics (1H1, 1H2)

**P502** For "Combination packagings", "Boxes", after "aluminium (4B)", insert the following row:

other metal (4N)	125 kg
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**P503** Amend the entries under "Outer packagings", "Drums" to read:

steel (1A1, 1A2)
aluminium (1B1, 1B2)
other metal (1N1, 1N2)
plywood (1D)
fibre (1G)
plastics (1H1, 1H2)

**P503** For "Combination packagings", "Boxes", after "aluminium (4B)", insert the following row:

other metal (4N)	125 kg
------------------	--------

**P504** In the text for "Combination packagings", (1) and (2), amend the text before "outer packagings" to read "...1A1, 1A2, 1B1, 1B2, 1N1, 1N2, 1H1, 1H2, 1D, 1G, 4A, 4B, 4N, 4C1, 4C2, 4D, 4F, 4G, 4H2".

**P504** In the text for "Combination packagings", (4), amend the text before "outer packagings" to read "...1A1, 1A2, 1B1, 1B2, 1N1, 1N2, 1H1, 1H2, 1D, 4A, 4B, 4N, 4C1, 4C2, 4D, 4H2".

**P520 (1)** Insert ", 4N" after "4B" and replace "drums (1A2, 1B2, 1G, 1H2 and 1D), jerricans (3A2, 3B2 and 3H2)" with "drums (1A1, 1A2, 1B1, 1B2, 1G, 1H1, 1H2 and 1D), jerricans (3A1, 3A2, 3B1, 3B2, 3H1 and 3H2)".

**P600** Amend the text in parentheses after "Outer packagings:" to read "(1A1, 1A2, 1B1, 1B2, 1N1, 1N2, 1H1, 1H2, 1D, 1G, 4A, 4B, 4N, 4C1, 4C2, 4D, 4F, 4G, 4H2)".

**P601 (1), last indent** Replace "1A2, 1B2, 1N2, 1H2" with "1A1, 1A2, 1B1, 1B2, 1N1, 1N2, 1H1, 1H2" and insert ", 4N" after "4B".

**P601 (2)** Replace "1A2, 1B2, 1N2, 1H2" with "1A1, 1A2, 1B1, 1B2, 1N1, 1N2, 1H1, 1H2" and insert ", 4N" after "4B".

**P601 (3)** After "Outer packagings:", replace "Steel or plastics drums, removable head (1A2 or 1H2)," with "Steel or plastics drums (1A1, 1A2, 1H1 or 1H2),".

**P602 (1), last indent** Replace "1A2, 1B2, 1N2, 1H2" with "1A1, 1A2, 1B1, 1B2, 1N1, 1N2, 1H1, 1H2" and insert ", 4N" after "4B".

**P602 (2)** Replace "1A2, 1B2, 1N2, 1H2" with "1A1, 1A2, 1B1, 1B2, 1N1, 1N2, 1H1, 1H2" and insert ", 4N" after "4B".

**P620** Amend the first sub-paragraph (b) — before the additional requirements — to read as follows:

"(b) A rigid outer packaging:

Drums (1A1, 1A2, 1B1, 1B2, 1N1, 1N2, 1H1, 1H2, 1D, 1G);

Boxes (4A, 4B, 4N, 4C1, 4C2, 4D, 4F, 4G, 4H1, 4H2);

Jerricans (3A1, 3A2, 3B1, 3B2, 3H1, 3H2).

The smallest external dimension shall be not less than 100 mm."

**P621** Amend to read as follows:

P621	PACKING INSTRUCTION	P621
This instruction applies to UN No. 3291.		
The following packagings are authorized provided that the general provisions of <b>4.1.1</b> except 4.1.1.15 and <b>4.1.3</b> are met:		
(1) Provided that there is sufficient absorbent material to absorb the entire amount of liquid present and the packaging is capable of retaining liquids:		
Drums (1A2, 1B2, 1N2, 1H2, 1D, 1G);		
Boxes (4A, 4B, 4N, 4C1, 4C2, 4D, 4F, 4G, 4H1, 4H2);		
Jerricans (3A2, 3B2, 3H2).		
Packagings shall conform to the packing group II performance level for solids.		
(2) For packages containing larger quantities of liquid:		
Drums (1A1, 1A2, 1B1, 1B2, 1N1, 1N2, 1H1, 1H2, 1D, 1G);		
Jerricans (3A1, 3A2, 3B1, 3B2, 3H1, 3H2);		
Composites (6HA1, 6HB1, 6HG1, 6HH1, 6HD1, 6HA2, 6HB2, 6HC, 6HD2, 6HG2, 6HH2, 6PA1, 6PB1, 6PG1, 6PD1, 6PH1, 6PH2, 6PA2, 6PB2, 6PC, 6PG2 or 6PD2).		
Packagings shall conform to the packing group II performance level for liquids.		
<b>Additional requirement:</b>		
Packagings intended to contain sharp objects such as broken glass and needles shall be resistant to puncture and retain liquids under the performance test conditions in Chapter 6.1.		

**P650** Amend paragraph (9) (a) including the Note to read as follows:

"(a) When dry ice or liquid nitrogen is used as a coolant, the requirements of 5.5.3 shall apply. When used, ice shall be placed outside the secondary packagings or in the outer packaging or an overpack. Interior supports shall be provided to secure the secondary packagings in the original position. If ice is used, the outside packaging or overpack shall be leakproof."

**P800** Amend the entries under "Outer packagings", "Drums" to read:

steel (1A1, 1A2)
metal, other than steel or aluminium (1N1, 1N2)
plastics (1H1, 1H2)
plywood (1D)
fibre (1G)

**P800** In paragraph (3) (d), for "Boxes", after "steel (4A)", insert the following row:

metal, other than steel or aluminium (4N)	400 kg
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**P802 (1)** Replace "1A2, 1B2, 1N2, 1H2, 1D, 4A, 4B, 4C1, 4C2, 4D, 4F, or 4H2" with "1A1, 1A2, 1B1, 1B2, 1N1, 1N2, 1H1, 1H2, 1D, 1G, 4A, 4B, 4N, 4C1, 4C2, 4D, 4F, 4G or 4H2".

**P802 (2)** Replace "1A2, 1B2, 1N2, 1H2, 1D, 1G, 4A, 4B, 4C1, 4C2, 4D, 4F, 4G or 4H2" with "1A1, 1A2, 1B1, 1B2, 1N1, 1N2, 1H1, 1H2, 1D, 1G, 4A, 4B, 4N, 4C1, 4C2, 4D, 4F, 4G or 4H2".

**P803 (2)** Insert ", 4N" after "4B".

**P804 (1), last indent** Replace "1A2, 1B2, 1N2, 1H2, 1D, 1G, 4A, 4B, 4C1, 4C2, 4D, 4F, 4G or 4H2" with "1A1, 1A2, 1B1, 1B2, 1N1, 1N2, 1H1, 1H2, 1D, 1G, 4A, 4B, 4N, 4C1, 4C2, 4D, 4F, 4G or 4H2".

**P804 (2)** Replace "1A2, 1B2, 1N2, 1H2, 1D, 1G, 4A, 4B, 4C1, 4C2, 4D, 4F, 4G or 4H2" with "1A1, 1A2, 1B1, 1B2, 1N1, 1N2, 1H1, 1H2, 1D, 1G, 4A, 4B, 4N, 4C1, 4C2, 4D, 4F, 4G or 4H2".

**P804 (3)** After "Outer packagings:", replace "Steel or plastics drums, removable head (1A2 or 1H2)" with "Steel or plastics drums (1A1, 1A2, 1H1 or 1H2)".

**P901** Amend to read as follows:

<b>P901</b>	<b>PACKING INSTRUCTION</b>	<b>P901</b>
This instruction applies to UN No. 3316.		
The following combination packagings are authorized provided the general provisions of <b>4.1.1</b> and <b>4.1.3</b> are met: Drums (1A1, 1A2, 1B1, 1B2, 1N1, 1N2, 1H1, 1H2, 1D, 1G); Boxes (4A, 4B, 4N, 4C1, 4C2, 4D, 4F, 4G, 4H1, 4H2); Jerricans (3A1, 3A2, 3B1, 3B2, 3H1, 3H2). Packagings shall conform to the performance level consistent with the packing group assigned to the kit as a whole (see 3.3.1, special provision 251). Maximum quantity of dangerous goods per outer packaging: 10 kg excluding the mass of any carbon dioxide, solid (dry ice) used as a refrigerant.		
<b>Additional requirement:</b> Dangerous goods in kits shall be packed in inner packagings which shall not exceed either 250 ml or 250 g and shall be protected from other materials in the kit.		

**P902** Amend to read as follows:

<b>P902</b>	<b>PACKING INSTRUCTION</b>	<b>P902</b>
This instruction applies to UN No. 3268.		
<b>Packaged articles:</b> The following packagings are authorized provided the general provisions of <b>4.1.1</b> and <b>4.1.3</b> are met: Drums (1A2, 1B2, 1N2, 1H2, 1D, 1G); Boxes (4A, 4B, 4N, 4C1, 4C2, 4D, 4F, 4G, 4H1, 4H2); Jerricans (3A2, 3B2, 3H2). Packagings shall conform to the packing group III performance level. The packagings shall be designed and constructed so as to prevent movement of the articles and inadvertent operation during normal conditions of carriage.		



**Unpackaged articles:**

The articles may also be carried unpackaged in dedicated handling devices, wagons / vehicles or containers when moved from where they are manufactured to an assembly plant.

**Additional requirement:**

Any pressure receptacle shall be in accordance with the requirements of the competent authority for the substance(s) contained therein.

**P903** Amend to read as follows:

<b>P903</b>	<b>PACKING INSTRUCTION</b>	<b>P903</b>
This instruction applies to UN Nos. 3090, 3091, 3480 and 3481.		
The following packagings are authorized provided that the general provisions of <b>4.1.1</b> and <b>4.1.3</b> are met:		
(1)	<p>For cells and batteries:</p> <p style="padding-left: 40px;">Drums (1A2, 1B2, 1N2, 1H2, 1D, 1G);</p> <p style="padding-left: 40px;">Boxes (4A, 4B, 4N, 4C1, 4C2, 4D, 4F, 4G, 4H1, 4H2);</p> <p style="padding-left: 40px;">Jerricans (3A2, 3B2, 3H2).</p> <p>Cells or batteries shall be packed in packagings so that the cells or batteries are protected against damage that may be caused by the movement or placement of the cells or batteries within the packaging.</p> <p>Packagings shall conform to the packing group II performance level.</p>	
(2)	<p>In addition for cells or batteries with a gross mass of 12 kg or more employing a strong, impact resistant outer casing, and assemblies of such cells or batteries:</p> <p style="padding-left: 40px;">(a) Strong outer packagings, in protective enclosures (e.g., in fully enclosed or wooden slatted crates); or</p> <p style="padding-left: 40px;">(b) Pallets or other handling devices.</p> <p>Cells or batteries shall be secured to prevent inadvertent movement, and the terminals shall not support the weight of other superimposed elements.</p> <p>Packagings need not meet the requirements of 4.1.1.3.</p>	
(3)	<p>For cells or batteries packed with equipment:</p> <p>Packagings conforming to the requirements in paragraph (1) of this packing instruction, then placed with the equipment in an outer packaging; or</p> <p>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.</p> <p>The equipment shall be secured against movement within the outer packaging.</p> <p>For the purpose of this packing instruction, "equipment" means apparatus requiring the lithium metal or lithium ion cells or batteries with which it is packed for its operation.</p>	
(4)	<p>For cells or batteries contained in equipment:</p> <p>Strong outer packagings constructed of suitable material, and of adequate strength and design in relation to the packaging capacity and its intended use. They shall be constructed in such a manner as to prevent accidental operation during carriage. Packagings need not meet the requirements of 4.1.1.3.</p> <p>Large equipment can be offered for carriage unpackaged or on pallets when the cells or batteries are afforded equivalent protection by the equipment in which they are contained.</p> <p>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. [When active, these devices shall meet defined standards for electromagnetic radiation intended to ensure that the operation of the device does not interfere with aircraft systems.]</p>	



P207	PACKING INSTRUCTION	P207
The packagings shall be designed and constructed to prevent movement of the aerosols and inadvertent discharge during normal conditions of carriage.		
<b>Special packing provision:</b>		
<b>PP87</b> For UN 1950 waste aerosols carried in accordance with special provision 327, the packagings shall have a means of retaining any free liquid that might escape during carriage, e.g. absorbent material. The packaging shall be adequately ventilated to prevent the creation of flammable atmosphere and the build-up of pressure.		
<b>RR6</b> For UN 1950 in the case of carriage by full load [RID: by wagon load or full load], metal articles may also be packed as follows: the articles shall be grouped together in units on trays and held in position with an appropriate plastics cover; these units shall be stacked and suitably secured on pallets.		

Renumber existing P206 as P208 and, in Table A of Chapter 3.2, for UN No. 3150 in column (8), replace "P206" with "P208".

#### 4.1.4.2

(ADR only:)

**IBC520** For UN 3119, in the entry for "Di-(3,5,5-trimethylhexanoyl) peroxide, not more than 38% in diluent type A", in column "Organic peroxide", replace "38%" with "52%".

For UN 3119, in the entry for "1,1,3,3-Tetramethylbutyl peroxyneodecanoate, not more than 52%, stable dispersion, in water", insert the following new row:

<i>Type of IBC</i>	<i>Maximum quantity (litres)</i>	<i>Control temperature</i>	<i>Emergency temperature</i>
31HA1	1 000	-5 °C	+5 °C

Insert the following new entries:

<i>UN No</i>	<i>Organic peroxide</i>	<i>Type of IBC</i>	<i>Maximum quantity (litres)</i>	<i>Control temperature</i>	<i>Emergency temperature</i>
3119	Diisobutryl peroxide, not more than 28% as a stable dispersion in water	31HA1	1 000	-20 °C	-10 °C
		31A	1 250	-20 °C	-10 °C
3119	Diisobutryl peroxide, not more than 42% as a stable dispersion in water	31HA1	1 000	-25 °C	-15 °C
		31A	1 250	-25 °C	-15 °C

#### 4.1.4.3

**LP902** Before "The following packagings are authorized...", insert a new heading to read "**Packaged articles:**" and before "The articles may also...", insert a paragraph break and a new heading to read "**Unpackaged articles:**". In the additional requirement, replace "pressure vessel" with "pressure receptacle" (twice).

4.1.5.17 Replace "1A2, 1B2" with "1A1, 1A2, 1B1, 1B2".

4.1.6.5 In the first sentence, add "and, in case of a chemical under pressure, for the propellant" after "authorized for the substance".

4.1.6.10 In the first sentence, replace "or P205" with ", P205 or P206".

Add a new second sentence to read as follows: "Pressure relief valves for closed cryogenic receptacles shall be subject to periodic inspections and tests according to the provisions of 6.2.1.6.3 and packing instruction P203."

4.1.6.15 In the first line for 4.1.6.8 (b) and (c), replace "ISO 11117:1998" with "either ISO 11117:1998 or ISO 11117:2008 + Cor 1:2009".

## Chapter 4.2

4.2.2 In the heading, add "and chemicals under pressure" at the end.

4.2.2.1 At the end, add "and chemicals under pressure".

4.2.2.2 In the second sentence, insert "and chemicals under pressure" after "Non-refrigerated liquefied gases".

4.2.2.7.1 In the first sentence, insert "or the propellant of the chemical under pressure" after "for the non-refrigerated liquefied gas" and insert ", or with chemicals under pressure" after "loaded with non-refrigerated liquefied gases". In the second sentence, insert "or propellant of chemicals under pressure" after "the temperature of the non-refrigerated liquefied gas".

4.2.5.2.6

**T50** In the second heading row, amend the first sentence to read as follows "This portable tank instruction applies to non-refrigerated liquefied gases and chemicals under pressure (UN Nos. 3500, 3501, 3502, 3503, 3504 and 3505)".

**T50** For UN 3220, in the last column (Maximum filling density), replace "0.95" with "0.87".

**T50** Add the following new entries:

<i>UN No.</i>	<i>Non-refrigerated liquefied gases</i>	<i>Max. allowable working pressure (bar)</i>	<i>Openings below liquid level</i>	<i>Pressure-relief requirements (see 6.7.3.7)</i>	<i>Maximum filling density (kg/l)</i>
3500	Chemical under pressure, n.o.s.	See MAWP definition in 6.7.3.1	Allowed	See 6.7.3.7.3	TP4 <sup>c</sup>
3501	Chemical under pressure, flammable, n.o.s.	See MAWP definition in 6.7.3.1	Allowed	See 6.7.3.7.3	TP4 <sup>c</sup>
3502	Chemical under pressure, toxic, n.o.s.	See MAWP definition in 6.7.3.1	Allowed	See 6.7.3.7.3	TP4 <sup>c</sup>
3503	Chemical under pressure, corrosive, n.o.s.	See MAWP definition in 6.7.3.1	Allowed	See 6.7.3.7.3	TP4 <sup>c</sup>

<sup>c</sup> For UN Nos. 3500, 3501, 3502, 3503, 3504 and 3505, the degree of filling shall be considered instead of the maximum filling density.

UN No.	Non-refrigerated liquefied gases	Max. allowable working pressure (bar)	Openings below liquid level	Pressure-relief requirements (see 6.7.3.7)	Maximum filling density (kg/l)
3504	Chemical under pressure, flammable, toxic, n.o.s.	See MAWP definition in 6.7.3.1	Allowed	See 6.7.3.7.3	TP4 <sup>c</sup>
3505	Chemical under pressure, flammable, corrosive, n.o.s.	See MAWP definition in 6.7.3.1	Allowed	See 6.7.3.7.3	TP4 <sup>c</sup>

#### 4.2.5.3

Insert new portable tank special provisions TP38, TP39 and TP40 to read as follows:

"TP38 Portable tank instruction T9 prescribed in RID/ADR applicable up to 31 December 2012 may continue to be applied until 31 December 2018."

"TP39 Portable tank instruction T4 prescribed in RID/ADR/ADN applicable up to 31 December 2012 may continue to be applied until 31 December 2018."

"TP40 Portable tanks shall not be carried when connected with spray application equipment."

*Consequential amendment:*

1.6.4 Add the following new transitional measure:

"1.6.4.44 For substances where TP38 or TP39 is assigned in column (11) of Table A of Chapter 3.2, the portable tank instruction prescribed in RID/ADR applicable up to 31 December 2012 may continue to be applied until 31 December 2018."

## Chapter 5.2

5.2.1.1 Insert the following new second sentence: "The UN number and the letters "UN" shall be at least 12 mm high, except for packagings of 30 litres or 30 kg capacity or less, when they shall be at least 6 mm in height and for packagings of 5 litres or 5 kg or less when they shall be of an appropriate size."

*Consequential amendment:*

1.6.1 Add the following new transitional measure:

"1.6.1.25 Packagings marked with a UN number in accordance with the provisions of RID/ADR/ADN applicable up to 31 December 2012 and which do not conform to the requirements of 5.2.1.1 regarding the size of the UN number and of the letters "UN" applicable as from 1 January 2013 may continue to be used until 31 December 2013."

5.2.1.3 Insert "and salvage pressure receptacles" after "salvage packagings".

5.2.1.8.3 Add the following new note at the end:

**"NOTE:** The labelling provisions of 5.2.2 apply in addition to any requirement for packages to bear the environmentally hazardous substance mark."

5.2.1.9.2 Amend to read as follows:

"5.2.1.9.2 Orientation arrows are not required on:

- (a) Outer packagings containing pressure receptacles except cryogenic receptacles;
- (b) Outer packagings containing dangerous goods in inner packagings each containing not more than 120 ml, with sufficient absorbent material between the inner and outer packagings to completely absorb the liquid contents;
- (c) Outer packagings containing Class 6.2 infectious substances in primary receptacles each containing not more than 50 ml;
- (d) Type IP-2, type IP-3, type A, type B(U), type B(M) or type C packages containing Class 7 radioactive material;
- (e) Outer packagings containing articles which are leak-tight in all orientations (e.g. alcohol or mercury in thermometers, aerosols, etc.); or
- (f) Outer packagings containing dangerous goods in hermetically sealed inner packagings each containing not more than 500 ml."

## Chapter 5.4

5.4.1.1.5 Amend to read as follows:

"5.4.1.1.5 *Special provisions for salvage packagings and salvage pressure receptacles*

When dangerous goods are carried in a salvage packaging or salvage pressure receptacle, the words "**SALVAGE PACKAGING**" or "**SALVAGE PRESSURE RECEPTACLE**" shall be added after the description of the goods in the transport document."

5.4.2 In footnote 5:

5.4.2.3 For "dangerous goods documentation" read "container/vehicle packing certificate".

5.4.2.4 For "dangerous goods documentation" read "container/vehicle packing certificate".

*(Correction to the 17th revised edition of the United Nations Recommendations on the Transport of Dangerous Goods, Model regulations. See ST/SG/AC.10/C.3/78, Annex I)*

## Chapter 5.5

Add the following new section:

**5.5.3 Special provisions applicable to packages and (ADR:) vehicles and containers / (RID:) wagons and containers / (ADN:) vehicles, wagons and containers containing substances presenting a risk of asphyxiation when used for cooling or conditioning purposes (such as dry ice (UN 1845) or nitrogen, refrigerated liquid (UN 1977) or argon, refrigerated liquid (UN 1951))**

**5.5.3.1 Scope**

5.5.3.1.1 This section is not applicable to substances which may be used for cooling or conditioning purposes when carried as a consignment of dangerous goods. When they are carried as a consignment, these substances shall be carried under the relevant entry of Table A in Chapter 3.2 in accordance with the associated conditions of carriage.

5.5.3.1.2 This section is not applicable to gases in cooling cycles.

5.5.3.1.3 Dangerous goods used for cooling or conditioning tanks or MEGCs during carriage are not subject to this section.

*(Correction to the 17th revised edition of the United Nations Recommendations on the Transport of Dangerous Goods, Model regulations. See ST/SG/AC.10/C.3/78, Annex I)*

#### **5.5.3.2 General**

5.5.3.2.1 (ADR:) Vehicles and containers / (RID:) Wagons and containers / (ADN:) Vehicles, wagons and containers containing substances used for cooling or conditioning purposes (other than fumigation) during carriage are not subject to any provisions of RID/ADR/ADN other than those of this section.

5.5.3.2.2 When dangerous goods are loaded in cooled or conditioned (ADR:) vehicles and containers / (RID:) wagons and containers / (ADN:) vehicles, wagons and containers any provisions of RID/ADR/ADN relevant to these dangerous goods apply in addition to the provisions of this section.

5.5.3.2.3 *(Reserved)*

5.5.3.2.4 Persons engaged in the handling or carriage of cooled or conditioned (ADR:) vehicles and containers / (RID:) wagons and containers / (ADN:) vehicles, wagons and containers shall be trained commensurate with their responsibilities.

#### **5.5.3.3 Packages containing a coolant or conditioner**

5.5.3.3.1 Packaged dangerous goods requiring cooling or conditioning assigned to packing instructions P203, P620, P650, P800, P901 or P904 of 4.1.4.1 (ADN: of ADR) shall meet the appropriate requirements of that packing instruction.

5.5.3.3.2 For packaged dangerous goods requiring cooling or conditioning assigned to other packing instructions, the packages shall be capable of withstanding very low temperatures and shall not be affected or significantly weakened by the coolant or conditioner. Packages shall be designed and constructed to permit the release of gas to prevent a build-up of pressure that could rupture the packaging. The dangerous goods shall be packed in such a way to prevent movement after the dissipation of any coolant or conditioner.

5.5.3.3.3 Packages containing a coolant or conditioner shall be carried in well ventilated (ADR:) vehicles and containers / (RID:) wagons and containers / (ADN:) vehicles, wagons and containers.

#### **5.5.3.4 Marking of packages containing a coolant or conditioner**

(ADR/ADN :) 5.5.3.4.1 Packages containing dangerous goods used for cooling or conditioning shall be marked with the name indicated in Column (2) of Table A of Chapter 3.2 of these dangerous goods followed by the words "AS COOLANT" or "AS CONDITIONER" as appropriate in an official language of the country of origin and also, if that language is not English, French or German, in English, French or German, unless agreements concluded between the countries concerned in the transport operation provide otherwise.

(RID :) 5.5.3.4.1 Packages containing dangerous goods used for cooling or conditioning shall be marked with the name indicated in Column (2) of Table A of Chapter 3.2 of these dangerous goods followed by the words "AS COOLANT" or "AS CONDITIONER" as appropriate in an official language of the country of origin and also, if that language is not English, French, German or Italian, in English, French, German or Italian, unless agreements concluded between the countries concerned in the transport operation provide otherwise.

5.5.3.4.2 The markings shall be durable, legible and placed in such a location and of such a size relative to the package as to be readily visible.

**5.5.3.5 (ADR:) Vehicles and containers / (RID:) Wagons and containers / (ADN:) Vehicles, wagons and containers containing unpackaged dry ice**

5.5.3.5.1 If dry ice in unpackaged form is used, it shall not come into direct contact with the metal structure of a (ADR:) vehicle or container / (RID:) wagon or container / (ADN:) vehicle, wagon or container to avoid embrittlement of the metal. Measures shall be taken to provide adequate insulation between the dry ice and the (ADR:) vehicle or container / (RID:) wagon or container / (ADN:) vehicle, wagon or container by providing a minimum of 30 mm separation (e.g. by using suitable low heat conducting materials such as timber planks, pallets etc).

5.5.3.5.2 Where dry ice is placed around packages, measures shall be taken to ensure that packages remain in the original position during carriage after the dry ice has dissipated.

**5.5.3.6 Marking of (ADR:) vehicles and containers / (RID:) wagons and containers / (ADN:) vehicles, wagons and containers**

5.5.3.6.1 (ADR:) Vehicles and containers / (RID:) Wagons and containers / (ADN:) Vehicles, wagons and containers containing dangerous goods used for cooling or conditioning shall be marked with a warning mark, as specified in 5.5.3.6.2 affixed at each access point in a location where it will be easily seen by persons opening or entering the (ADR:) vehicle or container / (RID:) wagon or container / (ADN:) vehicle, wagon or container. This mark shall remain on the (ADR:) vehicle or container / (RID:) wagon or container / (ADN:) vehicle, wagon or container until the following provisions are met:

(a) The (ADR:) vehicle or container / (RID:) wagon or container / (ADN:) vehicle, wagon or container has been ventilated to remove harmful concentrations of coolant or conditioner; and

(b) The cooled or conditioned goods have been unloaded.

(ADR/ADN:)

5.5.3.6.2 The warning mark shall be rectangular and shall not be less than 150 mm wide and 250 mm high. The warning mark shall include:

(a) The word "WARNING" in red or white with lettering not less than 25 mm high in an official language of the country of origin and also, if that language is not English, French or German, in English, French or German, unless agreements concluded between the countries concerned in the transport operation provide otherwise; and

(b) The proper shipping name followed by the words "AS COOLANT" or "AS CONDITIONER" as appropriate, shown below the symbol in black letters on a white background with lettering not less than 25 mm high in an official language of the country of origin and also, if that language is not English, French or German, in English, French or German, unless agreements concluded between the countries concerned in the transport operation provide otherwise.

For example: CARBON DIOXIDE, SOLID, AS COOLANT.

An illustration of this mark is given below.

(RID:)

5.5.3.6.2 The warning mark shall be rectangular and shall not be less than 150 mm wide and 250 mm high. The warning mark shall include:



(a) The word "WARNING" in red or white with lettering not less than 25 mm high in an official language of the country of origin and also, if that language is not English, French, German or Italian, in English, French, German or Italian, unless agreements concluded between the countries concerned in the transport operation provide otherwise; and

(b) The proper shipping name followed by the words "AS COOLANT" or "AS CONDITIONER" as appropriate, shown below the symbol in black letters on a white background with lettering not less than 25 mm high in an official language of the country of origin and also, if that language is not English, French, German or Italian, in English, French, German or Italian, unless agreements concluded between the countries concerned in the transport operation provide otherwise.

For example: CARBON DIOXIDE, SOLID, AS COOLANT.

An illustration of this mark is given below.



\* insert the proper shipping name followed by the words "AS COOLANT" or "AS CONDITIONER" as appropriate.

#### 5.5.3.7 Documentation

5.5.3.7.1 Documents (such as a bill of lading, cargo manifest or CMR/CIM consignment note) associated with the carriage of (ADR:) vehicles or containers / (RID:) wagons or containers / (ADN:) vehicles, wagons or containers that have been cooled or conditioned and have not been completely ventilated before carriage shall include the following information:

(a) The UN number preceded by the letters "UN"; and  
(ADR/ADN:)

(b) The proper shipping name followed by the words "AS COOLANT" or "AS CONDITIONER" as appropriate in an official language of the country of origin and also, if that language is not English, French or German, in English, French or German, unless agreements, if any, concluded between the countries concerned in the transport operation provide otherwise.

(RID:)

(b) The proper shipping name followed by the words "AS COOLANT" or "AS CONDITIONER" as appropriate in an official language of the country of origin and also, if that language is not English, French, German or Italian, in English, French, German or Italian, unless agreements, if any, concluded between the countries concerned in the transport operation provide otherwise.

For example: UN 1845, CARBON DIOXIDE, SOLID, AS COOLANT".

5.5.3.7.2 The transport document may be in any form, provided it contains the information required in 5.5.3.7.1. This information shall be easy to identify, legible and durable."

*Consequential amendment:*

*In the Note in 2.2.9.1.14, after "UN No. 1845 carbon dioxide, solid (dry ice)", insert a reference "18" to a footnote. The footnote reads as follows: "For UN No. 1845 carbon dioxide, solid (dry ice) used as a coolant, see 5.5.3".*

*In Table A of Chapter 3.2, for UN 1845, after "NOT SUBJECT TO RID/ADR/ADN" add "- When used as a coolant, see 5.5.3".*

*In Chapter 3.3, special provision 593, at the end add "except as specified in 5.5.3".*

## Chapter 6.1

6.1.2.7 In the table, under "4. Boxes", after the entries for "H. Plastics", insert the following row:

N. Metal, other than steel or aluminium	4N	6.1.4.14
---	----	----------

6.1.4.14 Amend to read as follows:

**"6.1.4.14 Steel, aluminium or other metal boxes**

4A steel boxes

4B aluminium boxes

4N metal, other than steel or aluminium, boxes".

## Chapter 6.2

6.2.1.1.5 Amend the first sentence to read as follows: "The test pressure of cylinders, tubes, pressure drums and bundles of cylinders shall be in accordance with packing instruction P200 of 4.1.4.1, or, for a chemical under pressure, with packing instruction P206 of 4.1.4.1."

6.2.1.6.1 At the end, amend Note 4 to read as follows:

**"NOTE 4:** For the periodic inspection and test frequencies, see packing instruction P200 of 4.1.4.1 or, for a chemical under pressure, packing instruction P206 of 4.1.4.1."

Add a new paragraph 6.2.1.6.3 to read as follows:

"6.2.1.6.3 Pressure relief valves for closed cryogenic receptacles shall be subject to periodic inspections and tests."

6.2.2.3 In the first table, amend the row for ISO 11117:1998 to read as follows:

ISO 11117:2008 + Cor 1:2009	Gas cylinders – Valve protection caps and valve guards – Design, construction and tests <i>NOTE: Construction according to ISO 11117:1998 may continue until 31 December 2014.</i>
--------------------------------	---

At the end of the first table, add a new row to read as follows:

ISO 13340:2001	Transportable gas cylinders – Cylinder valves for non-refillable cylinders – Specification and prototype testing
----------------	--

6.2.2.4 Insert the following new row in the table:

ISO 10460:2005	Gas cylinders – Welded carbon-steel gas cylinders – Periodic inspection and testing <i>NOTE: The repair of welds described in clause 12.1 of this standard shall not be permitted. Repairs described in clause 12.2 require the approval of the competent authority which approved the periodic inspection and test body in accordance with 6.2.2.6.</i>
----------------	---

Add a new 6.2.3.11 to read as follows:

**"6.2.3.11 Salvage pressure receptacles**

6.2.3.11.1 To permit the safe handling and disposal of the pressure receptacles carried within the salvage pressure receptacle, the design may include equipment not otherwise used for cylinders or pressure drums such as flat heads, quick opening devices and openings in the cylindrical part.

6.2.3.11.2 Instructions on the safe handling and use of the salvage pressure receptacle shall be clearly shown in the documentation for the application to the competent authority [of the country of approval] and shall form part of the approval certificate. In the approval certificate, the pressure receptacles authorized to be carried in a salvage pressure receptacle shall be indicated. A list of the materials of construction of all parts likely to be in contact with the dangerous goods shall also be included.

6.2.3.11.3 A copy of the approval certificate shall be delivered by the manufacturer to the owner of a salvage pressure receptacle.

6.2.3.11.4 The marking of salvage pressure receptacles according to 6.2.3 shall be determined by the competent authority [of the country of approval] in taking into account suitable marking provisions of [6.2.2.7][6.2.3.9] as appropriate. The marking shall include the water capacity and test pressure of the salvage pressure receptacle."

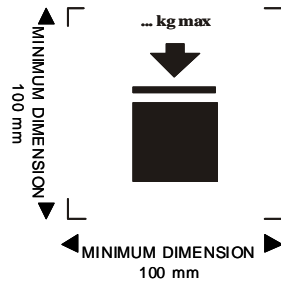
*Consequential amendment:*

*Add the following new transitional measure in Chapter 1.6:*

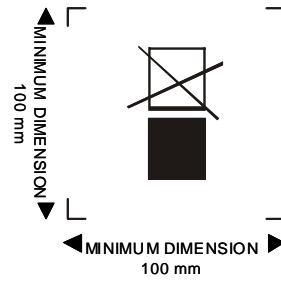
"1.6.2.12 Salvage pressure receptacles may continue to be constructed and approved according to national regulations up to 31 December 2013. Salvage pressure receptacles constructed and approved in accordance with national regulations before 1 January 2014 may continue to be used with the approval of the competent authorities of the countries of use."

## Chapter 6.5

6.5.2.2.2 Amend the symbols to read as follows:



IBCs capable of being stacked



IBCs NOT capable of being stacked

6.5.6.2.1 Replace "6.5.6.5" with "6.5.6.4".

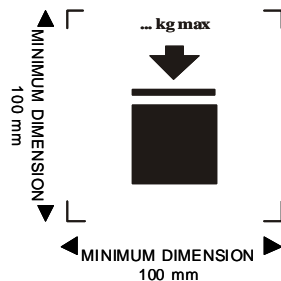
## Chapter 6.6

6.6.3.1 In the first paragraph, replace "durable and legible markings showing:" with "markings which are durable, legible and placed in a location so as to be readily visible. Letters, numerals and symbols shall be at least 12 mm high and shall show:"

Add a new 6.6.3.3 to read as follows:

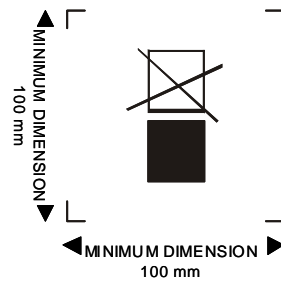
"6.6.3.3 The maximum permitted stacking load applicable when the large packaging is in use shall be displayed on a symbol as follows:

Large packaging capable of being stacked



Large packaging capable of being stacked

Large packaging NOT capable of being stacked



Large packaging NOT capable of being stacked

The symbol shall be not less than 100 mm × 100 mm, be durable and clearly visible. The letters and numbers indicating the mass shall be at least 12 mm high.

The mass marked above the symbol shall not exceed the load imposed during the design type test (see 6.6.5.3.3.4) divided by 1.8."

*Consequential amendment:*

1.6.1 Add the following new transitional measure:

"1.6.1.26 Large packagings manufactured or remanufactured before 1 January 2014 and which do not conform to the requirements of 6.6.3.1 regarding the height of letters, numerals and symbols applicable as from 1 January 2013 may continue to be used. Those manufactured or remanufactured before 1 January 2015 need not be marked with the maximum permitted stacking load in accordance with 6.6.3.3. Such large packagings not

marked in accordance with 6.6.3.3 may still be used after 31 December 2014 but must be marked in accordance with 6.6.3.3 if they are remanufactured after that date."

## Chapter 6.7

6.7.2.13.1 After sub-paragraph (e), add the following new sub-paragraph (f):

"(f) The cross sectional flow areas of the spring loaded pressure-relief devices, frangible discs and fusible elements in mm<sup>2</sup>."

Renumber existing sub-paragraph (f) as sub-paragraph (g).

6.7.2.13.2, 6.7.3.9.2, 6.7.4.8.2 and 6.7.5.6.2 Replace "ISO 4126-1:1991" with "ISO 4126-1:2004 and ISO 4126-7:2004".

6.7.3 After the heading, insert the following new Note:

**"NOTE:** *These requirements also apply to portable tanks intended for the carriage of chemicals under pressure (UN Nos. 3500, 3501, 3502, 3503, 3504 and 3505).*"

6.7.3.1 In the definition of *Design reference temperature*, in the second sentence, insert "or liquefied gas propellants of chemicals under pressure" after "non-refrigerated liquefied gas".

6.7.3.1 In sub-paragraph (b) of the definition of *Maximum allowable working pressure*, add a new sub-paragraph (iii) to read as follows:

"(iii) for chemicals under pressure, the MAWP (in bar) given in T50 portable tank instruction for the liquefied gas portion of the propellants listed in T50 in 4.2.5.2.6;"

6.7.3.5.4 In the first sentence, insert "or chemicals under pressure" after "non-refrigerated liquefied gases".

6.7.3.9.1 and 6.7.4.8.1 After sub-paragraph (d), add the following new sub-paragraph (e):

"(e) The cross sectional flow areas of the spring loaded pressure-relief devices and frangible discs in mm<sup>2</sup>."

Renumber existing sub-paragraph (e) as sub-paragraph (f).

6.7.5.6.1 After sub-paragraph (c), add the following new sub-paragraph (d):

"(d) The cross sectional flow areas of the spring loaded pressure-relief devices and frangible discs in mm<sup>2</sup>."

## Chapter 6.11

6.11.1 Add the following new definition:

*"Flexible bulk container* means a flexible container with a capacity not exceeding 15 m<sup>3</sup> and includes liners and attached handling devices and service equipment."

6.11.2.3 In the table add the following new row:

Flexible bulk container	BK3
-------------------------	-----

6.11.3 In the heading, insert "BK1 or BK2" before "bulk containers".

6.11.4 In the heading, insert "BK1 and BK2" before "bulk containers".

Add a new section 6.11.5 to read as follows:

**"6.11.5 Requirements for the design, construction, inspection and testing of flexible bulk containers BK3**

**6.11.5.1 Design and construction requirements**

6.11.5.1.1 Flexible bulk containers shall be sift-proof.

6.11.5.1.2 Flexible bulk containers shall be completely closed to prevent the release of contents.

6.11.5.1.3 Flexible bulk containers shall be waterproof.

6.11.5.1.4 Parts of the flexible bulk container which are in direct contact with dangerous goods:

(a) Shall not be affected or significantly weakened by those dangerous goods;

(b) Shall not cause a dangerous effect e.g. catalysing a reaction or reacting with the dangerous goods; and

(c) Shall not allow permeation of the dangerous goods that could constitute a danger under normal conditions of carriage.

**6.11.5.2 Service equipment and handling devices**

6.11.5.2.1 Filling and discharge devices shall be so constructed as to be protected against damage during carriage and handling. The filling and discharge devices shall be capable of being secured against unintended opening.

6.11.5.2.2 Slings of the flexible bulk container, if fitted, shall withstand pressure and dynamic forces which can appear in normal conditions of handling and carriage.

6.11.5.2.3 The handling devices shall be strong enough to withstand repeated use.

**6.11.5.3 Inspection and testing**

6.11.5.3.1 Each flexible bulk container design type shall successfully pass the tests prescribed in this Chapter before being used.

6.11.5.3.2 Tests shall also be repeated after each modification of design type which alters the design, material or manner of construction of a flexible bulk container.

6.11.5.3.3 Tests shall be carried out on flexible bulk containers prepared as for carriage. Flexible bulk containers shall be filled to the maximum mass at which they may be used and the contents shall be evenly distributed. The substances to be carried in the flexible bulk container may be replaced by other substances except where this would invalidate the results of the tests. When another substance is used it shall have the same physical characteristics (mass, grain size, etc.) as the substance to be carried. It is permissible to use additives, such as bags of lead shot, to achieve the requisite total mass of the flexible bulk container, so long as they are placed so that the test results are not affected.

6.11.5.3.4 Flexible bulk containers shall be manufactured and tested under a quality assurance programme which satisfies the competent authority, in order to ensure that each manufactured flexible bulk container meets the requirements of this Chapter.

**6.11.5.3.5 Drop test**

**6.11.5.3.5.1 Applicability**

For all types of flexible bulk containers, as a design type test.

**6.11.5.3.5.2 Preparation for testing**

The flexible bulk container shall be filled to its maximum permissible gross mass.

#### 6.11.5.3.5.3 Method of testing

The flexible bulk container shall be dropped onto a target surface that is non-resilient and horizontal. The target surface shall be:

- (a) Integral and massive enough to be immovable;
- (b) Flat with a surface kept free from local defects capable of influencing the test results;
- (c) Rigid enough to be non-deformable under test conditions and not liable to become damaged by the tests; and
- (d) Sufficiently large to ensure that the test flexible bulk container falls entirely upon the surface.

Following the drop, the flexible bulk container shall be restored to the upright position for observation.

#### 6.11.5.3.5.4 Drop height shall be:

Packing group III: 0.8 m

#### 6.11.5.3.5.5 Criteria for passing the test

(a) There shall be no loss of contents. A slight discharge, e.g. from closures or stitch holes, upon impact shall not be considered to be a failure of the flexible bulk container provided that no further leakage occurs after the container has been restored to the upright position;

(b) There shall be no damage which renders the flexible bulk container unsafe to be carried for salvage or for disposal.

#### 6.11.5.3.6 *Top lift test*

##### 6.11.5.3.6.1 Applicability

For all types of flexible bulk containers as a design type test.

##### 6.11.5.3.6.2 Preparation for testing

Flexible bulk containers shall be filled to six times the maximum net mass, the load being evenly distributed.

##### 6.11.5.3.6.3 Method of testing

A flexible bulk container shall be lifted in the manner for which it is designed until clear of the floor and maintained in that position for a period of five minutes.

##### 6.11.5.3.6.4 Criteria for passing the test

There shall be no damage to the flexible bulk container or its lifting devices which renders the flexible bulk container unsafe for carriage or handling, and no loss of contents.

#### 6.11.5.3.7 *Topple test*

##### 6.11.5.3.7.1 Applicability

For all types of flexible bulk containers as a design type test.

##### 6.11.5.3.7.2 Preparation for testing

The flexible bulk container shall be filled to its maximum permissible gross mass.

6.11.5.3.7.3 Method of testing

Flexible bulk container shall be toppled onto any part of its top by lifting the side furthest from the drop edge upon a target surface that is non-resilient and horizontal. The target surface shall be:

- (a) Integral and massive enough to be immovable;
- (b) Flat with a surface kept free from local defects capable of influencing the test results;
- (c) Rigid enough to be non-deformable under test conditions and not liable to become damaged by the tests; and
- (d) Sufficiently large to ensure that the test flexible bulk container falls entirely upon the surface.

6.11.5.3.7.4 For all flexible bulk containers, the topple height is specified as follows:

Packing group III: 0.8 m

6.11.5.3.7.5 Criterion for passing the test

There shall be no loss of contents. A slight discharge, e.g., from closures or stitch holes, upon impact shall not be considered to be a failure of the flexible bulk container provided that no further leakage occurs.

6.11.5.3.8 *Righting test*

6.11.5.3.8.1 Applicability

For all types of flexible bulk containers designed to be lifted from the top or side, as a design type test.

6.11.5.3.8.2 Preparation for testing

The flexible bulk container shall be filled to not less than 95% of its capacity and to its maximum permissible gross mass.

6.11.5.3.8.3 Method of testing

The flexible bulk container, lying on its side, shall be lifted at a speed of at least 0.1 m/s to an upright position, clear of the floor, by no more than half of the lifting devices.

6.11.5.3.8.4 Criterion for passing the test

There shall be no damage to the flexible bulk container or its lifting devices which renders the flexible bulk container unsafe for carriage or handling.

6.11.5.3.9 *Tear test*

6.11.5.3.9.1 Applicability

For all types of flexible bulk containers as a design type test.

6.11.5.3.9.2 Preparation for testing

The flexible bulk container shall be filled to its maximum permissible gross mass.

6.11.5.3.9.3 Method of testing



With the flexible bulk container placed on the ground, a 300 mm cut shall be made, completely penetrating all layers of the flexible bulk container on a wall of a wide face. The cut shall be made at a 45° angle to the principal axis of the flexible bulk container, halfway between the bottom surface and the top level of the contents. The flexible bulk container shall then be subjected to a uniformly distributed superimposed load equivalent to twice the maximum gross mass. The load must be applied for at least fifteen minutes. A flexible bulk container which is designed to be lifted from the top or the side shall, after removal of the superimposed load, be lifted clear of the floor and maintained in that position for a period of fifteen minutes.

#### 6.11.5.3.9.4 Criterion for passing the test

The cut shall not propagate more than 25% of its original length.

#### 6.11.5.3.10 *Stacking test*

##### 6.11.5.3.10.1 Applicability

For all types of flexible bulk containers as a design type test.

##### 6.11.5.3.10.2 Preparation for testing

The flexible bulk container shall be filled to its maximum permissible gross mass.

##### 6.11.5.3.10.3 Method of testing

The flexible bulk container shall be subjected to a force applied to its top surface that is four times the design load-carrying capacity for 24 hours.

##### 6.11.5.3.10.4 Criterion for passing the test

There shall be no loss of contents during the test or after removal of the load.

#### **6.11.5.4 *Test report***


6.11.5.4.1 A test report containing at least the following particulars shall be drawn up and shall be available to the users of the flexible bulk container:

1. Name and address of the test facility;
2. Name and address of applicant (where appropriate);
3. Unique test report identification;
4. Date of the test report;
5. Manufacturer of the flexible bulk container;
6. Description of the flexible bulk container design type (e.g. dimensions, materials, closures, thickness, etc) and/or photograph(s);
7. Maximum capacity/maximum permissible gross mass;
8. Characteristics of test contents, e.g. particle size for solids;
9. Test descriptions and results;
10. The test report shall be signed with the name and status of the signatory.

6.11.5.4.2 The test report shall contain statements that the flexible bulk container prepared as for carriage was tested in accordance with the appropriate provisions of this Chapter and that the use of other containment methods or components may render it invalid. A copy of the test report shall be available to the competent authority.

**6.11.5.5 Marking**

6.11.5.5.1 Each flexible bulk container manufactured and intended for use according to RID/ADR shall bear markings that are durable, legible and placed in a location so as to be readily visible. Letters, numerals and symbols shall be at least 24 mm high and shall show:


- (a) The United Nations packaging symbol 

This symbol shall not be used for any purpose other than certifying that a packaging, a flexible bulk container, a portable tank or a MEGC complies with the relevant requirements in Chapter 6.1, 6.2, 6.3, 6.5, 6.6, 6.7 or 6.11 ;

- (b) The code BK3;
- (c) A capital letter designating the packing group(s) for which the design type has been approved:
  - Z for packing group III only;
- (d) The month and year (last two digits) of manufacture;
- (e) The character(s) identifying the country authorizing the allocation of the mark; as indicated by the distinguishing sign for motor vehicles in international traffic;
- (f) The name or symbol of the manufacturer and other identification of the flexible bulk container as specified by the competent authority;
- (g) The stacking test load in kg;
- (h) The maximum permissible gross mass in kg.

Marking shall be applied in the sequence shown in (a) to (h); each element of the marking, required in these subparagraphs, shall be clearly separated, e.g. by a slash or space and presented in a way that ensures that all of the parts of the mark are easily identified.

6.11.5.5.2 *Example of marking*

	BK3/Z/11 09
	RUS/NTT/MK-14-10
	56000/14000".

*Consequential amendment:*

6.1.3.1 (a) (i), 6.2.2.7.2 (a), 6.2.2.9.2 (a), 6.3.4.2 (a), 6.5.2.1.1 (a), 6.6.3.1 (a), 6.7.2.20.1 (c) (i), 6.7.3.16.1 (c) (i), 6.7.4.15.1 (c) (i), 6.7.5.13.1 (c) (i) Amend the second sentence to read as follows: "This symbol shall not be used for any purpose other than certifying that a packaging, a flexible bulk container, a portable tank or a MEGC complies with the relevant requirements in Chapter 6.1, 6.2, 6.3, 6.5, 6.6, 6.7 or 6.11."

**Chapter 7.3**

7.3.2.1 After the description of the meaning of BK1 and BK2, insert:

"BK3: Carriage in flexible bulk containers is permitted".

7.3.2.4 After "bulk containers", insert "(code BK2) and flexible bulk containers (code BK3)". At the end, replace "watertight" with "waterproof" after "bulk container".

(ADN:)

7.1.1.18 In the heading and in the text, insert "bulk containers," after "large packagings,".

(RID/ADR:)

Add a new sub-section 7.3.2.9 to read as follows:

"7.3.2.9 *Use of flexible bulk containers*

7.3.2.9.1 Before a flexible bulk container is filled it shall be visually examined to ensure it is structurally serviceable, its textile slings, load-bearing structure straps, body fabric, lock device parts including metal and textile parts are free from protrusions or damage and that inner liners are free from rips, tears or any damage.

7.3.2.9.2 For flexible bulk containers, the period of use permitted for the carriage of dangerous goods shall be two years from the date of manufacture of the flexible bulk container.

7.3.2.9.3 A venting device shall be fitted if a dangerous accumulation of gases may develop within the flexible bulk container. The vent shall be so designed that the penetration of foreign substances is prevented under normal conditions of carriage."

(RID/ADR only:)

## Chapter 7.5

7.5.1.2, 7.5.1.3 At the beginning, insert "Unless otherwise specified in RID/ADR,".

7.5.2 Add a new 7.5.2.4 to read as follows:

"7.5.2.4 Mixed loading of dangerous goods packed in limited quantities with any type of explosive substances and articles, except those of Division 1.4, Compatibility Group S, is prohibited."

Add a new 7.5.7.6 to read as follows:

"7.5.7.6 *Loading of flexible bulk containers*

7.5.7.6.1 Flexible bulk containers shall be carried within a (ADR:) vehicle or container / (RID:) wagon or container with rigid sides and ends that extend at least two-thirds of the height of the flexible bulk container.

**NOTE:** *When loading flexible bulk containers in a (ADR:) vehicle or container / (RID:) wagon or container particular attention shall be paid to the guidance on the handling and stowage of dangerous goods referred to in 7.5.7.1 and to the IMO/ILO/UNECE Guidelines for Packing Cargo Transport Units (CTUs).*

7.5.7.6.2 Flexible bulk containers shall be secured by suitable means capable of restraining them in the (ADR:) vehicle or container / (RID:) wagon or container in a manner that will prevent any movement during carriage which would change the orientation of the flexible bulk container or cause it to be damaged. Movement of the flexible bulk containers may also be prevented by filling any voids by the use of dunnage or by blocking and bracing. Where restraints such as banding or straps are used, these shall not be over-tightened to cause damage or deformation to the flexible bulk containers.

7.5.7.6.3 Flexible bulk containers shall not be stacked."