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Item 6 of the provisional agenda

HARMONIZATION WITH THE UN MODEL REGULATIONS 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

Addendum

Draft proposal of amendments to RID/ADR/ADN

PART 1

Chapter 1.1

1.1.3.2 In (e), delete "and" at the end.

Amend (f) to read

"(f) Gases contained in foodstuffs (except UN 1950), including carbonated beverages;".

Add the following new sub-paragraphs:

"(g) Gases contained in balls intended for use in sports; and

(h) Gases contained in light bulbs provided they are packaged so that the projectile effects of any rupture of the bulb will be contained within the package.".

Chapter 1.2

1.2.1 Under "*Approval*", in the definition of "*Multilateral approval*", delete the last sentence ("The term "through or into" specifically excludes…").

(ADR:)
In the definitions of "*Battery-vehicle*" and "*Multiple-element gas container*" replace "gases of Class 2" by "gases as defined in 2.2.2.1.1".

(RID:)
In the definitions of "*Battery-wagon*", "*Multiple-element gas container*", "*Tank-container*", "*Portable tank*", replace "gases of Class 2" by "gases as defined in 2.2.2.1.1".

In the definition of "*GHS*", replace "second" with "third" and "ST/SG/AC.10/30/Rev.2" with "ST/SG/AC.10/30/Rev.3".

In the definition of "*Manual of Tests and Criteria*", replace "fourth" with "fifth" and amend the text in the parenthesis to read "(ST/SG/AC.10/11/Rev.5)".

In the definition of "*Pressure receptacle*", insert ", metal hydride storage systems" before "and bundles".

In the definition of "*Repaired IBC*", in the second sentence, replace "manufacturer's specification" with "design type from the same manufacturer".

(ADR:)
In the definitions of "*Tank-container*" and "*Portable tank*", replace "Class 2 substances" by "gases as defined in 2.2.2.1.1".

In the definition of "*UN Model Regulations*", replace "fifteenth" with "sixteenth" and "(ST/SG/AC.10/1/Rev.15)" with "(ST/SG/AC.10/1/Rev.16)".

Add the following new definitions in alphabetical order:

(RID/ADR only:)
"*Cargo transport unit* means a wagon/vehicle, a container, a tank-container, portable tank or a MEGC;

NOTE: *This definition applies only for the application of Special Provision 302 of Chapter 3.3 and of Chapter 5.5.*".

"*Conveyance* means, for carriage by road or by rail, a vehicle or a wagon;"

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

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

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

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

Consequential amendment: At the end of the definition of "Cryogenic receptacle", add "(see also *"Open cryogenic receptacle"*)""

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

(a) Is produced as a UN type from a non-UN type; or

(b) Is converted from one UN design type to another UN design type.

Remanufactured large packagings are subject to the same requirements of RID/ADR/ADN that apply to new large packagings of the same type (see also design type definition in 6.6.5.1.2);"

"*Reused large packaging* means a large packaging to be refilled which has been examined and found free of defects affecting the ability to withstand the performance tests; the term includes those which are refilled with the same or

similar compatible contents and are carried within distribution chains controlled by the consignor of the product;".

"*Through or into*, for the carriage of Class 7 material, means through or into the countries in which a consignment is carried but specifically excludes countries "over" which a consignment is carried by air provided that there are no scheduled stops in those countries;".

Chapter 1.3

1.3.1 In the first sentence, replace "shall receive training" with "shall be trained".
Add a new second sentence to read as follows: "Employees shall be trained in accordance with 1.3.2 before assuming responsibilities and shall only perform functions, for which required training has not yet been provided, under the direct supervision of a trained person.".

1.3.2.2 In the first sentence, replace "Personnel shall receive detailed training" with "Personnel shall be trained". In the second sentence, replace "the personnel shall be made aware" with "the personnel shall be aware"

(RID only:)
In the third sentence, replace "shall also receive training covering" with "shall also be trained in".
In paragraph (a), in the first sentence after the heading, replace "shall receive training covering" with "shall be trained in".
In paragraph (b), in the first and second sentence after the heading, replace "shall receive training" with "shall be trained".

1.3.2.3 Replace "personnel shall receive training covering" with "shall be trained in".

1.3.2.4 Amend to read as follows:

"1.3.2.4 The training shall be periodically supplemented with refresher training to take account of changes in regulations.".

1.3.3 Amend the text after the heading to read as follows:

"Records of training received according to this Chapter shall be kept by the employer and made available to the employee or competent authority, upon request. Records shall be kept by the employer for a period of time established by the competent authority. Records of training shall be verified upon commencing a new employment.".

Chapter 1.4

[(ADR:)
Amend 1.4.2.2.1 (b) to read as follows:
"(b) Ascertain that all information related to the dangerous goods to be carried has been provided by the consignor before carriage, that the prescribed documentation is on board the transport unit or if electronic data processing (EDP) or if electronic data interchange (EDI) techniques are used instead of paper documentation, that data may be made available during transport in a manner at least equivalent to that of paper documentation;".

(RID:)
Amend 1.4.2.2.1 (b) to read as follows:
"(b) Ascertain that all information related to the dangerous goods to be carried has been provided by the consignor before carriage, that the prescribed documentation is attached to the transport document or if electronic data processing (EDP) or if electronic data interchange (EDI) techniques are used instead of paper documentation, that data may be made available during transport in a manner at least equivalent to that of paper documentation;".]

Chapter 1.6

1.6.1.14 Amend to read as follows: "IBCs manufactured before 1 January 2011 and conforming to a design type which has not passed the vibration test of 6.5.6.13 or which was not required to meet the criteria of 6.5.6.9.5 (d) at the time it was subjected to the drop test, may still be used.".

1.6.4 Add the following new transitional measures:

"1.6.4.36 For substances where TP37 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 2010 may continue to be applied until 31 December 2016.

1.6.4.37 Portable tanks and MEGCs manufactured before 1 January 2012, that conform to the marking requirements of 6.7.2.20.1, 6.7.3.16.1, 6.7.4.15.1 or 6.7.5.13.1 applicable up to 31 December 2010, as relevant, may continue to be used if they comply with all other relevant requirements of RID/ADR applicable as from 1 January 2011 including, when applicable, the requirement of 6.7.2.20.1 (g) for marking the symbol "S" on the plate when the shell or the compartment is divided by surge plates into sections of not more than 7 500 litres capacity. When the shell, or the compartment, was already divided by surge plates into sections of not more than 7 500 litres capacity before 1 January 2012, the capacity of the shell, or respectively of the compartment, need not be supplemented with the symbol "S" until the next periodic inspection or test according to 6.7.2.19.5 is performed.

1.6.4.38 Portable tanks manufactured before 1 January 2014 need not be marked with the portable tank instruction as required in 6.7.2.20.2, 6.7.3.16.2 and 6.7.4.15.2 until the next periodic inspection and test.".

Chapter 1.7

1.7.1.1 In the second sentence, replace "2005" with "2009" (twice).
Replace the last sentence with the two following sentences: "Explanatory material can be found in “Advisory Material for the IAEA Regulations for the Safe Transport of Radioactive Material (2005 Edition)”, Safety Standard Series No. TS-G-1.1 (Rev.1), IAEA, Vienna (2008). [The prime responsibility for safety shall rest with the person or organization responsible for facilities and activities that give rise to radiation risk.]".

1.7.1.2 Amend the first sentence to read as follows: "The objective of RID/ADR/ADN is to establish requirements that shall be satisfied to ensure safety and to protect persons, property and the environment from the effects of radiation in the carriage of radioactive material.".

1.7.1.3 In the third sentence, replace "that is characterized" by "that are characterized".

1.7.1.5 Renumber the text after the heading as 1.7.1.5.1 and amend the beginning and sub-paragraph (a) to read as follows:

"1.7.1.5.1 Excepted packages which may contain radioactive material in limited quantities, instruments, manufactured articles and empty packagings as specified in 2.2.7.2.4.1 shall be subject only to the following provisions of Parts 5 to 7:

(a) The applicable provisions specified in 5.1.2, 5.1.3.2, 5.1.4, 5.1.5.4, 5.2.1.9 and 7.5.11 CV/CW33 (5.2);".

The last sentence becomes new paragraph 1.7.1.5.2.

1.7.2.3 At the end of the second sentence, add "and 7.5.11 CV/CW33 (1) (1.1)".

1.7.2.5 Replace "shall receive appropriate training concerning" with "shall be appropriately trained in ".

Chapter 1.10

Add new 1.10.2.3 and 1.10.2.4 to read as follows:

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

1.10.2.4 Records of all security training received shall be kept by the employer and made available to the employee or competent authority, upon request. Records shall be

kept by the employer for a period of time established by the competent authority.".

1.10.6 Amend to read as follows:

"1.10.6 For radioactive material, the provisions of this Chapter are deemed to be complied with when the provisions of the Convention on Physical Protection of Nuclear Material[1] and the IAEA circular on "The Physical Protection of Nuclear Material and Nuclear Facilities"[2] are applied.".

PART 2

Chapter 2.1

[2.1.1.1 Amend the definition of Class 9 to read as follows:

"Class 9: Miscellaneous dangerous substances and articles, including environmentally hazardous substances".]

Insert a new 2.1.2.3 to read as follows and renumber 2.1.2.3 to 2.1.2.6 accordingly:

"2.1.2.3 A substance may contain technical impurities (for example those deriving from the production process) or additives for stability or other purposes that do not affect their classification. However, a substance mentioned by name[, i.e. listed as a single entry in Table A of Chapter 3.2,] containing technical impurities or additives for stability or other purposes affecting its classification shall be considered a solution or mixture (see 2.1.3.3).".

2.1.3.3 Amend to read as follows:

"2.1.3.3 A solution or mixture composed of a single predominant substance mentioned by name in Table A of Chapter 3.2 and one or more substances not subject to RID/ADR/ADN and/or traces of one or more substances mentioned by name in Table A of Chapter 3.2, shall be assigned the UN number and proper shipping name of the predominant substance mentioned by name in Table A of Chapter 3.2 unless:

(a) The solution or mixture is mentioned by name in Table A of Chapter 3.2;

(b) The name and description of the substance mentioned by name in Table A of Chapter 3.2 specifically indicate that they apply only to the pure substance;

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[1] *IAEACIRC/274/Rev.1, IAEA, Vienna (1980).*

[2] *IAEACIRC/225/Rev.4 (Corrected), IAEA, Vienna (1999). 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.*

(c) The class, classification code, packing group, or physical state of the solution or mixture is different from that of the substance mentioned by name in Table A of Chapter 3.2; or

(d) The hazard characteristics and properties of the solution or mixture necessitate emergency response measures that are different from those required for the substance mentioned by name in Table A of Chapter 3.2.

In those other cases, except the one described in (a), the solution or mixture shall be classified as a substance not mentioned by name in the relevant class under a collective entry listed in sub-section 2.2.x.3 of that class taking account of the subsidiary risks presented by that solution or mixture, if any, unless the solution or mixture does not meet the criteria of any class, in which case it is not subject to RID/ADR/ADN.".

2.1.3.4.1 Move the entry "UN 2481 ETHYL ISOCYANATE" from the first indent (Class 3) to the second indent (Class 6.1).

2.1.3.5 Replace "2.1.2.4" with "2.1.2.5".

2.1.3.5.3 (a) In the text in parenthesis, add: ", for which special provision 290 of Chapter 3.3 applies," after "excepted packages".

2.1.3.6 Replace "2.1.2.4" with "2.1.2.5".

Chapter 2.2

2.2.1.1.1 Add a new paragraph at the end to read as follows:

"For the purposes of Class 1, the following definition applies:
Phlegmatized means that a substance (or “phlegmatizer”) has been added to an explosive to enhance its safety in handling and carriage. The phlegmatizer renders the explosive insensitive, or less sensitive, to the following actions: heat, shock, impact, percussion or friction. Typical phlegmatizing agents include, but are not limited to: wax, paper, water, polymers (such as chlorofluoropolymers), alcohol and oils (such as petroleum jelly and paraffin).".

2.2.1.1.6 In the last sentence of Note 2, insert "articles and" before "packages".

2.2.1.1.7.5 In Note 1, replace "all pyrotechnic composition" with "all pyrotechnic substances".

Amend Note 2 to read as follows:

*"**NOTE 2:** “Flash composition” in this table refers to pyrotechnic substances in powder form or as pyrotechnic units as presented in the fireworks, that are used to produce an aural effect, or used as a bursting charge or lifting charge,*

unless the time taken for the pressure rise is demonstrated to be more than 8 ms for 0.5 g of pyrotechnic substance in the HSL Flash Composition Test in Appendix 7 of the Manual of Tests and Criteria.".

In the default fireworks classification table, replace "pyrotechnic composition" with "pyrotechnic substance" whenever it appears.

2.2.1.1.8 For "POWDER, SMOKELESS" add ", 0509" after "UN Nos. 0160, 0161".

2.2.2.1.1 Delete Note 4.

2.2.2.1.5 Under "Oxidizing gases", amend the second sentence ("Oxidizing ability… 10156-2:2005)") to read as follows:

"*These are pure gases or gas mixtures with an oxidizing power greater than 23.5% as determined by a method specified in ISO 10156:1996 or 10156-2:2005.*".

2.2.3.2.1 Replace "2.3.3.2" with "2.3.3.3" at the end.

2.2.3.3 Under classification code F1, amend the name and description for UN No. 1999 to read "TARS, LIQUID, including road oils, and cutback bitumens".

2.2.42.1.3 Amend to read as follows:

"2.2.42.1.3 Self-heating of a substance is a process where the gradual reaction of that substance with oxygen (in air) generates heat. If the rate of heat production exceeds the rate of heat loss, then the temperature of the substance will rise which, after an induction time, may lead to self-ignition and combustion.".

2.2.43.3 Under classification code "W1" for the two entries for UN No. 1391, delete "having a flash-point above 60 °C".

Under classification code "WF1", replace the two entries for UN No. 1391 with the two following new entries:

"3482 ALKALI METAL DISPERSION, FLAMMABLE or
3482 ALKALINE EARTH METAL DISPERSION, FLAMMABLE".

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

Organic peroxide		**Column**	**Amendment**
tert-AMYLPEROXY-3,5,5-TRIMETHYLHEXANOATE		Subsidiary risks and remarks	Delete "3)"
DI-(2-tert-BUTYLPEROXYISOPROPYL)BENZENE(S)		Organic peroxide	Amend to read "DI-(tert-BUTYLPEROXYISOPROPYL) BENZENE(S)"
2,5-DIMETHYL-2,5-DI-(tert-BUTYLPEROXY)HEXANE *(Concentration > 52 – 100)*	(1st row)	Delete	

Insert the following new entries:

Organic peroxide	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**	**(11)**
2,5-DIMETHYL-2,5-DI-(tert-BUTYLPEROXY)HEXANE	> 90 – 100					OP5			3103	
2,5-DIMETHYL-2,5-DI-(tert-BUTYLPEROXY)HEXANE	> 52 – 90	≥ 10				OP7			3105	

2.2.61.1.1 Add a new note at the end to read as follows:

"***NOTE**: Genetically modified microorganisms and organisms shall be assigned to this class if they meet the conditions for this class.*".

2.2.61.3 Under classification code "TFC", add at the end (the text between brackets is deleted):

"3488 TOXIC BY INHALATION LIQUID, FLAMMABLE, CORROSIVE, N.O.S. with an inhalation toxicity lower than or equal to 200 ml/m³ and saturated vapour concentration greater than or equal to 500 LC_{50}

3489 TOXIC BY INHALATION LIQUID, FLAMMABLE, CORROSIVE, N.O.S. with an inhalation toxicity lower than or equal to 1000 ml/m³ and saturated vapour concentration greater than or equal to 10 LC_{50}

3492 TOXIC BY INHALATION LIQUID, CORROSIVE, FLAMMABLE, N.O.S. with an inhalation toxicity lower than or equal to 200 ml/m³ and saturated vapour concentration greater than or equal to 500 LC_{50}

3493 TOXIC BY INHALATION LIQUID, CORROSIVE, FLAMMABLE, N.O.S. with an inhalation toxicity lower than or equal to 1000 ml/m³ and saturated vapour concentration greater than or equal to 10 LC_{50}".

After classification code "TFC", add a new branch to read as follows:

flammable, water-reactive	TFW	3490 TOXIC BY INHALATION LIQUID, WATER-REACTIVE, FLAMMABLE, N.O.S. with an inhalation toxicity lower than or equal to 200 ml/m³ and saturated vapour concentration greater than or equal to 500 LC_{50} 3491 TOXIC BY INHALATION LIQUID, WATER-REACTIVE, FLAMMABLE, N.O.S. with an inhalation toxicity lower than or equal to 1000 ml/m³ and saturated vapour concentration greater than or equal to 10 LC_{50}

2.2.62.1.3 Delete the definition of "Genetically modified microorganisms and organisms".

2.2.7.1.3 In the definition of *Fissile material*, amend the text before sub-paragraphs (a) and (b) to read:

"*Fissile nuclides* means uranium-233, uranium-235, plutonium-239 and plutonium-241. *Fissile material* means a material containing any of the fissile nuclides. Excluded from the definition of fissile material are:".

2.2.7.2.2.1 In the table, under "Kr-79", in the third column, replace "1 x 10^0" with "2 x 10^0".

2.2.7.2.3.1.2 (a) (ii) Replace "providing they" by "that".

2.2.7.2.3.1.2 (a) (iii) and (iv) Replace "excluding material classified as fissile according to 2.2.7.2.3.5" with "excluding fissile material not excepted under 2.2.7.2.3.5".

2.2.7.2.3.1.2 (c) At the beginning, insert "meeting the requirements of 2.2.7.2.3.1.3," after "excluding powders,".

2.2.7.2.3.4.1 In the second sentence, insert ", taking into account the provisions of 6.4.8.14," after "package".

2.2.7.2.3.5 Amend the introductory sentence before sub-paragraph (a) to read as follows:

"Packages containing fissile material shall be classified under the relevant entry of Table 2.2.7.2.1.1, the description of which includes the words "FISSILE" or "fissile-excepted". Classification as "fissile-excepted" is allowed only if one of the conditions (a) to (d) of this paragraph is met. Only one type of exception is allowed per consignment (see also 6.4.7.2).".

2.2.7.2.3.5 (a) Amend to read as follows:

"(a) A mass limit per consignment, provided that the smallest external dimension of each package is not less than 10 cm, such that:

$$\frac{\text{mass of uranium} - 235\,(\text{g})}{\text{X}} + \frac{\text{mass of other fissile material}\,(\text{g})}{\text{Y}} < 1$$

where X and Y are the mass limits defined in Table 2.2.7.2.3.5, provided that either:

(i) each individual package contains not more than 15 g of fissile nuclides; for unpackaged material, this quantity limitation shall apply to the consignment being carried in or on the conveyance; or

(ii) the fissile material is a homogeneous hydrogenous solution or mixture where the ratio of fissile nuclides to hydrogen is less than 5% by mass; or

(iii) there are not more than 5 g of fissile nuclides in any 10 litre volume of material.

Beryllium shall not be present in quantities exceeding 1% of the applicable consignment mass limits provided in Table 2.2.7.2.3.5 except where the concentration of beryllium in the material does not exceed 1 gram beryllium in any 1 000 grams.

Deuterium shall also not be present in quantities exceeding 1% of the applicable consignment mass limits provided in Table 2.2.7.2.3.5 except where deuterium occurs up to natural concentration in hydrogen.".

2.2.7.2.3.5 (b) Replace "fissile material is" by "fissile nuclides are".

2.2.7.2.3.5 (d) Amend to read as follows:

"(d) Plutonium containing not more than 20% of fissile nuclides by mass up to a maximum of 1 kg of plutonium per consignment. Shipments under this exception shall be under exclusive use.".

2.2.7.2.4.1.1 (b) At the end, add "as specified in Table 2.2.7.2.4.1.2".

2.2.7.2.4.1.1 (d) At the end, add "as specified in Table 2.2.7.2.4.1.2".

2.2.7.2.4.1.3 In the first sentence before sub-paragraph (a), replace "provided that" with "only if".

2.2.7.2.4.1.4 At the beginning, replace "Radioactive material with an activity not exceeding the limit" with "Radioactive material in forms other than as specified in 2.2.7.2.4.1.3 and with an activity not exceeding the limits".

2.2.7.2.4.1.5 In the first sentence, delete "with an activity not exceeding the limit specified in column 4 of Table 2.2.7.2.4.1.2" and replace "provided that" with "only if".

2.2.7.2.4.1.6 The first amendment only applies to the French version. At the end, replace "provided that" with "only if".

2.2.7.2.4.2 Replace "if the conditions of 2.2.7.2.3.1 and 4.1.9.2 are met" with "if the definition of LSA in 2.2.7.1.3 and the conditions of 2.2.7.2.3.1, 4.1.9.2 and 7.5.11 CV/CW33 (2) are met".

2.2.7.2.4.3 Replace "if the conditions of 2.2.7.2.3.2 and 4.1.9.2 are met" with "if the definition of SCO in 2.2.7.1.3 and the conditions of 2.2.7.2.3.2, 4.1.9.2 and 7.5.11 CV/CW33 (2) are met".

2.2.8.1.6 At the end, replace "OECD Guideline 404[1]." with "OECD Test Guideline 404[1] or 435[2]. A substance which is determined not to be corrosive in accordance with OECD Test Guideline 430[3] or 431[4] may be considered not to be corrosive to skin for the purposes of RID/ADR/ADN without further testing.".

(Note for ADR: Footnotes should be numbered 7 to 10)

[2.2.9 Amend the heading to read as follows:

"**2.2.9 Class 9 Miscellaneous dangerous substances and articles, including environmentally hazardous substances**".

Consequential amendments:

2.1.1.1 Replace "Miscellaneous dangerous substances and articles" with: "Miscellaneous dangerous substances and articles, including environmentally hazardous substances".]

5.4.3.4 On page 3 of the instructions in writing, in column (1) for danger label No. 9, replace "Miscellaneous dangerous substances and articles" with:
"Miscellaneous dangerous substances and articles, including environmentally hazardous substances".]

2.2.9.1.1 The amendment does not apply to the English text.

2.2.9.1.10.1.4 The two first amendments do not apply to the English text.

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[1] *OECD Guideline for the testing of chemicals No. 404 "Acute Dermal Irritation/Corrosion" 2002.*

[2] *OECD Guideline for the testing of chemicals No. 435 "In Vitro Membrane Barrier Test Method for Skin Corrosion" 2006.*

[3] *OECD Guideline for the testing of chemicals No. 430 "In Vitro Skin Corrosion: Transcutaneous Electrical Resistance Test (TER)" 2004.*

[4] *OECD Guideline for the testing of chemicals No. 431 "In Vitro Skin Corrosion: Human Skin Model Test" 2004.*

Amend the definition of "NOEC" to read as follows:

"- NOEC (No Observed Effect Concentration): the test concentration immediately below the lowest tested concentration with statistically significant adverse effect. The NOEC has no statistically significant adverse effect compared to the control;".

The fourth amendment does not apply to the English text.

After the definition of "GLP", add the following new definition:

"- EC_x: the concentration associated with x% response;".

2.2.9.1.10.2.1 Rearrange the indents to read as follows:

"(a) Acute aquatic toxicity;
(b) Chronic aquatic toxicity;
(c) Potential for or actual bioaccumulation; and
(d) Degradation (biotic or abiotic) for organic chemicals.".

2.2.9.1.10.2.3 At the beginning, add the following two new paragraphs:

"Acute aquatic toxicity means the intrinsic property of a substance to be injurious to an organism in a short-term aquatic exposure to that substance.

Acute (short-term) hazard, for classification purposes, means the hazard of a chemical caused by its acute toxicity to an organism during short-term aquatic exposure to that chemical.".

The existing text becomes the new third paragraph.

2.2.9.1.10.2.4 *Text of existing 2.2.9.1.10.2.6, with the following modifications:*

At the beginning, add the following two new paragraphs:

"Chronic aquatic toxicity means the intrinsic property of a substance to cause adverse effects to aquatic organisms during aquatic exposures which are determined in relation to the life-cycle of the organism.

Long-term hazard, for classification purposes, means the hazard of a chemical caused by its chronic toxicity following long-term exposure in the aquatic environment.".

The existing text becomes the new third paragraph.

Amend the last sentence to read as follows: "The NOECs or other equivalent ECx shall be used.".

2.2.9.1.10.2.5 *Text of existing 2.2.9.1.10.2.4. The modifications do not apply to the English text.*

2.2.9.1.10.2.6 *Text of existing 2.2.9.1.10.2.5, with the following modifications:*

At the beginning, add the following new paragraph:

"*Degradation* means the decomposition of organic molecules to smaller molecules and eventually to carbon dioxide, water and salts."

In the second sentence of the new second paragraph, replace "OECD biodegradability tests (OECD Test Guideline 301 (A - F))" with "biodegradability tests (A-F) of OECD Test Guideline 301". The amendments to the fourth and last sentences do not apply to the English text.

In sub-paragraph (a), at the end, after "has been degraded", insert the following text: ", unless the substance is identified as a complex, multi-component substance with structurally similar constituents. In this case, and where there is sufficient justification, the 10-day window condition may be waived and the pass level applied at 28 days[4].".

(Note for ADR: Footnote should be numbered 14).

2.2.9.1.10.3 Amend to read as follows:

"2.2.9.1.10.3 Substance classification categories and criteria

2.2.9.1.10.3.1 Substances shall be classified as "environmentally hazardous substances (aquatic environment)", if they satisfy the criteria for Acute 1, Chronic 1 or Chronic 2, according to Table 2.2.9.1.10.3.1. These criteria describe in detail the classification categories. They are diagrammatically summarized in Table 2.2.9.1.10.3.2.

Table 2.2.9.1.10.3.1: Categories for substances hazardous to the aquatic environment
(see Note 1)

(a) Acute (short-term) aquatic hazard

Category Acute 1: *(see Note 2)*	
96 hr LC_{50} (for fish)	≤ 1 mg/l and/or
48 hr EC_{50} (for crustacea)	≤ 1 mg/l and/or
72 or 96hr ErC_{50} (for algae or other aquatic plants)	≤ 1 mg/l *(see Note 3)*

[4] *See Chapter 4.1 and Annex 9, paragraph A9.4.2.2.3 of the GHS.*

(b) Long-term aquatic hazard *(see also Figure 2.2.9.1.10.3.1)*

(i) Non-rapidly degradable substances (see Note 4) for which there are adequate chronic toxicity data available

Category Chronic 1: (see *Note 2*)	
Chronic NOEC or EC_x (for fish)	≤ 0.1 mg/l and/or
Chronic NOEC or EC_x (for crustacea)	≤ 0.1 mg/l and/or
Chronic NOEC or EC_x (for algae or other aquatic plants)	≤ 0.1 mg/l
Category Chronic 2:	
Chronic NOEC or EC_x (for fish)	≤ 1 mg/l and/or
Chronic NOEC or EC_x (for crustacea)	≤ 1 mg/l and/or
Chronic NOEC or EC_x (for algae or other aquatic plants)	≤ 1 mg/l

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

Category Chronic 1: *(see Note 2)*	
Chronic NOEC or EC_x (for fish)	≤ 0.01 mg/l and/or
Chronic NOEC or EC_x (for crustacea)	≤ 0.01 mg/l and/or
Chronic NOEC or EC_x (for algae or other aquatic plants)	≤ 0.01 mg/l
Category Chronic 2:	
Chronic NOEC or EC_x (for fish)	≤ 0.1 mg/l and/or
Chronic NOEC or EC_x (for crustacea)	≤ 0.1 mg/l and/or
Chronic NOEC or EC_x (for algae or other aquatic plants)	≤ 0.1 mg/l

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

Category Chronic 1: *(see Note 2)*	
96 hr LC_{50} (for fish)	≤ 1 mg/l and/or
48 hr EC_{50} (for crustacea)	≤ 1 mg/l and/or
72 or 96hr ErC_{50} (for algae or other aquatic plants)	≤ 1 mg/l *(see Note 3)*
and the substance is not rapidly degradable and/or the experimentally determined BCF is ≥ 500 (or, if absent the log K_{ow} ≥ 4) *(see Notes 4 and 5).*	
Category Chronic 2:	
96 hr LC_{50} (for fish)	>1 but ≤ 10 mg/l and/or
48 hr EC_{50} (for crustacea)	>1 but ≤ 10 mg/l and/or
72 or 96hr ErC_{50} (for algae or other aquatic plants)	>1 but ≤ 10 mg/l *(see Note 3)*
and the substance is not rapidly degradable and/or the experimentally determined BCF is ≥ 500 (or, if absent the log K_{ow} ≥ 4 *(see Notes 4 and 5).*	

NOTE 1: *The organisms fish, crustacea and algae are tested as surrogate species covering a range of trophic levels and taxa, and the test methods are highly standardized. Data on other organisms may also be considered, however, provided they represent equivalent species and test endpoints.*

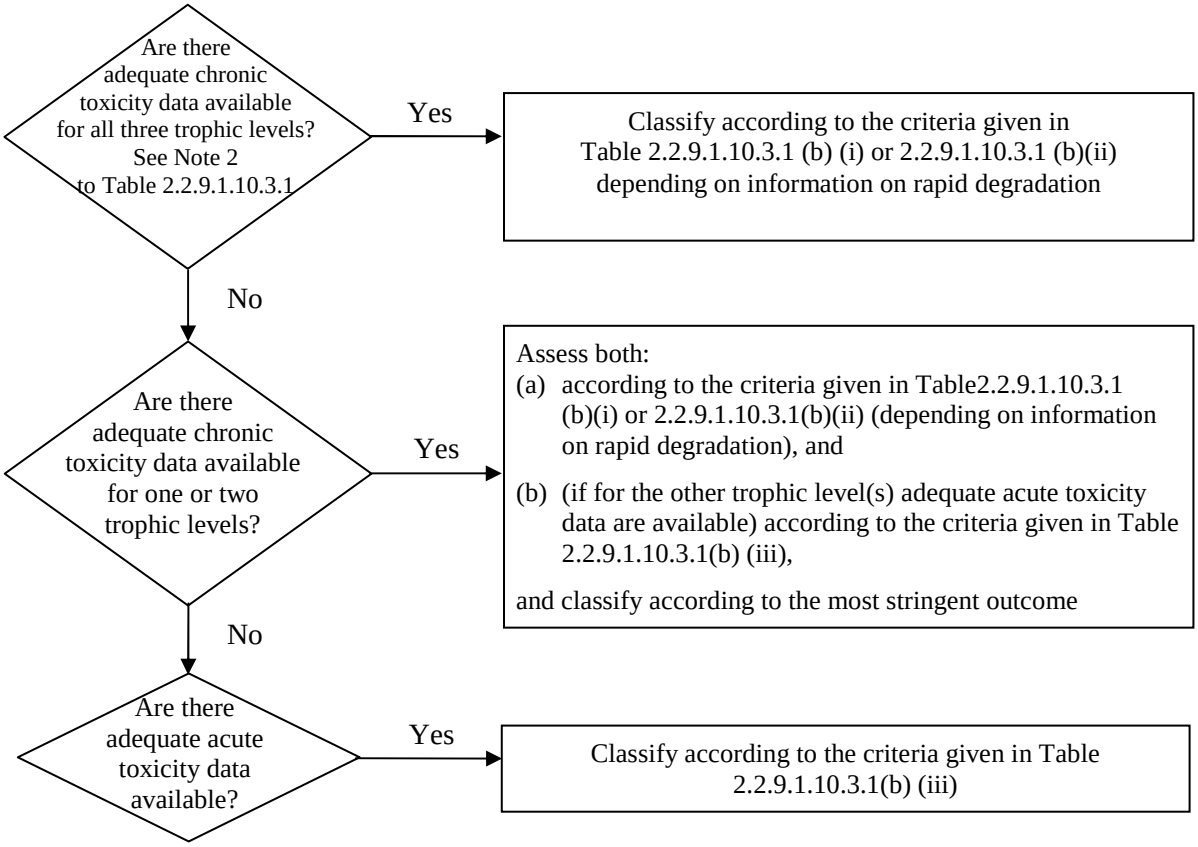
NOTE 2: *When classifying substances as Acute 1 and/or Chronic 1 it is necessary at the same time to indicate an appropriate M factor (see* 2.2.9.1.10.4.6.4 *) to apply the summation method.*

NOTE 3: *Where the algal toxicity ErC_{50} (= EC_{50} (growth rate)) falls more than 100 times below the next most sensitive species and results in a classification based solely on this effect, consideration shall be given to whether this toxicity is representative of the toxicity to aquatic plants. Where it can be shown that this is not the case, professional judgment shall be used in deciding if classification shall be applied. Classification shall be based on the ErC_{50}. In circumstances where the basis of the EC_{50} is not specified and no ErC_{50} is recorded, classification shall be based on the lowest EC_{50} available.*

NOTE 4: *Lack of rapid degradability is based on either a lack of ready biodegradability or other evidence of lack of rapid degradation. When no useful data on degradability are available, either experimentally determined or estimated data, the substance shall be regarded as not rapidly degradable.*

NOTE 5: *Potential to bioaccumulate, based on an experimentally derived BCF $\geq$ 500 or, if absent, a log $K_{ow} \geq 4$ provided log K_{ow} is an appropriate descriptor for the bioaccumulation potential of the substance. Measured log K_{ow} values take precedence over estimated values and measured BCF values take precedence over log K_{ow} values.*

Figure 2.2.9.1.10.3.1: Categories for substances long-term hazardous to the aquatic environment



2.2.9.1.10.3.2 The classification scheme in Table 2.2.9.1.10.3.2 below summarizes the classification criteria for substances.

Table 2.2.9.1.10.3.2: Classification scheme for substances hazardous to the aquatic environment

Classification categories			
Acute hazard (*see Note 1*)	**Long-term hazard** (*see Note 2*)		
	Adequate chronic toxicity data available		**Adequate chronic toxicity data not available** (*see Note 1*)
	Non-rapidly degradable substances (*see Note 3*)	**Rapidly degradable substances** (*see Note 3*)	
Category: Acute 1	**Category: Chronic 1**	**Category: Chronic 1**	**Category: Chronic 1**
$L(E)C_{50} \leq 1.00$	NOEC or $EC_x \leq 0.1$	NOEC or $EC_x \leq 0.01$	$L(E)C_{50} \leq 1.00$ and lack of rapid degradability and/or BCF ≥ 500 or, if absent log $K_{ow} \geq 4$
	Category: Chronic 2	**Category: Chronic 2**	**Category: Chronic 2**
	$0.1 <$ NOEC or $EC_x \leq 1$	$0.01 <$ NOEC or $EC_x \leq 0.1$	$1.00 < L(E)C_{50} \leq 10.0$ and lack of

Classification categories			
Acute hazard (*see Note 1*)	**Long-term hazard** (*see Note 2*)		
	Adequate chronic toxicity data available		**Adequate chronic toxicity data not available** (*see Note 1*)
	Non-rapidly degradable substances (*see Note 3*)	**Rapidly degradable substances** (*see Note 3*)	
			rapid degradability and/or BCF ≥ 500 or, if absent log K_{ow} ≥ 4

NOTE 1: *Acute toxicity band based on L(E)C_{50} values in mg/l for fish, crustacea and/or algae or other aquatic plants (or Quantitative Structure Activity Relationships (QSAR) estimation if no experimental data[5]).*

(Note for ADR: Footnote should be renumbered 15. Renumber existing footnotes 11 to 13 as 16 to 18).

NOTE 2: *Substances are classified in the various chronic categories unless there are adequate chronic toxicity data available for all three trophic levels above the water solubility or above 1 mg/l. ("Adequate" means that the data sufficiently cover the endpoint of concern. Generally this would mean measured test data, but in order to avoid unnecessary testing it can on a case by case basis also be estimated data, e.g. (Q)SAR, or for obvious cases expert judgment).*

NOTE 3: *Chronic toxicity band based on NOEC or equivalent EC_x values in mg/l for fish or crustacea or other recognized measures for chronic toxicity.*".

2.2.9.1.10.4.1 In the first sentence, replace "meaning acute category 1 and chronic categories 1 and 2" with ", meaning categories Acute 1 and Chronic 1 and 2". The second amendment does not apply to the English text.

Amend the second paragraph to read as follows:

"The "relevant ingredients" of a mixture are those which are present in a concentration equal to or greater than 0.1% (by mass) for ingredients classified as Acute and/or Chronic 1 and equal to or greater than 1% for other ingredients, unless there is a presumption (e.g. in the case of highly toxic ingredients) that an ingredient present at less than 0.1% can still be relevant for classifying the mixture for aquatic environmental hazards.".

2.2.9.1.10.4.2 In the heading of the figure, replace "chronic" with "long-term".

In the figure, in the middle column, modify the three bullet points to read them as sub-paragraphs (a), (b) and (c). In the new sub-paragraph (c), replace "formula" with "formulas" and insert "or EqNOECm" after "L(E)C_{50}" and "or "Chronic""

[5] *Special guidance is provided in Chapter 4.1, paragraph 4.1.2.13 and Annex 9, Section A9.6 of the GHS.*

after "“Acute”". In the right column, replace "chronic toxicity" with "long-term" (four times).

2.2.9.1.10.4.3 Amend to read as follows:

"2.2.9.1.10.4.3 Classification of mixtures when toxicity data are available for the complete mixture

2.2.9.1.10.4.3.1 When the mixture as a whole has been tested to determine its aquatic toxicity, this information shall be used for classifying the mixture according to the criteria that have been agreed for substances. The classification is normally based on the data for fish, crustacea and algae/plants (see 2.2.9.1.10.2.3and 2.2.9.1.10.2.4). When adequate acute or chronic data for the mixture as a whole are lacking, "bridging principles" or "summation method" shall be applied (see 2.2.9.1.10.4.4and 2.2.9.1.10.4.5).

2.2.9.1.10.4.3.2 The long-term hazard classification of mixtures requires additional information on degradability and in certain cases bioaccumulation. There are no degradability and bioaccumulation data for mixtures as a whole. Degradability and bioaccumulation tests for mixtures are not used as they are usually difficult to interpret, and such tests may be meaningful only for single substances.

2.2.9.1.10.4.3.3 Classification for category Acute 1

(a) When there are adequate acute toxicity test data (LC_{50} or EC_{50}) available for the mixture as a whole showing $L(E)C_{50} \leq 1$ mg/l:

Classify the mixture as Acute 1 in accordance with Table 2.2.9.1.10.3.1 (a);

(b) When there are acute toxicity test data (LC_{50}(s) or EC_{50}(s) available for the mixture as a whole showing $L(E)C_{50}(s) > 1$ mg/l, or above the water solubility:

No need to classify for acute hazard under RID/ADR.

2.2.9.1.10.4.3.4 Classification for categories Chronic 1 and 2

(a) When there are adequate chronic toxicity data (EC_x or NOEC) available for the mixture as a whole showing EC_x or NOEC of the tested mixture $\leq$ 1mg/l:

(i) classify the mixture as Chronic 1 or 2 in accordance with Table 2.2.9.1.10.3.1 (b) (ii) (rapidly degradable) if the available information allows the conclusion that all relevant ingredients of the mixture are rapidly degradable;

(ii) classify the mixture as Chronic 1 or 2 in all other cases in accordance with Table 2.2.9.1.10.3.1 (b) (i) (non-rapidly degradable);

(b) When there are adequate chronic toxicity data (EC_x or NOEC) available for the mixture as a whole showing EC_x(s) or NOEC(s) of the tested mixture > 1mg/l or above the water solubility:

No need to classify for long-term hazard under RID/ADR.".

2.2.9.1.10.4.4 Amend the heading to read as follows: "Classification of mixtures when toxicity data are not available for the complete mixture: bridging principles".

2.2.9.1.10.4.4.2 Amend to read as follows:

"2.2.9.1.10.4.4.2 Dilution

Where a new mixture is formed by diluting a tested mixture or a substance with a diluent which has an equivalent or lower aquatic hazard classification than the least toxic original ingredient and which is not expected to affect the aquatic hazards of other ingredients, then the resulting mixture shall be classified as equivalent to the original tested mixture or substance. Alternatively, the method explained in 2.2.9.1.10.4.5 may be applied.".

2.2.9.1.10.4.4.3 At the beginning, replace "one production batch of a complex mixture" with "a tested production batch of a mixture". Insert "untested" after "another" and replace "and produced" with "when produced". At the end of the first sentence, insert "untested" before "batch".

2.2.9.1.10.4.4 The amendment does not apply to the English text.

2.2.9.1.10.4.4.4 At the beginning, replace "If a mixture" with "If a tested mixture" and insert "the" before "ingredients". Insert "untested" after "concentrated" and "tested" after "original".

2.2.9.1.10.4.4.5 Amend the text after the heading to read as follows:

"For three mixtures (A, B and C) with identical ingredients, where mixtures A and B have been tested and are in the same toxicity category, and where untested mixture C has the same toxicologically active ingredients as mixtures A and B but has concentrations of toxicologically active ingredients intermediate to the concentrations in mixtures A and B, then mixture C is assumed to be in the same category as A and B.".

2.2.9.1.10.4.4.6 In sub-paragraph (b), insert "essentially" before "the same". In sub-paragraph (d), replace "Classification" with "Data on aquatic hazards" and "the same" with "substantially equivalent". Amend the text after sub-paragraph (d) to read as follows:

"If mixture (i) or (ii) is already classified based on test data, then the other mixture can be assigned the same hazard category.".

2.2.9.1.10.4.5 In the heading, insert "toxicity" before "data".

2.2.9.1.10.4.5.2 Amend to read as follows:

"2.2.9.1.10.4.5.2 Mixtures may be made of a combination of both ingredients that are classified (as Acute 1 and/or Chronic 1, 2) and those for which adequate toxicity test data are available. When adequate toxicity data are available for more than one ingredient in the mixture, the combined toxicity of those ingredients shall be calculated using the following additivity formulas (a) or (b), depending on the nature of the toxicity data:

(a) Based on acute aquatic toxicity:

$$\frac{\sum C_i}{L(E)C_{50m}} = \sum_n \frac{C_i}{L(E)C_{50i}}$$

where:

C_i	=	concentration of ingredient i (mass percentage);
$L(E)C_{50i}$	=	LC_{50} or EC_{50} for ingredient i (mg/l);
n	=	number of ingredients, and i is running from 1 to n;
$L(E)C_{50m}$	=	$L(E)C_{50}$ of the part of the mixture with test data

The calculated toxicity shall be used to assign that portion of the mixture an acute hazard category which is then subsequently used in applying the summation method;

(b) Based on chronic aquatic toxicity:

$$\frac{\sum C_i + \sum C_j}{EqNOEC_m} = \sum_n \frac{C_i}{NOEC_i} + \sum_n \frac{C_j}{0.1 \cdot NOEC_j}$$

where:

C_i = concentration of ingredient i (mass percentage) covering the rapidly degradable ingredients;

C_j = concentration of ingredient j (mass percentage) covering the non-rapidly degradable ingredients;

$NOEC_i$ = NOEC (or other recognized measures for chronic toxicity) for ingredient i covering the rapidly degradable ingredients, in mg/l;

$NOEC_j$ = NOEC (or other recognized measures for chronic toxicity) for ingredient j covering the non-rapidly degradable ingredients, in mg/l;

n = number of ingredients, and i and j are running from 1 to n;

$EqNOEC_m$ = equivalent NOEC of the part of the mixture with test data;

The equivalent toxicity thus reflects the fact that non-rapidly degrading substances are classified one hazard category level more “severe” than rapidly degrading substances.

The calculated equivalent toxicity shall be used to assign that portion of the mixture a long-term hazard category, in accordance with the criteria for rapidly degradable substances (Table 2.2.9.1.10.3.1 (b) (ii)), which is then subsequently used in applying the summation method.".

2.2.9.1.10.4.5.3 In the first sentence, replace "each substance" with "each ingredient", "same species" with "same taxonomic group", "daphnia" with "crustacea" and "three species" with "three groups". In the second sentence, replace "species" with "taxonomic group". In the last sentence, insert "and chronic" before "toxicity" and "and/or Chronic 1 or 2" after "Acute 1".

2.2.9.1.10.4.6.1 The amendment does not apply to the English text.

2.2.9.1.10.4.6.2 Amend the heading to read "Classification for category Acute 1".

2.2.9.1.10.4.6.2.1 In the first sentence, replace "All" with "First, all" and "shall be" with "are". In the second sentence, insert "the concentrations (in %) of" before "these ingredients". Delete "category" (twice).

2.2.9.1.10.4.6.2.2 Amend to read as follows:

"2.2.9.1.10.4.6.2.2 The classification of mixtures for acute hazards based on this summation of the concentrations of classified ingredients is summarized in Table 2.2.9.1.10.4.6.2.2 below.

Table 2.2.9.1.10.4.6.2.2: Classification of a mixture for acute hazards based on summation of the concentrations of classified ingredients

Sum of the concentrations (in %) of ingredients classified as:	Mixture classified as:
Acute 1 × M [a] ≥ 25%	Acute 1

[a] *For explanation of the M factor, see 2.2.9.1.10.4.6.4.*".

2.2.9.1.10.4.6.3 Amend the heading to read "Classification for categories Chronic 1 and 2".

2.2.9.1.10.4.6.3.1 The first amendment does not apply to the English text. In the second sentence, insert "the concentrations (in %) of" before "these ingredients". Delete "category" (twice).

2.2.9.1.10.4.6.3.2 Insert "the concentrations (in %) of" after "the sum of" (twice).

2.2.9.1.10.4.6.3.3 Amend to read as follows:

"2.2.9.1.10.4.6.3.3 The classification of mixtures for long-term hazards based on this summation of the concentrations of classified ingredients is summarized in Table 2.2.9.1.10.4.6.3.3 below.

Table 2.2.9.1.10.4.6.3.3: Classification of a mixture for long-term hazards based on summation of the concentrations of classified ingredients

Sum of the concentrations (in %) of ingredients classified as:		Mixture classified as:
Chronic 1 × M [a]	≥ 25%	Chronic 1
(M × 10 × Chronic 1) + Chronic 2	≥ 25%	Chronic 2

[a] *For explanation of the M factor, see 2.2.9.1.10.4.6.4.*".

2.2.9.1.10.4.6.4 In the first sentence after the heading, replace "Category acute 1 ingredients with toxicities well below 1 mg/l may influence" with "Acute 1 or Chronic 1 ingredients with acute toxicities well below 1 mg/l and/or chronic toxicities well below 0.1 mg/l (if non-rapidly degradable) and 0.01 mg/l (if rapidly degradable) may influence".

In the second sentence, insert "and Chronic 1" after "the concentrations of Acute 1". In the last sentence, insert "and/or chronic" after "specific acute".

Table 2.2.9.1.10.4.6.4 Replace with the following table:

"**Table 2.2.9.1.10.4.6.4: Multiplying factors for highly toxic ingredients of mixtures**

Acute toxicity	**M factor**	**Chronic toxicity**	**M factor**	
$L(E)C_{50}$ value		**NOEC value**	**NRD [a] ingredients**	**RD [b] ingredients**
$0.1 < L(E)C_{50} \leq 1$	1	$0.01 < NOEC \leq 0.1$	1	-
$0.01 < L(E)C_{50} \leq 0.1$	10	$0.001 < NOEC \leq 0.01$	10	1
$0.001 < L(E)C_{50} \leq 0.01$	100	$0.0001 < NOEC \leq 0.001$	100	10
$0.0001 < L(E)C_{50} \leq 0.001$	1 000	$0.00001 < NOEC \leq 0.0001$	1 000	100
$0.00001 < L(E)C_{50} \leq 0.0001$	10 000	$0.000001 < NOEC \leq 0.00001$	10 000	1 000
(continue in factor 10 intervals)		(continue in factor 10 intervals)		

[a] *Non-rapidly degradable.*
[b] *Rapidly degradable.*".

2.2.9.1.10.4.6.5 In the first sentence, replace "aquatic hazard" with "aquatic toxicity".

2.2.9.1.11 In the second sentence, insert "of toxic substances or" before "of infectious substances".

In NOTE 3, add the following sentence at the end: "Genetically modified live animals shall be carried under terms and conditions of the competent authorities of the countries of origin and destination."

2.2.9.1.14 In the Note, amend the proper shipping name of UN No. 3166 to read:

"UN No. 3166 engine, internal combustion or vehicle, flammable gas powered or vehicle, flammable liquid powered or engine, fuel cell, flammable gas powered or engine, fuel cell, flammable liquid powered or vehicle, fuel cell, flammable gas powered or vehicle, fuel cell, flammable liquid powered"

2.2.9.3 Replace "List of collective entries" with "List of entries".

Chapter 2.3

[2.3.3.1 Amend to read as follows:

"**2.3.3.1** ***Determination of flash-point***

2.3.3.1.1 The following methods for determining the flash-point of flammable liquids may be used:

International standards:

ISO 1516 (Determination of flash/no flash – Closed cup equilibrium method)

ISO 1523 (Determination of flash point – Closed cup equilibrium method)
ISO 2719 (Determination of flash point – Pensky-Martens closed cup method)
ISO 13736 (Determination of flash point – Abel closed-cup method)
ISO 3679 (Determination of flash point – Rapid equilibrium closed cup method)
ISO 3680 (Determination of flash/no flash – Rapid equilibrium closed cup method)

National standards:

American Society for Testing Materials International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, Pennsylvania, USA 19428-2959:

ASTM D3828-07a, Standard Test Methods for Flash Point by Small Scale Closed-Cup Tester
ASTM D56-05, Standard Test Method for Flash Point by Tag Closed-Cup Tester
ASTM D3278-96(2004)e1, Standard Test Methods for Flash Point of Liquids by Small Scale Closed-Cup Apparatus
ASTM D93-08, Standard Test Methods for Flash Point by Pensky-Martens Closed-Cup Tester

Association française de normalisation, AFNOR, 11, rue de Pressensé, F-93571 La Plaine Saint-Denis Cedex:

French Standard NF M 07 - 019
French Standards NF M 07 - 011 / NF T 30 - 050 / NF T 66 - 009
French Standard NF M 07 - 036

Deutsches Institut für Normung, Burggrafenstr. 6, D-10787 Berlin:

Standard DIN 51755 (flash-points below 65 °C)

State Committee of the Council of Ministers for Standardization, RUS-113813, GSP, Moscow, M-49 Leninsky Prospect, 9:

GOST 12.1.044-84

2.3.3.1.2 to 2.3.3.1.5 *Existing text of 2.3.3.1.2 and 2.3.3.1.6 to 2.3.3.1.8.* ".]

2.3.3.2 Insert a new sub-section 2.3.3.2 to read as follows and renumber 2.3.3.2 accordingly:

"**2.3.3.2** ***Determination of initial boiling point***

The following methods for determining the initial boiling point of flammable liquids may be used:

International standards:

ISO 3924 (Petroleum products – Determination of boiling range distribution – Gas chromatography method)
ISO 4626 (Volatile organic liquids – Determination of boiling range of organic solvents used as raw materials)
ISO 3405 (Petroleum products – Determination of distillation characteristics at atmospheric pressure)

National standards:

American Society for Testing Materials International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, Pennsylvania, USA 19428-2959:

ASTM D86-07a, Standard Test Method for Distillation of Petroleum Products at Atmospheric Pressure
ASTM D1078-05, Standard Test Method for Distillation Range of Volatile Organic Liquids

Further acceptable methods:

Method A.2 as described in Part A of the Annex to Commission Regulation (EC) No 440/2008[1].".

[Consequential amendment: In Chapter 3.3, special provision 649, replace "ASTM D86-01" with "ASTM D86-07a"and in footnote 2, replace "September 2001" with "April 2007".]

PART 3

Chapter 3.1

3.1.2.8.1 In the first sentence, insert "or 318" after "special provision 274".

3.1.2.8.1.1 In the first sentence, replace ", if relevant a biological name," with "or biological name,".

[1] *Commission Regulation (EC) No 440/2008 of 30 May 2008 laying down test methods pursuant to Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (Official Journal of the European Union, No. L 142 of 31.05.2008, p.1-739 and No. L 143 of 03.06.2008, p.55) .*

Delete 3.1.2.9 and add a new 3.1.3 to read as follows:

"**3.1.3 Solutions or mixtures**

NOTE: *Where a substance is specifically mentioned by name in Table A of Chapter 3.2, it shall be identified in carriage by the proper shipping name in Column (2) of Table A of Chapter 3.2. Such substances may contain technical impurities (for example those deriving from the production process) or additives for stability or other purposes that do not affect its classification. However, a substance mentioned by name containing technical impurities or additives for stability or other purposes affecting its classification shall be considered a solution or mixture (see 2.1.3.3).*

3.1.3.1 A solution or mixture is not subject to RID/ADR/ADN if the characteristics, properties, form or physical state of the solution or mixture are such that it does not meet the criteria, including human experience criteria, for inclusion in any class.

3.1.3.2 A solution or mixture composed of a single predominant substance mentioned by name in Table A of Chapter 3.2 and one or more substances not subject to RID/ADR/ADN and/or traces of one or more substances mentioned by name in Table A of Chapter 3.2, shall be assigned the UN number and proper shipping name of the predominant substance mentioned by name in Table A of Chapter 3.2 unless:

(a) The solution or mixture is mentioned by name in Table A of Chapter 3.2;

(b) The name and description of the substance mentioned by name in Table A of Chapter 3.2 specifically indicate that they apply only to the pure substance;

(c) The class, classification code, packing group, or physical state of the solution or mixture is different from that of the substance mentioned by name in Table A of Chapter 3.2; or

(d) The hazard characteristics and properties of the solution or mixture necessitate emergency response measures that are different from those required for the substance mentioned by name in Table A of Chapter 3.2.

Qualifying words such as "SOLUTION" or "MIXTURE", as appropriate, shall be added as part of the proper shipping name, for example, "ACETONE SOLUTION". In addition, the concentration of the mixture or solution may also be indicated after the basic description of the mixture or solution, for example, "ACETONE 75% SOLUTION".

3.1.3.3 A solution or mixture that is not mentioned by name in Table A of Chapter 3.2 and that is composed of two or more dangerous goods shall be assigned to an entry that has the proper shipping name, description, class, classification code and packing group that most precisely describe the solution or mixture.".

Chapter 3.2

Table A

For UN Nos. 0323, 0366, 0441, 0445, 0455, 0456, 0460 and 0500, add "347" in column (6).

For UN Nos. 1002 and 1956, delete "292" in column (6).

For UN Nos. 1092, 1098, 1135, 1143, 1163, 1182, 1185, 1238, 1239, 1244, 1251, 1510, 1541, 1580, 1595, 1605, 1647, 1670, 1695, 1752, 1809, 1810, 1834, 1838, 1892, 1994, 2232, 2334, 2337, 2382, 2407, 2474, 2477, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2521, 2605, 2606, 2644, 2646, 2668, 3023, 3079 and 3246 add "354" in column (6).

For UN Nos. 1092, 1098, 1135, 1143, 1163, 1182, 1185, 1238, 1239, 1244, 1251, 1541, 1580, 1595, 1605, 1647, 1670, 1695, 1752, 1809, 1810, 1838, 1892, 1994, 2232, 2334, 2337, 2382, 2407, 2474, 2477, 2480, 2482, 2484, 2485, 2486, 2487, 2488, 2521, 2606, 2644, 2646, 2668, 3023, 3246 and 3381 to 3390 amend the code in column (7b) to read "E0".

For UN Nos. 1135, 1143, 1695, 1752, 1809, 1810, 2232, 2337, 2382, 2474, 2477, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2521, 2605, 2606, 2644, 2646, 3023, 3079 and 3246 replace "P001" with "P602" in column (8).

For UN Nos. 1135, 1182, 1541, 1605, 1670, 1810, 1838, 1892, 2232, 2382, 2474, 2477, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2521, 2605, 2606, 2644, 2668, 3079 and 3246 amend the code in column (10) to read "T20".

For UN Nos. 1135, 1182, 1251, 1541, 1580, 1605, 1670, 1810, 1834, 1838, 1892, 2232, 2382, 2474, 2477, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2521, 2605, 2606, 2644, 2668, 3079 and 3246 add "TP37" in column (11).

For UN Nos. 1251 and 1580 replace "T14" with "T22" in column (10) [and in column (12), replace "L10CH" with "L15CH"].

For UN Nos. 1450 and 3213 (PG II and III), replace "604" with "350" in column (6).

For UN Nos. 1461 and 3210 (PG II and III), replace "605" with "351" in column (6).

For UN Nos. 1482 (PG II and III) and 3214, replace "608" with "353" in column (6).

(ADR:)
For UN Nos. 1541, 1580, 1595, 1605, 1647, 1670, 1752, 1809, 1892, 2232, 2644, 2646 and 3246 in column (15), amend the tunnel restriction code to read "(C/D)".

For UN Nos. 1748 (PG II), 2208 and 2880 (PG II and III), delete "313" in column (6).

For UN Nos. 1950 (twelve times) and 2037 (nine times), add "344" in column (6).

For UN Nos. 2605 and 3079, replace "3" with "6.1" in column (3a) and replace "3 + 6.1" with "6.1 + 3" in column (5). In column (2) amend the code to read "TF1". In column (9b), replace "MP7 MP17" with "MP8 MP17". In column (18) add "CV1 / CW31". In column (19), replace "S2 S22" with "S2 S9 S14". Amend the code in column (20) to read "663".
(ADR:) In column (13), insert "TE19" before "TE21". In column (15), amend the tunnel restriction code to read "(C/D)".

For UN Nos. 2910, 2916, 2917, 2919 and 3323, add "325" in column (6).

For UN Nos. 3328, 3329, 3330 and 3331, add "326" in column (6).

For UN Nos. 3391 to 3394, 3395 to 3399 (PG I, II and III) and 3400 (PG II and III), add "TP36" in column (11).

For UN Nos. 3480 and 3481, add "348" in column (6).

UN 1040 Add "342" in column (6) (twice).

UN 1072 Add "355" in column (6).

UN 1266 (PG II and III) Add "163" in column (6) (six times).

UN 1267 (PG I, II and III) Add "357" in column (6) (four times).

UN 1391 Delete the second entry. In the first entry, delete "having a flash-point above 60 °C" in column (2).

UN 1462 Replace "606" with "352" in column (6)..

UN 1510 Replace "5.1" with "6.1" in column (3a) and replace "5.1+6.1" with "6.1+5.1" in column (5).
In column (3b), replace "OT1" with "TO1".
In column (9b), replace "MP2" with "MP8 MP17".
In column (12), replace "L4BN" with "L10CH".
In column (16), delete "V5 / W5".
In column (18) replace "CV24 CV28 / CW24 CW28" with "CV1 CV13 CV28 / CW13 CW28 CW31".
In column (19), replace "S20" with "S9 S14".
[Amend the code in column (20) to read "665".]
(RID:)
In column (13), replace "TU3 TU28" with "TU14 TU15 TU38 TE21 TE22".
(ADR:)
In column (13), replace "TU3 TU28" with "TU14 TU15 TE19 TE21" and in column (15), amend the tunnel restriction code to read ["(C/D)"]["(B/D)"]

UN 1580 Replace "P602" with "P601" in column (8).

UN 1649 Delete the second entry. In the first entry, delete "having a flash-point above 60 °C" in column (2).

UN 1810 Replace "8" with "6.1" in column (3a) and replace "8" with "6.1+8" in column (5). Replace "II" with "I" in column (4).
In column (2) amend the code to read "TC3".
In column (7a), amend the code to read "LQ0".
In column (9b), replace "MP15" with "MP8 MP17".
In column (12), replace "L4BN" with "L10CH".
In column (15), amend the transport category to read "1".
In column (18) add "CV1 CV13 CV28 / CW13 CW28 CW31".
[Amend the code in column (20) to read "668".]
(RID:)
In column (13), add "TU14 TU15 TU38 TE21 TE22". In column (19), delete "CE6".
(ADR:)
In column (13), add "TU14 TU15 TE19 TE21". In column (15), amend the tunnel restriction code to read "(C/D)". In column (19), add "S9 S14".

UN 1834 Replace "8" with "6.1+8" in column (5).
In column (2) amend the code to read "TC3".
In column (3a), replace "8" with "6.1".
In column (12), replace "L10BH" with "L10CH".
In column (18) add "CV1 CV13 CV28 / CW13 CW28 CW31".
In column (19), replace "S20" with "S9 S14".
[Amend the code in column (20) to read "668".]
(RID:) In column (13), replace "TU38 TE22" with "TU14 TU15 TU38 TE21 TE22".
(ADR:) In column (13) add "TU14 TU15 TE19 TE21". In column (15), amend the tunnel restriction code to read "(C/D)".

UN 1838 Replace "8" with "6.1" in column (3a) and replace "8" with "6.1+8" in column (5). Replace "II" with "I" in column (4).
In column (2) amend the code to read "TC3".
In column (7a), amend the code to read "LQ0".
In column (8), replace "P001 IBC02" with "P602".
In column (9b), replace "MP15" with "MP8 MP17".
In column (12), replace "L4BN" with "L10CH".
In column (15), amend the transport category to read "1".
In column (18) add "CV1 CV13 CV28 / CW13 CW28 CW31".
[Amend the code in column (20) to read "668".]
(RID:) In column (13), add "TU14 TU15 TU38 TE21 TE22". In column (19), delete "CE6".
(ADR:) In column (13), add "TU14 TU15 TE19 TE21". In column (15), amend the tunnel restriction code to read "(C/D)". In column (19), add "S9 S14".

UN 1977 Add "345 346" in column (6).

UN 1999 (PG II and III) In column (2), amend the name and description to read "TARS, LIQUID, including road oils, and cutback bitumens" (six times). The texts in parenthesis remain unchanged. Amend the alphabetical index accordingly.

UN 2030 Delete the second entry. In the first entry, delete ", having a flash-point above 60 °C" in column (2).

[UN 2208 Add "589" in column (6).]

UN 2474 Replace "II" with "I" in column (4).
Amend the code in column (7a) to read "LQ0".
In column (9b), replace "MP15" with "MP8 MP17".
In column (12), replace "L4BH" with "L10CH".
In column (15), amend the transport category to read "1".
Amend the code in column (20) to read "66".
(RID:) In column (13), replace "TU15" with "TU14 TU15 TU38 TE21 TE22". In column (19), delete "CE5".
(ADR:) In column (13), replace "TU15 TE19" with "TU14 TU15 TE19 TE21". In column (15), amend the tunnel restriction code to read "(C/D)". In column (18) add "CV1". In column (19), replace "S9 S19" with "S9 S14".

UN 2481 Replace "3" with "6.1" in column (3a) and replace "3 + 6.1" with "6.1 + 3" in column (5).
In column (2) amend the code to read "TF1".
Replace "P601" with "P602" in column (8).
In column (9b), replace "MP2" with "MP8 MP17".
In column (18) add "CV1 / CW31".
Amend the code in column (20) to read "663".
(ADR:) In column (15), amend the tunnel restriction code to read "(C/D)". In column (19), replace "S2 S22" with "S2 S9 S14".

UN 2483 Replace "3" with "6.1" in column (3a) and replace "3 + 6.1" with "6.1 + 3" in column (5).
In column (2) amend the code to read "TF1".
In column (9b), replace "MP7 MP17" with "MP8 MP17".
In column (18) add "CV1 / CW31".
In column (19), replace "S2 S22" with "S2 S9 S14".
Amend the code in column (20) to read "663".
(ADR:) In column (13), insert "TE19" before "TE21". In column (15), amend the tunnel restriction code to read "(C/D)".

UN 2486 Replace "3" with "6.1" in column (3a) and replace "3 + 6.1" with "6.1 + 3" in column (5).
In column (2) amend the code to read "TF1".
Replace "II" with "I" in column (4).
In column (9b), replace "MP19" with "MP8 MP17".
In column (12), replace "L4BH" with "L10CH".

In column (15), amend the transport category to read "1".
In column (18) add "CV1 / CW31".
Amend the code in column (20) to read "663".
(RID:) In column (13), replace "TU15" with "TU14 TU15 TU38 TE21 TE22". In column (19), delete "CE7".
(ADR:) In column (13), replace "TU15" with "TU14 TU15 TE19 TE21". In column (15), amend the tunnel restriction code to read "(C/D)". In column (19), replace "S2 S19" with "S2 S9 S14".

UN 2668 Replace "II" with "I" in column (4).
Amend the code in column (7a) to read "LQ0".
Replace "P001 IBC02" with "P602" in column (8).
In column (9b), replace "MP15" with "MP8 MP17".
In column (12), replace "L4BH" with "L10CH".
In column (15), amend the transport category to read "1".
In column (18) add "CV1/CW31".
Amend the code in column (20) to read "663".
(RID:) In column (13), replace "TU15" with "TU14 TU15 TU38 TE21 TE22". In column (19), delete "CE5".
(ADR:) In column (13), replace "TU15 TE19" with " TU14 TU15 TE19 TE21". In column (15), amend the tunnel restriction code to read "(C/D)". In column (19), replace "S2 S9 S19" with "S2 S9 S14".

UN 3166 In column (2), insert "or engine, fuel cell, flammable gas powered or engine, fuel cell, flammable liquid powered or vehicle, fuel cell, flammable gas powered or vehicle, fuel cell, flammable liquid powered" at the end. Amend the alphabetical index accordingly.

UN 3212 In column (6), replace "559" with "349".

UN 3359 In column (2), amend the proper shipping name to read "FUMIGATED CARGO TRANSPORT UNIT". Amend the alphabetical index accordingly.

UN 3468 Add "356" in column (6) and replace "P099" with "P205" in column (8).

UN 3474 In column (2), amend the name and description to read "1-HYDROXYBENZOTRIAZOLE MONOHYDRATE". Amend the alphabetical index accordingly.

In Column (16), delete "V12"/"W12" wherever it appears.

Add the following new entries and amend the alphabetical index accordingly:

Note: The codes in parenthesis in column (15) apply for ADR only.

(1)	(2)	(3)	(3b)	(5)	(4)	(6)	(7a)	(7b)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
0509	POWDER, SMOKELESS	1	1.4C		1.4		LQ0	E0	P114(b)	PP48	MP20						2 (E)	V2/ W2		CV1 CV2 CV3/ CW1	(ADR:) S1	(RID:) 1.4C
1471	LITHIUM HYPOCHLORITE, DRY or LITHIUM HYPOCHLORITE MIXTURE	5.1	O2	III	5.1		LQ12	E1	P002 IBC08 LP02 R001	B3	MP10	T1	TP33	SGAV or SGAN	TU3	(ADR:) AT	3 (E)			CV24/ CW24	(RID:) CE11	50
3482	ALKALI METAL DISPERSION, FLAMMABLE or ALKALINE EARTH METAL DISPERSION, FLAMMABLE	4.3	WF1	I	4.3 +3	182 183 506	LQ0	E0	P402	RR8	MP2			L10BN(+)	TU1 TE5 TT3 TM2	(ADR:) FL	1 (B/E)	V1/ W1		CV23/ CW23	(ADR:) S2 S20	X323
3483	MOTOR FUEL ANTI-KNOCK MIXTURE, FLAMMABLE	6.1	TF1	I	6.1 +3		LQ0	E5	P602		MP8 MP17	T14	TP2	L10CH	TU14 TU15 (RID:) TU38 (ADR:) TE19 TE21 (RID:) TE22 TT6	(ADR:) FL	1 (C/D)			CV1 CV13 CV28/ CW13 CW28 CW31	(ADR:) S2 S9 S14	663
3484	HYDRAZINE AQUEOUS SOLUTION, FLAMMABLE with more than 37% hydrazine, by mass	8	CFT	I	8 +3 +6.1	530	LQ0	E0	P001		MP8 MP17	T10	TP2	L10BH	(RID:) TU38 TE22	(ADR:) FL	1 (C/D)			CV13 CV28/ CW13 CW28	(ADR:) S2 S14	886

(1)	(2)	(3)	(3b)	(5)	(4)	(6)	(7a)	(7b)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
3485	CALCIUM HYPOCHLORITE, DRY, CORROSIVE or CALCIUM HYPOCHLORITE MIXTURE, DRY, CORROSIVE with more than 39% available chlorine (8.8% available oxygen)	5.1	OC2	II	5.1 +8	314 [589]	LQ11	E2	P002 IBC08	B4, B13	MP2			SGAN	TU3		2 (E)	V11 V12 / W11 W12		CV24 CV35/ CW24 CW35	(RID:) CE10	(RID:) 58
3486	CALCIUM HYPOCHLORITE MIXTURE, DRY, CORROSIVE with more than 10% but not more than 39% available chlorine	5.1	OC2	III	5.1 +8	314 [589]	LQ12	E1	P002 IBC08 LP02 R001	B3, B13	MP2			SGAN	TU3		3 (E)			CV24 CV35/ CW24 CW35	(RID only:) CE11	(RID only:) 58
3487	CALCIUM HYPOCHLORITE, HYDRATED, CORROSIVE or CALCIUM HYPOCHLORITE, HYDRATED MIXTURE, CORROSIVE with not less than 5.5% but not more than 16% water	5.1	OC2	II	5.1 +8	314 322	LQ11	E2	P002 IBC08	B4, B13	MP2			SGAN	TU3		2 (E)	V11 V12 / W11 W12		CV24 CV35/ CW24 CW35	(RID only:) CE10	(RID only:) 58
3487	CALCIUM HYPOCHLORITE, HYDRATED, CORROSIVE or CALCIUM HYPOCHLORITE, HYDRATED MIXTURE, CORROSIVE with not less than 5.5% but not more than 16% water	5.1	OC2	III	5.1 +8	314	LQ12	E1	P002 IBC08 R001	B4	MP2			SGAV	TU3		3 (E)			CV24 CV35/ CW24 CW35	(RID only:) CE11	(RID only:) 58

(1)	(2)	(3)	(3b)	(5)	(4)	(6)	(7a)	(7b)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
3488	TOXIC BY INHALATION LIQUID, FLAMMABLE, CORROSIVE, N.O.S. with an inhalation toxicity lower than or equal to 200 ml/m³ and saturated vapour concentration greater than or equal to 500 LC_{50}	6.1	TFC	I	6.1 +3 +8	274	LQ0	E0	P601		MP8 MP17	T22	TP2	L10CH	TU14 TU15 (RID:) TU38 ADR:) TE19 TE21 (RID:) TE22	(ADR:) FL	1 (C/D)			CV1 CV13 CV28/ CW13 CW28 CW31	(ADR:) S2 S9 S14	663
3489	TOXIC BY INHALATION LIQUID, FLAMMABLE, CORROSIVE, N.O.S. with an inhalation toxicity lower than or equal to 1000 ml/m³ and saturated vapour concentration greater than or equal to 10 LC_{50}	6.1	TFC	I	6.1 +3 +8	274	LQ0	E0	P602		MP8 MP17	T20	TP2	L10CH	TU14 TU15 (RID:) TU38 (ADR:) TE19 TE21 (RID:) TE22	(ADR:) FL	1 (C/D)			CV1 CV13 CV28/ CW13 CW28 CW31	(ADR:) S2 S9 S14	663
3490	TOXIC BY INHALATION LIQUID, WATER-REACTIVE, FLAMMABLE, N.O.S. with an inhalation toxicity lower than or equal to 200 ml/m³ and saturated vapour concentration greater than or equal to 500 LC_{50}	6.1	TFW	I	6.1 +4.3 +3	274	LQ0	E0	P601		MP8 MP17	T22	TP2	L10CH	TU14 TU15 (RID:) TU38 (ADR:) TE19 TE21 (RID:) TE22	(ADR:) FL	1 (C/D)			CV1 CV13 CV28/ CW13 CW28 CW31	(ADR:) S2 S9 S14	623

(1)	(2)	(3)	(3b)	(5)	(4)	(6)	(7a)	(7b)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
3491	TOXIC BY INHALATION LIQUID, WATER-REACTIVE, FLAMMABLE, N.O.S. with an inhalation toxicity lower than or equal to 1000 ml/m³ and saturated vapour concentration greater than or equal to 10 LC_{50}	6.1	TFW	I	6.1 +4.3 +3	274	LQ0	E0	P602		MP8 MP17	T20	TP2	L10CH	TU14 TU15 (RID:) TU38 (ADR:) TE19 TE21 (RID:) TE22	(ADR:) FL	1 (C/D)			CV1 CV13 CV28/ CW13 CW28 CW31	(ADR:) S2 S9 S14	623
3492	TOXIC BY INHALATION LIQUID, CORROSIVE, FLAMMABLE, N.O.S. with an inhalation toxicity lower than or equal to 200 ml/m³ and saturated vapour concentration greater than or equal to 500 LC_{50}	6.1	TFC	I	6.1 +8 +3	274	LQ0	E0	P601		MP8 MP17	T22	TP2	L10CH	TU14 TU15 (RID:) TU38 (ADR:) TE19 TE21 (RID:) TE22	(ADR:) FL	1 (C/D)			CV1 CV13 CV28/ CW13 CW28 CW31	(ADR:) S2 S9 S14	668
3493	TOXIC BY INHALATION LIQUID, CORROSIVE, FLAMMABLE, N.O.S. with an inhalation toxicity lower than or equal to 1000 ml/m³ and saturated vapour concentration greater than or equal to 10 LC_{50}	6.1	TFC	I	6.1 +8 +3	274	LQ0	E0	P602		MP8 MP17	T20	TP2	L10CH	TU14 TU15 (RID:) TU38 (ADR:) TE19 TE21 (RID:) TE22	(ADR:) FL	1 (C/D)			CV1 CV13 CV28/ CW13 CW28 CW31	(ADR:) S2 S9 S14	668

(1)	(2)	(3)	(3b)	(5)	(4)	(6)	(7a)	(7b)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
3494	PETROLEUM SOUR CRUDE OIL, FLAMMABLE, TOXIC	3	FT1	I	3 +6.1	343 649	LQ0	E0	P001		MP7 MP17	T14	TP2	L10CH	TU14 TU15 (RID:) TU38 TE21 (RID:) TE22	(ADR:) FL	1 (C/E)			CV13 CV28/ CW13 CW28	(ADR:) S2 S22	336
3494	PETROLEUM SOUR CRUDE OIL, FLAMMABLE, TOXIC	3	FT1	II	3 +6.1	343 649	LQ4	E2	P001 IBC02		MP19	T7	TP2	L4BH	TU15	(ADR:) FL	2 (D/E)			CV13 CV28 / CW13 CW28	(ADR:) S2 S19 (RID:) CE7	336
3494	PETROLEUM SOUR CRUDE OIL, FLAMMABLE, TOXIC	3	FT1	III	3 +6.1	343 649	LQ7	E1	P001 IBC03 R001		MP19	T4	TP1	L4BH	TU15	(ADR:) FL	3 (D/E)			CV13 CV28 / CW13 CW28	(ADR:) S2 (RID:) CE4	36
3495	IODINE	8	CT2	III	8 + 6.1	279	LQ24	E1	P002 IBC08 R001	B3	MP10	T1	TP33	SGAV L4BN		(ADR:) AT	3 (E)		VV9/ VW9	CV13 CV28/ CW13 CW28	(RID only:) CE11	86

Chapter 3.3

3.3.1 **SP172** At the end, add the following new sentence: "For packing, see also 4.1.9.1.5.".

SP188 In (b), at the end of the second sentence, delete ", except those manufactured before 1 January 2009 which may be carried in accordance with this special provision and without this marking until 31 December 2010".
In (f), at the beginning, insert "button cell batteries installed in equipment (including circuit boards), or" after "Except for packages containing".

SP198 Insert ", perfumery products" after "paints" and ", 1266" after "1263" respectively.

SP219 Amend to read as follows:

"**219** Genetically modified microorganisms (GMMOs) and genetically modified organisms (GMOs) packed and marked in accordance with packing instruction P904 of 4.1.4.1 are not subject to any other requirements of RID/ADR/ADN.

If GMMOs or GMOs meet the criteria for inclusion in Class 6.1 or 6.2 (see 2.2.61.1 and 2.2.62.1) the requirements in RID/ADR/ADN for the carriage of toxic substances or infectious substances apply.".

SP290 Amend to read as follows:

"**290** When this radioactive material meets the definitions and criteria of other classes as defined in Part 2, it shall be classified in accordance with the following:

(a) Where the substance meets the criteria for dangerous goods in excepted quantities as set out in Chapter 3.5, the packagings shall be in accordance with 3.5.2 and meet the testing requirements of 3.5.3. All other requirements applicable to radioactive material, excepted packages as set out in 1.7.1.5 shall apply without reference to the other class;

(b) Where the quantity exceeds the limits specified in 3.5.1.2 the substance shall be classified in accordance with the predominant subsidiary risk. The transport document shall describe the substance with the UN number and proper shipping name applicable to the other class supplemented with the name applicable to the radioactive excepted package according to Column 2 of Table A of Chapter 3.2, and shall be carried in accordance with the provisions applicable to that UN number. An example of the information shown on the transport document is:

"UN 1993, Flammable liquid, n.o.s. (ethanol and toluene mixture), Radioactive material, excepted package – limited quantity of material, 3, PG II".

In addition, the requirements of 2.2.7.2.4.1 shall apply.

(c) The provisions of Chapter 3.4 for the carriage of dangerous goods packed in limited quantities shall not apply to substances classified in accordance with sub-paragraph (b);

(d) When the substance meets a special provision that exempts this substance from all dangerous goods provisions of the other classes it shall be classified in accordance with the applicable UN number of Class 7 and all requirements specified in 1.7.1.5 shall apply.".

SP292 Amend to read as follows:

"**292** *(Deleted).*".

SP302 Amend to read as follows:

"**302** Fumigated cargo transport units containing no other dangerous goods are only subject to the provisions of 5.5.2.".

SP313 Amend to read as follows:

"**313** *(Deleted).*".

SP559 Amend to read as follows:

"**559** *(Deleted)*".

SP604 to **SP606** Amend to read as follows:
"**604 to 606** *(Deleted)*".

SP608 Amend to read as follows:
"**608** *(Deleted)*".

Add the following new special provisions:

"**342** Glass inner receptacles (such as ampoules or capsules) intended only for use in sterilization devices, when containing less than 30 ml of ethylene oxide per inner packaging with not more than 300 ml per outer packaging, may be carried in accordance with the provisions in Chapter 3.5, irrespective of the indication of "E0" in column (7b) of Table A of Chapter 3.2 provided that:

(a) After filling, each glass inner receptacle has been determined to be leak-tight by placing the glass inner receptacle in a hot water bath at a temperature, and for a period of time, sufficient to ensure that an internal pressure equal to the vapour pressure of ethylene oxide at 55 °C is achieved. Any glass inner receptacle showing evidence of leakage, distortion or other defect under this test shall not be carried under the terms of this special provision;

(b) In addition to the packaging required by 3.5.2, each glass inner receptacle is placed in a sealed plastics bag compatible with ethylene oxide and capable of containing the contents in the event of breakage or leakage of the glass inner receptacle; and

(c) Each glass inner receptacle is protected by a means of preventing puncture of the plastics bag (e.g. sleeves or cushioning) in the event of damage to the packaging (e.g. by crushing).

343 This entry applies to crude oil containing hydrogen sulphide in sufficient concentration that vapours evolved from the crude oil can present an inhalation hazard. The packing group assigned shall be determined by the flammability hazard and inhalation hazard, in accordance with the degree of danger presented.

344 The provisions of 6.2.6 shall be met.

345 This gas contained in open cryogenic receptacles with a maximum capacity of 1 litre constructed with glass double walls having the space between the inner and outer wall evacuated (vacuum insulated) is not subject to RID/ADR/ADN provided each receptacle is carried in an outer packaging with suitable cushioning or absorbent materials to protect it from impact damage.

346 Open cryogenic receptacles conforming to the requirements of packing instruction P203 of 4.1.4.1 and containing no dangerous goods except for UN No. 1977 nitrogen, refrigerated liquid, which is fully absorbed in a porous material are not subject to any other requirements of RID/ADR/ADN.

347 This entry shall only be used if the results of Test series 6 (d) of Part I of the Manual of Tests and Criteria have demonstrated that any hazardous effects arising from functioning are confined within the package.

348 Batteries manufactured after 31 December 2011 shall be marked with the Watt-hour rating on the outside case.

349 Mixtures of a hypochlorite with an ammonium salt are not to be accepted for carriage. UN No. 1791 hypochlorite solution is a substance of Class 8.

350 Ammonium bromate and its aqueous solutions and mixtures of a bromate with an ammonium salt are not to be accepted for carriage.

351 Ammonium chlorate and its aqueous solutions and mixtures of a chlorate with an ammonium salt are not to be accepted for carriage.

352 Ammonium chlorite and its aqueous solutions and mixtures of a chlorite with an ammonium salt are not to be accepted for carriage.

353 Ammonium permanganate and its aqueous solutions and mixtures of a permanganate with an ammonium salt are not to be accepted for carriage.

354 This substance is toxic by inhalation.

355 Oxygen cylinders for emergency use carried under this entry may include installed actuating cartridges (cartridges, power device of Division 1.4, Compatibility Group C or S), without changing the classification in Class 2 provided the total quantity of deflagrating (propellant) explosives does not exceed 3.2 g per oxygen cylinder. The cylinders with the installed actuating cartridges as prepared for carriage shall have an effective means of preventing inadvertent activation.

356 Metal hydride storage system(s) installed in conveyances or in completed conveyance components or intended to be installed in conveyances shall be approved by the [competent authority] before acceptance for carriage. The transport document shall include an indication that the package was approved by the [competent authority] or a copy of the [competent authority] approval shall accompany each consignment.

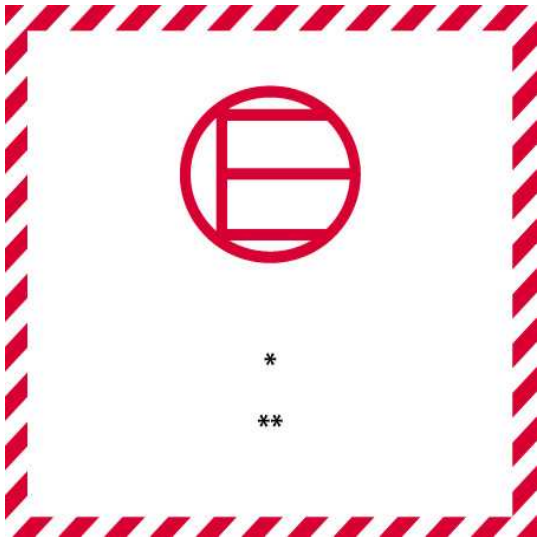
357 Petroleum crude oil containing hydrogen sulphide in sufficient concentration that vapours evolved from the crude oil can present an inhalation hazard shall be consigned under the entry UN 3494 PETROLEUM SOUR CRUDE OIL, FLAMMABLE, TOXIC.".

Chapter 3.4

The amendments to Chapter 3.4 will be listed in document ECE/TRANS/WP.15/AC.1/2009/28.

Chapter 3.5

3.5.4.2 Amend the figure to read as follows:



Excepted quantities mark

Hatching and symbol of the same colour, black or red,
on white or suitable contrasting background

* *The first or only label number indicated in column (5) of Table A of Chapter 3.2 shall be shown in this location.*

** *The name of the consignor or of the consignee shall be shown in this location if not shown elsewhere on the package.*

PART 4

Chapter 4.1

4.1.1.1 At the end, replace "or reused" with ", reused or remanufactured".

4.1.1.2 Add a new sub-paragraph (c) to read as follows:

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

4.1.1.19.6 In the table, for UN No. 3079 in column (3a), replace "3" with "6.1" and in column (3b), replace "FT1" with "TF1".

4.1.4.1 **P114** (b) Amend special packing provision PP48 to read as follows:

"**PP48** For UN Nos. 0508 and 0509, metal packagings shall not be used.".

P200 (10) In special packing provision "k", amend the first sentence to read as follows: "Valve outlets shall be fitted with pressure retaining gas-tight plugs or caps having threads that match those of the valve outlets [and made of material not liable to attack by the contents of the pressure receptacle].". Amend the seventh paragraph ("Each valve shall have a taper threaded connection…") to read as follows:
"Each valve shall be capable of withstanding the test pressure of the pressure receptacle and be connected directly to the pressure receptacle by either a taper thread or other means which meets the requirements of ISO 10692-2:2001.".

In special packing provision "q", in the first sentence, at the beginning, replace "The valves" with "Valve outlets". In the second sentence, at the end, replace "manifold outlet valve" with "outlet of the manifold valve" and add "pressure retaining" before "gas-tight plug". Add a new third sentence to read as follows: "Gas-tight plugs or caps shall have threads that match those of the valve outlets.".

In special packing provision "ra" amend the introductory phrase to read as follows:
"This gas may also be packed in capsules under the following conditions: ".

P203 Amend to read as follows:

P203	**PACKING INSTRUCTION**	**P203**

This instruction applies to Class 2 refrigerated liquefied gases.

Requirements for closed cryogenic receptacles:

(1) The special packing provisions of 4.1.6 shall be met.

(2) The requirements of Chapter 6.2 shall be met.

(3) The closed cryogenic receptacles shall be so insulated that they do not become coated with frost.

(4) Test pressure
Refrigerated liquids shall be filled in closed cryogenic receptacles with the following minimum test pressures:

(a) For closed cryogenic receptacles with vacuum insulation, the test pressure shall not be less than 1.3 times the sum of the maximum internal pressure of the filled receptacle, including during filling and discharge, plus 100 kPa (1 bar);

(b) For other closed cryogenic receptacles, the test pressure shall be not less than 1.3 times the maximum internal pressure of the filled receptacle, taking into account the pressure developed during filling and discharge.

(5) Degree of filling
For non-flammable, non-toxic refrigerated liquefied gases (classification codes 3A and 3O) the volume of liquid phase at the filling temperature and at a pressure of 100 kPa (1 bar) shall not exceed 98% of the water capacity of the pressure receptacle.
For flammable refrigerated liquefied gases (classification code 3F) the degree of filling shall remain below the level at which, if the contents were raised to the temperature at which the vapour pressure equalled the opening pressure of the relief valve, the volume of the liquid phase would reach 98% of the water capacity at that temperature.

(6) Pressure-relief devices
Closed cryogenic receptacles shall be fitted with at least one pressure-relief device.

(7) Compatibility
Materials used to ensure the leakproofness of the joints or for the maintenance of the closures shall be compatible with the contents. In the case of receptacles intended for the carriage of oxidizing gases (classification code 3O), these materials shall not react with these gases in a dangerous manner.

[(8) Periodic inspection
Receptacles [other than UN receptacles] shall be subjected to periodic inspections in accordance with the provisions of [6.2.1.6 and] 6.2.3.5 [6.2.3.5.2] respectively. Periodic inspections shall be carried out every 10 years.
By derogation from this date, the periodic inspection of receptacles which make use of composite materials (composite receptacles) may be carried out at intervals determined by the competent authority of the COTIF Member State/Contracting Party to RID/ADR which has approved the technical code for the design and construction.]

P203	PACKING INSTRUCTION	P203

Requirements for open cryogenic receptacles:

Only the following non oxidizing refrigerated liquefied gases of classification code 3A may be carried in open cryogenic receptacles: UN Nos. 1913, 1951, 1963, 1970, 1977, 2591, 3136 and 3158.

Open cryogenic receptacles shall be constructed to meet the following requirements:

(1) The receptacles shall be designed, manufactured, tested and equipped in such a way as to withstand all conditions, including fatigue, to which they will be subjected during their normal use and during normal conditions of carriage.

(2) The capacity shall be not more than 450 litres.

(3) The receptacle shall have a double wall construction with the space between the inner and outer wall being evacuated (vacuum insulation). The insulation shall prevent the formation of hoar frost on the exterior of the receptacle.

(4) The materials of construction shall have suitable mechanical properties at the service temperature.

(5) Materials which are in direct contact with the dangerous goods shall not be affected or weakened by the dangerous goods intended to be carried and shall not cause a dangerous effect, e.g. catalysing a reaction or reacting with the dangerous goods.

(6) Receptacles of glass double wall construction shall have an outer packaging with suitable cushioning or absorbent materials which withstand the pressures and impacts liable to occur under normal conditions of carriage.

(7) The receptacle shall be designed to remain in an upright position during carriage, e.g. have a base whose smaller horizontal dimension is greater than the height of the centre of gravity when filled to capacity or be mounted on gimbals.

(8) The openings of the receptacles shall be fitted with devices allowing gases to escape, preventing any splashing out of liquid, and so configured that they remain in place during carriage.

(9) Open cryogenic receptacles shall bear the following marks permanently affixed e.g. by stamping, engraving or etching:
- The manufacturer’s name and address;
- The model number or name;
- The serial or batch number;
- The UN number and proper shipping name of gases for which the receptacle is intended;
- The capacity of the receptacle in litres.

P402 In special packing provision specific to RID and ADR RR8, replace "and 3148" with ", 3148 and 3482".

P601 (1) and **P602** (1) In the first indent, replace "capacity of 1 litre" with "net quantity of 1 litre"

P620 Add the following new additional requirement:

"4. Other dangerous goods shall not be packed in the same packaging as Class 6.2 infectious substances unless they are necessary for maintaining the viability, stabilizing or preventing degradation or neutralizing the hazards of the infectious substances. A quantity of 30 ml or less of dangerous goods included in Classes 3, 8 or 9 may be packed in each primary receptacle containing infectious substances. These small quantities of dangerous goods of Classes 3, 8 or 9 are not subject to any

additional requirements of RID/ADR when packed in accordance with this packing instruction.".

Renumber existing additional requirement 4. as 5.

P621 In the second sentence, insert ", except 4.1.1.15," after "4.1.1".

P650 (9) (a) In the Note, insert "other" before "requirements to be met".

P901 Replace "Maximum quantity of dangerous goods per outer packaging: 10 kg." with "The quantity of dangerous goods per outer packaging shall not exceed 10 kg, excluding the mass of any carbon dioxide, solid, (dry ice) used as a refrigerant.".

At the end of the additional requirement, add the following new text:

"Dry ice
When carbon dioxide, solid, (dry ice) is used as a refrigerant, the packaging shall be designed and constructed to permit the release of the gaseous carbon dioxide to prevent the build up of pressure that could rupture the packaging.".

P904 Amend to read as follows:

P904	**PACKING INSTRUCTION**	**P904**

This instruction applies to UN No. 3245.

The following packagings are authorized:

(1) Packagings meeting the provisions of 4.1.1.1, 4.1.1.2, 4.1.1.4, 4.1.1.8 and 4.1.3 and so designed that they meet the construction requirements of 6.1.4. Outer packagings constructed of suitable material of adequate strength and designed in relation to the packaging capacity and its intended use shall be used. Where this packing instruction is used for the carriage of inner packagings of combination packagings the packaging shall be designed and constructed to prevent inadvertent discharge during normal conditions of carriage.

(2) Packagings, which need not conform to the packaging test requirements of Part 6, but conforming to the following:

(a) An inner packaging comprising:

(i) primary receptacle(s) and a secondary packaging, the primary receptacle(s) or the secondary packaging shall be leakproof for liquids or siftproof for solids;

(ii) for liquids, absorbent material placed between the primary receptacle(s) and the secondary packaging. The absorbent material shall be in a quantity sufficient to absorb the entire contents of the primary receptacle(s) so that any release of the liquid substance will not compromise the integrity of the cushioning material or of the outer packaging;

(iii) if multiple fragile primary receptacles are placed in a single secondary packaging they shall be individually wrapped or separated to prevent contact between them;

(b) An outer packaging shall be strong enough for its capacity, mass and intended use, and with a smallest external dimension of at least 100 mm.

For carriage, the mark illustrated below shall be displayed on the external surface of the outer packaging on a background of a contrasting colour and shall be clearly visible and legible. The mark shall be in the form of a square set at an angle of 45° (diamond-shaped) with each side having a length of at least 50 mm; the width of the line shall be at least 2 mm and the letters and numbers shall be at least 6 mm high.

Additional requirement:

Ice, dry ice and liquid nitrogen

When dry ice or liquid nitrogen is used, all applicable requirements of RID/ADR shall be met. When used, ice or dry 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 after the ice or dry ice has dissipated. If ice is used, the outside packaging or overpack shall be leakproof. If carbon dioxide, solid (dry ice) is used, the packaging shall be designed and constructed to permit the release of carbon dioxide gas to prevent a build-up of pressure that could rupture the packagings and the package (the outer packaging or the overpack) shall be marked "Carbon dioxide, solid" or "Dry ice".

NOTE: *If dry ice is used, there are no other requirements to be met (see 2.2.9.1.14). If liquid nitrogen is used, it is sufficient to comply with Chapter 3.3, special provision 593.*

The primary receptacle and the secondary packaging shall maintain their integrity at the temperature of the refrigerant used as well as the temperatures and the pressures which could result if refrigeration were lost.

4.1.4.1 Add the following new packing instruction:

P205	**PACKING INSTRUCTION**	**P205**
This instruction applies to UN No. 3468.		
(1)	For metal hydride storage systems, the special packing provisions of 4.1.6 shall be met.	
(2)	Only pressure receptacles not exceeding 150 litres in water capacity and having a maximum developed pressure not exceeding 25 MPa are covered by this packing instruction.	
(3)	Metal hydride storage systems meeting the applicable requirements for the construction and testing of pressure receptacles containing gas of Chapter 6.2 are authorised for the carriage of hydrogen only.	
(4)	When steel pressure receptacles or composite pressure receptacles with steel liners are used, only those bearing the "H" mark, in accordance with 6.2.2.9.2 (j) shall be used.	
(5)	Metal hydride storage systems shall meet the service conditions, design criteria, rated capacity, type tests, batch tests, routine tests, test pressure, rated charging pressure and provisions for pressure relief devices for transportable metal hydride storage systems specified in ISO 16111:2008 (Transportable gas storage devices – Hydrogen absorbed in reversible metal hydride) and their conformity and approval shall be assessed in accordance with 6.2.2.5.	
(6)	Metal hydride storage systems shall be filled with hydrogen at a pressure not exceeding the rated charging pressure shown in the permanent markings on the system as specified by ISO 16111:2008.	
(7)	The periodic test requirements for a metal hydride storage system shall be in accordance with ISO 16111:2008 and carried out in accordance with 6.2.2.6, and the interval between periodic inspections shall not exceed five years.	

4.1.4.2 **IBC04** Replace ", 21N, 31A, 31B and 31N" with "and 21N".

IBC05 In (1), replace ", 21N, 31A, 31B and 31N" with "and 21N".
In (2), replace ", 21H2, 31H1 and 31H2" with "and 21H2".
In (3), replace ", 21HZ1 and 31HZ1" with "and 21HZ1".

IBC06, IBC07 and **IBC08**
In (1), replace ", 21N, 31A, 31B and 31N" with "and 21N".
In (2), replace ", 21H2, 31H1 and 31H2" with "and 21H2".
In (3), replace ", 21HZ2, 31HZ1 and 31HZ2" with "and 21HZ2".

IBC06 Amend the additional requirement to read as follows:

"**Additional requirement:**
Where the solid may become liquid during carriage see 4.1.3.4.".

IBC07 Amend the additional requirement to read as follows:

"**Additional requirements:**
1. Where the solid may become liquid during carriage see 4.1.3.4.
2. Liners of wooden IBCs shall be siftproof.".

IBC08 Add the following new additional requirement:

"**Additional requirement:**
Where the solid may become liquid during carriage see 4.1.3.4.".

In special packing provision B13, replace "and 2880" with ", 2880, 3485, 3486 and 3487".

IBC520 For UN No. 3109, in the entry for Peroxyacetic acid, stabilized, not more than 17% (last entry), add "31H2" in column "Type of IBC" and add "1500" in column "Maximum quantity (litres/kg)" against this code.

IBC620 In the second sentence, insert ", except 4.1.1.15" after "4.1.1".

4.1.5.5 Amend to read as follows:

"4.1.5.5 Unless otherwise specified in RID/ADR, packagings, including IBCs and large packagings, shall conform to the requirements of chapters 6.1, 6.5 or 6.6, as appropriate, and shall meet their test requirements for packing group II.".

4.1.6.10 Amend the first sentence to read "Refillable pressure receptacles, other than cryogenic receptacles, shall be periodically inspected according to the provisions of 6.2.1.6, or 6.2.3.5.1 for non UN receptacles, and packing instruction P200 or P205 as applicable. [Closed cryogenic receptacles [, other than UN closed cryogenic receptacles,] shall be periodically inspected according to the provisions of 6.2.3.5.1 and P203 (8).]".

[Consequential amendment: In 6.2.3.5.2, insert "other than UN cryogenic receptacles" after "cryogenic receptacles".].

4.1.6.14 Insert the following new row at the end of the table:

4.1.6.8 (b) and (c)	ISO 16111:2008	Transportable gas storage devices – Hydrogen absorbed in reversible metal hydride

4.1.7.1 Amend the heading to read "Use of packagings (except IBCs)".

4.1.7.1.1 Amend to read as follows:

"4.1.7.1.1 Packagings for organic peroxides and self-reactive substances shall conform to the requirements of Chapter 6.1 and shall meet its test requirements for packing group II.".

4.1.7.2.1 At the end, add the following new sentence: "IBCs shall conform to the requirements of Chapter 6.5 and shall meet its test requirements for packing group II.".

4.1.9.1.5 Amend to read as follows:

"4.1.9.1.5 For radioactive material having other dangerous properties the package design shall take into account those properties. Radioactive material with a subsidiary risk, packaged in packages that do not require competent authority approval, shall be carried in packagings, IBCs, tanks or bulk containers fully complying with the requirements of the relevant chapters of Part 6 as appropriate, as well as applicable requirements of chapters 4.1, 4.2 or 4.3 for that subsidiary risk.".

4.1.9.3 (a) Insert "(or mass of each fissile nuclide for mixtures when appropriate)"after "a mass of fissile material".

Chapter 4.2

4.2.5.2.6 In the table for portable tank instructions T1-T22, add a reference to a new footnote b after "Bottom opening requirements" in the heading of the last column. The footnote shall read as follows:

"**[b]** *When this column indicates "Not allowed", bottom openings are not permitted when the substance to be carried is a liquid (see 6.7.2.6.1). When the substance to be carried is a solid at all temperatures encountered under normal conditions of carriage, bottom openings conforming to the requirements of 6.7.2.6.2 are authorized.*".

4.2.5.3 At the end, add the following new special provisions:

"TP36 Fusible elements in the vapour space may be used on portable tanks.

TP37 The portable tank instructions prescribed in RID/ADR applicable up to 31 December 2010 may continue to be applied until 31 December 2016.".

Chapter 4.3

4.3.4.1.3 (c) Replace "and UN No. 3404 potassium sodium alloys, solid" with ", UN No. 3404 potassium sodium alloys, solid and UN No. 3482 alkali metal dispersion, flammable or UN No. 3482 alkaline earth metal dispersion, flammable".

PART 5

Chapter 5.1

5.1.5.1.4 (a) Insert "the competent authority of the country of origin of the shipment and to" after "have been submitted to".

5.1.5.1.4 (b) At the end, insert "the competent authority of the country of origin of the shipment and" after "shall notify".

5.1.5.1.4 (d) In sub-paragraph (v), insert "(or of each fissile nuclide for mixtures when appropriate)" after "the mass of fissile material".

5.1.5.3.4 (d) and (e) Replace "when otherwise specified in the competent authority approval certificate of the country of origin of design (see 2.2.7.2.4.6)" with "under the provisions of 5.1.5.3.5".

5.1.5.3.5 Add a new paragraph 5.1.5.3.5 to read as follows:

"5.1.5.3.5 In all cases of international carriage of packages requiring competent authority design or shipment approval, for which different approval types apply in the different countries concerned by the shipment, the categorization shall be in accordance with the certificate of the country of origin of design".

5.1.5.4 Add a new sub-section 5.1.5.4 to read as follows, and renumber existing 5.1.5.4 as 5.1.5.5:

"**5.1.5.4** ***Specific provisions for excepted packages***

5.1.5.4.1 Excepted packages shall be legibly and durably marked on the outside of the packaging with:

(a) The UN number preceded by the letters “UN”;

(b) An identification of either the consignor or consignee, or both; and

(c) The permissible gross mass if this exceeds 50 kg.

5.1.5.4.2 The documentation requirements of Chapter 5.4 do not apply to excepted packages of radioactive material, except that the UN number preceded by the letters “UN” shall be shown on a transport document such as a bill of lading, air waybill or CMR/CIM consignment note.".

Chapter 5.2

5.2.1.7.2 Amend the second sentence to read "The marking of excepted packages shall be as required by 5.1.5.4.1.".

5.2.1.7.8 Amend to read as follows:

"5.2.1.7.8 In all cases of international carriage of packages requiring competent authority design or shipment approval, for which different approval types apply in the different countries concerned by the shipment, marking shall be in accordance with the certificate of the country of origin of the design.".

5.2.1.8.1 Amend to read as follows:

"5.2.1.8.1 Packages containing environmentally hazardous substances meeting the criteria of 2.2.9.1.10 shall be durably marked with the environmentally hazardous substance mark shown in 5.2.1.8.3 with the exception of single packagings and combination packagings where such single packagings or inner packagings of such combination packagings have:

- a net quantity of 5 *l* or less for liquids; or

- a net mass of 5 kg or less for solids.".

5.2.1.9.1 Replace "ISO 780:1985" with "ISO 780:1997".

5.2.1.9.2 (d) Delete "or" at the end.

5.2.1.9.2 (e) Add "or" at the end.

5.2.1.9.2 Add a new sub-paragraph (f) to read as follows:

"(f) Combination packagings containing hermetically sealed inner packagings each containing not more than 500 ml.".

5.2.2.1.11.2 (b) In the second sentence, insert "(or mass of each fissile nuclide for mixtures when appropriate)" after "the mass of fissile material".

5.2.2.1.11.5 Amend to read as follows:

"5.2.2.1.11.5 In all cases of international carriage of packages requiring competent authority design or shipment approval, for which different approval types apply in the different countries concerned by the shipment, labelling shall be in accordance with the certificate of the country of origin of design.".

[5.2.2.2.2 Amend the heading for specimen label No. 9 to read as follows:

"CLASS 9:
Miscellaneous dangerous substances and articles, including environmentally hazardous substances".]

Chapter 5.3

(ADR/ADN:)
5.3.2.1.4 In the first sentence, replace "under exclusive use" with "required to be carried under exclusive use". In the second sentence, insert "when required to be" before "carried under exclusive use.".

Chapter 5.4

5.4.0 Amend to read as follows:

"5.4.0 Unless otherwise specified, any carriage of goods governed by RID/ADR/ADN shall be accompanied by the documentation prescribed in this Chapter, as appropriate.".

(RID:) In the Note / (ADR/ADN:) In Note 2, add the following sentence at the end:

"*All references to "[dangerous goods] transport document" in this Chapter also include provision of the required information by use of EDP and EDI transmission techniques.*".

5.4.1.1.1 (e) At the end, add the following new note:

"***NOTE:*** *The number, type and capacity of each inner packaging within the outer packaging of a combination packaging is not required to be indicated.*".

5.4.1.1.6.1 At the end, replace "proper shipping name required in 5.4.1.1.1 (b)" with "dangerous goods description specified in 5.4.1.1.1 (a) to (c)".

5.4.1.2.5.1 (c) In the second sentence, insert "(or mass of each fissile nuclide for mixtures when appropriate)" after "the mass of fissile material".

5.4.1.2.5.1 (j) At the end, add: "For radioactive material for which the A_2 value is unlimited, the multiple of A_2 shall be zero.".

5.4.1.2.5.3 Amend to read as follows:

"5.4.1.2.5.3 In all cases of international carriage of packages requiring competent authorities design or shipment approval, for which different approval types apply in the different countries concerned by the shipment, the UN number and proper shipping name required in 5.4.1.1.1 shall be in accordance with the certificate of the country of origin of design.".

[Footnote 4 to 5.4.2 to be checked after consideration of draft amendments to section 5.4.2 of the IMDG code by IMO.].

[Add a new 5.4.1.4.3 to read as follows:

"5.4.1.4.3 When the dangerous goods transport information is given to the carrier by EDP or EDI techniques, the consignor shall be able to produce the information without delay as a paper document, with the information in the sequence required by this Chapter.".].

[5.4.2.3 Amend to read as follows:

"5.4.2.3 If the dangerous goods documentation is presented to the carrier by means of EDP or EDI transmission techniques, the signature(s) may be electronic signature(s) or may be replaced by the name(s) (in capitals) of the person authorized to sign.".

5.4.2.4 Add a new paragraph 5.4.2.4 to read as follows:

"5.4.2.4 When the dangerous goods transport information is given to a carrier by EDP or EDI techniques and subsequently the dangerous goods are transferred to a carrier that requires a paper dangerous goods transport document, the carrier shall ensure that the paper document indicates "Original received electronically" and the name of the signatory shall be shown in capital letters.".]

5.4.4 Insert a new section 5.4.4 to read as follows:

"**5.4.4 Retention of dangerous goods transport information**

5.4.4.1 The consignor and the carrier shall retain a copy of the dangerous goods transport document and additional information and documentation as specified in RID/ADR/ADN, for a minimum period of three months.

5.4.4.2 When the documents are kept electronically or in a computer system, the consignor and the carrier shall be able to reproduce them in a printed form.".

Renumber 5.4.4 as 5.4.5.

Consequential amendment:
(RID:) In 5.4.1.1.7, footnote 5 and in 5.4.1.4.2, replace "5.4.4" with "5.4.5".
(ADR:) In 5.4.1.4.2 replace "5.4.4" with "5.4.5".

Chapter 5.5

Amend to read as follows:

"**CHAPTER 5.5**

SPECIAL PROVISIONS

5.5.1 *(Deleted)*

5.5.2 Special provisions applicable to fumigated cargo transport units (UN 3359)

5.5.2.1 ***General***

5.5.2.1.1 Fumigated cargo transport units (UN 3359) containing no other dangerous goods are not subject to any provisions of RID/ADR/ADN other than those of this section.

NOTE: *For the purposes of this Chapter, cargo transport unit means a wagon/vehicle, a container, a tank-container, a portable tank or a MEGC.*

5.5.2.1.2 When the fumigated cargo transport unit is loaded with dangerous goods in addition to the fumigant, any provision of RID/ADR/ADN relevant to these goods (including placarding, marking and documentation) applies in addition to the provisions of this section.

5.5.2.1.3 Only cargo transport units that can be closed in such a way that the escape of gas is reduced to a minimum shall be used for the carriage of cargo under fumigation.

5.5.2.2 ***Training***

Persons engaged in the handling of fumigated cargo transport units shall be trained commensurate with their responsibilities.

5.5.2.3 ***Marking and placarding***

5.5.2.3.1 A fumigated cargo transport unit shall be marked with a warning mark, as specified in 5.5.2.3.2, affixed at each access point in a location where it will be easily seen by persons opening or entering the cargo transport unit. This mark shall remain on the cargo transport unit until the following provisions are met:

(a) The fumigated cargo transport unit has been ventilated to remove harmful concentrations of fumigant gas; and

(b) The fumigated goods or materials have been unloaded.

5.5.2.3.2 The fumigation warning mark shall be rectangular and shall not be less than 300 mm wide and 250 mm high. The markings shall be in black print on a white background with lettering not less than 25 mm high. An illustration of this mark is given in the figure below.

Fumigation warning mark

(*Existing fumigation warning sign unchanged*)

5.5.2.3.3 If the fumigated cargo transport unit has been completely ventilated either by opening the doors of the unit or by mechanical ventilation after fumigation, the date of ventilation shall be marked on the fumigation warning mark.

5.5.2.3.4 When the fumigated cargo transport unit has been ventilated and unloaded, the fumigation warning mark shall be removed.

5.5.2.3.5 Placards conforming to model No. 9 (see 5.2.2.2.2) shall not be affixed to a fumigated cargo transport unit except as required for other Class 9 substances or articles packed therein.

5.5.2.4 ***Documentation***

5.5.2.4.1 Documents associated with the carriage of cargo transport units that have been fumigated and have not been completely ventilated before carriage shall include the following information:

- "UN 3359, fumigated cargo transport unit, 9", or "UN 3359, fumigated cargo transport unit, class 9";

- The date and time of fumigation; and

- The type and amount of the fumigant used.

(RID:)
These particulars shall be drafted in an official language of the forwarding country and also, if the 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.

(ADR:)
These particulars shall be drafted in an official language of the forwarding country and also, if the 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.

5.5.2.4.2 The transport document may be in any form, provided it contains the information required in 5.5.2.4.1. This information shall be easy to identify, legible and durable.

5.5.2.4.3 Instructions for disposal of any residual fumigant including fumigation devices (if used) shall be provided.

5.5.2.4.4 A document is not required when the fumigated cargo transport unit has been completely ventilated and the date of ventilation has been marked on the warning mark (see 5.5.2.3.3 and 5.5.2.3.4).".

PART 6

Chapter 6.1

6.1.3.1 (a) (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 portable tank or a MEGC complies with the relevant requirements in Chapter 6.1, 6.2, 6.3, 6.5, 6.6 or 6.7.".

6.1.4.0 Add a new sub-section 6.1.4.0 to read as follows:

"**6.1.4.0** ***General requirements***

Any permeation of the substance contained in the packaging shall not constitute a danger under normal conditions of carriage.".

6.1.5.3.6.3 Amend to read as follows:

"6.1.5.3.6.3 The packaging or outer packaging of a composite or combination packaging shall not exhibit any damage liable to affect safety during carriage. Inner receptacles, inner packagings, or articles shall remain completely within the outer packaging and there shall be no leakage of the filling substance from the inner receptacle(s) or inner packaging(s).".

Chapter 6.2

6.2.1 Transfer the note after the heading after the chapter heading.

6.2.1.1.5 At the end, add the following new sentence: "The test pressure of a metal hydride storage system shall be in accordance with packing instruction P205 of 4.1.4.1.".

6.2.1.3.4 Insert "or P205" after "P200 (2)".

6.2.1.5.1 Insert "and metal hydride storage systems" after "cryogenic receptacles".

6.2.1.5.3 Add a new paragraph 6.2.1.5.3 to read as follows:

"6.2.1.5.3 For metal hydride storage systems, it shall be verified that the inspections and tests specified in 6.2.1.5.1 (a), (b), (c), (d), (e) if applicable, (f), (g), (h) and (i) have been performed on an adequate sample of the receptacles used in the metal hydride storage system. In addition, on an adequate sample of metal hydride storage systems, the inspections and tests specified in 6.2.1.5.1 (c) and (f) shall be performed, as well as 6.2.1.5.1 (e), if applicable, and inspection of the external conditions of the metal hydride storage system.

Additionally, all metal hydride storage systems shall undergo the initial inspections and tests specified in 6.2.1.5.1 (h) and (i), as well as a leakproofness test and a test of the satisfactory operation of the service equipment.".

6.2.1.6.1 In Note 2, delete ", ultrasonic examination". Add the following new sentence at the end: "ISO 16148:2006 may be used as a guide for acoustic emission testing procedures.".

Insert a new Note 3 to read as follows:

"***NOTE 3:*** *The hydraulic pressure test may be replaced by ultrasonic examination carried out in accordance with ISO 10461:2005+A1:2006 for seamless aluminium alloy gas cylinders and in accordance with ISO 6406:2005 for seamless steel gas cylinders.*".

Renumber Note 3 as Note 4.

6.2.2.1.1 In the table, add the following three new entries after ISO 7866:1999 standard:

ISO 4706:2008	Gas cylinders – Refillable welded steel cylinders – Test pressure 60 bar and below
ISO 18172-1:2007	Gas cylinders – Refillable welded stainless steel cylinders – Part 1: Test pressure 6 MPa and below
ISO 20703:2006	Gas cylinders – Refillable welded aluminium-alloy cylinders – Design, construction and testing

6.2.2.1.5 Add a new paragraph 6.2.2.1.5 to read as follows:

"6.2.2.1.5 The following standard applies for the design, construction, and initial inspection and test of UN metal hydride storage systems, except that inspection requirements related to the conformity assessment system and approval shall be in accordance with 6.2.2.5:

ISO 16111:2008	Transportable gas storage devices – Hydrogen absorbed in reversible metal hydride

".

6.2.2.2 At the beginning, in the text between brackets, insert "or P205" after "P200".

6.2.2.3 At the end, add the following new paragraph:

"For UN metal hydride storage systems, the requirements specified in the following standard apply to closures and their protection:

ISO 16111:2008	Transportable gas storage devices – Hydrogen absorbed in reversible metal hydride

".

6.2.2.4 At the beginning, insert "and UN metal hydride storage systems" after "UN cylinders" and in the table, add the following new entry at the end:

ISO 16111:2008	Transportable gas storage devices – Hydrogen absorbed in reversible metal hydride

6.2.2.7 After the heading, add the following new note:

"***NOTE:*** *Marking requirements for UN metal hydride storage systems are given in 6.2.2.9.*".

Assign paragraph number 6.2.2.7.1 to the first unnumbered paragraph under 6.2.2.7. Renumber subsequent paragraphs and cross-references accordingly.

6.2.2.7.2 (a) (existing 6.2.2.7.1 (a)) Amend the second sentence to read as follows: "This symbol shall not be used for any purpose other than certifying that a packaging, a portable tank or a MEGC complies with the relevant requirements in Chapter 6.1, 6.2, 6.3, 6.5, 6.6 or 6.7;".

Add a new paragraph 6.2.2.7.9 to read as follows:

"6.2.2.7.9 For bundles of cylinders, pressure receptacle marking requirements shall only apply to the individual cylinders of a bundle and not to any assembly structure.".

6.2.2.8 Assign paragraph number 6.2.2.8.1 to the first unnumbered paragraph under 6.2.2.8. Renumber the following paragraphs accordingly.

Renumber existing 6.2.2.9 as 6.2.2.10. As a consequence, amend the reference to 6.2.2.9 in 1.6.2.7, 1.8.7 (Note), 1.8.7.1.1 and 1.8.7.1.4.

6.2.2.9 Add a new sub-section 6.2.2.9 to read as follows:

"**6.2.2.9 Marking of UN metal hydride storage systems**

6.2.2.9.1 UN metal hydride storage systems shall be marked clearly and legibly with the marks listed below. These marks shall be permanently affixed (e.g. stamped, engraved, or etched) on the metal hydride storage system. The marks shall be on the shoulder, top end or neck of the metal hydride storage system or on a

permanently affixed component of the metal hydride storage system. Except for the United Nations packaging symbol, the minimum size of the marks shall be 5 mm for metal hydride storage systems with a smallest overall dimension greater than or equal to 140 mm and 2.5 mm for metal hydride storage systems with a smallest overall dimension less than 140 mm. The minimum size of the United Nations packaging symbol shall be 10 mm for metal hydride storage systems with a smallest overall dimension greater than or equal to 140 mm and 5 mm for metal hydride storage systems with a smallest overall dimension less than 140 mm.

6.2.2.9.2 The following marks shall be applied:

(a) The United Nations packaging symbol 

;

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

(b) "ISO 16111" (the technical standard used for design, manufacture and testing);

(c) The character(s) identifying the country of approval as indicated by the distinguishing signs of motor vehicles in international traffic [2];

NOTE: *The country of approval shall be understood to be the country that approved the body which inspected the individual receptacle at the time of manufacture.*

(d) The identity mark or stamp of the inspection body that is registered with the competent authority of the country authorizing the marking;

(e) The date of the initial inspection, the year (four digits) followed by the month (two digits) separated by a slash (i.e. "/");

(f) The test pressure of the receptacle in bar, preceded by the letters "PH" and followed by the letters "BAR";

(g) The rated charging pressure of the metal hydride storage system in bar, preceded by the letters "RCP" and followed by the letters "BAR";

(h) The manufacturer's mark registered by the competent authority. When the country of manufacture is not the same as the country of approval, then the manufacturer's mark shall be preceded by the character(s) identifying the country of manufacture as indicated by the distinguishing signs of motor

[2] *Distinguishing signs for motor vehicles in international traffic prescribed in the Vienna Convention on Road Traffic (1968).*

vehicles in international traffic[2]. The country mark and the manufacturer's mark shall be separated by a space or slash;

(i) The serial number assigned by the manufacturer;

(j) In the case of steel receptacles and composite receptacles with steel liner, the letter "H" showing compatibility of the steel (see 1SO 11114-1:1997); and,

(k) In the case of metal hydride storage systems having limited life, the date of expiry, denoted by the letters "FINAL" followed by the year (four digits) followed by the month (two digits) separated by a slash (i.e. "/").

The certification marks specified in (a) to (e) above shall appear consecutively in the sequence given. The test pressure (f) shall be immediately preceded by the rated charging pressure (g). The manufacturing marks specified in (h) to (k) above shall appear consecutively in the sequence given.

6.2.2.9.3 Other marks are allowed in areas other than the side wall, provided they are made in low stress areas and are not of a size and depth that will create harmful stress concentrations. Such marks shall not conflict with required marks.

6.2.2.9.4 In addition to the preceding marks, each metal hydride storage system that meets the periodic and test requirements of 6.2.2.4 shall be marked indicating:

(a) The character(s) identifying the country authorizing the body performing the periodic inspection and test, as indicated by the distinguishing sign of motor vehicles in international traffic[2]. This marking is not required if this body is approved by the competent authority of the country approving manufacture;

(b) The registered mark of the body authorised by the competent authority for performing periodic inspection and test;

(c) The date of the periodic inspection and test, the year (two digits) followed by the month (two digits) separated by a slash (i.e. "/"). Four digits may be used to indicate the year.

The above marks shall appear consecutively in the sequence given.".

6.2.6.3.3 Amend to read as follows:

"6.2.6.3.3 With the approval of the competent authority, aerosols and receptacles, small, are not subject to 6.2.6.3.1 and 6.2.6.3.2, if they are required to be sterile but may be adversely affected by water bath testing, provided:

---

[2] *Distinguishing signs for motor vehicles in international traffic prescribed in the Vienna Convention on Road Traffic (1968).*

(a) They contain a non-flammable gas and either

(i) contain other substances that are constituent parts of pharmaceutical products for medical, veterinary or similar purposes;

(ii) contain other substances used in the production process for pharmaceutical products; or

(iii) are used in medical, veterinary or similar applications;

(b) An equivalent level of safety is achieved by the manufacturer's use of alternative methods for leak detection and pressure resistance, such as helium detection and water bathing a statistical sample of at least 1 in 2000 from each production batch; and

(c) For pharmaceutical products according to (a) (i) and (iii) above, they are manufactured under the authority of a national health administration. If required by the competent authority, the principles of Good Manufacturing Practice (GMP) established by the World Health Organization (WHO)[3] shall be followed.".

Chapter 6.3

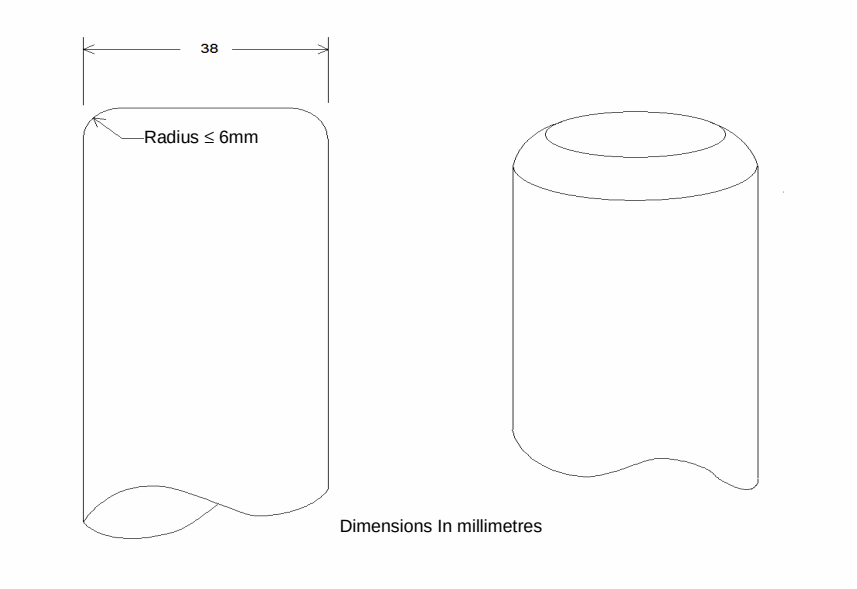
6.3.4.2 (a) Amend the second sentence to read as follows: "This symbol shall not be used for any purpose other than certifying that a packaging, a portable tank or a MEGC complies with the relevant requirements in Chapter 6.1, 6.2, 6.3, 6.5, 6.6 or 6.7;".

6.3.5.4.1 In the second sentence, insert "(see Figure 6.3.5.4.2)" after "not exceeding 6 mm".

6.3.5.4.2 In the third sentence, insert "(see Figure 6.3.5.4.2)" after "not exceeding 6 mm". At the end, insert the following new figure:

[3] *WHO Publication: "Quality assurance of pharmaceuticals. A compendium of guidelines and related materials. Volume 2: Good manufacturing practices and inspection"*.

Figure 6.3.5.4.2



Chapter 6.4

6.4.2.9 Delete "otherwise".

6.4.5.4.3 (c) Replace "an increase of more than 20%" with "more than a 20% increase".

6.4.5.4.4 Replace "of a permanent enclosed character" with "with the characteristics of a permanent enclosure". In sub-paragraph (c), insert "and subsequent amendments 1:1993, 2:1998, 3:2005, 4:2006 and 5:2006," after "Part 1: General Cargo Containers”".

6.4.6.1 Replace "ISO 7195:1993 “Packaging of uranium hexafluoride (UF_6) for transport”" with "ISO 7195:2005 “Nuclear Energy – Packaging of uranium hexafluoride (UF_6) for transport”".

6.4.6.2 (a) Replace "ISO 7195:1993" with "ISO 7195:2005".

6.4.6.4 (a) Replace "ISO 7195:1993" with "ISO 7195:2005".

6.4.7.16 (b) (ii) Replace "designed to ensure retention of the liquid contents" by "designed to enclose the liquid contents completely and ensure their retention".

6.4.11.5 Amend to read as follows:

"6.4.11.5 The package, after being subjected to the tests specified in 6.4.15, shall:

(a) Preserve the minimum overall outside dimensions of the package to at least 10 cm; and

(b) Prevent the entry of a 10 cm cube.".

6.4.11.7 (a) Replace "each of which" by "not less than two of which". The second amendment does not apply to the English text.

6.4.13 (c) Replace "6.4.11.12" with "6.4.11.13".

6.4.15.5 The first amendment does not apply to the English version. Amend sub-paragraph (a) to read as follows:

"(a) A total weight equal to 5 times the maximum weight of the package; and".

6.4.23.11 (h), 6.4.23.12 (j), 6.4.23.13 (j) and 6.4.23.14 (l) The amendment does not apply to the English text.

6.4.23.12 (h) The amendment does not apply to the English text.

6.4.23.12 (j), 6.4.23.13 (j), 6.4.23.14 (l) In the second sentence, replace "(for fissile material)" with "(for fissile material or for each fissile nuclide when appropriate)".

6.4.23.14 (g) The amendment does not apply to the English text.

6.4.23.14 (j) In the second sentence, replace "should" with "shall".

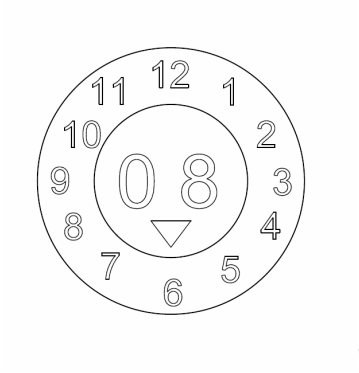
Chapter 6.5

6.5.2.1.1 (a) Amend the second sentence to read as follows: "This symbol shall not be used for any purpose other than certifying that a packaging, a portable tank or a MEGC complies with the relevant requirements in Chapter 6.1, 6.2, 6.3, 6.5, 6.6 or 6.7.".

6.5.2.2.4 Amend to read as follows:

"6.5.2.2.4 The inner receptacle of composite IBCs manufactured after 1 January 2011 shall bear the markings indicated in 6.5.2.1.1 (b), (c), (d) where this date is that of the manufacture of the plastics inner receptacle, (e) and (f). The UN packaging symbol shall not be applied. The marking shall be applied in the sequence shown in 6.5.2.1.1. It shall be durable, legible and placed in a location so as to be readily visible when the inner receptacle is placed in the outer casing.

The date of the manufacture of the plastics inner receptacle may alternatively be marked on the inner receptacle adjacent to the remainder of the marking. An example of an appropriate marking method is:



".

6.5.2.4 Add a new paragraph 6.5.2.4 to read as follows:

"**6.5.2.4** ***Marking of remanufactured composite IBCs (31HZ1)***

The marking specified in 6.5.2.1.1 and 6.5.2.2 shall be removed from the original IBC or made permanently illegible and new markings shall be applied to an IBC remanufactured in accordance with RID/ADR.".

6.5.4.1 At the beginning, insert ", remanufactured, repaired" after "manufactured". At the end, insert ", remanufactured or repaired" after "manufactured".

6.5.6.9.5 (d) At the end, add the following new note:

"***NOTE:*** *The criteria in (d) apply to design types for IBCs manufactured as from 1 January 2011*.".

Chapter 6.6

6.6.1.2 Replace "and tested" with ", tested and remanufactured" and, at the end, insert "or remanufactured large" after "each manufactured".

6.6.3.1 (a) Amend the second sentence to read as follows: "This symbol shall not be used for any purpose other than certifying that a packaging, a portable tank or a MEGC complies with the relevant requirements in Chapter 6.1, 6.2, 6.3, 6.5, 6.6 or 6.7.".

6.6.5.2.2 Amend to read as follows:

"6.6.5.2.2 In the drop tests for liquids, when another substance is used, it shall be of similar relative density and viscosity to those of the substance being carried. Water may also be used for the liquid drop test under the conditions in 6.6.5.3.4.4.".

6.6.5.3.4.4 Amend to read as follows:

"6.6.5.3.4.4 Drop height

NOTE: *Large packagings for substances and articles of Class 1 shall be tested at the packing group II performance level.*

6.6.5.3.4.4.1 For inner packagings containing solid or liquid substances or articles, if the test is performed with the solid, liquid or articles to be carried, or with another substance or article having essentially the same characteristics:

Packing group I	Packing group II	Packing group III
1.8 m	1.2 m	0.8 m

6.6.5.3.4.4.2 For inner packagings containing liquids if the test is performed with water:

(a) Where the substances to be carried have a relative density not exceeding l.2:

Packing group I	Packing group II	Packing group III
1.8 m	1.2 m	0.8 m

(b) Where the substances to be carried have a relative density exceeding 1.2, the drop height shall be calculated on the basis of the relative density (d) of the substance to be carried, rounded up to the first decimal, as follows:

Packing group I	Packing group II	Packing group III
d ×1.5 (m)	d × 1.0 (m)	d × 0.67 (m)

".

Chapter 6.7

6.7.2.6.2 (a) Amend to read as follows:

"(a) An external stop-valve, fitted as close to the shell as reasonably practicable, and so designed as to prevent any unintended opening through impact or other inadvertent act; and".

6.7.2.8.4 At the end, add the following sentence: "In addition, fusible elements conforming to 6.7.2.10.1 may also be used.".

6.7.2.10.1 In the first sentence, replace "110 °C" with "100 °C". In the second sentence, replace "in no case shall they" with "when used for transport safety purposes, they shall not". In the third sentence, replace "utilized" with "used" and at the end of the sentence, add "unless specified by special provision TP36 in Column (11) of Table A of Chapter 3.2.".

6.7.2.20.1 Amend to read as follows:

"6.7.2.20.1 Every portable tank shall be fitted with a corrosion resistant metal plate permanently attached to the portable tank in a conspicuous place readily accessible for inspection. When for reasons of portable tank arrangements the plate cannot be permanently attached to the shell, the shell shall be marked with at least the information required by the pressure vessel code. As a minimum, at least the following information shall be marked on the plate by stamping or by any other similar method:

(a) Owner information
  (i) Owner's registration number;
(b) Manufacturing information
  (i) Country of manufacture;
  (ii) Year of manufacture;
  (iii) Manufacturer's name or mark;
  (iv) Manufacturer's serial number;
(c) Approval information
  (i) The United Nations packaging symbol 

;

  This symbol shall not be used for any purpose other than certifying that a packaging, a portable tank or a MEGC complies with the relevant requirements in Chapter 6.1, 6.2, 6.3, 6.5, 6.6 or 6.7;
  (ii) Approval country;
  (iii) Authorized body for the design approval;
  (iv) Design approval number;
  (v) Letters 'AA', if the design was approved under alternative arrangements (see 6.7.1.2);
  (vi) Pressure vessel code to which the shell is designed;
(d) Pressures
  (i) MAWP (in bar gauge or kPa gauge) [2];
  (ii) Test pressure (in bar gauge or kPa gauge) [2];
  (iii) Initial pressure test date (month and year);
  (iv) Identification mark of the initial pressure test witness;
  (v) External design pressure [3] (in bar gauge or kPa gauge) [2];
  (vi) MAWP for heating/cooling system (in bar gauge or kPa gauge) [2] (when applicable);
(e) Temperatures
  (i) Design temperature range (in °C) [2];
(f) Materials

[2] *The unit used shall be indicated.*
[3] *See 6.7.2.2.10.*

(i) Shell material(s) and material standard reference(s);

(ii) Equivalent thickness in reference steel (in mm) [2];

(iii) Lining material (when applicable);

(g) Capacity

(i) Tank water capacity at 20 °C (in litres) [2];

This indication is to be followed by the symbol "S" when the shell is divided by surge plates into sections of not more than 7 500 litres capacity;

(ii) Water capacity of each compartment at 20 °C (in litres) [2] (when applicable, for multi-compartment tanks).

This indication is to be followed by the symbol "S" when the compartment is divided by surge plates into sections of not more than 7 500 litres capacity;

(h) Periodic inspections and tests

(i) Type of the most recent periodic test (2.5-year, 5-year or exceptional);

(ii) Date of the most recent periodic test (month and year);

(iii) Test pressure (in bar gauge or kPa gauge) [2] of the most recent periodic test (if applicable);

(iv) Identification mark of the authorized body who performed or witnessed the most recent test.

Figure 6.7.2.20.1: Example of identification plate marking

Owner's registration number			
MANUFACTURING INFORMATION			
Country of manufacture			
Year of manufacture			
Manufacturer			
Manufacturer's serial number			
APPROVAL INFORMATION			
u n	Approval country		
	Authorized body for design approval		
	Design approval number		'AA' *(if applicable)*
Shell design code (pressure vessel code)			
PRESSURES			
MAWP			bar *or* kPa
Test pressure			bar *or* kPa
Initial pressure test date:	*(mm/yyyy)*	Witness stamp:	
External design pressure			bar *or* kPa
MAWP for heating/cooling system (*when applicable)*			bar *or* kPa
TEMPERATURES			
Design temperature range		°C to	°C

MATERIALS							
Shell material(s) and material standard reference(s)							
Equivalent thickness in reference steel							mm
Lining material *(when applicable)*							
CAPACITY							
Tank water capacity at 20 °C				litres			'S' *(if applicable)*
Water capacity of compartment ___ at 20 °C *(when applicable, for multi-compartment tanks)*				litres			'S' *(if applicable)*
PERIODIC INSPECTIONS / TESTS							
Test type	Test date	Witness stamp and test pressure[a]		Test type	Test date	Witness stamp and test pressure[a]	
	(mm/yyyy)		bar *or* kPa		*(mm/yyyy)*		bar *or* kPa

[a] *Test pressure if applicable*.".

6.7.2.20.2 Insert "Portable tank instruction in accordance with 4.2.5.2.6" in the list.
(ADR:)
Delete "Name of substance(s) being carried and maximum mean bulk temperature when higher than 50 °C".

6.7.3.16.1 Amend to read as follows:

"6.7.3.16.1 Every portable tank shall be fitted with a corrosion resistant metal plate permanently attached to the portable tank in a conspicuous place readily accessible for inspection. When for reasons of portable tank arrangements the plate cannot be permanently attached to the shell, the shell shall be marked with at least the information required by the pressure vessel code. As a minimum, at least the following information shall be marked on the plate by stamping or by any other similar method:

(a) Owner information
  (i) Owner's registration number;
(b) Manufacturing information
  (i) Country of manufacture;
  (ii) Year of manufacture;
  (iii) Manufacturer's name or mark;
  (iv) Manufacturer's serial number;
(c) Approval information

(i) The United Nations packaging symbol  ;

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

(ii) Approval country;

(iii) Authorized body for the design approval;

(iv) Design approval number;

(v) Letters 'AA', if the design was approved under alternative arrangements (see 6.7.1.2);

(vi) Pressure vessel code to which the shell is designed;

(d) Pressures

(i) MAWP (in bar gauge or kPa gauge) [2];

(ii) Test pressure (in bar gauge or kPa gauge) [2];

(iii) Initial pressure test date (month and year);

(iv) Identification mark of the initial pressure test witness;

(v) External design pressure [3] (in bar gauge or kPa gauge) [2];

(e) Temperatures

(i) Design temperature range (in °C) [2];

(ii) Design reference temperature (in °C) [2];

(f) Materials

(i) Shell material(s) and material standard reference(s);

(ii) Equivalent thickness in reference steel (in mm) [2];

(g) Capacity

(i) Tank water capacity at 20 °C (in litres) [2];

(h) Periodic inspections and tests

(i) Type of the most recent periodic test (2.5-year, 5-year or exceptional);

(ii) date of the most recent periodic test (month and year);

(iii) Test pressure (in bar gauge or kPa gauge) [2] of the most recent periodic test (if applicable);

(iv) Identification mark of the authorized body who performed or witnessed the most recent test.

---

[2] *The unit used shall be indicated.*

[3] *See 6.7.3.2.8.*

Figure 6.7.3.16.1: Example of identification plate marking

Owner's registration number							
MANUFACTURING INFORMATION							
Country of manufacture							
Year of manufacture							
Manufacturer							
Manufacturer's serial number							
APPROVAL INFORMATION							
u n	Approval country						
	Authorized body for design approval						
	Design approval number						'AA' *(if applicable)*
Shell design code (pressure vessel code)							
PRESSURES							
MAWP							bar *or* kPa
Test pressure							bar *or* kPa
Initial pressure test date:	*(mm/yyyy)*			Witness stamp:			
External design pressure							bar *or* kPa
TEMPERATURES							
Design temperature range				°C to			°C
Design reference temperature							°C
MATERIALS							
Shell material(s) and material standard reference(s)							
Equivalent thickness in reference steel							mm
CAPACITY							
Tank water capacity at 20 °C							litres
PERIODIC INSPECTIONS / TESTS							
Test type	Test date	Witness stamp and test pressure[a]		Test type	Test date	Witness stamp and test pressure[a]	
	(mm/yyyy)		bar *or* kPa		*(mm/yyyy)*		bar *or* kPa

[a] *Test pressure if applicable*.".

6.7.3.16.2 Insert "Portable tank instruction in accordance with 4.2.5.2.6" in the list.

6.7.4.15.1 Amend to read as follows:

"6.7.4.15.1 Every portable tank shall be fitted with a corrosion resistant metal plate permanently attached to the portable tank in a conspicuous place readily accessible for inspection. When for reasons of portable tank arrangements the plate cannot be permanently attached to the shell, the shell shall be marked with at least the information required by the pressure vessel code. As a minimum, at least the following information shall be marked on the plate by stamping or by any other similar method:

(a) Owner information

(i) Owner's registration number;

(b) Manufacturing information

(i) Country of manufacture;

(ii) Year of manufacture;

(iii) Manufacturer's name or mark;

(iv) Manufacturer's serial number;

(c) Approval information

(i) The United Nations packaging symbol 

;

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

(ii) Approval country;

(iii) Authorized body for the design approval;

(iv) Design approval number;

(v) Letters 'AA', if the design was approved under alternative arrangements (see 6.7.1.2);

(vi) Pressure vessel code to which the shell is designed;

(d) Pressures

(i) MAWP (in bar gauge or kPa gauge) [2];

(ii) Test pressure (in bar gauge or kPa gauge) [2];

(iii) Initial pressure test date (month and year);

(iv) Identification mark of the initial pressure test witness;

(e) Temperatures

(i) Minimum design temperature (in °C) [2];

(f) Materials

(i) Shell material(s) and material standard reference(s);

(ii) Equivalent thickness in reference steel (in mm) [2];

(g) Capacity

(i) Tank water capacity at 20 °C (in litres) [2];

---

[2] *The unit used shall be indicated.*

(h) Insulation

(i) Either “Thermally insulated” or “Vacuum insulated” (as applicable);

(ii) Effectiveness of the insulation system (heat influx) (in Watts) [2];

(i) Holding times – For each refrigerated liquefied gas permitted to be carried in the portable tank:

(i) Name, in full, of the refrigerated liquefied gas;

(ii) Reference holding time (in days or hours) [2];

(iii) Initial pressure (in bar gauge or kPa gauge) [2];

(iv) Degree of filling (in kg) [2];

(j) Periodic inspections and tests

(i) Type of the most recent periodic test (2.5-year, 5-year or exceptional);

(ii) Date of the most recent periodic test (month and year);

(iii) Identification mark of the authorized body who performed or witnessed the most recent test.

Figure 6.7.4.15.1: Example of identification plate marking

Owner’s registration number				
MANUFACTURING INFORMATION				
Country of manufacture				
Year of manufacture				
Manufacturer				
Manufacturer’s serial number				
APPROVAL INFORMATION				
u n	Approval country			
	Authorized body for design approval			
	Design approval number			‘AA’ *(if applicable)*
Shell design code (pressure vessel code)				
PRESSURES				
MAWP				bar *or* kPa
Test pressure				bar *or* kPa
Initial pressure test date:	*(mm/yyyy)*	Witness stamp:		
TEMPERATURES				
Minimum design temperature				°C
MATERIALS				
Shell material(s) and material standard reference(s)				
Equivalent thickness in reference steel				mm
CAPACITY				
Tank water capacity at 20 °C				litres

[2] *The unit used shall be indicated.*

INSULATION					
'Thermally insulated' or 'Vacuum insulated' *(as applicable)*					
Heat influx			Watts		
HOLDING TIMES					
Refrigerated liquefied gas(es) permitted	Reference holding time		Initial pressure		Degree of filling
	days *or* hours		bar *or* kPa		kg
PERIODIC INSPECTIONS / TESTS					
Test type	Test date	Witness stamp	Test type	Test date	Witness stamp
	(mm/yyyy)			*(mm/yyyy)*	

".

6.7.4.15.2 Insert "Portable tank instruction in accordance with 4.2.5.2.6" in the list.

6.7.5.4.1 Amend the last sentence to read as follows: "If so required by the competent authority of the country of use, MEGCs for other gases shall be fitted with pressure relief devices as specified by that competent authority.".

6.7.5.13.1 Amend to read as follows:

"6.7.5.13.1 Every MEGC shall be fitted with a corrosion resistant metal plate permanently attached to the MEGC in a conspicuous place readily accessible for inspection. The metal plate shall not be affixed to the elements. The elements shall be marked in accordance with Chapter 6.2. As a minimum, at least the following information shall be marked on the plate by stamping or by any other similar method:

(a) Owner information

(i) Owner's registration number;

(b) Manufacturing information

(i) Country of manufacture;

(ii) Year of manufacture;

(iii) Manufacturer's name or mark;

(iv) Manufacturer's serial number;

(c) Approval information

(i) The United Nations packaging symbol 

;

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

(ii) Approval country;

(iii) Authorized body for the design approval;

(iv) Design approval number;

(v) Letters 'AA', if the design was approved under alternative arrangements (see 6.7.1.2);

(d) Pressures

(i) Test pressure (in bar gauge) [2];

(ii) Initial pressure test date (month and year);

(iii) Identification mark of the initial pressure test witness;

(e) Temperatures

(i) Design temperature range (in °C) [2];

(f) Elements / Capacity

(i) Number of elements;

(ii) Total water capacity (in litres) [2];

(h) Periodic inspections and tests

(i) Type of the most recent periodic test (5-year or exceptional);

(ii) Date of the most recent periodic test (month and year);

(iv) Identification mark of the authorized body who performed or witnessed the most recent test.

Figure 6.7.5.13.1: Example of identification plate marking

Owner's registration number			
MANUFACTURING INFORMATION			
Country of manufacture			
Year of manufacture			
Manufacturer			
Manufacturer's serial number			
APPROVAL INFORMATION			
u n	Approval country		
	Authorized body for design approval		
	Design approval number		'AA' *(if applicable)*

[2] *The unit used shall be indicated.*

PRESSURES					
Test pressure			bar		
Initial pressure test date:	*(mm/yyyy)*		Witness stamp:		
TEMPERATURES					
Design temperature range			°C to		°C
ELEMENTS / CAPACITY					
Number of elements					
Total water capacity			litres		
PERIODIC INSPECTIONS / TESTS					
Test type	Test date	Witness stamp	Test type	Test date	Witness stamp
	(mm/yyyy)			*(mm/yyyy)*	

".

PART 7

Chapter 7.2

7.2.4 Amend V12/W12 to read as follows:
"V12/W12 *Deleted.*"

Chapter 7.5

7.5.2.1 At the end of note d to the table, add the following two sentences:

" *Alkali metal nitrates include caesium nitrate (UN 1451), lithium nitrate (UN 2722), potassium nitrate (UN 1486), rubidium nitrate (UN 1477) and sodium nitrate (UN 1498). Alkaline earth metal nitrates include barium nitrate (UN 1446), beryllium nitrate (UN 2464), calcium nitrate (UN 1454), magnesium nitrate (UN 1474) and strontium nitrate (UN 1507).*".

Consequential amendment:
In the alphabetical index, add the following new entry:
"Rubidium nitrate, see 1477 5.1".

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