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Working Party on the Transport of Dangerous Goods

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

Ad hoc Working Group on the Harmonization of RID/ADR/ADN
with the UN Recommendations on the Transport of Dangerous Goods

Geneva, 18-20 May 2009

HARMONIZATION WITH THE UNITED NATIONS MODEL REGULATIONS ON THE TRANSPORT OF DANGEROUS GOODS

Draft proposal of amendments to RID/ADR/ADN

Note by the UNECE secretariat

The UNECE secretariat has prepared a draft proposal of amendments to RID/ADR/ADN on the basis of the decisions taken by the UN Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals at its December 2008 session. This document includes the draft proposal of amendments for Part 1 to Chapter 3.3.

The United Nations documents of reference are ST/SG/AC.10/36, -/Add.1 and -/Add.2. Corrections to the list of amendments to the UN Model Regulations, which will be submitted as ST/SG/AC.10/36/Add.1/Corr.1, are also taken into account.

Striken out text means that the amendment does not seem relevant for RID/ADR/ADN. Text underlined means alternative wording proposed by the secretariat. Text in square brackets means that the Working Group of the Joint Meeting should discuss the relevance of the text for RID/ADR/ADN. Additional information, such as references and comments, is also provided in square brackets.

[*/] *Informal document. Not issued as an official United Nations document. Circulated only to delegations participating in the work of the Joint Meeting of the RID Committee of Experts and the Working Party on the Transport of Dangerous Goods.*

PART 1

~~**Chapter 1.1**~~

~~1.1.1.4 In the first sentence, replace "is assured "with "are assured ".~~

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…").

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*", "*Portable tank*", ~~at the end,~~ replace "Class 2 substances~~ of Class 2~~" by "gases as defined in 2.2.2.1.1". In the definitions of "*Battery-vehicle*" and "*MEGC*" replace "gases of Class 2" by "gases as defined in 2.2.2.1.1".
[RID] In the definitions of "*Battery-wagon*", "*MEGC*", "*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 "*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 ~~road transport tank or freight vehicle, a railway transport tank or freight wagon, a multimodal freight container or portable tank~~wagon/vehicle, a container, a tank-container, portable tank~~,~~ or a MEGC as defined in this Part;"

"*Closed cargo transport unit* means a cargo transport unit which totally encloses the contents by permanent structures with complete and rigid surfaces. Cargo transport units with fabric sides or tops are not considered closed cargo transport units;" [see also existing definitions of closed wagon/vehicle and closed containers]

Consequential amendments:
[Deleted. Not applicable.]

"*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 ~~transport~~ 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;"

"*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 ~~these Regulations~~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 ~~transported~~ carried within distribution chains controlled by the consignor of the product;".

"*Through or into* means through or into the countries in which a consignment is ~~transported~~ 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 At the end of the introductory text, replace "shall receive the following training" with "shall be trained in the following".~~

~~1.3.2 (a) (i) Replace "shall receive training designed to provide familiarity" with "shall be trained in order to be familiar".~~

~~1.3.2 (b) Replace "shall receive detailed training concerning" with "shall be trained in".~~

~~1.3.2 (c) In the first sentence, replace "shall receive training on" with "shall be trained in".~~

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

1.3.2.3 Replace "personnel shall receive training covering" with "the training provided shall cover".

1.3.3 Amend the first sentence to read as follows:

"1.3.3 Records of training received according to this Chapter shall be kept by the employer and made available to the employee or competent authority, upon request. Records shall be kept by the employer for a period of time established by the competent authority.".
[See if the existing second sentence (refresher training) could be transferred elsewhere as it is not related to documentation.]

Chapter 1.4~~10~~

~~1.4.2.4 Amend to read as follows:~~

~~"1.4.2.4 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.".~~ [Not needed, covered by 1.3.3]

~~1.4.3.2.3~~1.10.6 Amend to read as follows:

"~~1.4.3.2.3~~1.10.6 For radioactive material, the provisions of this Chapter ~~and of section 7.2.4~~ 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.".

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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.*

Chapter 1.5

~~1.5.1.1~~1.7.1.1 In the second sentence, replace "2005" with "2009" (twice).
Replace the last sentence with the two following sentences [see if second sentence applies for RID/ADR/ADN]: "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.". Delete footnote 1.

~~1.5.1.2~~1.7.1.2 Amend the first sentence to read as follows: "The objective of ~~these Regulations~~RID/ADR/ADN is to establish requirements that ~~must~~ shall be satisfied to ensure safety and to protect persons, property and the environment from the effects of radiation in the ~~transport~~ carriage of radioactive material.".

~~1.5.1.3~~1.7.1.3 In the third sentence, replace "that is characterized" by "that are characterized".

~~1.5.1.5.1~~1.7.1.5 Renumber as 1.7.1.5.1 and amend the beginning and sub-paragraph (a) to read as follows:

"~~1.5.1.5.1~~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 (new – existing is renumbered as 5.1.5.5), ~~5.2.1.7~~5.2.1.9~~,~~ and ~~7.1.8.5.2~~7.5.11 CV33 (5.2);".

~~Delete sub-paragraph (d) and move the final "and" from sub-paragraph (c) to sub-paragraph (b).~~

~~1.5.1.5.2 Amend to read as follows:~~

~~"1.5.1.5.2 Excepted packages shall be subject to the relevant provisions of all other parts of these Regulations.".~~ The last sentence becomes new paragraph 1.7.1.5.2.

~~1.5.2.3~~1.7.2.3 At the end of the second sentence, add "and 7.5.11 CV33 (1) (1.1)~~7.1.8.1.1~~".

~~1.5.2.7~~1.7.2.5 Replace "shall receive appropriate training concerning" with "shall be appropriately trained in ".

PART 2

Chapter 2.0

~~2.0.1.1~~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".

Add a new 2.1.2.2.1 to read as follows:
~~2.0.2.2 Amend the first paragraph to read as follows:~~

"~~2.0.2.2~~2.1.2.2.1 [~~Dangerous goods commonly carried are listed in the Dangerous Goods List in Chapter 3.2. Where an article or substance is specifically listed by name, it shall be identified in transport by the proper shipping name in the Dangerous Goods List.~~]*[Not necessary]* ~~Such~~ A substance~~s~~ may contain technical impurities (for example those deriving from the production process) or additives for stability or other purposes that do not affect their classification. However, a substance listed by name containing technical impurities or additives for stability or other purposes affecting its classification shall be considered a mixture or solution (see ~~2.0.2.5~~2.1.3.3). ~~For dangerous goods not specifically listed by name "generic" or "not otherwise specified" entries are provided (see 2.0.2.7) to identify the article or substance in transport.".~~

~~2.0.2.5~~2.1.3.3 Amend to read as follows:

"~~2.0.2.5~~2.1.3.3A mixture or solution composed of a single predominant substance identified by name in ~~the Dangerous Goods List~~Table A of Chapter 3.2 and one or more substances not subject to these ~~Regulations~~ RID/ADR/ADN and/or traces of one or more substances identified by name in Table A of Chapter 3.2~~the Dangerous Goods List~~, shall be assigned the UN number and proper shipping name of the predominant substance named in Table A of Chapter 3.2~~the Dangerous Goods List~~ unless:

(a) The mixture or solution is identified by name in Table A of Chapter 3.2~~the Dangerous Goods List~~;

(b) The name and description of the substance named in Table A of Chapter 3.2~~the Dangerous Goods List~~ specifically indicate that they apply only to the pure substance;

(c) The ~~hazard~~ class or division, ~~subsidiary risk(s)~~classification code, packing group, or physical state of the mixture or solution is different from that of the substance named in Table A of Chapter 3.2~~the Dangerous Goods List~~; or

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

In those other cases, except the one described in (a), the mixture or solution shall be treated as a dangerous substance not specifically listed by name in ~~the Dangerous Goods List~~Table A of Chapter 3.2.".

~~2.0.2.9 Add a new paragraph 2.0.2.9 to read as follows:~~

~~"2.0.2.9 A mixture or solution that is not identified by name in the Dangerous Goods List and that is composed of two or more dangerous goods shall be assigned to an entry that has the proper shipping name, description, hazard class or division, subsidiary risk(s) and packing group that most precisely describe the mixture or solution.".~~ *[Already covered by 2.1.3.5]*

~~2.0.3.2~~2.1.3.5.3 (a) At the end of the text in parenthesis, add ~~the following new sentence~~: "~~For radioactive material in excepted packages~~, for which special provision 290 of Chapter 3.3 applies.".

Chapter 2.1

~~2.1.1.3~~2.2.1.1.1 (a) Add a new ~~sub-paragraph (d)~~NOTE 3 to read as follows:

"~~(d)~~***NOTE 3:*** Phlegmatized *means that a substance (or "phlegmatizer") has been added to an explosive to enhance its safety in handling and* ~~*transport*~~*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).".*

~~2.1.2.1.1 Add the following new notes after the table:~~

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

~~***NOTE 2:** Articles of compatibility groups D and E may be packed together with their own means of initiation, which do not have two effective protective features when, in the opinion of the competent authority of the country of origin, the accidental functioning of the means of initiation does not cause the explosion of an article under normal conditions of transport. Such packages shall be assigned to compatibility groups D or E.".*~~
[Corresponds to Notes 2 and 3 after 2.2.1.1.6. The requirements in Note 2 of UN Model Regulations corresponds to MP21.]

~~2.1.3.5.5~~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.".*

2.2.1.1.7.5~~2.1.3.5.5~~ In the default fireworks classification table, replace "pyrotechnic composition" with "pyrotechnic substance" whenever it appears.

Chapter 2.2

2.2.2.1.1 Delete ~~the note~~Note 4.

2.2.2.1.5~~2.2.2.1 (b)~~ ~~In (ii)~~Under "Oxidizing gases", ~~delete~~ amend the second sentence ("~~The~~ Oxidizing ability… 10156-2:2005")~~.~~ to read as follows:

~~Add the following new note:~~

"***~~NOTE:~~*** *~~In 2.2.2.1 (b) (ii),~~ "gases which cause or contribute to the combustion of other material more than air does" means pure gases or gas mixtures with an oxidizing power greater than 23.5% as determined by a method specified in ISO 10156:1996 or 10156-2:2005.*".

~~2.2.2.4~~ Add a new ~~2.2.2.4~~2.2.2.1.7 to read as follows:

"2.2.2.1.7 ~~2.2.2.4~~ Gases ~~of Division 2.2~~ assigned to group A or O are not subject to these Regulations when contained in the following:

- Foodstuffs, including carbonated beverages (except UN 1950);
- Balls intended for use in sports;
- Tyres ~~(except for air transport)~~; or
- Light bulbs provided they are packaged so that the projectile effects of any rupture of the bulb will be contained within the package.".

[See also 1.1.3.2. First and third indents are covered by 1.1.3.2 (f) and (d).]

~~2.2.3 (d) In the parenthesis, insert "the Note in 2.2.2.1 (b) and" before "ISO 10156:1996".~~

Chapter 2.3

2.3.3 Amend to read as follows:

[To be discussed. 2.3.3.1 of RID/ADR/ADN is different from 2.3.3 the UN Model Regulations and not all the standards listed in the previous edition of the UN Model Regulations were included in RID/ADR/ADN.]

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

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

International standards:

ISO 1516
ISO 1523
ISO 2719
ISO 13736
ISO 3679
ISO 3680

National standards:

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

ASTM D3828-93, Standard Test Methods for Flash Point by Small Scale Closed Tester
ASTM D56-93, Standard Test Method for Flash Point by Tag Closed Tester
ASTM D3278-96, Standard Test Methods for Flash Point of Liquids by Setaflash Closed-Cup Apparatus
ASTM D0093-96, Standard Test Methods for Flash Point by Pensky-Martens Closed Cup Tester

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

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

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

Standard DIN 51755 (flash points below 65 °C)

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

GOST 12.1.044-84".

2.3.4 ~~Add~~ Insert a new section 2.3.4 to read as follows and renumber 2.3.4 and 2.3.5 accordingly:

"**2.3.4 Determination of initial boiling point**

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

International standards:

ISO 3924
ISO 4626
ISO 3405

National standards:

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

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

Further acceptable methods:

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

Chapter 2.4

~~2.4.3.1.2~~2.2.42.1.3 Amend to read as follows:

"2.2.42.1.3~~2.4.3.1.2~~ Self-heating of a substance is a process where the gradual reaction of that substance with oxygen (in air) generates heat. If the rate of heat production exceeds the rate of heat loss, then the temperature of the substance will rise which, after an induction time, may lead to self-ignition and combustion.".

[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)* .

Chapter 2.5

~~2.5.3.2.4~~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	

~~Chapter 2.6, In Note 1 after the chapter heading, replace "an infectious substance" with "a toxic or an infectious substance".~~

~~2.6.3.1.5~~2.2.62.1.3 Delete the ~~text~~ definition of "Genetically modified microorganisms and organisms"~~and add the mention "Deleted"~~.
Consequential amendment: Delete 2.2.62.1.10.

~~2.7.1.3~~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:".

~~2.7.2.2.1~~2.2.7.2.2.1 In the table, under "Krypton (36)", add the following new entry:

Kr-79	4×10^0	2×10^0	1×10^3	1×10^5

~~2.7.2.3.1.2~~2.2.7.2.3.1.2 (a) (ii) Replace "providing they" by "that".

2.2.7.2.3.1.2~~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~~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 2.7.2.4.1.2" and replace "provided that" with "only if".

2.2.7.2.4.1.6 The first amendment only applies to the French version (Remplacer "l'uranium naturel, l'uranium appauvri ou le thorium naturel non irradiés peut" par "de l'uranium naturel non irradié, de l'uranium appauvri non irradié ou du thorium naturel non irradié peuvent".). 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 ~~7.1.8.2~~7.5.11 CV33 (2) are met".

2.2.7.2.4.3 Replace "if the conditions of 2.2.7.2.3.2~~.1~~ and 4.1.9.2 are met" with "if the definition of SCO in 2.7.1.3 and the conditions of 2.2.7.2.3.2, 4.1.9.2 and 7.5.11 CV33 (2)~~7.1.8.2~~ are met".

Chapter 2.8

~~2.8.2.4~~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 ~~these Regulations~~RID/ADR/ADN without further testing.".

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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.*

[Note for ADR: Footnotes should be numbered 7 to 10 and renumber existing footnotes 8 to 10 as 11 to 13.]

~~**Chapter 2.9**~~

2.2.9 Amend the ~~Chapter~~ heading to read as follows:

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

2.2.9.1.1 The amendment does not apply to the English text. In the French text, replace "qui, en cours de transport, présentent un danger" with "qui présentent, en cours de transport, un danger".

~~2.9.1.2 Delete the text and add the mention "Deleted".~~

[The secretariat thinks that the following amendments to 2.9.2 of the Model Regulations, except amendments related to GMOs and GMMOs, are not relevant for RID/ADR as a list of entries is included in 2.2.9.3 of RID/ADR.]

~~2.9.2 Amend to read as follows:~~

~~"2.9.2 Assignment to Class 9~~

~~The substances and articles of Class 9 are subdivided as follows:~~

~~***Substances which, on inhalation as fine dust, may endanger health***~~

~~2212 BLUE ASBESTOS (crocidolite) or~~
~~2212 BROWN ASBESTOS (amosite, mysorite)~~
~~2590 WHITE ASBESTOS (chrysotile, actinolite, anthophyllite, tremolite)~~

~~***Substances evolving flammable vapour***~~

~~2211 POLYMERIC BEADS, EXPANDABLE, evolving flammable vapour~~
~~3314 PLASTICS MOULDING COMPOUND in dough, sheet or extruded rope form evolving flammable vapour~~

~~***Lithium batteries***~~

~~3090 LITHIUM METAL BATTERIES (including lithium alloy batteries)~~
~~3091 LITHIUM METAL BATTERIES CONTAINED IN EQUIPMENT (including lithium alloy batteries) or~~
~~3091 LITHIUM METAL BATTERIES PACKED WITH EQUIPMENT (including lithium alloy batteries)~~
~~3480 LITHIUM ION BATTERIES (including lithium ion polymer batteries)~~

3481 LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT (including lithium ion polymer batteries) or
3481 LITHIUM ION BATTERIES PACKED WITH EQUIPMENT (including lithium ion polymer batteries)

Live-saving appliances

2990 LIFE-SAVING APPLIANCES, SELF-INFLATING
3072 LIFE-SAVING APPLIANCES NOT SELF-INFLATING containing dangerous goods as equipment
3268 AIR BAG INFLATORS or
3268 AIR BAG MODULES or
3268 SEAT BELT PRETENSIONERS

Substances and articles which, in the event of fire, may form dioxins

This group of substances includes:

2315 POLYCHLORINATED BIPHENYLS, LIQUID
3432 POLYCHLORINATED BIPHENYLS, SOLID
3151 POLYHALOGENATED BIPHENYLS, LIQUID or
3151 POLYHALOGENATED TERPHENYLS, LIQUID
3152 POLYHALOGENATED BIPHENYLS, SOLID or
3152 POLYHALOGENATED TERPHENYLS, SOLID

Examples of articles are transformers, condensers and apparatus containing those substances.

Substances transported or offered for transport at elevated temperatures

(a) Liquid

3257 ELEVATED TEMPERATURE LIQUID, N.O.S., at or above 100 °C and below its flash-point (including molten metal, molten salts, etc.)

(b) Solid

3258 ELEVATED TEMPERATURE SOLID, N.O.S., at or above 240 °C

Environmentally hazardous substances

(a) Solid

3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.

(b) Liquid

3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

These designations are used for substances and mixtures which are dangerous to the aquatic environment that do not meet the classification criteria of any other class or another substance within Class 9. These designations may also be used for wastes not otherwise subject to these Regulations but which are covered under the *Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal* and for substances designated to be environmentally hazardous substances by the competent authority of the country of origin, transit or destination which do not meet the criteria for an environmentally hazardous substance according to these Regulations or for any other hazard Class. The criteria for substances which are hazardous to the aquatic environment are given in section 2.9.3.

Genetically modified micro-organisms (GMMOs) and genetically modified organisms (GMOs)

3245 GENETICALLY MODIFIED MICRO-ORGANISMS or
3245 GENETICALLY MODIFIED ORGANISMS

GMMOs and GMOs which do not meet the definition of toxic substances (see 2.6.2) or infectious substances (see 2.6.3) shall be assigned to UN 3245.

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

GMMOs or GMOs are not subject to these Regulations when authorized for use by the competent authorities of the countries of origin, transit and destination.

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

Other substances or articles presenting a danger during transport, but not meeting the definitions of another class

1841 ACETALDEHYDE AMMONIA
1845 CARBON DIOXIDE, SOLID (DRY ICE)
1931 ZINC DITHIONITE (ZINC HYDROSULPHITE)
1941 DIBROMODIFLUOROMETHANE
1990 BENZALDEHYDE
2071 AMMONIUM NITRATE BASED FERTILISER
2216 FISH MEAL (FISH SCRAP), STABILIZED
2807 MAGNETIZED MATERIAL
2969 CASTOR BEANS or
2969 CASTOR MEAL or
2969 CASTOR POMACE or
2969 CASTOR FLAKE
3166 ENGINE, INTERNAL COMBUSTION or
3166 VEHICLE, FLAMMABLE GAS POWERED or
3166 VEHICLE, FLAMMABLE LIQUID POWERED or
3166 ENGINE, FUEL CELL, FLAMMABLE GAS POWERED or

~~3166 ENGINE, FUEL CELL, FLAMMABLE LIQUID POWERED or~~
~~3166 VEHICLE, FUEL CELL, FLAMMABLE GAS POWERED or~~
~~3166 VEHICLE, FUEL CELL, FLAMMABLE LIQUID POWERED~~
~~3171 BATTERY-POWERED VEHICLE or~~
~~3171 BATTERY-POWERED EQUIPMENT~~
~~3316 CHEMICAL KIT or~~
~~3316 FIRST AID KIT~~
~~3334 AVIATION REGULATED LIQUID, N.O.S.~~
~~3335 AVIATION REGULATED SOLID, N.O.S.~~
~~3359 FUMIGATED CARGO TRANSPORT UNIT~~
~~3363 DANGEROUS GOODS IN MACHINERY or~~
~~3363 DANGEROUS GOODS IN APPARATUS ".~~

[The amendments of Chapter 2.4 of ADN corresponding to the amendments of 2.9.3 of the Model Regulations will be presented in a separate document.]

~~2.9.3.1.4~~2.2.9.1.10.1.4 The two first amendments do not apply to the English text. (Dans la définition de "CE_{50}", remplacer "un produit chimique" par "une substance". Dans la définition de "CL_{50}", remplacer "matière" par "substance".)

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. (Dans la définition de "Lignes directrices de l'OCDE", insérer "pour les essais" avant "publiées" et "(OCDE)" après "économiques".)

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

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

~~2.9.3.2.1~~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.".

~~2.9.3.2.3~~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.

~~2.9.3.2.4~~2.2.9.1.10.2.4 *Text of existing ~~2.9.3.2.6~~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 EC_x shall be used.".

~~2.9.3.2.5~~2.2.9.1.10.2.5 *Text of existing ~~2.9.3.2.4~~2.2.9.1.10.2.4. The modifications do not apply to the English text.*

~~2.9.3.2.6~~2.2.9.1.10.2.6 *Text of existing ~~2.9.3.2.5~~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 and renumber existing footnotes 11 to 13 as 14 to 16.]

~~2.9.3.3~~2.2.9.1.10.3 Amend to read as follows:

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

"2.2.9.1.10.3 ~~2.9.3.3~~ ***Substance classification categories and criteria***

2.2.9.1.10.3.1 ~~2.9.3.3.1~~ Substances shall be classified as "environmentally hazardous substances (aquatic environment)", if they satisfy the criteria for Acute 1, Chronic 1 or Chronic 2, according to Table 2.2.9.1.10.3.1~~2.9.1~~. These criteria describe in detail the classification categories. They are diagrammatically summarized in Table 2.2.9.1.10.3.2~~2.9.2~~.

Table 2.2.9.1.10.3.1 ~~2.9.1~~: Categories for substances hazardous to the aquatic environment
(see Note 1)

(a) Acute (short-term) aquatic hazard

Category Acute 1: *(see Note 2)*		
	96 hr LC_{50} (for fish)	≤ 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)*

(b) Long-term aquatic hazard *(see also Figure 2.9.1)*

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

Category Chronic 1: (see *Note 2*)		
	Chronic NOEC or EC_x (for fish)	≤ 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.*

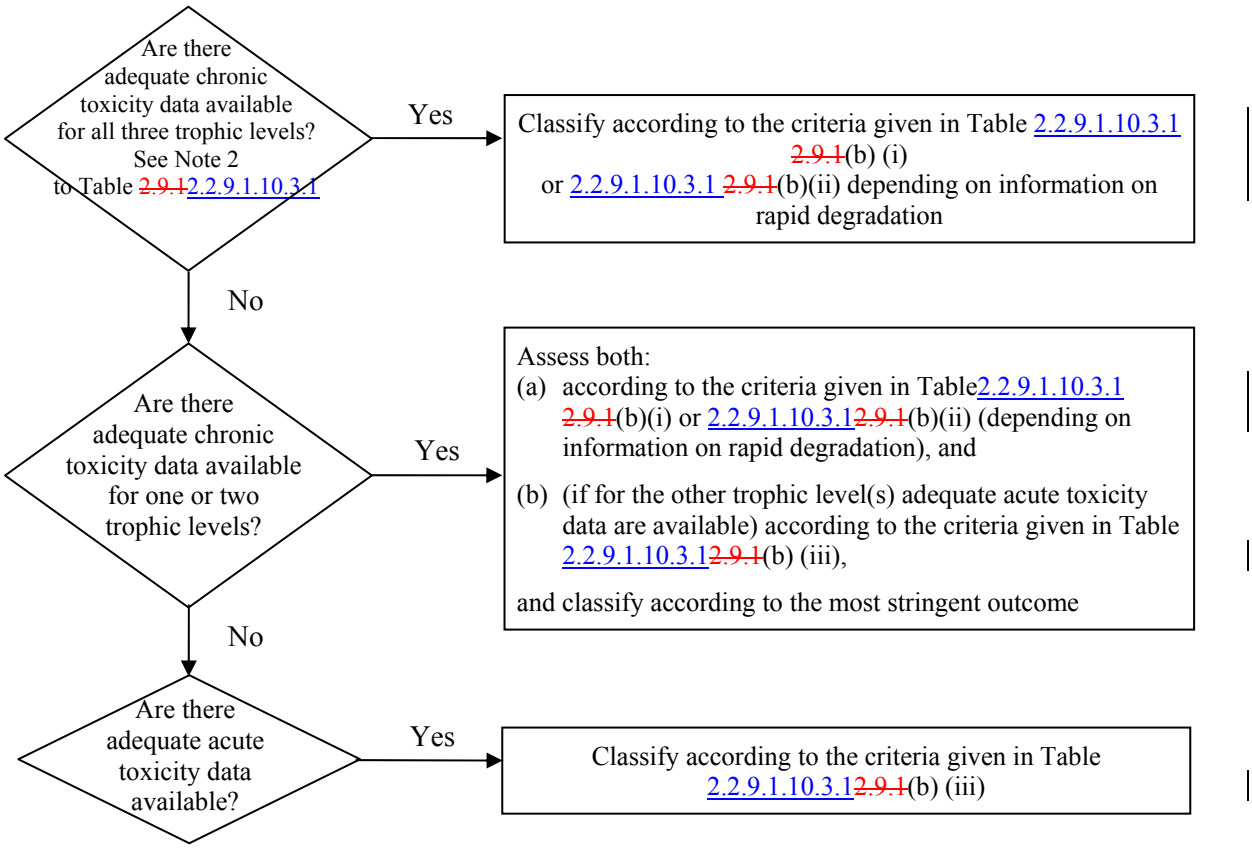
NOTE 2: *When classifying substances as Acute 1 and/or Chronic 1 it is necessary at the same time to indicate an appropriate M factor (see 2.2.9.1.10.4.6.4 ~~2.9.3.4.6.4~~) to apply the summation method.*

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

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

NOTE 5: *Potential to bioaccumulate, based on an experimentally derived BCF ≥ 500 or, if absent, a log K_{ow} ≥ 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 ~~2.9.1~~: Categories for substances long-term hazardous to the aquatic environment



2.2.9.1.10.3.2 ~~2.9.3.3.2~~ The classification scheme in Table 2.2.9.1.10.3.2 ~~2.9.2~~ below summarizes the classification criteria for substances.

Table 2.2.9.1.10.3.2 ~~2.9.2~~: Classification scheme for substances hazardous to the aquatic environment

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

~~2.9.3.4.1~~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.(Dans la deuxième phrase, insérer "des dangers" après "classification".)

2.2.9.1.10.4.1 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.".

~~2.9.3.4.2~~2.2.9.1.10.4.2 ~~Replace "Figure 2.9.1" with "Figure 2.9.2" (twice).~~ 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).

~~2.9.3.4.3~~2.2.9.1.10.4.3 Amend to read as follows:

"~~2.9.3.4.3~~2.2.9.1.10.4.3 *Classification of mixtures when toxicity data are available for the complete mixture*

~~2.9.3.4.3.1~~2.2.9.1.10.4.3.1 / 2.4.4.3.1 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 2.2.9.1.10.2.3~~2.9.3.2.3~~ and 2.2.9.1.10.2.4~~2.9.3.2.4~~). When adequate acute or chronic data for the mixture as a whole are lacking, "bridging principles" or "summation method" shall be applied (see 2.2.9.1.10.4.4~~2.9.3.4.4~~ and 2.2.9.1.10.4.5~~2.9.3.4.5~~).

~~2.9.3.4.3.2~~2.2.9.1.10.4.3.2 / 2.4.4.3.2 The long-term hazard classification of mixtures requires additional information on degradability and in certain cases bioaccumulation. There are no degradability and bioaccumulation data for mixtures as a whole. Degradability and bioaccumulation tests for mixtures are not used as they are usually difficult to interpret, and such tests may be meaningful only for single substances.

~~2.9.3.4.3.3~~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 these Regulations.

~~2.9.3.4.3.4~~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 ≤ 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 2.9.1 (b) (i) (non-rapidly degradable);

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

No need to classify for long-term hazard under these Regulations.".

~~2.9.3.4.4~~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~~2.9.3.4.4.2~~ Amend to read as follows:

"~~2.9.3.4.4~~ 2.2.9.1.10.4.4.2 Dilution

~~2.9.3.4.4.2.1~~ Where a new mixture is formed by diluting a tested mixture or a substance with a diluent which has an equivalent or lower aquatic hazard classification than the least toxic original ingredient and which is not expected to affect the aquatic hazards of other ingredients, then the resulting mixture shall be classified as equivalent to the original tested mixture or substance. Alternatively, the method explained in 2.9.3.4.5 may be applied.".

~~2.9.3.4.4.3.1~~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~~2.9.3.4.4.4~~ The amendment does not apply to the English text. (Modifier le titre pour lire comme suit : "Classification des mélanges lorsqu'il n'existe pas de données relatives à la toxicité sur le mélange : principes d'extrapolation".)

~~2.9.3.4.4.4.1~~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".

~~2.9.3.4.4.5.1~~2.2.9.1.10.4.4.5 Amend the text after the heading to read as follows:

"~~2.9.3.4.4.5.1~~ For three mixtures (A, B and C) with identical ingredients, where mixtures A and B have been tested and are in the same toxicity category, and where untested mixture C has the same toxicologically active ingredients as mixtures A and B but has concentrations of toxicologically active ingredients intermediate to the concentrations in mixtures A and B, then mixture C is assumed to be in the same category as A and B.".

~~2.9.3.4.4.6.1~~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.".

~~2.9.3.4.5~~2.2.9.1.10.4.5 In the heading, insert "toxicity" before "data".

~~2.9.3.4.5.2~~2.2.9.1.10.4.5.2 Amend to read as follows:

"2.2.9.1.10.4.5.2~~2.9.3.4.5.2~~ Mixtures may be made of a combination of both ingredients that are classified (as Acute 1 and/or Chronic 1, 2) and those for which adequate toxicity test data are available. When adequate toxicity data are available for more than one ingredient in the mixture, the combined toxicity of those ingredients shall be calculated using the following additivity formulas (a) or (b), depending on the nature of the toxicity data:

(a) Based on acute aquatic toxicity:

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

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:

$$\frac{\sum Ci + \sum Cj}{EqNOEC_m} = \sum_n \frac{Ci}{NOECi} + \sum_n \frac{Cj}{0.1 \times NOECj}$$

where:

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

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

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

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

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

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

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

The calculated equivalent toxicity shall be used to assign that portion of the mixture a long-term hazard category, in accordance with the criteria for rapidly degradable substances (Table 2.9.1 (b) (ii)), which is then subsequently used in applying the summation method.".

~~2.9.3.4.5.3~~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".

~~2.9.3.4.6.1.1~~2.2.9.1.10.4.6.1 The amendment does not apply to the English text. (Supprimer "de toxicité" (deux fois).)

~~2.9.3.4.6.2~~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~~2.9.3.4.6.2.1~~ 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~~2.9.3.4.6.2.2~~ Amend to read as follows:

"2.2.9.1.10.4.6.2.2~~2.9.3.4.6.2.2~~ The classification of mixtures for acute hazards based on this summation of the concentrations of classified ingredients is summarized in Table 2.2.9.1.10.4.6.2.2~~2.9.3~~ below.

Table 2.2.9.1.10.4.6.2.2~~2.9.3~~: Classification of a mixture for acute hazards based on summation of the concentrations of classified ingredients

Sum of the concentrations (in %) of ingredients classified as:	Mixture classified as:

Acute 1 × M [a] ≥ 25%	Acute 1

[a] *For explanation of the M factor, see ~~2.9.3.4.6.4~~2.2.9.1.10.4.6.4.*".

~~2.9.3.4.6.3~~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~~2.9.3.4.6.3.1~~ The first amendment does not apply to the English text. (Dans la première phrase, supprimer "de toxicité".) In the second sentence, insert "the concentrations (in %) of" before "these ingredients". Delete "category" (twice).

2.2.9.1.10.4.6.3.2~~2.9.3.4.6.3.2~~ Insert "the concentrations (in %) of" after "the sum of" (twice).

2.2.9.1.10.4.6.3.3~~2.9.3.4.6.3.3~~ Amend to read as follows:

"2.2.9.1.10.4.6.3.3~~2.9.3.4.6.3.3~~ The classification of mixtures for long-term hazards based on this summation of the concentrations of classified ingredients is summarized in Table 2.2.9.1.10.4.6.3~~2.9.4~~ below.

Table 2.2.9.1.10.4.6.3~~2.9.4~~: Classification of a mixture for long-term hazards based on summation of the concentrations of classified ingredients

Sum of the concentrations (in %) of ingredients classified as:		**Mixture classified as:**
Chronic 1 × M [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~~2.9.3.4.6.4~~.*".

2.2.9.1.10.4.6.4~~2.9.3.4.6.4.1~~ 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 third sentence, replace "Table 2.9.1" with "Table 2.9.3" and "Table 2.9.2" with "Table 2.9.4". In the fourth sentence, replace "summarised in Table 2.9.3" with "summarized in Table 2.9.5".~~ In the last sentence, insert "and/or chronic" after "specific acute".

Table ~~2.9.3~~2.2.9.1.10.4.6.4 Replace with the following table:

"**Table 2.2.9.1.10.4.6.4~~2.9.5~~: Multiplying factors for highly toxic ingredients of mixtures**

Acute toxicity	**M factor**	**Chronic toxicity**	**M factor**

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

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

~~2.9.3.4.6.5.1~~2.2.9.1.10.4.6.5 In the first sentence, replace "aquatic hazard" with "aquatic toxicity".

~~2.9.3.5 Delete.~~

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, ~~insert~~ replace ", if relevant a biological name," with "or biological name," ~~after "recognized chemical"~~.

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

"**3.1.3 Mixtures or solutions**

NOTE: *Where a substance is specifically listed by name in ~~the Dangerous Goods List~~Table A in Chapter 3.2, it shall be identified in ~~transport~~ carriage by the proper shipping name in ~~the Dangerous Goods List~~Column (2) of Table A. 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 listed by name containing technical impurities or additives for stability or other purposes affecting its classification shall be considered a mixture or solution (see ~~2.0.2.2 and 2.0.2.5~~2.1.2.2.1 and 2.1.3.3).*

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

3.1.3.2 A mixture or solution composed of a single predominant substance identified by name in Table A of Chapter 3.2~~the Dangerous Goods List~~ and one or more substances not subject to RID/ADR/ADN~~these Regulations~~ and/or traces of one or more substances identified

by name in Table A~~the Dangerous Goods List~~, shall be assigned the UN number and proper shipping name of the predominant substance named in ~~the Dangerous Goods List~~Table A unless:

(a) The mixture or solution is identified by name in ~~the Dangerous Goods List~~Table A;

(b) The name and description of the substance named in ~~the Dangerous Goods List~~Table A specifically indicate that they apply only to the pure substance;

(c) The hazard class or division, subsidiary risk(s), packing group, or physical state of the mixture or solution is different from that of the substance named in ~~the Dangerous Goods List~~Table A; or

(d) The hazard characteristics and properties of the mixture or solution necessitate emergency response measures that are different from those required for the substance identified by name in ~~the Dangerous Goods List~~Table A.

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

3.1.3.3 A mixture or solution that is not identified by name in Table A of Chapter 3.2~~the Dangerous Goods List~~ and that is composed of two or more dangerous goods shall be assigned to an entry that has the proper shipping name, description, ~~hazard~~ class or division, subsidiary risk(s), classification code and packing group that most precisely describe the mixture or solution.".

Chapter 3.2

Dangerous Goods List

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".

[The Joint Meeting's Working Group on Tanks should check if a consequent amendment is required for the RID/ADR tank code.]

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. 1194, 1222, 1261, 1865, 3094 (PG I) and 3301, replace "P099" with "P001" in column (8).~~

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

~~For UN Nos. 1378, 1450, 1461, 1462, 1482 (PG II and III), 1549, 1556 (PG I, II and III), 1557 (PG I, II and III), 1564 (PG II and III), 1566 (PG II and III), 1583 (PG I, II and III), 1655 (PG I, II and III), 1935 (PG I, II and III), 2024 (PG I, II and III), 2025 (PG I, II and III), 2026 (PG I, II and III), 2291, 2570 (PG I, II and III), 2627, 2630, 2742, 2856, 2881 (PG I, II and III), 3141, 3144 (PG I, II and III), 3210 (PG II and III), 3212, 3213 (PG II and III), 3214, 3219 (PG II and III), 3256, 3257, 3258, 3283 (PG I, II and III), 3284 (PG I, II and III), 3285 (PG I, II and III), 3361, 3362 and 3440 (PG I, II and III) add "274" in column (6).~~

~~For UN Nos. 1391, 1649 and 2030 (packing group I), delete "329" in column (6).~~
~~For UN Nos. 1391, 1649 and 2030 (packing group I), delete "329" in column (6).~~
For UN 1391, the second entry should be deleted. In the first entry, delete "having a flash-point above 60 °C" in column (2).
For UN 1649, the second entry should be deleted. In the first entry, delete "having a flash-point above 60 °C" in column (2).
For UN 2030, the second entry should be deleted. In the first entry, delete ", having a flash-point above 60 °C" in column (2).

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

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

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

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

For UN No~~s~~. 1810 ~~and 1838,~~ replace "8" with "6.1" in column (3a) and ~~add~~ replace "8" with "6.1+8" in column (~~4~~5).
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".
(RID:) In column (13), add "TU14 TU15 TU38 TE21 TE22".
(ADR:) In column (13), add "TU14 TU15 TE19 TE21".
In column (15), amend the transport category to read "1".
In column (18) add "CV1 CV13 CV28 / CW13 CW28 CW31".
(RID:) In column (19), delete "CE6".
(ADR:) In column (19), add "S9 S14".
~~(RID:) In column (19), delete "CE6".~~Amend the code in column (20) to read "668".
(ADR:) In column (15), amend the tunnel restriction code to read "(C/E)".

For UN No~~s~~. 1810~~, 1838, 2474, 2486 and 2668,~~ replace "II" with "I" in column (~~5~~4).

For UN No. 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".
(RID:) In column (13), replace "TU38 TE22" with "TU14 TU15 TU38 TE21 TE22".
(ADR:) In column (13) add "TU14 TU15 TE19 TE21".
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".
(ADR:) In column (15), amend the tunnel restriction code to read "(C/E)".

For UN No~~s~~. ~~1810, 1838, 2474, 2486 and~~ 2668, replace "II" with "I" in column (5).
In column (9b), replace "MP15" with "MP8 MP17".
In column (12), replace "L4BH" with "L10CH".
(RID:) In column (13), replace "TU15" with "TU14 TU15 TU38 TE21 TE22".
(ADR:) In column (13), replace "TU15 TE19" with " TU14 TU15 TE19 TE21".
In column (15), amend the transport category to read "1".
In column (18) add "CV1/CW31".
(RID:) In column (19), delete "CE5".
(ADR:) In column (19), replace "S2 S9 S19" with "S2 S9 S14".
~~(RID:) In column (19), delete "CE5".~~
Amend the code in column (20) to read "663".
(ADR:) In column (15), amend the tunnel restriction code to read "(C/D)".

For UN No~~s~~. ~~1810 and~~ 1838, replace "8" with "6.1" in column (3a) and ~~add~~ replace "8" with "6.1+8" in column (~~4~~5).
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".
(RID:) In column (13), add "TU14 TU15 TU38 TE21 TE22".
(ADR:) In column (13), add "TU14 TU15 TE19 TE21".
In column (15), amend the transport category to read "1".
In column (18) add "CV1 CV13 CV28 / CW13 CW28 CW31".
(RID:) In column (19), delete "CE6".
(ADR:) In column (19), add "S9 S14".
Amend the code in column (20) to read "668".
(ADR:) In column (15), amend the tunnel restriction code to read "(C/E)".

For UN No~~s~~. ~~1810,~~ 1838~~, 2474, 2486 and 2668,~~ replace "II" with "I" in column (~~5~~4).

For UN No~~s~~. ~~1810, 1838,~~ 2474~~, 2486 and 2668~~, replace "II" with "I" in column (5).
In column (9b), replace "MP15" with "MP8 MP17".
In column (12), replace "L4BH" with "L10CH".
(RID:) In column (13), replace "TU15" with "TU14 TU15 TU38 TE21 TE22".
(ADR:) In column (13), replace "TU15 TE19" with "TU14 TU15 TE19 TE21".
In column (15), amend the transport category to read "1".
(ADR:) In column (18) add "CV1".
(RID:) In column (19), delete "CE5".
(ADR:) In column (19), replace "S9 S19" with "S9 S14".
Amend the code in column (20) to read "66".
(ADR:) In column (15), amend the tunnel restriction code to read "(C/E)".

~~For UN Nos. 1810, 1834, 2474 and 2668 add "TP13" in column (11).~~

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

For UN Nos. 2474~~, 2486~~ *[Already LQ0 in RID/ADR]* and 2668 amend the ~~value~~ code in column (7a) to read "LQ0".

For UN No~~s~~. 2481~~, 2483, 2486, 2605 and 3079~~, replace "3" with "6.1" in column (3a) and replace "3 + 6.1" with "6.1 + 3" in column (4).
In column (2) amend the code to read "TF1".
In column (9b), replace "MP2" with "MP8 MP17".
In column (18) add "CV1 / CW31".
(ADR:) In column (19), replace "S2 S22" with "S2 S9 S14".
Amend the code in column (20) to read "663".
(ADR:) In column (15), amend the tunnel restriction code to read "(C/D)".

For UN Nos. ~~2481, ~~2483~~, 2486, 2605 and 3079~~, replace "3" with "6.1" in column (3a) and replace "3 + 6.1" with "6.1 + 3" in column (4).

In column (2) amend the code to read "TF1".
In column (9b), replace "MP7 MP17" with "MP8 MP17".
(ADR:) In column (13), insert "TE19" before "TE21".
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 (15), amend the tunnel restriction code to read "(C/D)".

For UN No~~s~~. ~~2481, 2483, ~~2486, ~~2605 and 3079, ~~replace "3" with "6.1" in column (3a) and replace "3 + 6.1" with "6.1 + 3" in column (4~~5~~).
For UN No~~s~~. ~~1810, 1838, 2474, ~~2486~~ and 2668~~, replace "II" with "I" in column (5).

In column (2) amend the code to read "TF1".
In column (9b), replace "MP19" with "MP8 MP17".
In column (12), replace "L4BH" with "L10CH".
(RID:) In column (13), replace "TU15" with "TU14 TU15 TU38 TE21 TE22".
(ADR:) In column (13), replace "TU15" with "TU14 TU15 TE19 TE21".
In column (15), amend the transport category to read "1".
In column (18) add "CV1 / CW31".
(RID:) In column (19), delete "CE7".
(ADR:) In column (19), replace "S2 S19" with "S2 S9 S14".
Amend the code in column (20) to read "663".
(ADR:) In column (15), amend the tunnel restriction code to read "(C/D)".

For UN Nos. ~~2481, 2483, 2486, ~~2605 and 3079, replace "3" with "6.1" in column (3a) and replace "3 + 6.1" with "6.1 + 3" in column (4).

In column (2) amend the code to read "TF1".
In column (9b), replace "MP7 MP17" with "MP8 MP17".
(ADR:) In column (13), insert "TE19" before "TE21".
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 (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. 3077 and 3082, delete "179" in column (6).~~

~~For UN Nos. 3095 (PG I), 3096 (PG I) and 3124 (PG I), replace "P099" with "P002" in column (8).~~

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

UN 1510 Replace "5.1" with "6.1" in column (3a) and replace "5.1+6.1" with "6.1+5.1" in column (4~~5~~).
In column (3b), replace "OT1" with "TO1".
In column (9b), replace "MP2" with "MP8 MP17".
In column (12), replace "L4BN" with "L10CH".
(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".
[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".
(ADR:) In column (15), amend the tunnel restriction code to read "(C/D)".

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

UN 1838 Replace "P001 IBC02" with "P602" in column (8).

~~UN 1845 Delete "III" in column (5).~~

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 2481 Replace "P601" with "P602" in column (8).

UN 2668 Replace "P001 ~~IBC99~~" with "P602" in column (8).
[Delete IBC02?]

UN 3166 In column (2), insert [in lowercase] *[UN 3166 is NOT SUBJECT TO RID/ADR/ADN]* "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 ~~and in column (6), add "356"~~. Amend the alphabetical index accordingly.

UN 3212 ~~Add "349" in column (6).~~ 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" ~~and in column (6), delete "28"~~. Amend the alphabetical index accordingly.

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

Add the following new entries and amend the alphabetical index and Appendix A accordingly:
[The codes in brackets 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~~	1.4C		1.4		~~0~~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	~~223~~	~~5 kg~~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	~~0~~LQ0	E0	P402	RR8	MP2			L10BN(+)	TU1 TE5 TT3 TM2	(ADR:) FL	1 (B/E)	V1	-	CV23/ CW23	(ADR:) S2 S20	X323
3483	MOTOR FUEL ANTI-KNOCK MIXTURE, FLAMMABLE	6.1	TF1	I	6.1 +3		~~0~~LQ0	E5	P602	-	MP8 MP17	T14	TP2 ~~TP13~~	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~~3 6.1~~	530	~~0~~LQ0	E0	P001	-	MP8 MP17	T10	TP2 ~~TP13~~	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	~~1 kg~~ LQ11 [see 3085 PGII]	E2	P002 IBC08	PP85 ~~B2,~~ B4, B13	MP2						2 (E)	V11 V12 / W11 W12		CV24/ CW24	(RID:) 58	(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	~~5 kg~~ LQ12 [See 3085]	E1	P002 IBC08 LP02 R001	PP85 B3, B13	MP2						3 (E)			CV24/ CW24	(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~~1 kg~~	E2	P002 IBC08	PP85 ~~B2,~~ B4, B13	MP2						2 (E)	V11 V12 / W11 W12		CV24	(RID only:) CE10	(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)
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	~~223~~ 314	LQ12 ~~5 kg~~ [See 3085]	E1	P002 IBC08 R001	PP85 B4	MP2						3 (E)			CV24/ CW24	(RID only:) CE11	(RID only:) 58
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	~~0~~LQ0	E0	P601		MP8 MP17	T22	TP2 ~~TP13~~	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

(1)	(2)	(3)	(3b)	(5)	(4)	(6)	(7a)	(7b)	(8)	(9a)	(9b)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
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	~~0~~LQ0	E0	P602		MP8 MP17	T20	TP2 ~~TP13~~	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	TW1 [or new code TFW with amend. in 2.2.61.1.2 and 2.2.61.3]	I	6.1 +4.3 +3	274	~~0~~LQ0	E0	P601		MP8 MP17	T22	TP2 ~~TP13~~	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	TW1 [or new code TFW with amend. in 2.2.61.1.2 and 2.2.61.3]	I	6.1 +4.3 +3	274	LQ0~~0~~	E0	P602		MP8 MP17	T20	TP2 ~~TP13~~	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~~0~~	E0	P601		MP8 MP17	T22	TP2 ~~TP13~~	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)
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~~0~~	E0	P602		MP8 MP17	T20	TP2 ~~TP13~~	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
3494	PETROLEUM SOUR CRUDE OIL, FLAMMABLE, TOXIC	3	FT1	I	3 +6.1	343 649	~~0~~LQ0	E0	P001		MP7 MP17	T14	TP2 ~~TP13~~	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	~~1 L~~LQ4	E2	P001 IBC02		MP19	T7	TP2	L4BH	TU15	(ADR:) FL	2 (D/E)			CV13 CV28 / CW13 CW28	(ADR:) S2 S19	336
3494	PETROLEUM SOUR CRUDE OIL, FLAMMABLE, TOXIC	3	FT1	III	3 +6.1	343 649	~~5 L~~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	~~5 kg~~LQ24 [see 2923 PGIII]	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.".

~~**SP179** Amend to read as follows: "*Deleted.*".~~

SP188 ~~In (b), at the end of the second sentence, after "case", add the following text: ", except those manufactured before 1 January 2009 which may be transported 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 are not subject to any other requirements in these Regulations.

If GMMOs or GMOs meet ~~the definition in Chapter 2.6 of a toxic substance or an infectious substance and~~ the criteria for inclusion in ~~Division~~ Class 6.1 or 6.2 (see 2.2.61.1 and 2.2.62.1) the requirements in ~~these Regulations~~RID/ADR/ADN for ~~transporting~~ the carriage of toxic substances or infectious substances apply.".

~~**SP240** Add the following new sentence at the end: "Vehicles which contain a fuel cell shall be consigned under the entries UN 3166 VEHICLE, FUEL CELL POWERED WITH FLAMMABLE GAS or UN 3166 VEHICLE, FUEL CELL POWERED WITH FLAMMABLE LIQUID, as appropriate.".~~

SP290 Amend to read as follows:

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

(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 ~~1.5.1.5~~1.7.1.5 shall apply without reference to the other class ~~or division~~;

(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 dangerous goods transport document shall describe the substance with the UN number and proper shipping name applicable to the other class supplemented with the name applicable to the radioactive excepted package according to Column 2 ~~in the Dangerous Goods List~~of Table A of Chapter 3.2, and shall be ~~transported~~ carried in accordance with the provisions applicable to that UN number. An example of the information shown on the dangerous goods transport document is:

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

In addition, the requirements of 2.2.7.2.4.1 shall apply.

(c) The provisions of Chapter 3.4 for the ~~transport~~ 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 ~~1.5.1.5~~1.7.1.5 shall apply.".

SP292 Amend to read as follows: "*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.".

~~**SP304** Add the following new paragraph at the end:~~

~~"Nevertheless, in the case of application of this exemption to sea transport of nickel-metal hydride batteries, other than button cells, the following requirements apply:~~

~~(a) The consignment shall be accompanied by a document describing the batteries as "nickel-metal hydride batteries" including a declaration signed by the consignor that the batteries are securely packed and protected against short circuits and that stowage away from sources of heat is required;~~

~~(b) Unit loads and cargo transport units shall be marked "STOW AWAY FROM SOURCES OF HEAT" in capital letters not less than 65 mm high.".~~

~~**SP312** At the beginning, add the following new first paragraph:~~

~~"Vehicles or machinery powered by a fuel cell engine shall be consigned under the entries UN 3166 VEHICLE, FUEL CELL, FLAMMABLE GAS POWERED or UN 3166 VEHICLE, FUEL CELL, FLAMMABLE LIQUID POWERED, or UN 3166 ENGINE, FUEL CELL, FLAMMABLE GAS POWERED or UN 3166 ENGINE, FUEL CELL, FLAMMABLE LIQUID POWERED as appropriate. These entries include hybrid electric vehicles powered by both a fuel cell and an internal combustion engine with wet batteries, sodium batteries or lithium batteries, transported carried with the battery(ies) installed.".~~

~~In the second paragraph (existing first paragraph), at the beginning, replace "Vehicles" with "Other vehicles".~~

SP313 ~~**and 329**~~ Amend to read as follows: "*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 ~~transported~~ carried in accordance with the provisions in Chapter 3.5, irrespective of the indication of "E0" in column 7b of ~~the Dangerous Goods List~~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 ~~transported~~ 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.~~4~~ 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 ~~these Regulations~~RID/ADR/ADN provided each receptacle is ~~transported~~ 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 and containing no dangerous goods except for UN 1977, nitrogen, refrigerated liquid, which is fully absorbed in a porous material are not subject to any other requirements of ~~these Regulations~~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 ~~transport~~carriage. UN No. 1791 hypochlorite solution is a substance of Class 8.

Delete 559.

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

Delete 604.

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

Delete 605.

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

Delete 606.

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

Delete 608.

354 This substance is toxic by inhalation.

355 Oxygen cylinders for emergency use ~~transported~~ 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 ~~of Division 2.2~~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 ~~transport~~ 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 ~~transport~~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.".

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