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**Administrative Committee of the European Agreement
Concerning the International Carriage of Dangerous
Goods by Inland Waterways (ADN)**

European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (ADN)

Draft amendments to the Regulations annexed to ADN*

At its twenty-seventh session (28 January 2022), the ADN Administrative Committee requested the secretariat to prepare a consolidated list of all the amendments it had adopted for entry into force on 1 January 2023 so that they could be made the subject of an official proposal in accordance with the procedure set out in article 20 of ADN. The notification would have to be issued no later than 1 July 2022, with a reference to 1 January 2023 as the scheduled date of entry into force (see ECE/ADN/60, paragraph 19).

The present document contains the requested consolidated list of amendments adopted by the Administrative Committee at its twenty-seventh session on the basis of those proposed by the Safety Committee at its thirty-ninth session (see ECE/ADN/60, paragraph 18 and ECE/TRANS/WP.15/AC.2/80, annex I). These amendments have been prepared by the Safety Committee at its thirty-seventh, thirty-eighth and thirty-ninth sessions (see ECE/TRANS/WP.15/AC.2/76, annex I, ECE/TRANS/WP.15/AC.2/78, annex I and ECE/TRANS/WP.15/AC.2/80, annex I).

* Distributed in German by the Central Commission for the Navigation of the Rhine under the symbol CCNR/ZKR/ADN/61.



Chapter 1.1

1.1.4 Insert the following new 1.1.4.7:

“1.1.4.7 Refillable pressure receptacles authorized by the United States of America Department of Transportation

NOTE: For carriage in accordance with 1.1.4.7, see also 5.4.1.1.24.

1.1.4.7.1 *Import of gases*

Refillable pressure receptacles authorised by the United States of America Department of Transportation and constructed and tested in accordance with standards listed in Part 178, Specifications for Packagings of Title 49, Transportation, of the Code of Federal Regulations accepted for carriage in a transport chain in accordance with 1.1.4.2 may be carried from the location of the temporary storage at the end point of the transport chain to the end user.

1.1.4.7.2 *Export of gases and empty uncleaned pressure receptacles*

Refillable pressure receptacles authorised by the United States of America Department of Transportation and constructed in accordance with standards listed in Part 178, Specifications for Packagings of Title 49, Transportation, of the Code of Federal Regulations may be filled and carried only for the purpose of exporting to countries which are not Contracting Parties to ADN provided the following provisions are met:

- (a) The filling of the pressure receptacle is in accordance with the relevant requirements of the Code of Federal Regulations of the United States of America;
- (b) The pressure receptacles shall be marked and labelled in accordance with Chapter 5.2;
- (c) The provisions of 4.1.6.12 and 4.1.6.13 of ADR shall apply to pressure receptacles. Pressure receptacles shall not be filled after they become due for periodic inspection but may be carried after the expiry of the time-limit for purposes of performing inspection, including the intermediate carriage operations.”

(Reference document: ECE/TRANS/WP.15/253 and ECE/TRANS/WP.15/AC.1/162)

1.1.5 At the end, add the following Note:

“NOTE: A standard provides details on how to meet the provisions of ADN and may include requirements in addition to those set out in ADN.”

Chapter 1.2

1.2 Amend the title to read **“DEFINITIONS, UNITS OF MEASUREMENT AND ABBREVIATIONS”**.

1.2.1 In the definitions for “Auto-ignition temperature”, “Deflagration”, “Detonation”, “Explosion”, “Explosive atmosphere” and “Temperature class”, replace “EN 13237:2011” with “EN 13237:2012”.

- 1.2.1 In the definition for “*Bundle of cylinders*” replace “an assembly of cylinders” by “a pressure receptacle comprising an assembly of cylinders or cylinder shells”.
- 1.2.1 Add the following new note under the definition of “*Closure*”:
 “**NOTE:** For pressure receptacles, closures are, for example, valves, pressure relief devices, pressure gauges or level indicators.”
- 1.2.1 Amend the definition for “*Cryogenic receptacle*” to read as follows and reorder it alphabetically in the English version:
 “*Closed cryogenic receptacle* means a thermally insulated pressure receptacle for refrigerated liquefied gases of a water capacity of not more than 1 000 litres;”
- 1.2.1 In the definition for “*Cylinder*”, delete “transportable”.
- 1.2.1 In the definition for “*Equipment category*” (three times) and “*Equipment protection level*”, replace “IEC 60079-0” by “IEC 60079-0:2017+Cor 1:2020”.
- 1.2.1 In the definition for “*Electrical apparatus protected against water jets*”, replace “IEC publication 60529” with “IEC Publication 60529:1989 + A1:1999 + A2:2013”.
- 1.2.1 In the definition for “*Explosion group/subgroup*”, replace “EN IEC 60079-0:2012” with “EN IEC 60079-0:2017+Cor 1:2020”.
- 1.2.1 The amendment to the definition of “*Filler*” does not apply to the English version.
- 1.2.1 In the definition for “*Gas detection system*”, replace “EN 50271:2010” by “EN 50271:2010 or EN 50271:2018”.
- 1.2.1 Amend the definition of “*GHS*” to read:
 “*Globally Harmonized System of Classification and Labelling of Chemicals*” means the ninth revised edition of United Nations publication bearing this title (ST/SG/AC.10/30/Rev.9);”
- 1.2.1 In the definition of “*Manual of Tests and Criteria*”, after “ST/SG/AC.10/11/Rev.7”, insert “and Amend.1”.
- 1.2.1 In the definition for “*Metal hydride storage system*”, replace “receptacle” by “pressure receptacle shell”.
- 1.2.1 In the definition of “*Over-moulded cylinder*” insert “shell” after “coated welded steel inner cylinder” and after “surface of the steel cylinder”. The second amendment does not apply to the English text.
- 1.2.1 In the definitions for “*Oxygen measuring system*” and “*Oxygen meter*”, replace “IEC/EN 50104:2010” by “EN 50104:2019”.
- 1.2.1 In the definition of “*Packing group*”, delete the Note.
- 1.2.1 In the definition for “*Pressure drum*”, delete “, transportable”.
- 1.2.1 In the definition for “*Pressure receptacle*”, after “*Pressure receptacle* means”, add “a transportable receptacle intended for holding substances under pressure including its closure(s) and other service equipment and is”. The second modification does not apply to the English text.
- 1.2.1 In the definition for “*Protective suit*”, replace “EN 1149-5:2008” with “EN 1149-5:2018”. Amend the second sentence to read as follows: “The choice of an appropriate protective suit shall correspond to the dangers likely to arise.”.

- 1.2.1 In the definition for “*Receptacle*”, replace “Cryogenic receptacle” by “Closed cryogenic receptacle, Open cryogenic receptacles”.
- 1.2.1 Amend the definition for “*Recycled plastics material*” to read as follows:
 “*Recycled plastics material* means material recovered from used industrial packagings that has been cleaned and prepared for processing into new packagings. The specific properties of the recycled material used for production of new packagings shall be assured and documented regularly as part of a quality assurance programme recognized by the competent authority. The quality assurance programme shall include a record of proper pre-sorting and verification that each batch of recycled plastics material has the proper melt flow rate, density, and tensile yield strength, consistent with that of the design type manufactured from such recycled material. This necessarily includes knowledge about the packaging material from which the recycled plastics have been derived, as well as awareness of the prior contents of those packagings if those prior contents might reduce the capability of new packagings produced using that material. In addition, the packaging manufacturer's quality assurance programme under 6.1.1.4 of ADR shall include performance of the mechanical design type test in 6.1.5 of ADR on packagings manufactured from each batch of recycled plastics material. In this testing, stacking performance may be verified by appropriate dynamic compression testing rather than static load testing;
NOTE:ISO 16103:2005 “Packaging – Transport packages for dangerous goods – Recycled plastics material”, provides additional guidance on procedures to be followed in approving the use of recycled plastics material. These guidelines have been developed based on the experience of the manufacturing of drums and jerricans from recycled plastics material and as such may need to be adapted for other types of packagings, IBCs and large packagings made of recycled plastics material.”.”
- 1.2.1 In the definition for “*Tank*”, delete the Note at the end.
- 1.2.1 In the definition for “*Tube*”, delete “transportable”.
- 1.2.1 In the definition for “*Types of protection*”, under “Electrical equipment”:
- Replace “IEC 60079-0:2014” by “IEC 60079-0:2017+Cor 1:2020”.
 - Replace “EEx (d)” by “EEx d” and replace “IEC 60079-1:2014” by “IEC 60079-1:2014 Cor 1:2018”.
 - Replace “EEx (e)” by “EEx e” and replace “IEC 60079-7:2016” by “IEC 60079-7:2016 A1:2017”.
 - Replace “EEx (ia)” by “EEx ia” and “EEx (ib)” by “EEx ib” and replace “IEC 60079-11:2012” by “IEC 60079-11:2011 Cor.:2012”.
 - Replace “EEx (m)” by “EEx m” and replace “IEC 60079-18:2014” by “IEC 60079-18:2014; A1:2017; Cor.:2018”.
 - Replace “EEx (p)” by “EEx p” and replace “IEC 60079-2:2015” by “IEC 60079-2:2014 Cor.:2015”.
 - Replace “EEx (q)” by “EEx q”.
- 1.2.1 In the definition of “*UN Model Regulations*”, replace “twenty-first” by “twenty-second” and replace “(ST/SG/AC.10/1/Rev.21)” by “(ST/SG/AC.10/1/Rev.22)”.
- 1.2.1 Amend the definition for “*Working pressure*” to read as follows:
 “*Working pressure*
 (a) For a compressed gas, means the settled pressure at a reference temperature of 15 °C in a full pressure receptacle;

(b) For UN No. 1001 acetylene, dissolved, means the calculated settled pressure at a uniform reference temperature of 15 °C in an acetylene cylinder containing the specified solvent content and the maximum acetylene content;

(c) For UN No. 3374 acetylene, solvent free, means the working pressure which was calculated for the equivalent cylinder for UN No. 1001 acetylene, dissolved.”

The Note remains unchanged.

1.2.1 Add the following new definitions:

“*Fibre-reinforced plastics* means material consisting of fibrous and/or particulate reinforcement contained within a thermoset or thermoplastic polymer (matrix);”

“*Inner vessel*, for a closed cryogenic receptacle, means the pressure vessel intended to contain the refrigerated liquefied gas;”

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

NOTE: *The terms "cylinder shell", "pressure drum shell" and "tube shell" are also used.*”

1.2.1 The amendment to delete the footnotes does not apply to the English text.

1.2.1 Delete the following definitions:

“*ADR*”, “*ASTM*”, “*CDNI*”, “*CEVNI*”, “*CGA*”, “*CIM*”, “*CMNI*”, “*CMR*”, “*CSC*”, “*EN*”, “*IAEA*”, “*IBC*”, “*ICAO*”, “*IMO*”, “*ISO*”, “*MEGC*”, “*MEMU*”, “*LEL*”, “*OTIF*”, “*RID*”, “*SADT*”, “*SAPT*”, “*SOLAS*”, “*STCW*”, “*UIC*”, “*UEL*”, “*UNECE*”.

1.2.2.1 In the table, after the entry for “Power”, add the following new entry:

Electrical resistance	Ω (ohm)	--	$1 \Omega = 1 \text{ kg} \cdot \text{m}^2 / \text{s}^3 / \text{A}^2$
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Add a new section 1.2.3 to read as follows:

“1.2.3 List of abbreviations

In ADN, abbreviations, acronyms and abbreviated designations of regulatory texts are used, with the following meaning:

A

“*ADR*”* means the Agreement concerning the International Carriage of Dangerous Goods by Road;

“*ASTM*” means the American Society for Testing and Materials (ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA, 19428-2959, United States of America), www.astm.org;

C

“*CDNI*”** means Convention on the Collection, Storage and Reception of Waste Generated during Navigation on the Rhine and Other Inland Waterways;

“*CEVNI*”*** means the UNECE European Code for Inland Waterways;

“*CGA*” means the Compressed Gas Association, 8484 Westpark Drive, Suite 220, McLean, Virginia 22102, United States, www.cganet.com;

"*CIM*"[†] means the Uniform Rules Concerning the Contract of International Carriage of Goods by Rail (Appendix B to the Convention concerning International Carriage by Rail (COTIF)), as amended;

"*CMNI*"^{††} means the Convention on the Contract for the Carriage of Goods by Inland Waterway (Budapest, 22 June 2001)

"*CMR*"^{†††} means the Convention on the Contract for the International Carriage of Goods by Road (Geneva, 19 May 1956), as amended;

"*CNG*" means compressed natural gas (see 1.2.1);

"*CSC*" means the International Convention for Safe Containers (Geneva, 1972) as amended and published by the International Maritime Organization (IMO), London;

"*CSI*" means criticality safety index (see 1.2.1);

E

"*EIGA*" means European Industrial Gas Association, 30 Avenue de l'Astronomie, 1210 Brussels (Belgium), www.eiga.eu;

"*EN*" (standard) means a European standard published by the European Committee for Standardization (CEN) (CEN, Avenue Marnix 17, B-1000 Brussels, Belgium), www.cen.eu;

F

"*FRP*" means fibre-reinforced plastics (see 1.2.1);

G

"*GESAMP*" means the Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection (see 1.2.1).

"*GHS*" means Globally Harmonized System of Classification and Labelling of Chemicals (see 1.2.1);

I

"*IAEA*" means the International Atomic Energy Agency, P.O. Box 100, 1400 Vienna, Austria, www.iaea.org;

"*IBC*" means intermediate bulk container (see 1.2.1);

"*ICAO*" means the International Civil Aviation Organization, 999 University Street, Montreal, Quebec H3C 5H7, Canada, www.icao.org;

"*ICAO Technical Instructions*" means the Technical Instructions for the Safe Transport of Dangerous Goods by Air, (see 1.2.1);

"*IMDG*" see definition of "IMDG Code" in 1.2.1;

"*IMO*" means the International Maritime Organization, 4 Albert Embankment, London SE1 7SR, United Kingdom, www.imo.org;

"*IMSBC*" see definition of "IMSBC Code" in 1.2.1;

"*ISO*" (standard) means an international standard published by the International Organization for Standardization, 1, rue de Varembe, 1204 Geneva 20, Switzerland, www.iso.org;

L

"*LEL*": see Lower explosion limit (see 1.2.1);

"*LNG*" means liquefied natural gas (see 1.2.1);

"LPG" means liquefied petroleum gas (see 1.2.1);

"LSA" (material) means low specific activity material (see 2.2.7.1.3);

M

"MEGC" means multiple-element gas container (see 1.2.1);

"MEMU" means mobile explosives manufacturing unit (see 1.2.1);

N

"N.O.S." means not otherwise specified entry (see 1.2.1);

O

"OTIF" means Intergovernmental Organisation for International Carriage by Rail (OTIF, Gryphenhübeliweg 30, CH-3006 Bern);

R

"RID" means Regulations concerning the International Carriage of Dangerous Goods by Rail (Appendix C of COTIF (Convention concerning international carriage by rail));

S

"SADT" means self-accelerating decomposition temperature (see 1.2.1);

"SAPT" means self-accelerating polymerization temperature (see 1.2.1);

"SCO" means surface contaminated object (see 2.2.7.1.3);

"SOLAS" means the International Convention for the Safety of Life at Sea, 1974, as amended;

"STCW" means the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, as amended.

T

"TI" means transport index (see 1.2.1);

U

"UEL": see Upper explosion limit (see 1.2.1);

"UIC"[‡] means the International Union of Railways, 16 rue Jean Rey, 75015 Paris, France, www.uic.org;

"UNECE" means the United Nations Economic Commission for Europe, Palais des Nations, 8-14 avenue de la Paix, 1211 Geneva 10, Switzerland, www.unece.org;

In the English version, footnotes *, **, ***, †, ††, ††† and ‡ read as follows:

* The acronym "ADR" corresponds to the French term "Accord relatif au transport international des marchandises dangereuses par route".

** The acronym "CDNI" corresponds to the French term "Convention relative à la collecte, au dépôt et à la réception de déchets en navigation rhénane et intérieure".

*** The acronym "CEVNI" corresponds to the French term "Code européen des voies de navigation intérieure".

† The acronym "CIM" corresponds to the French term "Contrat de transport international ferroviaire de marchandises".

- †† The acronym “CMNI” corresponds to the French term “Convention de Budapest relative au contrat de transport de marchandises en navigation intérieure”.
- ††† The acronym “CMR” corresponds to the French term “Convention relative au contrat de transport international de marchandises par route”.
- ‡ The acronym “UIC” corresponds to the French term “Union internationale des chemins de fer”.

Chapter 1.4

- 1.4.3.3 In (b), replace “date of the next” by “date specified for the next”.
- 1.4.3.4 (c) Replace “exceptional check” by “exceptional inspection”.

Chapter 1.5

- 1.5.1.1 At the end, after “Contracting Parties”, insert a footnote 1 to read as follows:
- “¹ *Note by the Secretariat: The special agreements concluded under this Chapter may be consulted on the web site of the Secretariat of the United Nations Economic Commission for Europe (<https://unece.org/multilateral-agreements>).*”

Chapter 1.6

- 1.6.1.1 Replace “30 June 2021” by “30 June 2023” and “31 December 2020” by “31 December 2022”.
- 1.6.1.41 and 1.6.1.42 Delete and replace “1.6.1.39 and 1.6.1.40 (*Deleted*)” by “1.6.1.39 to 1.6.1.42 (*Deleted*)”.
- 1.6.1.44 Delete and add “1.6.1.44 (*Deleted*)”.
- 1.6.1.46 Delete and replace “1.6.1.47 (*Deleted*)” by “1.6.1.46 and 1.6.1.47 (*Deleted*)”.
- 1.6.1 Add the following new transitional measures:
- “1.6.1.48 (*Reserved*)”
- “1.6.1.49 The mark shown in Figure 5.2.1.9.2 applicable until 31 December 2022, may continue to be applied until 31 December 2026.”
- “1.6.1.50 For articles that meet the definition for DETONATORS, ELECTRONIC as described in 2.2.1.4 Glossary of names, and assigned to UN Nos. 0511, 0512 and 0513, the entries for DETONATORS, ELECTRIC (UN Nos. 0030, 0255 and 0456) may continue to be used until 30 June 2025.”
- “1.6.1.51 Adhesives, paint and paint related materials, printing inks and printing ink related materials and resin solutions assigned to UN 3082 environmentally hazardous substance, liquid, N.O.S., packing group III in accordance with 2.2.9.1.10.6 as a consequence of 2.2.9.1.10.5¹ containing 0.025 % or more of the following substances, on their own or in combination:
- 4,5-dichloro-2-octyl-2H-isothiazol-3-one (DCOIT);
 - octhilonone (OIT); and
 - zinc pyrithione (ZnPT);

may be carried until 30 June 2025 in steel, aluminium, other metal or plastic packagings, which do not meet the requirements of 4.1.1.3, when carried in quantities of 30 litres or less per packaging as follows:

- (a) In palletized loads, a pallet box or unit load device, e.g. individual packagings placed or stacked and secured by strapping, shrink or stretch-wrapping or other suitable means to a pallet; or
- (b) As inner packagings of combination packagings with a maximum net mass of 40 kg.”

Footnote 1 to read as follows:

“¹ Commission Delegated Regulation (EU) 2020/1182 of 19 May 2020 amending, for the purposes of its adaptation to technical and scientific progress, Part 3 of Annex VI to Regulation (EC) No 1272/2008 of the European Parliament and of the Council on classification, labelling and packaging of substances and mixtures (fifteenth ATP to the CLP), applicable from 1 March 2022.”

1.6.7.2.1.1 Insert the following new transitional provision:

8.6.1.1	Changes to certificate of approval, numbers 4 and 8	N.R.M. from 1 January 2023 Renewal of the certificate of approval after 31 December 2022
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1.6.7.2.2.2 In the Table of general transitional provisions: Tank vessels, amend the transitional provision for “7.2.3.20.1, Ballast water Prohibition against filling cofferdams with water” to read as follows:

7.2.3.20.1	Prohibition against filling cofferdams not fitted out as service spaces, with water	N.R.M. Renewal of the certificate of approval after 31 December 2038 Until then, the following requirements apply on board vessels in service: Cofferdams, not fitted out as service spaces, may be filled with water during unloading to provide trim and to permit residue-free drainage as far as possible.
9.1.0.53.4 (a)	EN 15869-1:2019	N.R.M. from 1 January 2023

1.6.7.2.2.2 In the Table of general transitional provisions: Tank vessels, insert the following new transitional provisions:

1.2.1	Electrical apparatus protected against water jets IEC 60529:1989 + A1:1999 + A2:2013	N.R.M. from 1 January 2023
1.2.1	Explosion group IEC 60079-0:2017+Cor 1:2020	N.R.M. from 1 January 2023
1.2.1	Gas detection system Test according to IEC/EN 60079-29-1:2016 and EN 50271:2010 or EN 50271:2018	N.R.M. from 1 January 2023 for vessels brought into service before 1 January 2019: Renewal of the certificate of approval after 31 December 2024

1.2.1	Oxygen measuring system Test according to standard EN 50104:2019	N.R.M. from 1 January 2023 Until that date, the oxygen measuring system must be checked in accordance with IEC/EN 50104:2010
1.2.1	Oxygen meter Test according to standard EN 50104:2019	N.R.M. from 1 January 2023 Until that date, the oxygen meter must be checked in accordance with IEC/EN 50104:2010
1.2.1	Protective suit Compliance with EN 1149-5:2018	N.R.M. from 1 January 2023
1.2.1	Types of protection, electrical equipment CEI 60079-0:2017+ Cor 1:2020	N.R.M. from 1 January 2023
1.2.1	Types of protection EEx d, IEC standard	N.R.M. from 1 January 2023
1.2.1	Types of protection EEx e, IEC standard	N.R.M. from 1 January 2023
1.2.1	Types of protection EEx m, IEC standard	N.R.M. from 1 January 2023
1.2.1	Types of protection EEx p, EEx q, IEC Standard	N.R.M. from 1 January 2023
1.6.7.5.1 (d)	Note of the transitional provisions actually applied	Renewal of the certificate of approval after 31 December 2022
1.16.1.4.2 (e)	Date of application of the transitional provisions in the annex to the certificate of approval in the event of modification	Renewal of the certificate of approval after 31 December 2022
8.1.6.2	EN ISO 10380:2012	N.R.M. from 1 January 2023
8.1.6.2	EN ISO 13765:2018	N.R.M. from 1 January 2023

1.6.7.2.2.2 Renumber transitional provision for 9.3.1.0.3 (d), 9.3.2.0.3 (d) and 9.3.3.0.3 (d) "Fire-resistant materials of accommodation and wheelhouse" as 9.3.1.0.6, 9.3.2.0.6 and 9.3.3.0.6.

1.6.7.5.1 (d) Amend the beginning to read as follows:

“The application of this sub-section, including the transitional provisions actually applied, shall be entered...”. Remainder unchanged.

1.6.8.1 Delete and insert: “1.6.8.1 (*Deleted*)”.

1.6.8 Insert the following new transitional provision:

“1.6.8.3 Certificates of specific knowledge of ADN referred to in 8.2.2.8 issued before 1 January 2023 and which conform to the format laid down in ISO/IEC 7810:2003 shall remain valid until the expiry date indicated therein.”.

Chapter 1.7

- 1.7.1 In Note 1, first sentence, replace “persons” by “people”.
- 1.7.1.1 In the second sentence, replace “These standards are based on the 2018 edition” by “ADN is based on the 2018 edition”.
- At the end, replace “Safety Standard Series” by “Safety Standards Series”.
- 1.7.2.5 Replace “persons” by “people”.

Chapter 1.8

- 1.8.1.2.1 In footnote *, replace “(<http://www.unece.org/trans/danger/danger.html>)” by “(<https://unece.org/standardized-model-checklists>)”.
- 1.8.3.17 Delete and insert: “1.8.3.17 (Deleted)”.
- 1.8.5.4 In section 6 of the “Model for report on occurrences during the carriage of dangerous goods”, cell for note (3), add a new entry to read “17 MEMU” and renumber remaining entries accordingly.

Chapter 1.9

- 1.9.3 (c) Replace “Emergency requirements regarding routing or parking” by “Emergency requirements regarding routing or berthing”.
- 1.9.4 At the end, after “Contracting Parties”, add a reference to a new footnote 1 to read as follows:
- “¹ *Multimodal guidelines (Inland TDG Risk Management Framework) may be consulted on the website of the Directorate General for Mobility and Transport of the European Commission (https://ec.europa.eu/transport/themes/dangerous_good/risk_management_framework_en)*”

Chapter 1.10

- 1.10.5 Delete footnotes 1 and 2. After “Convention on Physical Protection of Nuclear Material”, add “(INFCIRC/274/Rev.1, IAEA, Vienna (1980))”. After “Nuclear Security Recommendations on Physical Protection of Nuclear Material and Nuclear Facilities”, add “(INFCIRC/225/Rev.5, IAEA, Vienna (2011))”.

Chapter 1.16

- 1.16.1.4.2 Insert a new subparagraph (e) to read as follows:
- “(e) In a derogation to subparagraphs (a) to (d), the date of presentation for first inspection for obtaining a certificate of approval after the conversion of an existing type of tank vessel, a type of cargo tank or a cargo tank design to another type or design at a higher level.”.

Chapter 2.1

- 2.1.4.3.1 Under (a), number the indents as (i) to (iv). Under (b), number the indents as (i) and (ii).

Chapter 2.2

2.2.1.1.7.5 In Note 3, number the indents as (a) to (d).

2.2.2.2.2 Amend the fifth indent to read:

“– Dissolved gases which cannot be classified under UN Nos. 1001, 1043, 2073 or 3318. For UN No. 1043, see special provision 642;”.

2.2.3.3 In the List of collective entries, for F1, delete the entry for UN number 1169 and amend the entry for UN number 1197 to read: “1197 EXTRACTS, LIQUID, for flavour or aroma”.

2.2.41.4 In the last sentence of the first paragraph, after “The formulations” add “not listed in this sub-section but”.

In the table, add the following new entry in proper order:

(7-METHOXY-5-METHYL-BENZOTHIOPHEN-2-YL) BORONIC ACID	88-100	OP7				3230	(11)
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Under the table, add the following new table note:

“(11) The technical compound with the specified concentration limits may contain up to 12 % water and up to 1 % organic impurities.”

2.2.52.4 In the last sentence, after “The formulations” add “not listed in this sub-section but”.

In the table, add the following new entries in proper order:

ACETYL ACETONE PEROXIDE	≤ 35	≥ 57			≥ 8	OP8			3107	32)
tert-BUTYLPEROXY ISOPROPYLCARBONATE	≤ 62		≥ 38			OP7			3105	
tert-HEXYL PEROXYPIVALATE	≤ 52 as a stable dispersion in water					OP8	+15	+20	3117	

Under the table, in “Remarks (refer to the last column of the Table in 2.2.52.4):” add the following entry at the end:

“32) Active oxygen ≤ 4.15 %.”

2.2.7.1.3 The amendment to delete the footnotes does not apply to the English text.

2.2.7.2.3.1.4 and 2.2.7.2.3.1.5 Delete and replace “2.2.7.2.3.1.3 (Deleted)” by “2.2.7.2.3.1.3 to 2.2.7.2.3.1.5 (Deleted)”.

2.2.7.2.3.4.1 (c) In the first sentence, replace “2.2.7.2.3.1.4” by “2.2.7.2.3.4.3”.

2.2.7.2.3.4.2 Replace “2.2.7.2.3.1.4” by “2.2.7.2.3.4.3”.

2.2.7.2.3.4 Insert a new 2.2.7.2.3.4.3 to read as follows:

“2.2.7.2.3.4.3 A solid material sample representing the entire contents of the package shall be immersed for 7 days in water at ambient temperature. The volume of water to be used in the test shall be sufficient to ensure that at the end of the 7-day test period the free volume of the unabsorbed and unreacted water remaining shall be at least 10 % of the volume of the solid test sample itself. The water shall have an initial pH of 6-8 and a maximum conductivity of 1 mS/m at 20 °C. The total activity of the free volume of water shall be measured following the 7-day immersion of the test sample.”

Renumber current paragraph 2.2.7.2.3.4.3 as 2.2.7.2.3.4.4 and replace “2.2.7.2.3.4.1 and 2.2.7.2.3.4.2” by “2.2.7.2.3.4.1, 2.2.7.2.3.4.2 and 2.2.7.2.3.4.3”.

2.2.8.1.5.2 In the second sentence, replace “OECD Test Guidelines^{6,7,8,9}” by “OECD Test Guidelines Nos. 404⁶, 435⁷, 431⁸ or 430⁹”. In the third sentence, replace “OECD Test Guidelines^{6,7,8,9}” by “one of these or non-classified in accordance with OECD Test Guideline No. 439¹⁰,”. In the fourth sentence, delete “*in vitro*”. At the end, add the following new sentence: “If the test results indicate that the substance or mixture is corrosive, but the test method does not allow discrimination between packing groups, it shall be assigned to packing group I if no other test results indicate a different packing group.”.

Add a footnote 10 to read “¹⁰ *OECD Guideline for the testing of chemicals No. 439 “In Vitro Skin Irritation: Reconstructed Human Epidermis Test Method” 2015.*”.

Renumber subsequent footnotes in Chapter 2.2 accordingly.

2.2.8.1.5.3 (c) (ii) Replace “ISO 3574 or Unified Numbering System (UNS) G10200 or a similar type” by “ISO 3574, Unified Numbering System (UNS) G10200”.

2.2.9.1.7 (g) Amend the beginning of the sentence to read “Except for button cells installed in equipment (including circuit boards), manufacturers ...”.

Chapter 2.4

Table 2.4.3.1 In (a) and (b) (iii), replace “hr” by “h” (eighteen times).

2.4.4.3.4 (a) After (i), add a new note to read as follows:

NOTE: *In this situation, when EC_x or NOEC of the tested mixture > 0.1 mg/l, there is no need to classify for long-term hazard under ADN.*”

Chapter 3.2, Table A

For UN 1002, in column (6), add “397”.

For all UN numbers to which special provision 386 is assigned in column (6), insert in column (6) “676”. Applies to UN Nos. 1010, 1051, 1060, 1081, 1082, 1085, 1086, 1087, 1092, 1093, 1143, 1167, 1185, 1218, 1246, 1247, 1251, 1301, 1302, 1303, 1304, 1545, 1589, 1614, 1724, 1829, 1860, 1917, 1919, 1921, 1991, 2055, 2200, 2218, 2227, 2251, 2277, 2283, 2348, 2352, 2396, 2452, 2521, 2522, 2527, 2531, 2607, 2618, 2838, 3022, 3073, 3079, 3302, 3531, 3532, 3533 and 3534.

For UN 1012, in column (2), amend the name and description to read “BUTYLENE”. In column (6), add “398”.

For UN 1043, in column (6) insert “642”.

Delete the five entries for UN 1169.

For UN 1197, packing groups II and III (five entries), in column (2) replace “EXTRACTS, FLAVOURING, LIQUID” by “EXTRACTS, LIQUID, for flavour or aroma”.

For UN No. 1288, both entries, in column (8) insert “T”.

For UN No. 1345, in column (2), amend the name and description to read “RUBBER SCRAP or RUBBER SHODDY, powdered or granulated, not exceeding 840 microns and rubber content exceeding 45 %”.

For UN No. 1408, in column (6) insert “802”.

For UN No. 1694, in column (6) delete “302” and insert “802”.

For UN No. 1872 In column (3b), replace “OT2” by “O2”.

In column (5), delete “+ 6.1”.

In column (6) delete “802” and in column (9) delete “EP”.

For UN 1891, in column (3a), replace “6.1” by “3”. In column (3b), replace “T1” by “FT1”. In column (5), replace “6.1” by “3+6.1”. In column (7a), replace “100 ml” by “1 L”. In column (7b), replace “E4” by “E2”.

For UN No. 1950, “AEROSOLS, toxic, flammable, corrosive”, in column (10) insert “VE04”.

For UN No. 2015, In the first entry, in column (2), before the existing text, insert “HYDROGEN PEROXIDE, STABILIZED or”.

For UN Nos. 2381, 3483, 3543, 3544, 3545, 3546, 3547 and 3548, in column (6) insert “802”.

For UN No. 2426, amend the name and description in column (2) to read “AMMONIUM NITRATE, LIQUID (hot concentrated solution)”.

For UN No. 3206, second entry, in column (6) delete “183” and insert “182”.

For UN 3208, packing group II, in column (7b), replace “E0” by “E2”.

For UN 3209, packing group II, in column (7b), replace “E2” by “E0”.

For UN 3269, packing groups II and III, and UN 3527, packing groups II and III, in column (7b), replace “E0” by “See SP 340”.

For UN No. 3408, all entries, in column (6) insert “802”.

For UN No. 3440, all entries, in column (6) insert “563”.

For UN No. 3494, all entries, in column (6) delete “649”.

For UN Nos. 3537, 3539, 3540, 3541 and 3542, in column (6) insert “802”.

For UN 3538, in column (6), add “396”.

Chapter 3.2

3.2.3.1, column (20), remark 33, paragraph (n) Amend subparagraph .1 to read as follows:

“.1 The addition date of the stabilizer and the duration of its effectiveness;”.

Chapter 3.2, Table C

For UN No. 1010, 1,2-BUTADIENE, STABILIZED, REFRIGERATED, amend column (2) to read: “BUTADIENES (1,2-BUTADIENE), STABILIZED, REFRIGERATED”.

For UN No. 1010, 1,3-BUTADIENE, STABILIZED, REFRIGERATED, amend column (2) to read: “BUTADIENES (1,3-BUTADIENE), STABILIZED, REFRIGERATED”.

For UN No. 1010, BUTADIENES STABILIZED or BUTADIENES AND HYDROCARBON MIXTURE, STABILIZED, having a vapour pressure at 70 °C not exceeding 1.1 MPa (11 bar) and a density at 50 °C not lower than 0.525 kg/l (contains less than 0.1% 1,3-butadiene):

amend column (2) to read: “BUTADIENES, STABILIZED or BUTADIENES AND HYDROCARBON MIXTURE, STABILIZED, containing more than 40% butadienes (contains less than 0.1% 1,3-butadiene)”.

For UN No. 1010, BUTADIENES STABILIZED or BUTADIENES AND HYDROCARBON MIXTURE, STABILIZED, REFRIGERATED, having a vapour pressure at 70 °C not exceeding 1.1 MPa (11 bar) and a density at 50 °C not lower than 0.525 kg/l (contains less than 0.1% 1,3-butadiene):

amend column (2) to read: “BUTADIENES, STABILIZED or BUTADIENES AND HYDROCARBON MIXTURE, STABILIZED, REFRIGERATED, containing more than 40% butadienes (contains less than 0.1% 1,3-butadiene)”.

For UN No. 1010, BUTADIENES, STABILIZED or BUTADIENES AND HYDROCARBON MIXTURE, STABILIZED, having a vapour pressure at 70 °C not exceeding 1.1 MPa (11 bar) and a density at 50 °C not lower than 0.525 kg/l, (with 0.1% or more 1,3-butadiene):

amend column (2) to read: “BUTADIENES, STABILIZED or BUTADIENES AND HYDROCARBON MIXTURE, STABILIZED, containing more than 40% butadienes (contains 0.1% or more 1,3-butadiene)”.

For UN No. 1010, BUTADIENES, STABILIZED or BUTADIENES AND HYDROCARBON MIXTURE, STABILIZED, REFRIGERATED, having a vapour pressure at 70 °C not exceeding 1.1 MPa (11 bar) and a density at 50 °C not lower than 0.525 kg/l, (with 0.1% or more 1,3-butadiene):

amend column (2) to read: “BUTADIENES, STABILIZED or BUTADIENES AND HYDROCARBON MIXTURE, STABILIZED, REFRIGERATED, containing more than 40% butadienes (contains 0.1% or more 1,3-butadiene)”.

For identification No. 9004, amend column (5) to read “9 + S”

Add the following new entries:

UN No. or substance identification No.	Name and description	Class	Classification code	Packing group	Dangers	Type of tank vessel	Cargo tank design	Cargo tank type	Cargo tank equipment	Opening pressure of the pressure relief valve/high velocity vent valve in kPa	Maximum degree of filling in %	Relative density at 20 °C	Type of sampling device	Pump room below deck permitted	Temperature class	Explosion group	Anti-explosion protection required	Equipment required	Number of cones/blue lights	Additional requirements/Remarks
(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
	3.1.2	2.2	2.2	2.1.1.3	5.2.2 / 3.2.3.1	1.2.1 / 7.2.2.0.1	3.2.3.1 / 1.2.1	3.2.3.1 / 1.2.1	3.2.3.1 / 1.2.1	3.2.3.1 / 1.2.1	7.2.4.21	3.2.3.1	3.2.3.1 / 1.2.1	3.2.3.1 / 1.2.1	1.2.1	1.2.1 / 3.2.3.3	1.2.1 / 3.2.3.3	8.1.5	7.2.5	3.2.3.1
1288	SHALE OIL	3	F1	II	3+N3+CMR	N	2	3	3	45	97	0.92	3	yes	T3	II B ⁴⁾	yes	PP, EP, EX, TOX, A	1	14; 23
1288	SHALE OIL	3	F1	III	3+N3+CMR	N	2	3	3	45	97	0.92	3	yes	T3	II B ⁴⁾	yes	PP, EP, EX, TOX, A	0	14; 23

Chapter 3.2

3.2.3.3 Amend Scheme B to read as follows:

Scheme B: Criteria for equipment of vessels of type N with closed cargo tanks

Ascertain which substance/cargo tank characteristics in the first six columns are relevant. Select the applicable row in the relevant column. The cargo tank equipment requirements for N-vessels with closed cargo tanks are then described in this row in the seventh column. If multiple columns are relevant select the topmost relevant row in the seventh column.

<i>Substance/cargo tank characteristics</i>						<i>Requirements arising</i>
<i>Class 3, flash-point < 23°C</i>			<i>Corrosive substances</i>	<i>CMR substances</i>		<i>Cargo tank equipment</i>
175 kPa ≤ P _{v 50} < 300 kPa without refrigeration						Pressure tank (400 kPa)
175 kPa ≤ P _{v 50} < 300 kPa, with refrigeration						Pressure relief valve/high velocity vent valve opening pressure: 50 kPa (with refrigeration (No. 1 in column (9)))
	150 kPa ≤ P _{v 50} < 175 kPa	110 kPa ≤ P _{v 50} < 150 kPa without water spraying				Pressure relief valve/high velocity vent valve opening pressure: 50 kPa
		110 kPa ≤ P _{v 50} < 150 kPa with water spraying			Vapour pressure > 10 kPa (calculation of the vapour pressure according to the formula for column 10, except that v _a = 0.03)	Pressure relief valve/high velocity vent valve opening pressure: 10 kPa (with water spraying (No. 3 in column (9)))
			P _{v 50} < 110 kPa	Packing group I or II with P _{v 50} > 12.5 kPa or reacting dangerously with water or with gases in solution	Vapour pressure ≤ 10 kPa (calculation of the vapour pressure according to the formula for column 10, except that v _a = 0.03)	Pressure relief valve/high velocity vent valve opening pressure: 10 kPa

3.2.3.3, column (18) and 3.2.4.3 J, column (18) Amendment does not apply to the English text.

3.2.4.2 In the Application form for special authorizations, under section 1.5.2:

In 2.12 “Flow time” replace “ISO 2431-1996” by “ISO 2431:2019”.

In 3.2 “Flash-point”, replace:

- “DIN 51755-1:1974” by “DIN 51755:1974-03”.
- “EN ISO 3679:2004” by “ISO 3679:2015”.
- “EN ISO 2592:2002” by “ISO 2592:2017”.

In 3.3 “Explosion limits”, replace “EN 1839:2012” by “EN 1839:2017”.

Chapter 3.3

Special provision (SP) 119 At the end, add a new note to read as follows:

“NOTE: *For the purposes of carriage, heat pumps may be considered as refrigerating machines.”*

SP 188 (g) and (h) The amendment does not apply to the English text.

SP 225 After (a), insert the following new note:

“NOTE: *This entry applies to portable fire extinguishers, even if some components that are necessary for their proper functioning (e.g. hoses and nozzles) are temporarily detached, as long as the safety of the pressurized extinguishing agent containers is not compromised and the fire extinguishers continue to be identified as a portable fire extinguisher.”*

SP 291 At the end, add a new note to read as follows:

“NOTE: *For the purposes of carriage, heat pumps may be considered as refrigerating machines.”*

SP 327 In the first sentence, replace “5.4.1.1.3” by “5.4.1.1.3.1”.

SP 363 At the end of paragraph (j), insert the following Note:

“NOTE: *On engines and machinery with a capacity of more than 450 l but containing 60 l of liquid fuel or less, labelling and placarding compliant with the above requirements are permitted.”*

SP 389 In the first paragraph, amend the first sentence to read as follows:

“This entry only applies to lithium ion batteries or lithium metal batteries installed in a cargo transport unit and designed only to provide power external to the cargo transport unit.”

In the last paragraph, at the beginning of the last sentence, insert “Except as provided in 1.1.3.6 of RID or ADR”.

Replace “396-499 (*Reserved*)” by “399-499 (*Reserved*)”.

SP 591 After “the requirements”, insert “of Class 8”.

SP 593 Amend to read as follows:

“593 This gas, when used for cooling goods not fulfilling the criteria of any class, e.g. medical or biological specimens, if contained in double wall receptacles which comply with the provisions of packing instruction P203, paragraph (6) for open cryogenic receptacles of 4.1.4.1 of ADR, is not subject to the requirements of ADN except as specified in 5.5.3.”

- SP 644 Insert the following new second indent:
 “– The solution does not contain more than 93 % ammonium nitrate;”
- SP 650 In paragraph (e), replace “5.4.1.1.3” by “5.4.1.1.3.1”.
- SP 651 Amend to read as follows:
 “651 Special provision V2 (1) of ADR does not apply if the net explosive mass per transport unit does not exceed 4 000 kg, provided that the net explosive mass per vehicle does not exceed 3 000 kg.”.
- SP 654 In the first sentence, replace “5.4.1.1.3” by “5.4.1.1.3.1”.
- SP 655 At the beginning of the first sentence, after “Cylinder” delete “and their closures”.
- SP 663 Amend the first paragraph under “**General provisions:**” to read as follows:
 “Packagings, discarded, empty, uncleaned with residues presenting a primary or subsidiary hazard of Class 5.1 shall not be loaded in bulk together with packagings, discarded, empty, uncleaned with residues presenting a hazard of other classes. Packagings, discarded, empty, uncleaned with residues presenting a primary or subsidiary hazard of Class 5.1 shall not be packed with other packagings, discarded, empty, uncleaned with residues presenting hazards of other classes in the same outer packaging.”
- SP 674 In sub-paragraph (a) General: In the first sentence replace “welded steel cylinders” by “welded steel cylinder shells”. At the end of the second sentence insert “shell” after “steel cylinder”. The second modification to the second sentence doesn’t apply to the English text. In the third sentence insert “shell” after “steel cylinder”.
 In sub-paragraph (b) Basic population: Replace “inner cylinders” by “inner steel cylinder shells”.
 In sub-paragraph (d) Traceability: In the first sentence insert “shell” after “steel cylinder”. In the second indent insert “shell” after “steel cylinder”.
- Add the following new special provisions:
- “396 Large and robust articles may be carried with connected gas cylinders with the valves open regardless of 4.1.6.5 of ADR provided:
- (a) The gas cylinders contain nitrogen of UN No. 1066 or compressed gas of UN No. 1956 or compressed air of UN No. 1002;
 - (b) The gas cylinders are connected with the article through pressure regulators and fixed piping in such a way that the pressure of the gas (gauge pressure) in the article does not exceed 35 kPa (0.35 bar);
 - (c) The gas cylinders are properly secured so that they cannot move in relation to the article and are fitted with strong and pressure resistant hoses and pipes;
 - (d) The gas cylinders, pressure regulators, piping and other components are protected from damage and impacts during carriage by wooden crates or other suitable means;
 - (e) The transport document includes the following statement “TRANSPORT IN ACCORDANCE WITH SPECIAL PROVISION 396”;
 - (f) Cargo transport units containing articles carried with cylinders with open valves containing a gas presenting a risk of asphyxiation are well ventilated and marked in accordance with 5.5.3.6.”

- “397 Mixtures of nitrogen and oxygen containing not less than 19.5 % and not more than 23.5 % oxygen by volume may be carried under this entry when no other oxidizing gases are present. A Class 5.1 subsidiary hazard label (model No. 5.1, see 5.2.2.2.2) is not required for any concentrations within this limit.”
- “398 This entry applies to mixtures of butylenes, 1-butylene, cis-2-butylene and trans-2-butylene. For isobutylene, see UN No. 1055.
- NOTE: For additional information to be added in the transport document, see 5.4.1.2.2 (e).”*
- “641 (Reserved)”
- “642 Except as authorized under 1.1.4.2, this entry of the UN Model Regulations shall not be used for the carriage of fertilizer ammoniating solutions with free ammonia. Otherwise, for carriage of ammonia solution, see UN Nos. 2073, 2672 and 3318.”
- “676 For the carriage of packages containing polymerizing substances the provisions of special provision 386, in conjunction with 7.1.7.3, 7.1.7.4, 5.4.1.1.15 and 5.4.1.2.3.1, need not be applied, when carried for disposal or recycling provided the following conditions are met:
- (a) Before loading an examination has shown that there is no significant deviation between the outside temperature of the package and the ambient temperature;
 - (b) The carriage is effected within a period of not more than 24 hours from that examination;
 - (c) The packages are protected from direct sunlight and from the impact of other sources of heat (e.g. additional loads that are being carried above ambient temperature) during carriage;
 - (d) The ambient temperatures during the carriage are below 45 °C;
 - (e) Vehicles and containers are adequately ventilated;
 - (f) The substances are packed in packages with a maximum capacity of 1 000 litres.
- In assessing the substances for carriage under the conditions of this special provision, additional measures to prevent dangerous polymerization may be considered, for example the addition of inhibitors.”

Chapter 3.4

- 3.4.11 Number the indents as (a) and (b).

Chapter 3.5

- 3.5.4.3 Number the indents as (a) and (b).

Chapter 5.1

- 5.1.3 The amendment does not apply to the English version.
- 5.1.3.1 The amendment does not apply to the English version.

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

“A competent authority may approve provisions under which consignments that do not satisfy all the applicable requirements of ADN may be carried under special arrangement (see 1.7.4).”

Chapter 5.2

5.2.1.6 At the end of footnote 1, add the following new indent:

“- *For UN No. 1012 Butylene: 1-butylene, cis-2-butylene, trans-2-butylene, butylenes mixture.*”

5.2.1.9.2 Remove the double asterisk in figure 5.2.1.9.2 and remove the note for the double asterisk below the figure.

5.2.1.10.1 Number the indents as (a) to (d). In (c), replace “cryogenic receptacles” with “closed or open cryogenic receptacles”.

5.2.1.10.2 (a) Replace “cryogenic receptacles” with “closed or open cryogenic receptacles”.

5.2.2.2.2 In the table, in the subheading for “Class 9 hazard”, delete “, including environmentally hazardous substances”.

Chapter 5.3

5.3.2.1.5 Amend the note to read as follows:

NOTE: *This paragraph need not be applied to vehicles or wagons carrying containers for carriage in bulk, tanks and MEGCs with a maximum capacity of 3 000 litres.*”

5.3.2.1.7 The amendment does not apply to the English version.

Chapter 5.4

5.4.1.1.3 Number the text under the heading as 5.4.1.1.3.1.

Insert a new 5.4.1.1.3.2 to read as follows:

“5.4.1.1.3.2 If it is not possible to measure the exact quantity of the waste at the place of loading, the quantity according to 5.4.1.1.1 (f) may be estimated for the following cases under the following conditions:

- (a) For packagings, a list of packagings including the type and the nominal volume is added to the transport document;
- (b) For containers, the estimation is based on their nominal volume and other available information (e.g. type of waste, average density, degree of filling);
- (c) For vacuum operated waste tanks, the estimation is justified (e.g. by means of an estimation provided by the consigner or by vehicle equipment).

Such estimation of the quantity is not allowed for:

- Exemptions for which the exact quantity is essential (e.g. 1.1.3.6 of RID or ADR);
- Waste containing substances mentioned in 2.1.3.5.3 or substances of Class 4.3;
- Tanks other than vacuum operated waste tanks.

A statement shall be included in the transport document, as follows:

“QUANTITY ESTIMATED IN ACCORDANCE WITH 5.4.1.1.3.2.”

5.4.1.1.5 Amend the paragraph below the heading to read as follows:

“When dangerous goods are carried in salvage packagings in accordance with 4.1.1.19 of ADR, including large salvage packagings, larger size packagings or large packagings of appropriate type and performance level to be used as a salvage packaging, the words “**SALVAGE PACKAGING**” shall be added after the description of the goods in the transport document.

When dangerous goods are carried in salvage pressure receptacles in accordance with 4.1.1.20 of ADR, the words “**SALVAGE PRESSURE RECEPTACLE**” shall be added after the description of the goods in the transport document.”

5.4.1.1.11 Replace “6.7.2.19.6 (b)” by “6.7.2.19.6.1 (b)” (twice), replace “6.7.3.15.6 (b)” by “6.7.3.15.6.1 (b)” (twice) and replace “6.7.4.14.6 (b)” by “6.7.4.14.6.1 (b)” (twice).

5.4.1.1.15 In the heading, replace “substances stabilized by temperature control” by “stabilized and temperature controlled substances”.

Amend the text under this heading to read:

“Unless already part of the proper shipping name the word “**STABILIZED**” shall be added to the proper shipping name if stabilization is used and the words “**TEMPERATURE CONTROLLED**” shall be added to the proper shipping name if stabilization is by temperature control or a combination of chemical stabilization and temperature control (see 3.1.2.6).

If the words “**TEMPERATURE CONTROLLED**” are part of the proper shipping name (see also 3.1.2.6), the control and emergency temperatures (see 7.1.7) shall be indicated in the transport document, as follows:

"**CONTROL TEMPERATURE:°C EMERGENCY TEMPERATURE:°C**"

5.4.1.1.16 Delete and add “5.4.1.1.16 (*Deleted*)”.

5.4.1.1.21 Amend to read as follows:

“5.4.1.1.21 *Additional information in the case of the application of special provisions*

Where, in accordance with a special provision in Chapter 3.3, additional information is necessary, this additional information shall be included in the transport document.”

5.4.1.1 Add the following new 5.4.1.1.23 and 5.4.1.1.24:

“5.4.1.1.23 *Special provisions for the carriage of substances carried in molten state*

When a substance, which is solid in accordance with the definition in 1.2.1, is offered for carriage in the molten state, the qualifying word “**MOLTEN**” shall be added as part of the proper shipping name, unless it is already part of the proper shipping name (see 3.1.2.5);”

“5.4.1.1.24 *Special provisions for refillable pressure receptacles authorized by the United States of America Department of Transportation*

For carriage in accordance with 1.1.4.7, a statement shall be included in the transport document, as follows:

"**CARRIAGE IN ACCORDANCE WITH 1.1.4.7.1**" or

"**CARRIAGE IN ACCORDANCE WITH 1.1.4.7.2**", as appropriate.”

- 5.4.1.2.2 Add the following new sub-paragraph at the end:
- “(e) For carriage of UN No. 1012, the transport document shall contain the name of the specific gas carried (see special provision 398 of Chapter 3.3) in brackets after the proper shipping name.”
- 5.4.2 In the first paragraph, replace “with the transport document” by “to the maritime carrier by those responsible for packing the container”.
- In the second paragraph, in the first sentence, replace “; if not, these documents shall be attached” by “(see for example 5.4.5)”.
- The third amendment does not apply to the English version.
- Delete the Note after the second paragraph.
- In the third paragraph, after “may”, insert “also”.

Chapter 5.5

- 5.5.2.4.1 Number the indents as (a) to (c).

Chapter 7.1

- 7.1.4.4.4 Amend the legend to “Examples of stowage and segregation of containers” under R to read as follows:
- “R Container (e.g. reefer) with electrical equipment which do not fulfil the requirements in 7.1.4.4.4 (a).”
- 7.1.4.4.4 Amend the legend to “Examples of stowage and segregation of containers” under Z to read as follows:
- “Z Electrical installations and equipment which do not fulfil the requirements in 7.1.4.4.4 (a).”
- 7.1.7.3.2 (a) Replace “the word “STABILIZED”” by “the words “TEMPERATURE CONTROLLED””.
- 7.1.7.4.5 At the beginning of (a) and (b), replace “Thermal insulation” by “Vehicle, container, packaging or overpack with thermal insulation”.
- In (b), replace “with coolant system” by “and coolant system”.
- At the beginning of (c), (d) and (e), replace “Thermal insulation” by “Vehicle or container with thermal insulation”.
- 7.1.7.4.7 Insert the following text before the existing text:
- “Insulated, refrigerated and mechanically refrigerated containers intended for the carriage of temperature controlled substances shall conform to the following conditions:
- (a) The overall heat transfer coefficient of an insulated container shall be not more than 0.4 W/m²/K;
- (b) The refrigerant used shall not be flammable; and
- (c) Where containers are provided with vents or ventilation valves care shall be taken to ensure that refrigeration is not impaired by the vents or ventilation valves.”
- In the existing text, delete “or containers” (two times).

Chapter 7.2

7.2.3.1.1 Amend to read as follows:

“7.2.3.1.1 The cofferdams shall be empty, as long as the adjacent cargo tanks are not empty. They shall be inspected before each filling and if not filled they shall be inspected frequently, at least once a week, in order to ascertain that they are dry (except for condensation water).”.

7.2.3.1.6, second indent Amendment does not apply to the English text.

7.2.3.20.1 Amend the beginning to read as follows:

“7.2.3.20.1 Cofferdams fitted out as service spaces, and hold spaces containing insulated cargo tanks shall not be filled with water.

Cofferdams, not fitted out as service spaces, may be filled with water, provided that:

- (a) the adjacent cargo tanks are empty;
- (b) this has been taken into account in the intact and damage stability calculations; and
- (c) filling is not prohibited in column (20) of Table C of Chapter 3.2.

Double-hull spaces, double bottoms and hold spaces which do not contain insulated cargo tanks may be filled with ballast water provided: ...”.
Remainder unchanged.

7.2.4.16.8 In the first and second paragraphs, replace “the PP equipment referred to in 8.1.5” by “the PP protective equipment referred to in 8.1.5”.

7.2.4.41 In the first sentence, after “and smoking” insert “, including electronic cigarettes”.

7.2.5.4.2 Amend the beginning of the first sentence to read as follows:

“An expert in accordance with 8.2.1.2 shall be permanently on board...”.
Remainder unchanged.

Chapter 8.1

8.1.2.1 In paragraph (b), delete “and, where necessary the container/vehicle packing certificate (see 5.4.2)”.

8.1.2.2 (f) Replace “during a stay near to or within an onshore assigned zone” by “during a stay in the immediate vicinity of or within an onshore assigned zone”.

8.1.2.3 (s) Replace “degassing or during a stay near to or within an onshore assigned zone” by “degassing during berthing or during a stay in the immediate vicinity of or within an onshore assigned zone”.

8.1.2.9 Amend the beginning to read as follows:

“8.1.2.9 8.1.2.1 (b), 8.1.2.1 (g) and 8.1.2.4 do not apply to oil separator vessels...”.
Remainder unchanged.

8.1.5.1, PP Amendment does not apply to the English text.

8.1.6.2 In the first sentence, replace “EN 13765:2010-08” by “ISO 13765:2018” and “EN ISO 10380:2003-10” by “ISO 10380:2012”.

8.1.6.2 In the second sentence, replace “or table K.1 of standard EN 13765: 2010-08” by “or section 8 and annex K of standard EN 13765:2018 (routine tests)”.

8.1.6.2 In the second sentence, delete “or paragraph 7 of standard EN ISO 10380:2003-10”.

Chapter 8.2

- 8.2.2.3.1.1 Practical exercises Amendment does not apply to the English text.
- 8.2.2.3.3 Under “*Specialization course on gases*”, amend the description of “Prior training” to read as follows:
 “Examination passed after “tank vessels” or combined “dry cargo vessels/tank vessels” ADN basic training”.
- 8.2.2.3.3 Under “*Specialization course on chemicals*”, amend the description of “Prior training” to read as follows:
 “Examination passed after “tank vessels” or combined “dry cargo vessels/tank vessels” ADN basic training”.
- 8.2.2.7.1.1 Amend to read as follows:
 “8.2.2.7.1.1 After basic training, an examination shall be taken within six months following the completion of such training. If a candidate fails the examination, he or she may retake it twice during this six-month period without attending another basic training course.”.
- 8.2.2.7.1.3 and 8.2.2.7.2.3 In footnote 1, replace
 “(http://www.unece.org/trans/danger/publi/adn/catalog_of_questions.html)” by
 “(<https://unece.org/catalogue-questions>)”.
- 8.2.2.7.2.1 Amend the second sentence to read as follows: “This examination shall be held either immediately after the training or within six months following the completion of such training.”
- 8.2.2.7.2.5 In the second paragraph, replace the last sentence that reads: “If the candidate obtains 44 but does not achieve 20 in one part, the part in question may be resat once.” by the following text:
 “If a candidate fails the examination, he or she may retake it, fully or partially, twice during this six-month period without attending another specialization course. If the 44 marks are not achieved, the exam may be taken again in its entirety. If the candidate obtains 44 but does not achieve 20 in one part, only the part in question may be taken again.”.
- 8.2.2.8.2 Replace “ISO/IEC 7810:2003” by “ISO/IEC 7810:2019”.

Chapter 8.3

- 8.3.5, third indent Replace “in accordance with 7.2.3.7.6” by “in accordance with 7.2.3.7.1.6 or 7.2.3.7.2.6”.

Chapter 8.6

- 8.6.1.1 and 8.6.1.2 In point 4, replace “Additional requirements” by “Requirements”.
- 8.6.1.1 In point 8, amend the introductory text to read as follows: “This certificate is delivered on the basis of:”.

Chapter 9.1

9.1.0.40.2.16 Amend to read as follows:

“Permanently installed fire-extinguishing systems for protecting objects

- (a) Permanently installed fire-extinguishing systems for protecting objects are permitted for the protection of installations and equipment.

The action of the fire-extinguishing systems must be aimed directly at the objects to be protected. The range of action of fire-extinguishing systems may be limited in space by means of structural measures.

Permanently installed fire-extinguishing systems for protecting objects may already be structurally integrated into the objects concerned.

Permanently installed fire-extinguishing systems for protecting objects must be independent of the systems referred to in 9.1.0.40.2.2 to 9.1.0.40.2.16 in respect of their supply of extinguishing agent.

- (b) The following requirements apply to permanently installed fire-extinguishing systems for protecting objects:
- (i) 9.1.0.40.2.2, if the extinguishing agent used requires the range of action to be limited by structural measures;
 - (ii) 9.1.0.40.2.3 and 9.1.0.40.2.4;
 - (iii) 9.1.0.40.2.5 (b) and (c), in addition to the provisions of (c) of the present section;
 - (iv) 9.1.0.40.2.6, (a) to (e), and at each entrance to a room or in the immediate vicinity of an encapsulated object, a suitable sign for the fire-extinguishing system for physical protection must be prominently displayed;
 - (v) 9.1.0.40.2.7 to 9.1.0.40.2.13;
 - (vi) *(Reserved)*;
 - (vii) 9.1.0.40.2.15, (b) to (e).

Only extinguishing agents suitable for extinguishing a fire on or in the object to be protected and which are mentioned in 9.1.0.40.2.1 may be used in permanently installed fire-extinguishing systems for protecting objects.

The competent authority may authorize exemptions concerning the extinguishing agent for permanently installed fire-extinguishing systems for protecting objects which are based on a fire protection concept.

- (c) Permanently installed fire-extinguishing systems for protecting objects must be capable of being triggered manually. Manual triggering must be possible in the immediate vicinity of the protected object. They may be triggered automatically if the triggering signal is emitted by two fire detectors with different means of detection. The triggering must occur without delay. If the fire-extinguishing system is intended to protect several spaces, it shall comprise a separate and clearly-marked triggering device for each space.

The activation of the fire-extinguishing system shall be displayed in the wheelhouse and at the entrance to the room in which the object to be protected is located. In the case of encapsulated objects, the display at the room entrance can be omitted if another display is attached to the object itself.

For manual activation, operating instructions in accordance with 9.1.0.40.2.5 (e) shall be displayed next to each triggering device, taking into account the location and nature of the object.

- (d) The type and place of installation of permanently installed fire-extinguishing systems for protecting objects shall be entered in the ship's certificate.
- (e) The provisions of this section do not apply to water spray systems in accordance with 9.3.1.28, 9.3.2.28 and 9.3.3.28.”.

9.1.0.53.4 (f) Replace “EN 15869-03:2010” with “EN 15869-1:2019”.

Chapter 9.3

9.3.1.0 Amend as follows:

Renumber the first paragraph of 9.3.1.0.1 (a) as 9.3.1.0.1.1. At the end, after “equivalent metal” add “, special provisions of the additional requirements/remarks of column 20 of Table C of Chapter 3.2 excepted”.

Renumber the second paragraph of 9.3.1.0.1 (a) as 9.3.1.0.1.2.

Renumber 9.3.1.0.1 (b) as 9.3.1.0.2.

Renumber existing 9.3.1.0.2 as 9.3.1.0.3. Replace “plastic materials or rubber” by “plastic materials, rubber, glass or composite”.

Renumber 9.3.1.0.3 as 9.3.1.0.4. Replace “plastic materials or rubber” by “plastic materials, rubber, glass or composite”.

9.3.x.0 Replace the Table under 9.3.x.0.4 (former 9.3.x.0.3) by the following Table:

(X means "allowed")

	Wood	Aluminium alloys	Plastic material / Composite	Rubber	Glass
Permanently installed materials					
Chocking of cargo tanks which are independent of the vessel's hull and chocking of installations and equipment	X		X		
Masts and similar round timber	X	X	X		
Engine parts		X	X		
Protective covers of engines and pumps			X		
Notice boards (Prohibition of admittance and smoking)		X	X		
Parts of the electrical installation		X	X		
	<i>According to the applicable technical norms</i>				
Parts of the loading and unloading installation, e.g., gaskets		X	X	X	
Supports and stops of any kind	X		X		
Ventilators, including hose assemblies for ventilation		X	X		
Parts of the water spray system, the shower and the eye and face bath		X	X		
Insulation of cargo tanks and of piping for loading and unloading, gas discharge pipes and heating pipes		X	X	X	
Coating of cargo tanks and of piping for loading and unloading		X	X	X	
Insulation of cargo tanks (Table C, Column (20), Remark 32)		X	X	X	
All kinds of gaskets		X	X	X	
	<i>Subject to Table C, Column (20), Remark 39 a)</i>				
Cables for electrical equipment			X	X	
	<i>According to the applicable technical norms</i>				
Boxes, cabinets or other receptacles placed on the deck for storage of disposal and recovery equipment, for capstans, extinguishers, fire hoses, etc.		X	X		
Boxes, cabinets or other receptacles placed on the deck for storage of disposal of waste		X	X		
	<i>For oily and greasy wastes fire-resistant receptacles only (7.2.1.21.6)</i>				

(X means "allowed")

	Wood	Aluminium alloys	Plastic material / Composite	Rubber	Glass
Portable equipment					
Gangways	X	X	X	X	
External ladders and passageways (gangways)		X	X	X	
Outboard ladders		X	X	X	
Ladders		X	X	X	
Cleaning equipment, e.g. brooms	X	X	X	X	
Fire extinguishers, portable gas detectors,		X	X	X	
Rescue winches		X			
Personal protective and safety equipment, rescue equipment conforming to ES-TRIN		X	X	X	
Driptrays			X		
Fenders	X		X	X	
Mooring lines, ropes for tenders, etc.			X		
	<i>Respecting 7.2.4.76</i>				
Mat under hose assemblies for loading and unloading piping system			X	X	
Fire hoses, air hoses, hoses for cleaning the deck, etc.			X	X	
Other kinds of hoses	<i>In line with 8.1.6.2 and norms mentioned</i>				
Aluminium gauging rods		X			
	<i>If fitted with brass feet or protected in another way to avoid sparking.</i>				
Sampling equipment			X		
Receptables for oily and greasy wastes (7.2.4.1)		X	X		
	<i>Fire-resistant receptables, (7.2.1.21.6)</i>				
Receptables for residual products and receptables for slops		X	X		
	<i>Respecting ADR, RID or IMDG-Code regarding the admission requirements of materials.</i>				
Sampling bottles			X		X
	<i>Respecting ADR, regarding the admission requirements of materials.</i>				

(X means "allowed")

	<i>Wood</i>	<i>Aluminium alloys</i>	<i>Plastic material / Composite</i>	<i>Rubber</i>	<i>Glass</i>
Photo-optical copies of the certificate of approval according to 8.1.2.6 or 8.1.2.7, and of the vessel's certificate, the measurement certificate and other applicable documents ¹		X	X		
Aluminum basket for storing of mooring wires/lines		X			
Boot's hook	X	X	X		
Ship's boat (In case of 7.2.3.29.1 and 7.2.3.31.1 allowed in the cargo area)		X	X		
<i>Only when the material shall not readily ignite</i>					

¹ The Rhine or Danube navigation membership certificate.

- 9.3.x.0 Replace the paragraphs after the Table by the following paragraphs:
- “9.3.x.0.5 The paint used in the cargo area shall not be liable to produce sparks in case of impact.
- 9.3.x.0.6 All permanently fitted materials in the accommodation or wheelhouse, with the exception of furniture, shall not readily ignite. They shall not evolve fumes or toxic gases in dangerous quantities, if involved in a fire.”.
- 9.3.1.11.7, 9.3.2.11.9 and 9.3.3.11.8 Replace “wearing protective clothing” by “wearing personal protective equipment”.
- 9.3.x.40.1 The amendment does not apply to the English text.
- 9.3.x.40.2.16 Amend to read as follows (x to be replaced by 1, 2 and 3 respectively):

“Permanently installed fire-extinguishing systems for protecting objects

- (a) Permanently installed fire-extinguishing systems for protecting objects are permitted for the protection of installations and equipment.

The action of the fire-extinguishing systems must be aimed directly at the objects to be protected. The range of action of fire-extinguishing systems may be limited in space by means of structural measures.

Permanently installed fire-extinguishing systems for protecting objects may already be structurally integrated into the objects concerned.

Permanently installed fire-extinguishing systems for protecting objects must be independent of the systems referred to in 9.3.x.40.2.2 to 9.3.x.40.2.16 in respect of their supply of extinguishing agent.

- (b) The following requirements apply to permanently installed fire-extinguishing systems for protecting objects:

- (i) 9.3.x.40.2.2, if the extinguishing agent used requires the range of action to be limited by structural measures;
- (ii) 9.3.x.40.2.3 and 9.3.x.40.2.4;
- (iii) 9.3.x.40.2.5 (b) and (c), in addition to the provisions of (c) of the present section;
- (iv) 9.3.x.40.2.6, (a) to (e), and at each entrance to a room or in the immediate vicinity of an encapsulated object, a suitable sign for the fire-extinguishing system for physical protection must be prominently displayed;
- (v) 9.3.x.40.2.7 to 9.3.x.40.2.13;
- (vi) *(Reserved)*;
- (vii) 9.3.x.40.2.15, (b) to (e).

Only extinguishing agents suitable for extinguishing a fire on or in the object to be protected and which are mentioned in 9.3.x.40.2.1 may be used in permanently installed fire-extinguishing systems for protecting objects.

The competent authority may authorize exemptions concerning the extinguishing agent for permanently installed fire-extinguishing systems for protecting objects which are based on a fire protection concept.

- (c) Permanently installed fire-extinguishing systems for protecting objects must be capable of being triggered manually. Manual triggering must be possible in the immediate vicinity of the protected object. They may be triggered automatically if the triggering signal is emitted by two fire detectors with different means of detection. The triggering must occur without delay. If the fire-extinguishing system is intended to protect several spaces, it shall comprise a separate and clearly-marked triggering device for each space.

The activation of the fire-extinguishing system shall be displayed in the wheelhouse and at the entrance to the room in which the object to be protected is located. In the case of encapsulated objects, the display at the room entrance can be omitted if another display is attached to the object itself.

For manual activation, operating instructions in accordance with 9.3.x.40.2.5 (e) shall be displayed next to each triggering device, taking into account the location and nature of the object.

- (d) The type and place of installation of permanently installed fire-extinguishing systems for protecting objects shall be entered in the ship's certificate.
- (e) The provisions of this section do not apply to water spray systems in accordance with 9.3.1.28, 9.3.2.28 and 9.3.3.28.”.

9.3.2.0 and 9.3.3.0 Amend as follows:

Renumber the first paragraph of 9.3.2.0.1 (a) and 9.3.3.0.1 (a) as 9.3.2.0.1.1 and 9.3.3.0.1.1, respectively. At the end, after “equivalent metal” add “, special provisions of the additional requirements/remarks of column 20 of Table C of Chapter 3.2 excepted”.

Renumber the second paragraph of 9.3.2.0.1 (a) and 9.3.3.0.1 (a) as 9.3.2.0.1.3 and 9.3.3.0.1.3, respectively.

Renumber 9.3.2.0.1 (c) et 9.3.3.0.1 (c) as 9.3.2.0.1.2 et 9.3.3.0.1.2, respectively.

Renumber 9.3.2.0.1 (b) and 9.3.3.0.1 (b) as 9.3.2.0.2 and 9.3.3.0.2, respectively.

Renumber 9.3.2.0.2 and 9.3.3.0.2 as 9.3.2.0.3 and 9.3.3.0.3, respectively. Replace “plastic materials or rubber” by “plastic materials, rubber, glass or composite”.

Renumber 9.3.2.0.3 and 9.3.3.0.3 as 9.3.2.0.4 and 9.3.3.0.4, respectively. Replace “plastic materials or rubber” by “plastic materials, rubber, glass or composite”.

9.3.3.12.8 Amend to read as follows:

“9.3.3.12.8 9.3.3.12.6 does not apply to open type N.”

9.3.3.40.1 At the end of the first indent, add the following text:

“When an unmanned pushed barge has only one energy source and the second energy source needs to be supplied by another manned vessel, the approval certificate shall indicate under number 13, Additional obligations, that: “When dangerous goods are carried, the fire extinguishing system shall be permanently supplied with energy by another vessel alongside its own energy source.”.”

9.3.3.60 Amendment does not apply to the English text.

9.3.4.3.1.2.2.1.3 Replace the sentence “This corresponds to the vertical collision location “collision at deck level”.” by the following new text:

“This corresponds to the vertical collision location “collision above deck level”. Point P2 is the point where the upper edge of the vertical part of the push barge or V-bow strikes the upper part of the wale plate. The area bordered by points P1 and P2 corresponds to the vertical collision location “collision at deck level”.”.