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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 thirty-first session (26 January 2024), 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 2025 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 2024, with a reference to 1 January 2025 as the scheduled date of entry into force (see ECE/ADN/69, paragraph 22).

The present document contains the requested consolidated list of amendments adopted by the Administrative Committee at its thirty-first session on the basis of those proposed by the Safety Committee at its forty-third session (see ECE/ADN/69, paragraph 21 and ECE/TRANS/WP.15/AC.2/88, annex I). These amendments have been prepared by the Safety Committee at its fortieth, forty-first and forty-second sessions (see ECE/TRANS/WP.15/AC.2/82, annex III, ECE/TRANS/WP.15/AC.2/84, annex I and ECE/TRANS/WP.15/AC.2/86, annex II).

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Chapter 1.1

- 1.1.3.1 Rename current sub-paragraph (a) as sub-paragraph (a) (i).

After sub-paragraph (a) (i), add the following new sub-paragraph (ii):

“(ii) The carriage of dangerous goods by private individuals in the limits defined in paragraph (a) (i) intended initially for their personal or domestic use or for their leisure or sporting activities and which are carried as waste, including the cases when these dangerous goods are no longer packaged in the original package for retail sale, provided that measures have been taken to prevent any leakage under normal conditions of carriage;”.

Chapter 1.2

- 1.2.1 In the definition for *Autonomous protection systems*, replace “deflagration safe vacuum valves” by “vacuum relief valves, pressure relief valves”

- 1.2.1 In the definition for *Cargo pump-room* replace "pump-room" by "pump room".

- 1.2.1 In the definitions for "*Device for the safe depressurization of cargo tanks*", "*Equipment intended for use in explosion hazardous areas*", "*Flame arrester*", "*Gas detection system*", "*Gas detector*", "*High-velocity vent valve*", "*Oxygen measuring system*", "*Oxygen meter*", "*Sampling opening*", "*Toximeter*" and "*Vacuum valve*", in the footnote relative to the IECEx-System, replace "<http://iecex.com/rules>" by "<https://www.iecex.com/publications/iecex-rules/>".

- 1.2.1 In the definition for *Gas detection system*, amend the first paragraph to read as follows:

“means a steady state monitoring system with direct-measuring sensors capable of detecting in time significant concentrations of flammable gases from the cargo at concentrations below their (LEL) and capable of activating the alarms when a limiting value is exceeded. It must be calibrated for n-Hexane or for a gas prescribed by the system’s manufacturer. The threshold level of the sensors shall be set at not more than 10% of the LEL of n-Hexane or of the calibration gas prescribed by the system’s manufacturer.”

- 1.2.1 In the definition for *Gas detector*, amend the first sentence of the second paragraph to read:

“The maximum detection level of the sensors is 5% of the LEL of methane or the gas prescribed by the equipment manufacturer.”

- 1.2.1 In the definition of *Globally Harmonized System of Classification and Labelling of Chemicals*, replace “ninth” by “tenth” and replace “(ST/SG/AC.10/30/Rev.9)” by “(ST/SG/AC.10/30/Rev.10)”.

- 1.2.1 Amendment to the definition for *Inspection body* does not apply to the English text.

- 1.2.1 In the definition of *Manual of Tests and Criteria*, replace “seventh” by “eighth” and “(ST/SG/AC.10/11/Rev.7 and Amend.1)” by “(ST/SG/AC.10/11/Rev.8)”.

- 1.2.1 Amend the definition of *Recycled plastics material* to read as follows:

“*Recycled plastics material* means material recovered from used industrial packagings or from other plastics material that has been pre-sorted and prepared for processing into new packagings, including IBCs. The specific properties of the recycled material used for production of new packagings, including IBCs, 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, which is of homogeneous composition, is consistent with the material specifications (melt flow rate, density, and tensile properties) of the design type manufactured from such recycled material. This necessarily includes knowledge about the plastics material from which the recycled plastics have been derived, as well as awareness of

the prior use, including prior contents, of the plastics material if that prior use might reduce the capability of new packagings, including IBCs, produced using that material. In addition, the packaging or IBC manufacturer's quality assurance programme under 6.1.1.4 or 6.5.4.1 of ADR shall include performance of the appropriate mechanical design type tests in 6.1.5 or 6.5.6 of ADR on packagings or IBCs, 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;"

In the note under the definition, in the first sentence, replace "to be followed" by "which may be followed".

1.2.1 In the definition for *Safety valve* delete "spring-loaded".

1.2.1 In the definition for *Sampling opening* add the following sentence at the end:

"Other cargo tank openings, except cargo tank hatches, shall be deemed to be a sampling opening if they comply with the aforementioned requirements;"

1.2.1 Delete the definition for *Supply installation (bunkering system)*.

1.2.1 In the definition of *UN Model Regulations*, replace "twenty-second" by "twenty-third" and replace "(ST/SG/AC.10/1/Rev.22)" by "(ST/SG/AC.10/1/Rev.23)".

1.2.1 Amendment to the definition for *Vessel record* not applicable to English.

1.2.1 Add the following new definitions in alphabetical order:

"*Boiler room* means a space housing a fuel-operated installation designed to produce steam or heat a thermal fluid;"

"*Engine room* means a space where combustion engines are installed;"

"*Main engine room* means a space where the propulsion engines are installed;"

1.2.2.1 In the table, in the entry for "Electrical resistance", in the last column, replace " $1 \Omega = 1 \text{ kg} \cdot \text{m}^2 / \text{s}^3 / \text{A}^2$ " by " $1 \Omega = 1 \text{ kg} \cdot \text{m}^2 \cdot \text{s}^{-3} \cdot \text{A}^{-2}$ ".

Chapter 1.4

1.4.2.1.1 In sub-paragraph (c), replace "bulk containers" by "containers for carriage in bulk".

1.4.2.2.1 (i) After "carriage, unloading" insert ", degassing".

1.4.3.8.1 (b) Replace "there is a flame arrester in the piping" by "there are flame arresters in all the piping".

Chapter 1.6

1.6.1.1 Replace "2023" by "2025" and "2022" by "2024".

1.6.1.8 After "may continue to be used", add "until 31 December 2026".

1.6.1.38 Delete and replace "1.6.1.39 to 1.6.1.42 (*Deleted*)" by "1.6.1.38 to 1.6.1.42 (*Deleted*)".

1.6.1.43 Replace "2.2.9.1.7" by "2.2.9.1.7.1".

1.6.1 Add the following transitional measures:

"1.6.1.54 Vats for the carriage of molten aluminium of UN No. 3257 which have been constructed and approved before 1 July 2025 in accordance with the provisions of national law but which do not, however, conform to the construction and approval requirements of AP11 in 7.3.3.2.7 of ADR applicable as from 1 January 2025 may continue to be used with the approval of the competent authorities in the countries of use."

- “1.6.1.55 Substances assigned to UN No. 1835 or 3560, may be carried until 31 December 2026 in accordance with the classification provisions and transport conditions of ADN applicable to UN No. 1835 TETRAMETHYLAMMONIUM HYDROXIDE SOLUTION up to 31 December 2024.”
- “1.6.1.56 Substances assigned to UN No. 3423, may be carried until 31 December 2026 in accordance with the classification provisions and transport conditions of ADN applicable up to 31 December 2024.”
- “1.6.1.57 Packagings manufactured before 1 January 2027 and which do not conform to the requirements of 6.1.3.1 of ADR regarding the affixing of marks on non-removable components applicable as from 1 January 2025 may continue to be used.”
- 1.6.7.2.1.1 In the Table of general transitional provisions: Dry cargo vessels, delete the following transitional provisions:

Paragraphs	Subject
8.6.1.1 8.6.1.2	Changes to certificate of approval
9.1.0.12.1	Ventilation of holds
9.1.0.12.3	Ventilation of service spaces
9.1.0.17.2	Gas-tight openings facing holds
9.1.0.17.3	Entrances and openings in the protected area
9.1.0.32.2	Open ends of the air pipes not less than 0.50 m above the open deck
9.1.0.34.1	Position of exhaust pipes
9.1.0.35	Stripping pumps in the protected area
9.1.0.40.1	Fire extinguishers, two pumps, etc.
9.1.0.41 in conjunction with 7.1.3.41	Fire and naked light
9.2.0.34.1	Position of exhaust pipes
9.2.0.41 in conjunction with 7.1.3.41	Fire and naked light

- 1.6.7.2.2.2 Replace "pump-room" by "pump room" and "pump-rooms" by "pump rooms", wherever it appears.

- 1.6.7.2.2.2 In the Table of general transitional provisions: Tank vessels, in the transitional provision for 7.2.2.19.3, amend the beginning of the second paragraph to read as follows:

“Vessels moving a pushed convoy or a side-by-side formation shall comply with the requirements of the following sections, subsections and paragraphs: 1.16.1.1, 1.16.1.2, 1.16.1.3, 7.2.2.5, 8.1.4, 8.1.5, 8.1.6.1, 8.1.6.3, 8.1.7, 9.3.3.0.1.1 for the vessel’s hull, 9.3.3.0.4 last line from table 4 for the vessel’s boat, 9.3.3.0.6, 9.3.3.10.1...”. Remainder unchanged.

- 1.6.7.2.2.2 In the Table of general transitional provisions: Tank vessels, delete the following transitional provisions:

Paragraphs	Subject
7.2.4.22.3	Sampling from other openings
8.6.1.3 8.6.1.4	Changes to certificate of approval
9.3.3.11.4	Shut-off devices of the loading and unloading piping in the cargo tank from which they come

Paragraphs	Subject
9.3.1.11.8 9.3.3.11.9	Dimensions of openings for access to spaces within the cargo area
9.3.2.12.1 9.3.3.12.1	Ventilation openings in hold spaces
9.3.1.12.2 9.3.3.12.2	Ventilation systems in double-hull spaces and double bottoms
9.3.1.12.3 9.3.2.12.3 9.3.3.12.3	Height above the deck of the air intake for service spaces located below deck
9.3.1.12.6 9.3.2.12.6 9.3.3.12.6	Permanently installed devices according to 9.3.x.40.2.2 (c)
9.3.3.17.5 (b), (c)	Approval of shaft passages and displaying of instructions
9.3.1.17.6 9.3.3.17.6	Pump-room below deck
9.3.2.20.2 9.3.3.20.2	Intake valve
9.3.3.20.2	Filling of cofferdams with pump
9.3.2.20.2 9.3.3.20.2	Filling of cofferdams within 30 minutes
9.3.1.21.3 9.3.2.21.3 9.3.3.21.3	Marking on each level gauge of all permissible maximum filling levels of cargo tanks
9.3.3.21.1 (b)	Liquid level gauge
9.3.3.21.1 (g)	Sampling opening
9.3.1.21.4 9.3.2.21.4 9.3.3.21.4	Level alarm device independent from the liquid-level gauge
9.3.1.21.5 (a) 9.3.2.21.5 (a) 9.3.3.21.5 (a)	Socket close to the shore connections of the loading and unloading piping and switching off of vessel's pump
9.3.1.21.7 9.3.2.21.7 9.3.3.21.7	Vacuum or overpressure alarms in cargo tanks for the carriage of substances <u>without</u> remark 5 in column (20) of Table C of Chapter 3.2
9.3.1.21.7 9.3.2.21.7 9.3.3.21.7	Temperature alarms in cargo tanks
9.3.1.22.4	Prevention of spark-formation by closure devices
9.3.1.22.3 9.3.2.22.4 (a) 9.3.3.22.4 (a)	Position of exhaust outlets of pressure relief valves/high velocity vent valves above the deck
9.3.2.22.4 (a) 9.3.3.22.4 (e)	Set pressure of relief valve/high-velocity vent valve
9.3.2.25.1 9.3.3.25.1	Shut-down of cargo pumps
9.3.2.25.8 (a)	Ballasting suction pipes located within the cargo area but outside the cargo tanks
9.3.2.25.9 9.3.3.25.9	Loading and unloading flow

Paragraphs	Subject
9.3.3.25.12	9.3.3.25.1 (a) and (c), 9.3.3.25.2 (e), 9.3.3.25.3 and 9.3.3.25.4 (a) are not applicable for Type N open with the exception of Type N open carrying corrosive substances (see Chapter 3.2, Table C, column (5), hazard 8)
9.3.1.31.5 9.3.2.31.5 9.3.3.31.5	Temperature in the engine room
9.3.3.34.1	Exhaust pipes
9.3.3.35.3	Suction pipes for ballasting located within the cargo area but outside the cargo tanks
9.3.1.35.4	Stripping installation of the pump-room outside the pump-room
9.3.1.40.1 9.3.2.40.1 9.3.3.40.1	Fire extinguishing systems, two pumps, etc.
9.3.1.51 (b) 9.3.2.51 (b) 9.3.3.51 (b)	Surface temperature of outer parts of engines and of their air inlets and exhaust ducts
9.3.1.60 9.3.2.60 9.3.3.60	A spring-loaded non-return valve shall be fitted. The water shall meet the quality of drinking water on board.

1.6.7.2.2.2 Table of general transitional provisions: Tank vessels, amend the transitional provisions for 8.1.2.3 (r), (s), (t), (v) and 8.1.2.3 (u) to read as follows:

8.1.2.3 (r), (s), (u), (v)	Documents which must be carried on board	<p>N.R.M. from 1 January 2019</p> <p>Renewal of the certificate of approval after 31 December 2020</p> <p>Until that date, in addition to the documents required in accordance with 1.1.4.6, the following documents are required:</p> <p>(a) A list of the machinery, appliances or other electrical equipment located in the cargo area, including the following particulars: Machinery or appliance, location, type of protection, type of explosion protection, testing body and approval number;</p> <p>(b) A list of or general plan indicating the electrical equipment located outside the cargo area which may be operated during loading, unloading or degassing.</p> <p>The documents listed above shall bear the stamp of the competent authority issuing the certificate of approval.</p>
8.1.2.3 (t)	Documents which must be carried on board Plan with classification of zones	<p>N.R.M. from 1 January 2019</p> <p>Renewal of the certificate of approval after 31 December 2034</p> <p>Until that date, in addition to the documents required in accordance with 1.1.4.6 a plan indicating the boundaries of the cargo area and the location of the electrical equipment installed in that area is required.</p> <p>This plan shall bear the stamp of the competent authority issuing the certificate of approval.</p>

1.6.7.2.2.2 Table of general transitional provisions: Tank vessels, in the transitional provision for 8.1.6.2, second column, replace "EN ISO 13765:2018" by "EN 13765:2018".

1.6.7.2.2.2 Table of general transitional provisions: Tank vessels, amend transitional provision for 9.3.x.40.2 to read as follows:

Paragraphs	Subject	Time limit and comments
9.3.1.40.2 9.3.2.40.2 9.3.3.40.2	Fixed fire extinguishing system in engine room, cargo pump rooms and all spaces containing essential equipment for the refrigerant equipment	N.R.M. Renewal of the certificate of approval after 31 December 2034

1.6.7.2.2.2 In the Table of general transitional provisions: Tank vessels, add the following new transitional provisions to read:

3.2.3.3 and consequential change to Table C	Partly closed sampling device	N.R.M. from 1 January 2025 Renewal of the certificate of approval after 31 December 2024
8.1.6.2	ISO 20519:2021	N.R.M. from 1 January 2025 Renewal of the certificate of approval after 31 December 2040

1.6.7.2.2.5 Delete and insert “(Deleted)”.

Chapter 1.8

1.8.3.2 Renumber sub-paragraphs (a) and (b) as (b) and (c). In the renumbered (c), before “carriage”, insert “consignment,” (twice).

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

“(a) (Reserved);”

1.8.3.11 Amend as follows:

In sub-paragraph (b), second indent, replace “, provisions for tanks and tank-containers” by “and provisions for tanks”.

In sub-paragraph (b), fifth indent, replace “carriage in fixed or demountable tanks” by “carriage in tanks”.

Chapter 1.16

1.16.1.2.1 At the end of the first sentence, delete “, as appropriate”.

Chapter 2.1

2.1.2.8 Amend the introductory paragraph to read:

“A consignor who has identified, on the basis of test data, that a substance listed by name in column 2 of Table A or in column (2) of Table C of Chapter 3.2 meets classification criteria for a class or danger that is not identified in column (3a) or (5) of Table A or in column (3a) or (5) of Table C of Chapter 3.2, may, with the approval of the competent authority, consign the substance:”

2.1.2.8 Amend *Note 2* to read as follows:

“**NOTE 2:** When a competent authority grants such approvals, it should inform the United Nations Sub-Committee of Experts on the Transport of Dangerous Goods in respect of Table A and the ADN Safety Committee in respect of Table C accordingly and submit a relevant proposal of amendment to the Dangerous Goods List of the UN Model Regulations or to Table C of ADN. Should the proposed amendment be rejected, the competent authority should withdraw its approval.”

2.1.5.2 Amend to read as follows:

“2.1.5.2 Such articles may in addition contain cells or batteries. Lithium metal, lithium ion and sodium ion cells and batteries that are integral to the article shall be of a type proven to meet the testing requirements of the *Manual of Tests and Criteria*, Part III, sub-section 38.3. For articles containing pre-production prototype lithium metal, lithium ion or sodium ion cells or batteries carried for testing, or for articles containing lithium metal, lithium ion or sodium ion cells or batteries manufactured in production runs of not more than 100 cells or batteries, the requirements of special provision 310 of Chapter 3.3 shall apply.”

Chapter 2.2

2.2.1.1.1 Amend as follows:

In sub-paragraph (a), for “Pyrotechnic substances”, replace “substances or mixtures of substances” by “explosive substances”.

The amendment to sub-paragraph (c) does not apply to the English version.

At the end, before the definition of “*Phlegmatized*”, replace “definition applies” by “definitions apply”. At the end of the last paragraph, replace the full stop by a semicolon and add a new paragraph to read as follows:

“*Explosive or pyrotechnic effect* means, in the context of (c), an effect produced by self-sustaining exothermic chemical reactions including shock, blast, fragmentation, projection, heat, light, sound, gas and smoke.”

2.2.1.4 Add the following new entry in alphabetical order:

“FIRE SUPPRESSANT DISPERSING DEVICES: UN No. 0514

Articles which contain a pyrotechnic substance, which are intended to disperse a fire extinguishing agent (or aerosol) when activated, and which do not contain any other dangerous goods.”

2.2.2.3 Under classification code 2F, for UN No. 1010, replace “40 %” by “20 %”.

2.2.3.1.1 At the end of the third paragraph, replace “3357 and 3379” by “3357, 3379 and 3555”.

2.2.3.3 For “F1”, before “3065 ALCOHOLIC BEVERAGES”, add an entry for “3269 POLYESTER RESIN KIT, liquid base material”. For “F3”, delete the entry for “3269 POLYESTER RESIN KIT, liquid base material”.

2.2.41.1.2 Amend the name of subdivision “F” to read “Flammable solids, without subsidiary hazard, and articles containing such substances”.

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

“*Metal powders* are powders of metals or metal alloys.”

2.2.41.1.5 In sub-paragraph (a), replace “metal powders or powders of metal alloys” by “metal powders”.

2.2.41.1.5 In sub-paragraph (b), replace “Metal powders or powders of metal alloys” by “Metal powders”.

2.2.41.1.8 In sub-paragraph (b), replace “Metal powders or powders of metal alloys” by “Metal powders”.

2.2.41.3 For “F1”, before the first entry, add an entry for “3527 POLYESTER RESIN KIT, solid base material”. For “F4”, delete the entry for “3527 POLYESTER RESIN KIT, solid base material”.

2.2.42.1.2 Amend the name of subdivision “S” to read “Substances liable to spontaneous combustion, without subsidiary hazard, and articles containing such substances”.

Amend subdivision “SW” to read as follows:

“SW Substances liable to spontaneous combustion, which, in contact with water, emit flammable gases, and articles containing such substances:

SW1 Substances;

SW2 Articles;”

2.2.42.3 At the entry of the tree, replace “Substances liable to spontaneous combustion” by “Substances liable to spontaneous combustion and articles containing such substances”.

Amend the branch for “Water-reactive SW” to read as follows:

Water-reactive SW	substances SW1	3393 ORGANOMETALLIC SUBSTANCE, SOLID, PYROPHORIC, WATER-REACTIVE 3394 ORGANOMETALLIC SUBSTANCE, LIQUID, PYROPHORIC, WATER-REACTIVE
	articles SW2	(No collective entry with this classification code available; if need be, classification under a collective entry with a classification code to be determined according to the table of precedence of hazard in 2.1.3.10.)

2.2.43.3 At the entry of the tree, replace “Substances which, in contact with water, emit flammable gases” by “Substances which, in contact with water, emit flammable gases, and articles containing such substances”.

For “W3”, for UN No. 3292, replace “SODIUM” by “METALLIC SODIUM OR SODIUM ALLOY” (twice).

2.2.52.4 In the table, for “ISOPROPYL sec-BUTYL PEROXYDICARBONATE + DI-sec-BUTYL PEROXYDICARBONATE + DI-ISOPROPYL PEROXYDICARBONATE”, in column “Concentration”, replace “ $\leq 32 + \leq 15 - 18 \leq 12 - 15$ ” by “ $\leq 32 + \leq 15 - 18 + \leq 12 - 15$ ”.

In the table, for “DI-2,4-DICHLOROBENZOYL PEROXIDE”, concentration “ ≤ 52 as a paste with silicon oil”, in column “Packing Method”, replace “OP7” by “OP5” and in column “Number (Generic entry)”, replace “3106” by “3104”.

In the table, add the following new entries:

DIBENZOYL PEROXIDE	≤ 42	≥ 38			≥ 13	OP8			3109	
2,5-DIMETHYL-2,5-DI-(tert-BUTYLPEROXY) HEXANE	≤ 22			≥ 78					Exempt	29)
METHYL ETHYL KETONE PEROXIDE(S)	see remark 33)	≥ 41			≥ 9	OP8			3105	33) 34)

After the table, add the following new remarks:

“33) Available oxygen ≤ 10 %.

34) Sum of diluent type A and water ≥ 55 %, and in addition methyl ethyl ketone.”

2.2.61.1.2 In the first sentence, after “Substances”, add “and articles”.

Amend the name of subdivision “T” to read “Toxic substances without subsidiary hazard and articles containing such substances”.

Amend the name of subdivision “TF” to read “Toxic substances, flammable, and articles containing such substances”. Under “TF”, add the following new subdivision: “TF4 Articles;”.

Amend the name of subdivision “TC” to read “Toxic substances, corrosive, and articles containing such substances”. Under “TC”, add the following new subdivision: “TC5 Articles;”.

2.2.61.3 Amend the titles before the trees to read:

“Toxic substances without subsidiary hazard(s), and articles containing such substances”

“Toxic substances with subsidiary hazard(s), and articles containing such substances”

For “TF3”, delete the entry for “1700 TEAR GAS CANDLES”.

For “TF”, after the branch for “TF3”, add the following new branch:

articles	TF4	1700 TEAR GAS CANDLES
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For “TC”, after the branch for “TC4”, add the following new branch:

articles	TC5	(No collective entry with this classification code available; if need be, classification under a collective entry with a classification code to be determined according to the table of precedence of hazard in 2.1.3.10.)
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2.2.62.1.4.1 In the table, for UN 2814, in the entry for “Monkeypox virus”, at the end, add “(cultures only)”.

2.2.7.1.3 In the definition for “*Specific activity of a radionuclide*”, at the end, add the following new note:

“NOTE: *The terms “activity concentration” and “specific activity” are synonymous for the purpose of ADN.”*

2.2.9.1.2 For code M4, after “Lithium batteries” add “and sodium ion batteries”.

2.2.9.1.3 Place this paragraph number before the heading “*Definitions and classification*”.

2.2.9.1.4 Place this paragraph number before the heading “*Substances which, on inhalation as fine dust, may endanger health*”.

2.2.9.1.5 Place this paragraph number before the heading “*Substances and articles which, in the event of fire, may form dioxins*”.

2.2.9.1.6 Place this paragraph number before the heading “*Substances evolving flammable vapour*”.

2.2.9.1.7 Before 2.2.9.1.7, replace “*Lithium batteries*” by the following heading:

“2.2.9.1.7 *Lithium batteries and sodium ion batteries*”

Renumber current 2.2.9.1.7 as 2.2.9.1.7.1 with the following heading:

“2.2.9.1.7.1 *Lithium batteries*”

2.2.9.1.7.1 (as renumbered) In sub-paragraph (g), at the end, add a new note to read as follows:

“NOTE: *The term “make available” means that manufacturers and subsequent distributors ensure that the test summary is accessible so that the consignor or other persons in the supply chain can confirm compliance.”*

Add a new 2.2.9.1.7.2 to read as follows:

“2.2.9.1.7.2 *Sodium ion batteries*

Cells and batteries, cells and batteries contained in equipment, or cells and batteries packed with equipment containing sodium ion, which are a rechargeable electrochemical system where the positive and negative electrode are both intercalation or insertion compounds, constructed with no metallic sodium (or sodium alloy) in either electrode and with an organic

non aqueous compound as electrolyte, shall be assigned to UN Nos. 3551 or 3552 as appropriate.

NOTE: *Intercalated sodium exists in an ionic or quasi-atomic form in the lattice of the electrode material.*

They may be carried under these entries if they meet the following provisions:

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

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

- (b) Each cell and battery incorporates a safety venting device or is designed to preclude a violent rupture under conditions normally encountered during carriage;
- (c) Each cell and battery is equipped with an effective means of preventing external short circuits;
- (d) Each battery containing cells or a series of cells connected in parallel is equipped with effective means as necessary to prevent dangerous reverse current flow (e.g., diodes, fuses, etc.);
- (e) Cells and batteries shall be manufactured under a quality management programme as prescribed under 2.2.9.1.7.1 (e) (i) to (ix);
- (f) Manufacturers and subsequent distributors of cells or batteries shall make available the test summary as specified in the *Manual of Tests and Criteria*, Part III, sub-section 38.3, paragraph 38.3.5.

NOTE: *The term "make available" means that manufacturers and subsequent distributors ensure that the test summary is accessible so that the consignor or other persons in the supply chain can confirm compliance.*

Sodium ion batteries are not subject to the provisions of ADN if they meet the requirements of special provisions 188 or 400 of Chapter 3.3."

2.2.9.1.8 Place this paragraph number before the heading "*Life-saving appliances*".

2.2.9.1.9 Place this paragraph number before the heading "*Environmentally hazardous substances*".

2.2.9.1.10 Replace the current heading before 2.2.9.1.10 and the heading numbered 2.2.9.1.10 by:

"2.2.9.1.10 *Pollutants to the aquatic environment: environmentally hazardous substances (aquatic environment)*"

2.2.9.1.11 Place this paragraph number before the heading "*Genetically modified microorganisms or organisms*".

Add the following new note 3 and renumber current notes 3 and 4 as notes 4 and 5:

NOTE 3: *Pharmaceutical products (such as vaccines) that are packed in a form ready to be administered, including those in clinical trials, and that contain GMMOs or GMOs are not subject to ADN."*

2.2.9.1.13 Place this paragraph number before the heading "*Elevated temperature substances*".

2.2.9.1.14 Place this paragraph number before the heading "*Other substances and articles presenting a danger during carriage but not meeting the definitions of another class*".

In the introductory sentence, after "miscellaneous substances" add "and articles".

- 2.2.9.1.15 Place this paragraph number before the heading “*Assignment of the packing groups*”.
- 2.2.9.2 In the first indent, after “Lithium batteries”, add “and sodium ion batteries”.
- 2.2.9.3 In the list of entries, for code “M4”, amend the branch header “Lithium batteries” to read “Lithium batteries and sodium ion batteries” and add the following new entries:
- “3551 SODIUM ION BATTERIES with organic electrolyte
- 3552 SODIUM ION BATTERIES CONTAINED IN EQUIPMENT or SODIUM ION BATTERIES PACKED WITH EQUIPMENT, with organic electrolyte”.
- In the list of entries, for code “M5”, add the following new entry:
- “3559 FIRE SUPPRESSANT DISPERSING DEVICES”
- In the list of entries, for code “M11”, add the following new entries before the entry for UN No. 3548:
- “3556 VEHICLE, LITHIUM ION BATTERY POWERED
- 3557 VEHICLE, LITHIUM METAL BATTERY POWERED
- 3558 VEHICLE, SODIUM ION BATTERY POWERED”.

Chapter 3.1

- 3.1.2.2 In the first sentence, delete “and” or”.

Chapter 3.2

- 3.2 Replace "pump-room" by "pump room" and "pump-rooms" by "pump rooms", wherever it appears.
- 3.2.1 In the explanatory note for column (4), in the last sentence, replace “Certain articles and substances” by “Articles and certain substances”. Add the following new sentence at the end: “Packing groups may also be assigned via special provisions in Chapter 3.3 as indicated in column (6).”.

Chapter 3.2, Table A

For UN Nos. 1006, 1013, 1046 and 1066, in column (6), insert “406” and delete “653”.

For UN No. 1010, in column (2), replace “40 %” by “20 %” and in column (6), add “402”.

For UN Nos. 1057, 3150, 3358, 3478, 3479 and 3537, in column (12), replace "1" by "0".

For UN Nos. 1204, 1310, 1320, 1321, 1322, 1336, 1337, 1344, 1347, 1348, 1349, 1354, 1355, 1356, 1357, 1517, 1571, 2059 (all entries), 2555, 2556, 2852, 2907, 3064, 3317, 3319, 3343, 3344, 3357, 3364, 3365, 3366, 3367, 3368, 3369, 3370 and 3376, in column (6), add “28”.

For UN No. 1700, in column (3b), replace “TF3” by “TF4”.

For UN Nos. 1700, 2016 and 2017, in column (12), replace "2" by "0".

For UN No. 1774, in column (3b), replace “C11” by “C9”.

For UN No. 1835, packing group II:

In column (2), replace "SOLUTION" by "AQUEOUS SOLUTION with more than 2.5 % but less than 25 % tetramethylammonium hydroxide";

In column (3b), replace "C7" by "CT1";

In column (5), add "+6.1";

In column (6) add "279 408";

For UN No. 1835, packing group III, in column (2), replace "SOLUTION" by "AQUEOUS SOLUTION with not more than 2.5 % tetramethylammonium hydroxide" and in column (6) add "408".

For UN No. 1977, in column (8) insert "T".

For UN No. 2016, in column (3b), replace "T2" by "T10".

For UN No. 2017, in column (3b), replace "TC2" by "TC5".

For UN No. 2028, in column (4), delete "II".

For UN No. 2073, in column (6), delete "532".

For UN Nos. 2210, 2870 (first entry), 3393 and 3394, in column (3b), replace "SW" by "SW1".

For UN Nos. 2212 and 2590, in column (6), add "678".

For UN No. 2426, in column (6), delete "644".

For UN No. 2672, in column (6), delete "543".

For UN No. 2795, in column (6), add "401".

For UN No. 2803, in column (6), add "365".

For UN No. 2870 (second entry), in column (3b), replace "SW" by "SW2" and, in column (4), delete "I".

For UN No. 3082, in column (6), insert: "650".

For UN Nos. 3090, 3091, 3480, 3481, in column (6), add "677".

For UN No. 3165, in column (4), delete "I".

For UN No. 3269 (two entries), in column (3b), replace "F3" by "F1".

For UN No. 3270, in column (6), add "403".

For UN No. 3292, in column (2), replace "SODIUM" by "METALLIC SODIUM OR SODIUM ALLOY" (twice) and in column (6), add "401".

For UN Nos. 3359 and 3363, in column (12), insert "0".

For UN No. 3473, in column (12), replace "1" by "0".

For UN No. 3423:

In column (3a), replace "8" by "6.1";

In column (3b), replace "C8" by "TC2";

In column (4), replace "II" by "I";

In column (5), replace "8" by "6.1 + 8";

In column (6), add “279”;

In column (7a), replace “1 kg” by “0”;

In column (7b), replace “E2” by “E5”;

For UN No. 3527 (both entries), in column (3b), replace “F4” by “F1”.

For UN Nos. 3537, 3538, 3540, 3541, 3546, 3547 and 3548, in column (6), add “310”.

For UN No. 3539, in column (12), replace "2" by "0".

For UN No. 3540, in column (12), replace "1" by "0".

Chapter 3.2

3.2.3.1, Explanations concerning Table C, column (14) Amendment not applicable to English.

3.2.3.1, Explanations concerning Table C, Column (16) Delete: “(flame arresters, vacuum relief valves, pressure relief valves/high velocity vent valves and devices for safe pressure relief of cargo tanks with integrated flame arrester plate stack)”.

3.2.3.1, Explanations concerning Table C, Column (20) Amend remark 39 as follows:

In subparagraph (a), replace "carbon dioxide" by "refrigerated liquefied gases".

Amendment to subparagraph (c) not applicable to English.

In subparagraph (d), delete at the end "or when the CO₂ level is too high".

3.2.3.1, Explanations concerning Table C, Column (20) At the end of remark 42 add three new sentences to read as follows:

"In the case of UN No. 2187 'CARBON DIOXIDE, REFRIGERATED LIQUID', this provision applies when the possibility of solidification shall be avoided. To ensure the product remains in the liquid phase, the temperature shall be kept at 15 °C above the solidification temperature at the required pressure during the transport.

The transport document shall contain a notice on the avoidance of solidification of the product."

3.2.3.1, Explanations concerning Table C, Column (20) Add the following new remarks:

"46. Materials of construction and ancillary equipment such as insulation shall be resistant to the effects of high oxygen concentrations caused by condensation and enrichment at the low temperatures attained in parts of the cargo system. Due consideration shall be given to ventilation in areas where condensation might occur, to avoid the stratification of oxygen-enriched atmosphere."

"47. The flash-point of the substances carried may vary between 60 °C and 100 °C. This information shall be mentioned in the transport document."

Chapter 3.2, Table C

Heading of column 14 Amendment not applicable to English.

For UN Nos. 1108, 1157, 2323, 2370 and 3079, replace "II B ⁴⁾" by "II A ⁹⁾" in column (16).

For the following UN Nos, in column (13), replace “3” by “2”:

UN No.	Name and description	Packing group
1171	ETHYLENE GLYCOL MONOETHYL ETHER	III
1172	ETHYLENE GLYCOL MONOETHYL ETHER ACETATE	III
1188	ETHYLENE GLYCOL MONOMETHYL ETHER	III
1203	MOTOR SPIRIT or GASOLINE or PETROL	II

UN No.	Name and description	Packing group
1268	PETROLEUM DISTILLATES, N.O.S. or PETROLEUM PRODUCTS, N.O.S.(NAPHTA) 110 kPa < vp50 ≤ 175 kPa	II
1268	PETROLEUM DISTILLATES, N.O.S. or PETROLEUM PRODUCTS, N.O.S. (NAPHTA) 110 kPa < vp50 ≤ 150 kPa	II
1268	PETROLEUM DISTILLATES, N.O.S. or PETROLEUM PRODUCTS, N.O.S. (NAPHTA) vp50 ≤ 110 kPa	II
1268	PETROLEUM DISTILLATES, N.O.S. or PETROLEUM PRODUCTS, N.O.S (BENZENE HEART CUT) vp50 ≤ 110 kPa	II
1288	SHALE OIL	II
1288	SHALE OIL	III
2265	N,N-DIMETHYLFORMAMIDE	III
3082	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (BILGE WATER, CONTAINS SLUDGE)	III
3082	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (OIL SLUDGE)	III
3082	ENVIRONMENTALLY HAZARDOUS SUBSTANCE; LIQUID, N.O.S. (HEAVY HEATING OIL)	III
3295	HYDROCARBONS, LIQUID, N.O.S. (1-OCTEN)	II
3295	HYDROCARBONS, LIQUID, N.O.S. (POLYCYCLIC AROMATIC HYDROCARBONS MIXTURE)	III
3475	ETHANOL AND GASOLINE MIXTURE or ETHANOL AND MOTOR SPIRIT MIXTURE or ETHANOL AND PETROL MIXTURE, with more than 10% but not more than 90% ethanol	II
3475	ETHANOL AND GASOLINE MIXTURE or ETHANOL AND MOTOR SPIRIT MIXTURE or ETHANOL AND PETROL MIXTURE, with more than 90% ethanol	II

For UN No. 1764 "DICHLOROACETIC ACID" and for UN No. 2430 "ALKYLPHENOLS, SOLID, N.O.S. (NONYLPHENOL, MIXED ISOMERS, MOLTEN)" (both entries), add "; 34" in column (20).

For UN No. 2187, add remark 42 in column 20.

For UN No. 2527 "ISOBUTYL ACRYLATE, STABILIZED", in column (16), replace "II B⁹⁾" by "II B3¹⁴⁾".

For UN No. 2924, FLAMMABLE LIQUID, CORROSIVE, N.O.S., packing group III, first entry (without (II B3)), in column (20) delete "44".

For UN No. 3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE; LIQUID, N.O.S. (HEAVY HEATING OIL), in column (20) add "47".

For UN No. 3295, HYDROCARBONS, LIQUID, N.O.S. CONTAINING ISOPRENE AND PENTADIENE, STABILIZED, second entry, amend column (18) to read: "PP, EP, EX, TOX, A".

For substance identification No. 9003 "SUBSTANCES WITH A FLASH-POINT ABOVE 60 °C BUT NOT MORE THAN 100 °C which are not affected to another class", in column (5) delete danger "N1".

Insert the following new entries as follows:

(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
1300	TURPENTINE SUBSTITUTE	3	F1	III	3+N2+F	N	3	3			97	0.78	3	yes	T3	IIB ⁴⁾ (II B3)		PP,E X,A	0	44
1977	NITROGEN, REFRIGERATED, LIQUID	2	3A		2.2	G	1	1	1		95		1	no			No	PP	0	31, 39, 42, 46

Chapter 3.2

3.2.3.3, Flowchart for classification of liquids of Classes 3, 6.1, 8 and 9 for carriage in tanks in inland navigation In the first box, after the second bullet point, insert the following bullet point:

- "● Auto-ignition temperature ≤ 200 °C,".

3.2.3.3 and 3.2.4.3 Amend column (13) to read as follows:

“Column (13): Determination of type of sampling device

1 = closed:

- Substances to be transported in pressure cargo tanks and in membrane tanks
- Substances with danger 6.1 in column (5) and assigned to packing group I
- Stabilized substances to be transported under inert gas

2 = partly closed:

- All other substances for which type C or substances with CMR properties for which type N with closed cargo tanks is required
- Substances with danger CMR in column (5) and for which no closed sampling is required

3 = open: – All other substances”.

3.2.3.3 column (14) and 3.2.4.3 F, column (14) Amendment not applicable to English.

3.2.3.3 and 3.2.4.3, Column (20) Amend remark 39 to read as follows:

"Remark 39: Reference shall be made in column (20) to remark 39 for the carriage of UN No. 1977 NITROGEN, REFRIGERATED, LIQUID and UN No. 2187 CARBON DIOXIDE, REFRIGERATED LIQUID of Class 2."

3.2.3.3 and 3.2.4.3, Column (20): Amend remark 42 to read as follows:

"Remark 42: Reference shall be made in column (20) to remark 42 for UN No. 1038 ETHYLENE, REFRIGERATED LIQUID, for UN No. 1972 METHANE REFRIGERATED LIQUID or NATURAL GAS, REFRIGERATED LIQUID, with high methane content, for UN No. 1977 NITROGEN, REFRIGERATED, LIQUID and for UN No. 2187, CARBON DIOXIDE, REFRIGERATED LIQUID."."

3.2.3.3 and 3.2.4.3 Add the following new remarks for column (20):

"Remark 44: *Reserved*".

"Remark 45: *Reserved*".

"Remark 46: Reference shall be made in column (20) to remark 46 for the carriage of UN No. 1977 NITROGEN, REFRIGERATED, LIQUID of Class 2."

"Remark 47: Reference shall be made in column (20) to remark 47 for UN No. 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE; LIQUID, N.O.S. (HEAVY HEATING OIL)."

Chapter 3.3

SP 188 In (a), after “lithium ion”, insert “or sodium ion”.

In the note under (a), replace “2.2.9.1.7” by “2.2.9.1.7.1”.

In (b), first sentence, after “lithium ion”, insert “or sodium ion”. In the second sentence, after “Lithium ion”, insert “and sodium ion” and replace “except those” by “except lithium ion batteries”.

In the note under (b), replace “2.2.9.1.7” by “2.2.9.1.7.1”.

In (c), after “Each”, insert “lithium”, replace “2.2.9.1.7” by “2.2.9.1.7.1” and after “(g)”, insert “or for sodium ion cells or batteries, the provisions of 2.2.9.1.7.2 (a), (e) and (f) shall apply”.

In (f):

– In the first sentence, replace “lithium battery mark” by “battery mark”;

– In the last paragraph, first sentence, replace “lithium battery mark” by “battery mark”;

– In the Note, replace “(lithium battery mark)” by “(battery mark)”

In the antepenultimate paragraph, second sentence, delete “lithium”.

SP 230 Replace “2.2.9.1.7” by “2.2.9.1.7.1”. At the end, add the following new sentence “Sodium ion cells and batteries may be carried under this entry if they meet the provisions of 2.2.9.1.7.2.”.

SP 252 Amend to read as follows:

“252 (1) Ammonium nitrate hot concentrated solutions can be carried under this entry provided:

(a) The solution contains not more than 93 % ammonium nitrate;

(b) The solution contains at least 7 % water;

(c) The solution contains not more than 0.2 % combustible material;

(d) The solution contains no chlorine compounds in quantities such that the chloride ion level exceeds 0.02 %;

(e) The pH of an aqueous solution of 10 % of the substance is between 5 and 7, measured at 25 °C; and

(f) The maximum allowable carriage temperature of the solution is 140 °C.

(2) Additionally, ammonium nitrate hot concentrate solutions are not subject to ADN provided:

(a) The solution contains not more than 80 % ammonium nitrate;

(b) The solution contains not more than 0.2 % combustible material;

(c) The ammonium nitrate remains in solution under all conditions of carriage; and

(d) The solution does not meet the criteria of any other class.”

SP 280 In the last sentence, at the end, add “or to fire suppressant dispersing devices described in special provision 407 (UN Nos. 0514 and 3559)”.

SP 296 In (d), after “lithium batteries”, insert “or sodium ion batteries”.

SP 310 Amend the first paragraph to read as follows:

“Cells or batteries from production runs of not more than 100 cells or batteries, or pre-production prototypes of cells or batteries when these prototypes are carried for testing, shall meet the provisions of 2.2.9.1.7.1 with the exception of (a), (e) (vii), (f) (iii) if applicable, (f) (iv) if applicable and (g).

NOTE: *“Carried for testing” includes, but is not limited to, testing described in the “Manual of Tests and Criteria”, Part III, sub-section 38.3, integration testing and product performance testing.*

These cells and batteries shall be packaged in accordance with packing instruction P910 of 4.1.4.1 of ADR or LP905 of 4.1.4.3 of ADR, as applicable.

Articles (UN Nos. 3537, 3538, 3540, 3541, 3546, 3547 or 3548) may contain such cells or batteries provided that the applicable parts of packing instruction P006 of 4.1.4.1 of ADR or LP03 of 4.1.4.3 of ADR, as applicable, are met.”

- In the current second paragraph, replace “Carriage” by “Transport”.
- SP 328 In the last paragraph, replace “lithium metal or lithium ion” by “lithium metal, lithium ion or sodium ion”, replace the “or” before “UN 3481” by a comma and, at the end of the sentence, add “or UN 3552 SODIUM ION BATTERIES CONTAINED IN EQUIPMENT”.
- SP 348 Replace “Batteries” by “Lithium batteries”. After “2011” insert “and sodium ion batteries manufactured after 31 December 2025”.
- SP 360 In the first sentence, replace “lithium metal batteries or lithium ion batteries” by “lithium metal, lithium ion or sodium ion batteries” and replace “entry UN 3171 BATTERY-POWERED VEHICLE” by “entries UN 3556 VEHICLE, LITHIUM ION BATTERY POWERED or UN 3557 VEHICLE, LITHIUM METAL BATTERY POWERED or UN 3558 VEHICLE, SODIUM ION BATTERY POWERED, as applicable”.
- SP 363 In (f), amend the second sentence to read “However, lithium batteries shall meet the provisions of 2.2.9.1.7.1, except that (a), (e) (vii), (f) (iii) if applicable, (f) (iv) if applicable and (g) do not apply when batteries of a production run of not more than 100 cells or batteries, or pre-production prototypes of cells or batteries when these prototypes are carried for testing, are installed in machinery or engines.”. Add the following new third sentence: “Furthermore, sodium ion batteries shall meet the provisions of 2.2.9.1.7.2, except that (a), (e) and (f) do not apply when batteries of a production run of not more than 100 cells or batteries, or pre-production prototypes of cells or batteries when these prototypes are carried for testing, are installed in machinery or engines.”.
- SP 365 After “mercury”, add “or gallium”. Replace “UN No. 3506” by “UN Nos. 3506 or 3554, as appropriate”.
- SP 366 After “mercury”, add “or gallium”.
- SP 371 In (1), renumber subparagraphs (i) to (vii) as (a) to (g) respectively. In (1) (f), first sentence, replace “16.6.1.3.1 to 16.6.1.3.6” by “16.6.1.3.1 to 16.6.1.3.4, 16.6.1.3.6”.
- SP 376 Amend as follows:
- In the first paragraph, replace “Lithium ion cells or batteries and lithium metal cells or batteries” by “Lithium metal, lithium ion or sodium ion cells or batteries”.
- In the paragraph after the note, replace “UN No. 3090, UN No. 3091, UN No. 3480 and UN No. 3481” by “UN Nos. 3090, 3091, 3480, 3481, 3551 and 3552, as appropriate”.
- In the third paragraph after the note, delete the last sentence, which reads “In both cases the cells and batteries are assigned to transport category 0.”.
- In the fourth paragraph after the note, replace “or” by a comma and after “LITHIUM METAL BATTERIES””, add “or “DAMAGED/DEFECTIVE SODIUM ION BATTERIES””.
- SP 377 Amend as follows:
- In the first paragraph, replace “Lithium ion and lithium metal” by “Lithium metal, lithium ion and sodium ion” and after “non-lithium”, insert “or non-sodium ion”.
- In the second paragraph, replace “2.2.9.1.7 (a) to (g)” by “2.2.9.1.7.1 (a) to (g) or 2.2.9.1.7.2 (a) to (f) as appropriate”.
- In the third paragraph, replace “or” by “, “SODIUM ION BATTERIES FOR DISPOSAL”,”. At the end of the sentence, add “or “SODIUM ION BATTERIES FOR RECYCLING”, as appropriate”.

SP 379 In (d) (i), replace “ISO 11114-1:2012 + A1:2017” by “ISO 11114-1:2020”.

SP 387 In the first sentence, replace “2.2.9.1.7” by “2.2.9.1.7.1”.

SP 388 Amend the fifth paragraph to read as follows:

“Entry UN 3171 only applies to vehicles and equipment powered by wet batteries, metallic sodium batteries or sodium alloy batteries, carried with these batteries installed.”

After the fifth paragraph, add the following new paragraph:

“UN 3556 VEHICLE, LITHIUM ION BATTERY POWERED, UN 3557 VEHICLE, LITHIUM METAL BATTERY POWERED and UN 3558 VEHICLE, SODIUM ION BATTERY POWERED, as applicable, apply to vehicles powered by lithium ion, lithium metal or sodium ion batteries carried with the batteries installed.”

In the seventh paragraph (old sixth paragraph), combine and amend the last two sentences to read “When vehicles are carried in a packaging, some parts of the vehicle, other than the battery, may be detached from its frame to fit into the packaging.”.

Amend the two last paragraphs to read as follows:

“Dangerous goods, such as batteries, airbags, fire extinguishers, compressed gas accumulators, safety devices and other integral components of the vehicle that are necessary for the operation of the vehicle or for the safety of its operator or passengers, shall be securely installed in the vehicle and are not otherwise subject to ADN. However, lithium batteries shall meet the provisions of 2.2.9.1.7.1, except that (a), (e) (vii), (f) (iii) if applicable, (f) (iv) if applicable and (g) do not apply when batteries of a production run of not more than 100 cells or batteries, or pre-production prototypes of cells or batteries when these prototypes are carried for testing, are installed in vehicles. Furthermore, sodium ion batteries shall meet the provisions of 2.2.9.1.7.2, except that (a), (e) and (f) do not apply when batteries of a production run of not more than 100 cells or batteries, or pre-production prototypes of cells or batteries when these prototypes are carried for testing, are installed in vehicles.

Where a lithium battery installed in a vehicle is damaged or defective, the vehicle shall be carried in accordance with the conditions defined in special provision 667 (c).”

SP 389 In the first paragraph, replace “2.2.9.1.7” by “2.2.9.1.7.1”.

Replace “399-499 (*Reserved*)” by “409-499 (*Reserved*)”.

SP 532 Delete and add “532 (*Deleted*)”.

SP 543 Delete and add “543 (*Deleted*)”.

SP 636 Amend as follows:

In the first paragraph:

Replace “lithium cells and batteries” by “lithium cells and batteries or sodium ion cells and batteries”;

Replace “lithium ion cells” by “lithium ion or sodium ion cells”;

Replace “lithium ion batteries” by “lithium ion or sodium ion batteries”;

Replace “other non-lithium cells or batteries,” by “other cells or batteries,”;

Replace “and 2.2.9.1.7” by “, 2.2.9.1.7.1 and 2.2.9.1.7.2”;

In sub-paragraph (b), after “lithium cells and batteries” add “and sodium ion cells and batteries”;

In the note under sub-paragraph (b), after “lithium cells and batteries” add “and sodium ion cells and batteries”;

Amend sub-paragraph (c) to read:

“(c) Packages are marked "LITHIUM BATTERIES FOR DISPOSAL", "LITHIUM BATTERIES FOR RECYCLING", "SODIUM ION BATTERIES FOR DISPOSAL" or "SODIUM ION BATTERIES FOR RECYCLING", as appropriate.”

SP 644 Delete and add “644 (*Deleted*)”.

SP 650 Amend as follows:

In the first sentence, replace “under the conditions of packing group II” by: “under the conditions of UN No. 1263, packing group II, or UN No. 3082, as appropriate”.

In the second sentence, replace “provisions of UN No. 1263, packing group II” by: “provisions for UN No. 1263, packing group II, and UN No. 3082”.

In sub-paragraph (a), add the following new sentence at the end: “Mixed packing of waste classified as UN No. 1263 and waste water-based paints classified as UN No. 3082 is permitted”.

In sub-paragraph (d), after the first sentence, insert the following two new sentences: “Waste classified as UN No. 1263 may be mixed and loaded with waste water-based paints classified as UN No. 3082 in the same vehicle, wagon or container. In the case of such mixed loading the entire contents shall be assigned to UN No. 1263.”

In sub-paragraph (e), after “in accordance with 5.4.1.1.3.1”, add: “with the appropriate UN number(s)”. Replace the last two lines by:

“"UN 1263 WASTE PAINT, 3, II";

"UN 1263 WASTE PAINT, 3, PG II;

"UN 3082 WASTE ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (PAINT), 9, III"; or

"UN 3082 WASTE ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (PAINT), 9, PG III".”

SP 653 Delete and add “653 (*Deleted*)”.

SP 666 Add a new sub-paragraph (e):

“(e) Vehicles that are fully enclosed by packagings, crates or other means that prevent ready identification are subject to the marking and labelling requirements of Chapter 5.2.”

At the end, add the following new paragraph:

“Alternatively, for sodium ion battery powered vehicles, see special provision 404.”

SP 667 Amend as follows:

Sub-paragraph (a) Delete and add “(a) (*Deleted*)”

In sub-paragraph (b), replace “2.2.9.1.7” by “2.2.9.1.7.1 and 2.2.9.1.7.2” and replace “lithium cells or batteries” by “lithium cells or batteries or sodium ion cells or batteries”.

In (b)(ii), replace “the lithium cell or battery” by “the lithium cell or battery or the sodium ion cell or battery”.

In sub-paragraph (c), replace “lithium cells or batteries” by “lithium cells or batteries or sodium ion cells or batteries”.

SP 668 Amend the introductory sentence to read as follows:

“Substances for the purpose of applying road markings and bitumen or similar products for the purpose of repairing cracks and crevices in existing road surfaces, carried at elevated

temperature, are not subject to the other requirements of ADN, provided that the following conditions are met:".

SP 669 Replace "UN Nos. 3166 or 3171" by "UN No. 3166, 3171, 3556, 3557 or 3558, as appropriate".

SP 670 Amend as follows:

In sub-paragraph (a):

In the first paragraph, after "Lithium cells and batteries" add "and sodium ion cells and batteries" and replace "376 and 2.2.9.1.7" by "376, 2.2.9.1.7.1 and 2.2.9.1.7.2";

In (ii), after "other lithium cell or battery" add "or sodium ion cell or battery";

In sub-paragraph (b):

In the first paragraph, after "lithium cells and batteries" add "and sodium ion cells and batteries" and replace "376 and 2.2.9.1.7" by "376, 2.2.9.1.7.1 and 2.2.9.1.7.2";

In (ii), after "lithium cells or batteries" add "and sodium ion cells and batteries";

In the note under (ii), replace "lithium cells and batteries in the equipment" by "lithium cells and batteries and sodium ion cells and batteries contained in equipment";

In (iii), amend the first sentence to read "Packages are marked "LITHIUM BATTERIES FOR DISPOSAL", "LITHIUM BATTERIES FOR RECYCLING", "SODIUM ION BATTERIES FOR DISPOSAL" or "SODIUM ION BATTERIES FOR RECYCLING", as appropriate.". In the second sentence, after "lithium cells or batteries" add "or sodium ion cells or batteries".

SP 674 (d) After "inspection bodies" insert "(as defined in 1.2.1)".

Add the following new special provisions:

"28 This substance may be carried under the provisions of Class 3 or Class 4.1 only if it is so packed that the percentage of diluent will not fall below that stated, at any time during carriage (see 2.2.3.1.1 and 2.2.41.1.18). In cases where the diluent is not stated, the substance shall be packed so that the amount of explosive substance does not exceed the stated value."

"399 (*Reserved*)"

"400 Sodium ion cells and batteries and sodium ion cells and batteries contained in or packed with equipment, prepared and offered for carriage, are not subject to other provisions of ADN if they meet the following:

- (a) The cell or battery is short-circuited, in a way that the cell or battery does not contain electrical energy. The short-circuiting of the cell or battery is easily verifiable (e.g., busbar between terminals);
- (b) Each cell or battery meets the provisions of 2.2.9.1.7.2 (a), (b), (d), (e) and (f);
- (c) Each package is marked according to 5.2.1.9;
- (d) Except when cells or batteries are installed in equipment, each package is capable of withstanding a 1.2 m drop test in any orientation without damage to cells or batteries contained therein, without shifting of the contents so as to allow battery to battery (or cell to cell) contact and without release of contents;

- (e) Cells and batteries, when installed in equipment are protected from damage. When batteries are installed in equipment, the equipment is packed in strong outer packagings constructed of suitable material of adequate strength and design in relation to the packaging's capacity and its intended use unless the battery is afforded equivalent protection by the equipment in which it is contained;
- (f) Each cell, including when it is a component of a battery, only contains dangerous goods that are authorized to be carried in accordance with the provisions of Chapter 3.4 and in a quantity not exceeding the quantity specified in column (7a) of Table A of Chapter 3.2."
- "401 Sodium ion cells and batteries with organic electrolyte shall be carried as UN No. 3551 or 3552 as appropriate. Sodium ion cells and batteries with aqueous alkali electrolyte shall be carried as UN No. 2795. Batteries containing metallic sodium or sodium alloy shall be carried as UN No. 3292."
- "402 Substances carried under this entry shall have 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."
- "403 Nitrocellulose membrane filters covered by this entry with nitrocellulose content not exceeding 53 g/m² and a nitrocellulose net mass not exceeding 300 g per inner packaging, are not subject to the requirements of ADN if they meet the following conditions:
- (a) They are packed with paper separators of minimum 80 g/m² placed between each layer of nitrocellulose membrane filters;
- (b) They are packed to maintain the alignment of the nitrocellulose membrane filters and the paper separators in any of the following configurations:
- (i) Rolls tightly wound and packed in plastic foil of minimum 80 g/m² or aluminium pouches with an oxygen permeability of equal or less than 0.1 % in accordance with standard ISO 15105-1:2007;
- (ii) Sheets packed in cardboard of minimum 250 g/m² or aluminium pouches with an oxygen permeability of equal or less than 0.1 % in accordance with standard ISO 15105-1:2007;
- (iii) Round filters packed in disc holders or cardboard packaging of minimum 250 g/m² or single packed in pouches of paper and plastic material of total minimum 100 g/m²."
- (as amended in ECE/TRANS/WP.15/AC.1/170, annex II)*
- "404 Vehicles powered by sodium ion batteries, containing no other dangerous goods, are not subject to other provisions of ADN, if the battery is short-circuited in a way that the battery does not contain electrical energy. The short-circuiting of the battery shall be easily verifiable (e.g. busbar between terminals)."
- "405 *(Reserved)*"
- "406 Substances under this entry may be carried in accordance with the limited quantity provisions of Chapter 3.4 when carried in pressure receptacles containing not more than 1 000 ml. The pressure receptacles shall meet the requirements of packing instruction P200 of 4.1.4.1 of ADR and have a test pressure capacity product not exceeding 15.2 MPa·l (152 bar·l). The pressure receptacles shall not be packed together with other dangerous goods."
- "407 Fire suppressant dispersing devices are articles which contain a pyrotechnic substance, which are intended to disperse a fire extinguishing agent (or aerosol) when activated, and which do not contain any other dangerous goods. These articles, as packaged for carriage, shall fulfil the criteria for Division 1.4,

Compatibility Group S, when tested in accordance with test series 6 (c) of Section 16 of Part I of the *Manual of Tests and Criteria*. The device shall be carried with either the means of activation removed or equipped with at least two independent means to prevent accidental activation.

Fire suppressant dispersing devices shall only be assigned to Class 9, UN No. 3559 if the following additional conditions are met:

- (a) The device meets the exclusion criteria in 2.2.1.1.8.2 (b), (c) and (d);
- (b) The suppressant is deemed safe for normally occupied spaces in compliance with international or regional standards (e.g. the United States of America National Fire Protection Association standard for fixed aerosol fire-extinguishing systems NFPA 2010);
- (c) The article is packaged in a manner such that when activated, temperatures of the outside of the package do not exceed 200 °C;
- (d) This entry is used only with the approval of the competent authority of the country of manufacture³.

This entry does not apply to "SAFETY DEVICES, electrically initiated" described in special provision 280 (UN No. 3268)."

Footnote 3 reads:

³ *If the country of manufacture is not a Contracting Party to ADN, the approval shall be recognized by the competent authority of a Contracting Party to ADN."*

In Chapter 3.3, renumber the existing footnotes 3 to 5 as footnotes 4 to 6.

"408 This entry applies only to aqueous solutions comprised of water, tetramethylammonium hydroxide (TMAH), and no more than 1 % of other constituents. Other formulations containing tetramethylammonium hydroxide shall be assigned to an appropriate generic or N.O.S. entry (e.g., UN No. 2927, TOXIC LIQUID, CORROSIVE, ORGANIC, N.O.S.), except as follows:

- (a) Other formulations containing a surfactant in a concentration > 1 % and with not less than 8.75 % tetramethylammonium hydroxide shall be assigned to UN No. 2927, TOXIC LIQUID, CORROSIVE, ORGANIC, N.O.S., PG I; and
- (b) Other formulations containing a surfactant in a concentration > 1 % and with more than 2.38 % but less than 8.75 % tetramethylammonium hydroxide shall be assigned to UN No. 2927, TOXIC LIQUID, CORROSIVE, ORGANIC, N.O.S., PG II."

"677 Cells and batteries which, in accordance with special provision 376, are identified as damaged or defective and liable to rapidly disassemble, dangerously react, produce a flame or a dangerous evolution of heat or a dangerous emission of toxic, corrosive or flammable gases or vapours under normal conditions of carriage, shall be assigned to transport category 0. In the transport document, the words "Carriage in accordance with special provision 376" shall be supplemented by the words "Transport category 0"."

Chapter 5.2

5.2.1.9 Amend the heading to read "**5.2.1.9 Battery mark**".

5.2.1.9.1 Amend as follows:

After "lithium cells or batteries", insert "or sodium ion cells or batteries".

Replace "special provision 188" by "special provisions 188 or 400".

5.2.1.9.2 In the first paragraph, first sentence, replace the "or" before "'UN 3480'" by a comma and at the end of the sentence, add ", or 'UN 3551' for sodium ion

cells or batteries”. In the second sentence, delete “lithium” and replace “UN 3091” or “UN 3481” by “UN 3091”, “UN 3481” or “UN 3552”. In the third sentence, delete “lithium”.

Amend the heading of figure 5.2.1.9.2 to read “**Battery mark**”.

In the last paragraph, third sentence, replace “UN number” by “UN number(s)” and delete “for lithium ion or lithium metal batteries or cells”.

- 5.2.2.1.12.1 Replace “lithium batteries” by “lithium batteries or sodium ion batteries”, and “lithium battery mark” by “battery mark”.

Chapter 5.3

- 5.3 Under the Chapter title, add a new note to read as follows:

“NOTE 3: Removable skips not conforming to Chapter 6.11 of ADR are considered as containers under this Chapter.”

- 5.3.1.4 In the heading, replace “*Placarding of vehicles for carriage in bulk, wagons for carriage in bulk*” by “*Placarding of vehicles and wagons when used for carriage in bulk*”.
- 5.3.2.3.2 Delete the line “78 radioactive material, corrosive”.

Chapter 5.4

- 5.4.1.1.1 Amend as follows:

In sub-paragraph (c), third indent, delete “lithium” and replace “and 3481” by “, 3481, 3551 and 3552 as well as for battery-powered vehicles of UN Nos. 3556, 3557 and 3558”.

The amendment to sub-paragraph (g) in the French version does not apply to the English text.

- 5.4.1.1.1 Add a new subparagraph (j) to read as follows:

"(j) if column (11) in Table A of Chapter 3.2 contains the additional requirement "ST01", confirmation of stabilization (see 7.1.6.11)."

- 5.4.1.1.2 Add a new subparagraph (h) to read as follows:

"(h) the information required in column (20) of Table C, remark 3, remark 17, remark 22, remark 39 (b), remark 42 or remark 47, respectively."

- 5.4.1.1.3.1 Amend the second and third paragraph to read as follows:

“If the provision for waste as set out in 2.1.3.5.5 is applied, the following shall be added to the dangerous goods description required in 5.4.1.1.1 (a) to (d) for carriage in bulk or in packages and to 5.4.1.1.2 (a) to (d) for carriage in tank vessels:

“WASTE IN ACCORDANCE WITH 2.1.3.5.5” (e.g. “UN 3264, CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S., 8, II, WASTE IN ACCORDANCE WITH 2.1.3.5.5”).

The technical name, as prescribed in Chapter 3.3, special provision 274, in case of carriage in bulk or in packages, or as prescribed in paragraph 3.2.3.1, remark 27 in column (20) of Table C of Chapter 3.2, in case of carriage in tank vessels, need not be added.”

In the second dashed bullet, after “2.1.3.5.3”, insert “(with the exception of UN No. 3291, clinical waste, unspecified, n.o.s. or (bio)medical waste, n.o.s. or regulated medical waste, n.o.s. in packaging conforming to packing instruction P621 of ADR)”.

5.4.1.1.21 Amend to read as follows:

“5.4.1.1.21 *Information required in specific cases defined in other parts of ADN*

Where in accordance with provisions in chapters 3.3, 3.5, 4.1 of ADR, 4.2 of ADR, 4.3 of ADR and 5.5 information is necessary, this information shall be included in the transport information.”

Chapter 5.5

5.5.3.3.1 Replace “P650, P800, P901 or P904” by “P650 or P800”.

Part 6, Chapter 6.1

Chapter 6.2 The amendment does not apply to the English version.

Chapter 6.3 At the end add: "(UN Nos. 2814 and 2900)".

Chapter 6.4 Replace "and material of Class 7" by "for radioactive material and for the approval of such material".

Chapter 6.9 Amend to read as follows:

"Chapter 6.9 Requirements for the design, construction, inspection and testing of portable tanks with shells made of fibre-reinforced plastics (FRP) materials;".

Add a new Chapter 6.13 to read as follows:

"Chapter 6.13 Requirements for the design, construction, equipment, type approval, testing and marking of fibre-reinforced plastics (FRP) fixed tanks (tank-vehicles) and demountable tanks;".

Chapter 7.1

7.1.3.31 In the second indent of the first paragraph, replace “Annex 8, Section 1” by “Section II, Chapter 1, and Section III, Chapter 2”.

7.1.4.14.2 Amendment does not apply to the English text.

7.1.5.0.2 Amend to read as follows:

"7.1.5.0.2 Vessels carrying the dangerous goods listed in Table A of Chapter 3.2 in packages placed exclusively in containers shall display the number of blue cones or blue lights indicated in the following table instead of the number of blue cones or blue lights indicated in column (12) of Table A of Chapter 3.2:

Number of cones/lights indicated in table A column (12):	Class and packing group of the substance:	Total gross mass:	Number of cones/lights to be displayed:
1 cone/light	Class 2 or PG I	> 130.000 kg	1
	Class 2 or PG I	≤ 130.000 kg	0
	Other classes or PG II or III	All masses	0
2 cones/lights	Class 2 or PG I	> 30.000 kg	2
	Class 2 or PG I	≤ 30.000 kg	0
	Other classes or PG II or III	All masses	0
3 cones/ lights	All classes	All masses	3

7.1.7.2 The amendment does not apply to the English text.

Chapter 7.2

7.2 Replace "pump-room" by "pump room" and "pump-rooms" by "pump rooms", wherever it appears.

- 7.2.2.6 Delete and insert “7.2.2.6 (Reserved)”
- 7.2.2.19.3 Amend as follows:
 Replace "9.3.3.0.1" by "9.3.3.0.1.1 for the vessel’s hull".
 Delete "9.3.3.0.3.1".
 Replace "9.3.3.0.5" by "9.3.3.0.4 last line from Table 4 for the vessel’s boat".
 Add "9.3.3.0.6" in numerical order.
- 7.2.3.2, heading Amendment not applicable to English.
- 7.2.3.2.1 Amendment not applicable to English.
- 7.2.3.7.1.3 After the first sentence, insert the following:
 “The gas/air mixture from cargo tanks may only be discharged into the atmosphere
- (a) through the device for the safe depressurization of cargo tanks (see 9.3.2.22.4 (a), 9.3.2.22.4 (b), 9.3.3.22.4 (a), 9.3.3.22.4 (b)); or
 - (b) through the sampling opening (see (9.3.2.21.1 (g), 9.3.3.21.1 (g)); or
 - (c) through the open housing of the flame arrester at the connection point of the cargo tank and the venting piping (see 9.3.2.22.4 (b), 9.3.3.22.4 (d)); or
 - (d) through a suitable hose that is connected to the venting piping and equipped with a flame arrester preceding the hose (explosion group/subgroup according to column (16) of Table C of Chapter 3.2).”
- 7.2.3.7.2.2 Amend the second paragraph to read as follows:
 “The checklist shall be provided at least in languages understood by the master or the expert and the operator of the reception facility. The checklist can be provided electronically if both sides agree, are able to use advanced e-signatures and both sides get a copy.”
- 7.2.3.7.2.3 Amend as follows:
 In the second paragraph, replace “a permanently installed or portable spring-loaded low-pressure valve” by “an additional permanently installed or portable vacuum valve in accordance with 9.3.2.62 or 9.3.3.62”. Delete the second sentence that reads: “This low-pressure valve shall be so installed that under normal working conditions the vacuum valve is not activated.”
 Amend the first sentence of the third paragraph to read as follows:
 “If explosion protection is required in column (17) of Table C of Chapter 3.2 then all piping connected between the degassing vessel and the reception facility shall be equipped with an appropriate flame arrester.”
- 7.2.3.20.1 Amendment not applicable to English.
- 7.2.3.31.1 In the second indent of the first paragraph, replace “Annex 8, Section 1” by “Section II, Chapter 1, and Section III, Chapter 2”.
- 7.2.3.51.4 Replace “degassing during berthing” by “degassing at berth”.
- 7.2.3.51.7 Replace “degassing during berthing” by “degassing at berth”.
- 7.2.3.51.7 Amend the second indent to read as follows:
 “- When values below 10% of the LEL of n-Hexane or of the calibration gas prescribed by the manufacturer are reached in the wheelhouse, accommodation and service spaces located outside the cargo area.”
- 7.2.4.1.4 Amend to read as follows:
 “7.2.4.1.4. On board supply vessels or other vessels delivering products for the operation of vessels, the maximum content per receptacle of cargo samples referred to in 7.2.4.1.1 may be increased to a maximum of 1 litre per receptacle with a maximum of 500 receptacles. The total quantity of cargo samples in litres must not exceed 250 litres on board of the vessel.”

7.2.4.10.3 Amend to read as follows:

“The checklist shall be provided at least in languages understood by the master and the person responsible for the handling at the shore facilities. The checklist can be provided electronically if both sides agree, are able to use advanced e-signatures and both sides get a copy.”

7.2.4.13.1 Amendment not applicable to English.

7.2.4.22 Amend to read as follows:

“7.2.4.22 Opening of openings of cargo tanks

7.2.4.22.1 7.2.4.22 applies only to type N and type C tank vessels.

By way of derogation from 7.2.3.22 and provided that this is not prohibited by other legal requirements, the opening of cargo tank openings, including when the tanks have not been unloaded, degassed or are not gas-free,

- for cleaning and replacement of flame arrester plate stacks;
- for visual inspection from the deck;
- for sampling;
- for the connection of a tank washing system;
- for gas measurement,
- for the determination of the filling quantity in a cargo tank in exceptional cases; and
- for the subsequent addition of stabilizer in exceptional cases;

is authorized in the following conditions.

7.2.4.22.2 Opening of cargo tanks is permitted only if the vessel is not connected to the shore facility or if the shut-off devices of the vessel and the shore facility are closed.

Opening of openings of cargo tanks is permitted only after the depressurization of the relevant cargo tanks by means of the device for the safe depressurization of cargo tanks prescribed in 9.3.2.22.4 (a) and 9.3.2.22.4 (b) or 9.3.3.22.4 (a) and 9.3.3.22.4 (b).

When explosion protection is required under column (17) of Table C of Chapter 3.2, the opening of cargo tank hatches shall be permitted only if the cargo tanks in question are discharged and the concentration of flammable gases in the tank is less than 10% of the lower explosive limit of the cargo/previous cargo. The results of the measurements shall be recorded in writing. Entry into these cargo tanks is not permitted for the purpose of measuring.

7.2.4.22.3 Opening of openings of cargo tanks loaded with substances for which marking with one or two blue cones or one or two blue lights is prescribed in column (19) of Table C of Chapter 3.2 shall be permitted only when loading has been interrupted for not less than 10 minutes.

7.2.4.22.4 For the replacement of flame arrester plate stacks for the purpose of cleaning or replacement with flame arrester plate stacks of the same design, the following conditions shall be met:

- (a) Cleaning and replacing of the flame arrester plate stack shall be carried out only by trained and qualified personnel;
- (b) Opening is permitted only when the relevant cargo tanks are discharged and the concentration of flammable gases in the cargo tank is less than 10% of the lower explosive limit of the cargo/previous cargo;
- (c) The results of the measurements shall be recorded in writing.

7.2.4.22.5 For repairs on the flame arrester housing, 8.1.7.3 shall apply.

7.2.4.22.6 Visual inspection of the cargo tank from the deck, determination of the cargo tank filling level and subsequent addition of stabilizer are only permitted via the sampling outlet.

7.2.4.22.7 Sampling shall be permitted only by means of the sampling device prescribed in column (13) of Table C of Chapter 3.2 or a device ensuring a higher level of safety.

7.2.4.22.8 In the event of a proven and unexpected failure of the closed or partially closed sampling device connection (see 9.3.x.21.1 (g)), which cannot be remedied immediately, sampling shall be permitted via the open sampling outlet. The occurrence of a fault and the use of the sampling outlet must be recorded in writing or electronically by the master and confirmed in writing by the person appointed by the filler or unloader.

7.2.4.22.9 The operations for the opening of openings shall be carried out using only appropriate low-sparking hand tools.

On board vessels covered by the classification of zones as defined in section 1.2.1, all electrical and non-electrical appliances and devices used for activities on open cargo tanks shall meet the requirements for use in zone 0.

7.2.4.22.10 The duration of opening shall be strictly limited to the time necessary for the activities listed in 7.2.4.22.1. Opening the cargo tanks immediately before and after a thunderstorm as well as during a thunderstorm shall be prohibited.

7.2.4.22.11 The working instructions concerning explosion protection in accordance with 1.3.2.5 shall be available and applied on board.

7.2.4.22.12 Persons who open openings or who are in the immediate vicinity of an opening shall use the equipment prescribed in column (18) of Table C of Chapter 3.2.

7.2.4.22.13 The requirements of 7.2.4.16.8 apply by analogy to visual inspection, filling level determination, gas measurement or stabilizer addition operations after loading.

7.2.4.22.14 If the quantity of the cargo measured by the filler differs from the quantity determined on board by means of measuring instruments, the filling quantity in the cargo tank may be determined manually via the sampling opening using a measuring tape and a thermometer.

The measuring instruments used for determining the filling quantity in cargo tanks shall consist of electrostatically conductive material and shall be electrically connected to the vessel's hull during measuring. The measuring instrument shall be suitable for use in zone 0.

7.2.4.22.15 If an unforeseen extension of the navigation time requires the addition of extra stabilizer to one or more cargo tanks during transport, this is only permitted through the sampling opening. Electrostatic charges shall be prevented.

7.2.4.22.16 The requirements in accordance with 7.2.3.1.4 shall apply additionally for gas measurement.

7.2.4.22.17 The sampling receptacles including all accessories such as ropes, etc., shall consist of electrostatically conductive material and shall be electrically connected to the vessel's hull.

7.2.4.22.18 When closing the sampling opening or the flame arrester housing, the flame arrester should be checked for damage, soiling and correct installation and be repaired, where necessary, before the journey is continued.

7.2.4.22.19 The requirements of 7.2.4.22.1 to 7.2.4.22.11 and of 7.2.4.23 shall not apply to oil separator or supply vessels.

7.2.4.22.20 To wash cargo tanks, only the special connection opening for tank washing systems provided for this purpose or built-in tank washing systems on the cargo tank may be used.

If these special openings or built-in tank washing systems are not available, other measures should be taken to avoid vapours escaping from the cargo tanks.

7.2.4.22.21 The competent authority may permit the opening of openings for reasons not listed in 7.2.4.22.1 under equivalent conditions.”

7.2.4.60 Add the following sentence at the end: “If an unmanned pushed barge whose list of substances does not include substances with danger 8 in column (5) of Table C of Chapter 3.2, is not equipped with built in shower and eye and face bath, a mobile shower and mobile eye and face bath have to be provided on board the pushed barge during loading and unloading operations and cargo operations by pumping.

Chapter 8.1

8.1 Replace "pump-room" by "pump room" and "pump-rooms" by "pump rooms", wherever it appears.

8.1.2.1 (d) Delete “which may be a copy which can be consulted by electronic means at any time”.

8.1.2.1 Add a new sub-paragraph (l) to read as follows:

"(l) For vessels which required repair of explosion-protected installations and equipment and autonomous protection systems, the certificate referred to in 8.1.7.3."

8.1.2.1 Add the following paragraph at the end:

“The documents listed in subparagraphs (c), (d) and (h) may be kept on board electronically in a human-readable format.”

8.1.2.2 (h) and 8.1.2.3 (u) Insert a footnote 2 after “test body” to read as follows:

“² Notified body, in the frame of Directive 2014/34/EU, or equivalent.”

8.1.2.2 Add the following paragraph after subparagraph (h):

“The document listed in subparagraph (a) may be kept on board electronically in a human-readable format.”

8.1.2.3 (s) Replace “degassing ” by “degassing at berth”.

8.1.2.3 (v) Replace “loading, unloading, degassing, berthing or” by “loading, unloading, degassing at berth or”.

8.1.2.3 Add the following paragraphs at the end:

“The documents listed in subparagraphs (a), (g), (j), (k), (m), (n) and (q) may be kept on board electronically in a human-readable format.

The documents listed in subparagraph (c) may be kept on board electronically in PDF format according to standard ISO 32000-1, accompanied by an advanced electronic signature according to Regulation (EU) 910/2014, or at least equivalent.”

8.1.2.4 Amend to read as follows:

"The instructions in writing referred to in 5.4.3 shall be made available to the master before loading. They shall be kept readily available in the wheelhouse.

On board dry cargo vessels, the transport documents shall be made available to the master before loading and on board tank vessels they shall be made available to him after loading and before the journey commences."

8.1.5.1 In “TOX”, after “with the accessories and instructions” insert a footnote 3 to read as follows:

“³ *The instructions could be kept on board electronically in a human-readable format.*”

8.1.6.2, first paragraph Replace "ISO 13765:2018" by "EN 13765:2018".

8.1.6.2, second paragraph Replace “part 5.5.2 of ISO 20519:2017” by “part 5.5.2 of ISO 20519:2021”.

Chapter 8.6

8.6 Replace "pump-room" by "pump room" and "pump-rooms" by "pump rooms", wherever it appears.

8.6.4, Checklist degassing to reception facilities Amend point 6.2 to read as follows:

“

6.2 (a)	Is the air inlet for equalization of pressure in the cargo tank part of a closed system or is it equipped with an additional vacuum valve on board of the vessel?	O**	—
6.2 (b)	Is the air inlet for equalization of pressure in the cargo tank part of a closed system or is it equipped with an additional vacuum valve on shore?	—	O**, ***

”

Add a new Table note *** to read as follows:

“*** Only applicable if air inlet is in piping of the shore-based reception facility.”

8.6.4, Checklist degassing to reception facilities Amend point 10 to read as follows:

“Are all cargo tank hatches and other cargo tanks openings closed or, if appropriate, protected by flame arresters in good condition?”

Chapter 9.1

9.1.0.12.2 Amendment does not apply to the English text.

9.1.0.12.3 (b) (v) In subparagraph 1., replace “temperature class T6” by “temperature class T4”.

9.1.0.31.1 Replace “Annex 8, Section 1” by “Section II, Chapter 1, and Section III, Chapter 2”.

9.1.0.40.2.1 Amendment not applicable to English.

9.1.0.40.2.2 Amendment not applicable to English.

9.1.0.95.1 and 9.2.0.95.1, last paragraph Amendment does not apply to the English text.

Chapter 9.3

9.3 Replace "pump-room" by "pump room" and "pump-rooms" by "pump rooms", wherever it appears.

9.3.x.12.4 (b) (v) In subparagraph 1., replace “temperature class T6” by “temperature class T4”.

9.3.x.17.6 In the paragraph after the indents, amend the end to read as follows:

“...actuates a visual and audible alarm when the gas concentration has reached 20% of the LEL of n-Hexane or of the calibration gas prescribed by the system’s manufacturer.”

9.3.1.31.1 and 9.3.2.31.1 In the last sentence, replace “Annex 8, Section 1” by “Section II, Chapter 1, and Section III, Chapter 2”.

9.3.x.40.2.1 Amendment not applicable to English.

9.3.x.40.2.2 Amendment not applicable to English.

9.3.x.51 (c) Insert "on board" after "surface temperatures within the assigned zones".

9.3.x.60 Replace the sentence “The water shall meet the quality of drinking water on board” by “The water shall meet the minimum quality requirements applicable to drinking water on board vessels.”

9.3.1.62 Delete and insert “9.3.1.62 (*Deleted*)”.

9.3.2.15.1, last paragraph Amendment does not apply to the English text.

9.3.2.17.7 and 9.3.3.17.7 Amendment not applicable to English.

9.3.2.22.4 (b) Amend the first indent to read as follows:

"- At the connection to each cargo tank, the venting piping shall be equipped with a flame arrester capable of withstanding a detonation and the vacuum valve shall be equipped with a flame arrester capable of withstanding a deflagration; and".

9.3.3.61 Add the following sentence at the end: "If an unmanned pushed barge is not equipped with a shower and an eye and face bath in accordance with 9.3.3.60, the list of substances according to 1.16.1.2.5 may not include substances with danger 8 in column (5) of Table C of Chapter 3.2.

9.3.2.62 and 9.3.3.62 Amend to read as follows:

"9.3.x.62 Additional vacuum valve for degassing to reception facilities

An opening in the loading and unloading piping or in the venting piping, used at reception facilities to take in ambient air to prevent exceedance of the maximum permissible vacuum (see 7.2.3.7.2.3), shall be fitted with an additional portable vacuum valve or an additional permanently installed vacuum valve. When the intake of ambient air is done with a hose ending shoreside, the open end of the hose shall be equipped with such a valve in the same manner.

The trigger pressure of the additional vacuum valve shall be adjusted so that under normal working conditions the vacuum valve referred to in 9.3.x.22.4 is not activated during degassing.

If the vessel's substance list according to 1.16.1.2.5 contains substances for which explosion protection is required in column (17) of Table C of Chapter 3.2, the valve shall be fitted with a flame arrester capable of withstanding a deflagration. When the vessel is not degassing to a reception facility, the permanently installed valve or the opening to which a portable valve is connected shall be closed with a blind flange.

NOTE: 7.2.4.22.1 applies for the opening of this opening."

9.3.3.25.12 In the third paragraph, delete "9.3.3.25.2 (g)".
