



Economic and Social Council

Distr.: General
3 November 2017
English
Original: English and French

Economic Commission for Europe

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

Twentieth session

Geneva, 26 January 2018

Item 5 of the provisional agenda

Work of the Safety Committee

Proposed amendments to the Regulations annexed to ADN for entry into force on 1 January 2019

Note by the secretariat*

1. At its nineteenth session, the ADN Administrative Committee asked the secretariat to consolidate in a single document all the draft amendments adopted in 2016 and 2017 that had not yet been approved by the Administrative Committee (ECE/ADN/42, para.18).
2. The present document is a consolidation of the proposed amendments to the Regulations annexed to ADN that the Safety Committee has adopted for entry into force on 1 January 2019:
 - (a) at its thirty-first session (ECE/TRANS/WP.15/AC.2/64, annex I);
 - (b) at its thirtieth session (ECE/TRANS/WP.15/AC.2/62, annex II);
 - (c) at its twenty-ninth session (ECE/TRANS/WP.15/AC.2/60, annex III);
3. Each proposed amendment is followed by a reference to the document in which the amendment was proposed.
4. The Safety Committee is expected to verify at its thirty-second session the proposed amendments which are still in square brackets and to report its conclusions to the ADN Administrative Committee which will be invited to endorse all amendments.
5. This document does not contain the draft amendments related to the new protection against explosion concept, adopted by the ADN Safety Committee at its thirty-first session, ECE/TRANS/WP.15/AC.2/2017/21 as amended by informal documents INF.14 annex III, INF.29 and INF.33, since those draft amendments are still subject to final reading at the thirty-second session of the Safety Committee, see ECE/TRANS/WP.15/AC.2/2018/11.

* Distributed in German by the Central Commission for the Navigation of the Rhine under the symbol CCNR/ZKR/ADN/2018/1

Chapter 1.1

1.1.3.6.2 (d) and (e) Amend the indents to read as follows:

- “- closed containers;
- sheeted vehicles or sheeted wagons;”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

1.1.4.3 Amend footnote 2 to read as follows: “² The International Maritime Organization (IMO) has issued “Revised guidance on the continued use of existing IMO type portable tanks and road tank vehicles for the transport of dangerous goods” as circular CCC.1/Circ.3 and Corrigenda. The text of this guidance can be found on the IMO website at: www.imo.org.”.

(Reference document: ECE/TRANS/WP.15/AC.2/62)

Chapter 1.2

1.2.1 In the definition for *Cargo tank (gas free)*, amend the end to read “...dangerous gases and vapours.”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

1.2.1 Amend the definition of *Toximeter* to read as follows:

“*Toximeter* means a (trans)portable device allowing measuring of any significant concentration of toxic gases and vapours. The device has to comply with standard EN 45544-1:2015, EN 45544-2:2015, EN 45544-3:2015 and EN 45544-4:2016 or with standard ISO 17621:2015.

If this device is used in explosion hazardous areas it shall be in addition suitable to be used in the respective zone and it has to be proven that the applicable requirements are fulfilled (e.g. conformity assessment procedure according to Directive 2014/34/EC¹, or ECE/TRADE/391² or at least equivalent).

This device shall be so designed that such measurements are possible without the necessity of entering the spaces to be checked.”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

1.2.1 Add the following definitions in alphabetical order:

“*Degassing* means an operation with the aim of lowering the concentration of dangerous gases and vapours in empty or unloaded cargo tanks by emitting them to the atmosphere or to reception facilities;”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

“*Explosion range* means the range of the concentration of a flammable substance or mixture of substances in air, within which an explosion can occur, respectively the range of the concentration of a flammable substance or mixture of substances in mixture with air/inert gas, within which an explosion can occur, determined under specified test conditions;”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

“*LEL*: see *Lower explosion limit*;”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

“*Lower explosion limit (LEL)* means the lowest concentration of the explosion range at which an explosion can occur;”.

¹ Journal of the European Communities No. L 23 of 26 February 2014, p. 309.

² A Common Regulatory Framework for Equipment Used in Environments with an Explosive Atmosphere, United Nations 2011.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

“Reception facility means a facility for receiving gases and vapours during degassing of empty or unloaded cargo tanks and piping for loading and unloading;”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

“UEL: see *Upper explosion limit*;”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

“Upper explosion limit (UEL) means the highest concentration of the explosion range at which an explosion can occur;”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

Chapter 1.4

1.4.2.2.1 Insert a new subparagraph (k) to read as follows:

“(k) Complete his section of the checklist referred to in 7.2.3.7.2.2 prior to the degassing of empty or unloaded cargo tanks and piping for loading and unloading of a tank vessel to a reception facility.”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

1.4.3.3 (s) Replace “at the crossing-point of the gas discharge pipe or the compensation pipe” by “at the connecting-point of the vapour return piping and the venting piping”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

1.4.3.7.1 (j) Replace “at the connecting-point of the gas discharge pipe or the gas return pipe” by “at the connecting-point of the vapour return piping and the venting piping”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

1.4.3.7.2 Amend to read as follows:

“1.4.3.7.2 If the unloader makes use of the services of other participants (cleaner, decontamination facility, etc.) or of the pumps of the vessel he shall take appropriate measures to ensure that the requirements of ADN have been complied with.”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

1.4.3 Add a new section 1.4.3.8 to read as follows:

“1.4.3.8 **Reception facility operator**

1.4.3.8.1 In the context of 1.4.1, the reception facility operator shall in particular:

- (a) Complete his section of the checklist referred to in 7.2.3.7.2.2 prior to the degassing of empty or unloaded cargo tanks and piping for loading and unloading of a tank vessel;
- (b) Ascertain that, when prescribed in 7.2.3.7.2.3, there is a flame arrester in the piping of the reception facility which is connected to the degassing vessel, to protect the vessel against detonations and passage of flames from the side of the reception facility.”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

Chapter 1.6

1.6.7.2.2.2 Add the following transitional provisions:

9.3.1.60	A spring-loaded non-return valve shall be fitted.	N.R.M. Renewal of the certificate of approval after 31 December 2018
9.3.2.60		
9.3.3.60	The water shall meet the quality of drinking water on board.	

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

9.3.3.11.2 (d)	Side struts between the hull and the cargo tanks	N.R.M. from 1 January 2019 Renewal of the certificate of approval after 31 December 2044
----------------	--	---

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

Chapter 1.8

1.8.3.1 At the end, add a Note to read as follows: “**NOTE:** This obligation does not apply to reception facility operators.”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

1.8.5.1 After “, carriage or unloading of dangerous goods” insert “, or during degassing of tank vessels”. Replace “the loader, filler, carrier or consignee,” by “the loader, filler, carrier, consignee or reception facility operator,”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

Chapter 3.2, Table A

3.2.1 For UN No. 0510, in column (9) insert “PP”. In column (11) insert “LO01” and “HA01, HA03” and in column (12) insert “1”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

3.2.1 For UN No. 1148, PG III, insert “T” in column (8).

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

3.2.1 For UN Nos. 3166, 3171, 3527 PG III, 3530, 3531, 3532, 3533 and 3534, in column (9) insert “PP” and in column (12) insert “0”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

3.2.1 For UN No. 3527 PG II, in column (9) insert “PP” and in column (12) insert “1”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

3.2.1 For UN Nos. 3528 and 3529, in column (9) insert “PP, EX, A”. In column (10) insert “VE01” and in column (12) insert “0”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

Chapter 3.2, Table C

3.2.3.1 In “Explanations concerning Table C”, indents of the second paragraph, amend the last indent to read as follows:

“- If a cell contains an asterisk, “*”, the applicable requirements should be determined by applying 3.2.3.3. The determination of the applicable requirements by applying 3.2.3.3 should take precedence over using the entries for mixtures for which no sufficient data is available.”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

3.2.3.1 In column (5) 'Dangers', amend the fourth paragraph to read as follows:

"In the case of a substance or mixture with CMR properties under Categories 1A or 1B of Chapters 3.5, 3.6 and 3.7 of GHS, the code 'CMR' is added to the information."

(Reference document: ECE/TRANS/WP.15/AC.2/62)

3.2.3.1, Column (20), remark 12 Amend subparagraph (e) to read as follows:

"(e) The cargo tanks shall be entered and inspected prior to each loading of these substances to ensure freedom from contamination, heavy rust deposits or visible structural defects.

When these cargo tanks are fitted in type C tank vessels, with cargo tank design 1 and cargo tank type 1, and are in continuous service for these substances, such inspections shall be performed at intervals of not more than two and a half years.

When these cargo tanks are fitted in type G tank vessels, with cargo tank design 1 and cargo tank type 1, and are in continuous service for these substances, such inspections shall be performed during the periodic inspection for the renewal of the certificate of approval according to 1.16.10."

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

3.2.3.1 In "Explanations concerning Table C", for column (20) "Additional requirements/Remarks", add a new remark to read as follows:

"44. A substance shall only be assigned to this entry where there is measurement data or verified information in accordance with IEC 60079-20-1 or equivalent that allows for an assignment to subgroup II B3 of explosion group II B."

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

3.2.3.2 For UN No. 1206, in column (12) replace "0.68" by "0.67 – 0.70".

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

3.2.3.2 For UN No. 1208 first row, in column (12) replace "0.66" by "0.65 – 0.70".

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

3.2.3.2 For UN No. 1262, in column (12) replace "0.7" by "0.69 – 0.71".

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

3.2.3.2 For UN No. 1664, delete "17" in column (20).

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

3.2.3.2 For UN No. 1764, insert "6:+13 °C" in column (20) before "17".

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

3.2.3.2 For UN No. 2057 packing group II:

In column (5)	Replace "3 +N3" by "3 + N1".
In column (6)	Replace "N" by "C".
In column (8)	Insert "2".
In column (13)	Insert "2".

3.2.3.2 For UN No. 2057 packing group III:

In column (5)	Replace "3 +N3" by "3 + N1".
In column (6)	Replace "N" by "C".
In column (8)	Replace "3" by "2".
In column (13)	Insert "2".

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

3.2.3.2 For UN Nos.2448, 3256 (all entries) and 3257 (all entries), insert “; 17” after “7” in column (20).

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

3.2.3.2 In the following entries, amend column (16) to read “II A”:

1120	BUTANOLS (sec-BUTYLALCOHOL)
1191	OCTYL ALDEHYDES (n-OCTYLALDEHYDE)
1229	MESITYL OXYDE
1783	HEXAMETHYLENEDIAMINE SOLUTION, PG II
1783	HEXAMETHYLENEDIAMINE SOLUTION, PG III
2048	DICYCLOPENTADIENE
2053	METHYL ISOBUTYL CARBINOL
2057	TRIPROPYLENE, PG II
2057	TRIPROPYLENE, PG III
2357	CYCLOHEXYLAMINE
2485	n-BUTYL ISOCYANATE
2486	ISOBUTYL ISOCYANATE
2531	METHACRYLIC ACID, STABILIZED
2381	DIMETHYL DISULPHIDE
2618	VINYLTOLUENES, STABILIZED

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

3.2.3.2 In the following entries, amend column (16) to read “II B (II B1)”:

1163	DIMETHYLHYDRAZINE, UNSYMMETRICAL
1274	n-PROPANOL or PROPYL ALCOHOL, NORMAL, PG II
1274	n-PROPANOL or PROPYL ALCOHOL, NORMAL, PG III
3475	ETHANOL AND GASOLINE MIXTURE or ETHANOL and MOTOR SPIRIT MIXTURE or ETHANOL AND PETROL MIXTURE, with more than 90 % ethanol

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

3.2.3.2 In the following entries, amend column (16) to read “II B (II B2)”:

1188	ETHYLENE GLYCOL MONOMETHYL ETHER
1275	PROPIONALDEHYDE

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

3.2.3.2 In the following entries, amend column (16) to read “II B (II B3)”:

1280	PROPYLENE OXIDE
1991	CHLOROPRENE, STABILIZED
2309	OCTADIENE (1,7-OCTADIENE)
2983	ETHYLENE OXIDE AND PROPYLENE OXIDE MIXTURE, with not more than 30 % ethylene oxide

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

3.2.3.2 In the following entries, amend column (16) to read “II B (II B3¹⁴)”:

1578	CHLORONITROBENZENES, SOLID, MOLTEN
1663	NITROPHENOLS
2078	TOLUENE DIISOCYANATE (and isomeric mixtures) (2,4-TOLUENE DIISOCYANATE)
2205	ADIPONITRILE
2259	TRIETHYLENETETRAMINE
2280	HEXAMETHYLENEDIAMINE, SOLID, MOLTEN
3446	NITROTOLUENES, SOLID, MOLTEN (p-NITROTOLUENE)

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

3.2.3.2 Insert the following new entries:

(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
1148	DIACETONE ALCOHOL	3	F1	III	3	N	3	2			97	0.93	3	yes	T1	II A	yes	PP, EX, A	0	
1203	MOTOR SPIRIT or GASOLINE or PETROL, WITH MORE THAN 10 % BENZENE	3	F1	II	3+N2+C MR+F	C	*	*	*	*	*		*	yes	T3	II A	yes	*	1	*see 3.2.3.3
1224	KETONES, LIQUID, N.O.S.	3	F1	II	3+(N1, N2, N3, CMR, F or S)	*	*	*	*	*	*		*	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	*	1	14; 27; 29; 44 *see 3.2.3.3
1224	KETONES, LIQUID, N.O.S.	3	F1	III	3+(N1, N2, N3, CMR, F or S)	*	*	*	*	*	*		*	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	*	0	14; 27; 44 *see 3.2.3.3
1267	PETROLEUM CRUDE OIL	3	F1	I	3+(N1, N2, N3, CMR, F)	*	*	*	*	*	*		*	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	*	1	14; 44 *see 3.2.3.3
1267	PETROLEUM CRUDE OIL	3	F1	II	3+(N1, N2, N3, CMR, F)	*	*	*	*	*	*		*	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	*	1	14; 44 *see 3.2.3.3
1267	PETROLEUM CRUDE OIL	3	F1	III	3+(N1, N2, N3, CMR, F)	*	*	*	*	*	*		*	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	*	0	14; 44 *see 3.2.3.3
1267	PETROLEUM CRUDE OIL WITH MORE THAN 10% BENZENE	3	F1	I	3+CMR+F+(N1, N2, N3)	C	*	*	*	*	*		*	yes	T4 ³⁾	II B ⁴⁾	yes	*	1	*see 3.2.3.3
1267	PETROLEUM CRUDE OIL WITH MORE THAN 10% BENZENE	3	F1	I	3+CMR+F+(N1, N2, N3)	C	*	*	*	*	*		*	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	*	1	44 *see 3.2.3.3

(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
1267	PETROLEUM CRUDE OIL WITH MORE THAN 10% BENZENE	3	F1	II	3+CMR+F+(N1, N2, N3)	C	*	*	*	*	*		*	yes	T4 ³⁾	II B ⁴⁾	yes	*	1	*see 3.2.3.3
1267	PETROLEUM CRUDE OIL WITH MORE THAN 10% BENZENE	3	F1	II	3+CMR+F+(N1, N2, N3)	C	*	*	*	*	*		*	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	*	1	44 *see 3.2.3.3
1267	PETROLEUM CRUDE OIL WITH MORE THAN 10% BENZENE	3	F1	III	3+CMR+F+(N1, N2, N3)	C	*	*	*	*	*		*	yes	T4 ³⁾	II B ⁴⁾	yes	*	0	*see 3.2.3.3
1267	PETROLEUM CRUDE OIL WITH MORE THAN 10% BENZENE	3	F1	III	3+CMR+F+(N1, N2, N3)	C	*	*	*	*	*		*	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	*	0	44 *see 3.2.3.3
1267	PETROLEUM CRUDE OIL WITH MORE THAN 10% BENZENE INITIAL BOILING POINT ≤ 60 °C	3	F1	I	3+CMR+F+(N1, N2, N3)	C	1	1					1	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	PP, EP, EX, TOX, A	1	29; 43; 44
1267	PETROLEUM CRUDE OIL WITH MORE THAN 10% BENZENE INITIAL BOILING POINT ≤ 60 °C	3	F1	II	3+CMR+F+(N1, N2, N3)	C	1	1					1	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	PP, EP, EX, TOX, A	1	29; 44
1267	PETROLEUM CRUDE OIL WITH MORE THAN 10% BENZENE INITIAL BOILING POINT ≤ 60 °C	3	F1	III	3+CMR+F+(N1, N2, N3)	C	1	1					1	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	PP, EP, EX, TOX, A	0	29; 44
1267	PETROLEUM CRUDE OIL WITH MORE THAN 10% BENZENE 60 °C < INITIAL BOILING POINT ≤ 85 °C	3	F1	II	3+CMR+F+(N1, N2, N3)	C	2	2	3	50	95		2	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	PP, EP, EX, TOX, A	1	23; 29; 38; 44

(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
1267	PETROLEUM CRUDE OIL WITH MORE THAN 10% BENZENE 60 °C < INITIAL BOILING POINT ≤ 85 °C	3	F1	III	3+CMR+F+(N1, N2, N3)	C	2	2	3	50	95		2	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	PP, EP, EX, TOX, A	1	23; 29; 38; 44
1267	PETROLEUM CRUDE OIL WITH MORE THAN 10% BENZENE 85 °C < INITIAL BOILING POINT ≤ 115 °C	3	F1	II	3+CMR+F+(N1, N2, N3)	C	2	2		50	95		2	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	PP, EP, EX, TOX, A	1	29; 44
1267	PETROLEUM CRUDE OIL WITH MORE THAN 10% BENZENE 85 °C < INITIAL BOILING POINT ≤ 115 °C	3	F1	III	3+CMR+F+(N1, N2, N3)	C	2	2		50	95		2	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	PP, EP, EX, TOX, A	0	29; 44
1267	PETROLEUM CRUDE OIL WITH MORE THAN 10% BENZENE INITIAL BOILING POINT > 115 °C	3	F1	II	3+CMR+F+(N1, N2, N3)	C	2	2		35	95		2	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	PP, EP, EX, TOX, A	1	29; 44
1267	PETROLEUM CRUDE OIL WITH MORE THAN 10% BENZENE INITIAL BOILING POINT > 115 °C	3	F1	III	3+CMR+F+(N1, N2, N3)	C	2	2		35	95		2	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	PP, EP, EX, TOX, A	0	29; 44
1268	PETROLEUM DISTILLATES, N.O.S. or PETROLEUM PRODUCTS, N.O.S.	3	F1	I	3+(N1, N2, N3, CMR, F)	*	*	*	*	*	*		*	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	*	1	14; 27; 44 *see 3.2.3.3

1268	PETROLEUM DISTILLATES, N.O.S. or PETROLEUM PRODUCTS, N.O.S.	3	F1	II	3+(N1, N2, N3, CMR, F)	*	*	*	*	*	*	*	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	*	1	14; 27; 44 *see 3.2.3.3
1268	PETROLEUM DISTILLATES, N.O.S. or PETROLEUM PRODUCTS, N.O.S.	3	F1	III	3+(N1, N2, N3, CMR, F)	*	*	*	*	*	*	*	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	*	0	14; 27; 44 *see 3.2.3.3
1268	PETROLEUM DISTILLATES, N.O.S. or PETROLEUM PRODUCTS, N.O.S. WITH MORE THAN 10% BENZENE	3	F1	I	3+CMR+F+(N1, N2, N3)	C	*	*	*	*	*	*	yes	T4 ³⁾	II B ⁴⁾	yes	*	1	27 *see 3.2.3.3
1268	PETROLEUM DISTILLATES, N.O.S. or PETROLEUM PRODUCTS, N.O.S. WITH MORE THAN 10% BENZENE	3	F1	I	3+CMR+F+(N1, N2, N3)	C	*	*	*	*	*	*	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	*	1	27; 44 *see 3.2.3.3
1268	PETROLEUM DISTILLATES, N.O.S. or PETROLEUM PRODUCTS, N.O.S. WITH MORE THAN 10% BENZENE	3	F1	II	3+CMR+F+(N1, N2, N3)	C	*	*	*	*	*	*	yes	T4 ³⁾	II B ⁴⁾	yes	*	1	27 *see 3.2.3.3
1268	PETROLEUM DISTILLATES, N.O.S. or PETROLEUM PRODUCTS, N.O.S. WITH MORE THAN 10% BENZENE	3	F1	II	3+CMR+F+(N1, N2, N3)	C	*	*	*	*	*	*	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	*	1	27; 44 *see 3.2.3.3
1268	PETROLEUM DISTILLATES, N.O.S. or PETROLEUM PRODUCTS, N.O.S. WITH MORE THAN 10% BENZENE	3	F1	III	3+CMR+F+(N1, N2, N3)	C	*	*	*	*	*	*	yes	T4 ³⁾	II B ⁴⁾	yes	*	0	27 *see 3.2.3.3

1268	PETROLEUM DISTILLATES, N.O.S. or PETROLEUM PRODUCTS, N.O.S. WITH MORE THAN 10% BENZENE	3	F1	III	3+CMR+F+(N1, N2, N3)	C	*	*	*	*	*	*	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	*	0	27; 44 *see 3.2.3.3	
1268	PETROLEUM DISTILLATES, N.O.S. or PETROLEUM PRODUCTS, N.O.S. WITH MORE THAN 10% BENZENE INITIAL BOILING POINT ≤ 60 °C	3	F1	I	3+CMR+F+(N1, N2, N3)	C	1	1			95		1	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	PP, EP, EX, TOX, A	1	27; 29; 43; 44
1268	PETROLEUM DISTILLATES, N.O.S. or PETROLEUM PRODUCTS, N.O.S. WITH MORE THAN 10% BENZENE INITIAL BOILING POINT ≤ 60 °C	3	F1	II	3+CMR+F+(N1, N2, N3)	C	1	1			95		1	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	PP, EP, EX, TOX, A	1	27; 29; 44
1268	PETROLEUM DISTILLATES, N.O.S. or PETROLEUM PRODUCTS, N.O.S. WITH MORE THAN 10% BENZENE 60 °C < INITIAL BOILING POINT ≤ 85 °C	3	F1	II	3+CMR+F+(N1, N2, N3)	C	2	2	3	50	95		2	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	PP, EP, EX, TOX, A	1	23; 27; 29; 38; 44

1268	PETROLEUM DISTILLATES, N.O.S. or PETROLEUM PRODUCTS, N.O.S. WITH MORE THAN 10% BENZENE 85 °C < INITIAL BOILING POINT ≤ 115 °C	3	F1	II	3+CMR+F+(N1, N2, N3)	C	2	2	50	95		2	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	PP, EP, EX, TOX, A	1	27; 29; 44
1268	PETROLEUM DISTILLATES, N.O.S. or PETROLEUM PRODUCTS, N.O.S. WITH MORE THAN 10% BENZENE INITIAL BOILING POINT > 115 °C	3	F1	II	3+CMR+F+(N1, N2, N3)	C	2	2	35	95		2	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	PP, EP, EX, TOX, A	1	27; 29; 44
1863	FUEL, AVIATION, TURBINE ENGINE	3	F1	I	3+(N1, N2, N3, CMR, F)	*	*	*	*	*		*	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	*	1	14; 44 *see 3.2.3.3
1863	FUEL, AVIATION, TURBINE ENGINE	3	F1	II	3+(N1, N2, N3, CMR, F)	*	*	*	*	*		*	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	*	1	14; 44 *see 3.2.3.3
1863	FUEL, AVIATION, TURBINE ENGINE	3	F1	III	3+(N1, N2, N3, CMR, F)	*	*	*	*	*		*	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	*	0	14; 44 *see 3.2.3.3
1863	FUEL, AVIATION, TURBINE ENGINE WITH MORE THAN 10% BENZENE	3	F1	I	3+CMR+F+(N1, N2, N3)	C	*	*	*	*		*	yes	T4 ³⁾	II B ⁴⁾	yes	*	1	*see 3.2.3.3
1863	FUEL, AVIATION, TURBINE ENGINE WITH MORE THAN 10% BENZENE	3	F1	I	3+CMR+F+(N1, N2, N3)	C	*	*	*	*		*	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	*	1	44 *see 3.2.3.3

1863	FUEL, AVIATION, TURBINE ENGINE WITH MORE THAN 10% BENZENE	3	F1	II	3+CMR+F+(N1, N2, N3)	C	*	*	*	*	*	*	yes	T4 ³⁾	II B ⁴⁾	yes	*	1	*see 3.2.3.3	
1863	FUEL, AVIATION, TURBINE ENGINE WITH MORE THAN 10% BENZENE	3	F1	II	3+CMR+F+(N1, N2, N3)	C	*	*	*	*	*	*	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	*	1	44 *see 3.2.3.3	
1863	FUEL, AVIATION, TURBINE ENGINE WITH MORE THAN 10% BENZENE	3	F1	III	3+CMR+F+(N1, N2, N3)	C	*	*	*	*	*	*	yes	T4 ³⁾	II B ⁴⁾	yes	*	0	*see 3.2.3.3	
1863	FUEL, AVIATION, TURBINE ENGINE WITH MORE THAN 10% BENZENE	3	F1	III	3+CMR+F+(N1, N2, N3)	C	*	*	*	*	*	*	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	*	0	44 *see 3.2.3.3	
1863	FUEL, AVIATION, TURBINE ENGINE WITH MORE THAN 10% BENZENE INITIAL BOILING POINT ≤ 60 °C	3	F1	I	3+CMR+F+(N1, N2, N3)	C	1	1				95	1	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	PP, EP, EX, TOX, A	1	29; 43; 44
1863	FUEL, AVIATION, TURBINE ENGINE WITH MORE THAN 10% BENZENE INITIAL BOILING POINT ≤ 60 °C	3	F1	II	3+CMR+F+(N1, N2, N3)	C	1	1				95	1	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	PP, EP, EX, TOX, A	1	29; 44
1863	FUEL, AVIATION, TURBINE ENGINE WITH MORE THAN 10% BENZENE 60 °C < INITIAL BOILING POINT ≤ 85 °C	3	F1	III	3+CMR+F+(N1, N2, N3)	C	2	2	3	50	95		2	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	PP, EP, EX, TOX, A	0	23; 29; 38; 44

1863	FUEL, AVIATION, TURBINE ENGINE WITH MORE THAN 10% BENZENE 85 °C < INITIAL BOILING POINT ≤ 115 °C	3	F1	III	3+CMR+ F+(N1, N2, N3)	C	2	2		50	95		2	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	PP, EP, EX, TOX, A	0	29; 44
1863	FUEL, AVIATION, TURBINE ENGINE WITH MORE THAN 10% BENZENE INITIAL BOILING POINT > 115 °C	3	F1	III	3+CMR+ F+(N1, N2, N3)	C	2	2		35	95		2	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	PP, EP, EX, TOX, A	0	29; 44
1986	ALCOHOLS, FLAMMABLE, TOXIC, N.O.S.	3	FT1	I	3+6.1+(N 1, N2, N3, CMR, F or S)	C	1	1	*	*	95		1	no	T4 ³⁾	II B ⁴⁾ (II B3)	yes	PP, EP, EX, TOX, A	2	27; 29; 44 *see 3.2.3.3
1986	ALCOHOLS, FLAMMABLE, TOXIC, N.O.S.	3	FT1	I	3+6.1+(N 1, N2, N3, CMR, F or S)	C	2	2	*	*	95		1	no	T4 ³⁾	II B ⁴⁾ (II B3)	yes	PP, EP, EX, TOX, A	2	27; 29; 44 *see 3.2.3.3
1986	ALCOHOLS, FLAMMABLE, TOXIC, N.O.S.	3	FT1	II	3+6.1+(N 1, N2, N3, CMR, F or S)	C	2	2	*	*	95		2	no	T4 ³⁾	II B ⁴⁾ (II B3)	yes	PP, EP, EX, TOX, A	2	27; 29; 44 *see 3.2.3.3
1986	ALCOHOLS, FLAMMABLE, TOXIC, N.O.S.	3	FT1	III	3+6.1+(N 1, N2, N3, CMR, F or S)	C	2	2	*	*	95		2	no	T4 ³⁾	II B ⁴⁾ (II B3)	yes	PP, EP, EX, TOX, A	0	27; 29; 44 *see 3.2.3.3
1987	ALCOHOLS, N.O.S.	3	F1	II	3+(N1, N2, N3, CMR, F or S)	*	*	*	*	*	*		*	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	*	1	14; 27; 29; 44*see 3.2.3.3

1987	ALCOHOLS, N.O.S.	3	F1	III	3+(N1, N2, N3, CMR, F or S)	*	*	*	*	*	*	*	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	*	0	14; 27; 44 *see 3.2.3.3
1989	ALDEHYDES, N.O.S.	3	F1	II	3+(N1, N2, N3, CMR, F or S)	*	*	*	*	*	*	*	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	*	1	14; 27; 29; 44 *see 3.2.3.3
1989	ALDEHYDES, N.O.S.	3	F1	III	3+(N1, N2, N3, CMR, F or S)	*	*	*	*	*	*	*	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	*	0	14; 27; 44 *see 3.2.3.3
1992	FLAMMABLE LIQUID, TOXIC, N.O.S.	3	FT1	I	3+6.1+(N1, N2, N3, CMR, F or S)	C	1	1	*	*	95	1	no	T4 ³⁾	II B ⁴⁾ (II B3)	yes	PP, EP, EX, TOX, A	2	27; 29; 44 *see 3.2.3.3
1992	FLAMMABLE LIQUID, TOXIC, N.O.S.	3	FT1	I	3+6.1+(N1, N2, N3, CMR, F or S)	C	2	2	*	*	95	1	no	T4 ³⁾	II B ⁴⁾ (II B3)	yes	PP, EP, EX, TOX, A	2	27; 29; 44 *see 3.2.3.3
1992	FLAMMABLE LIQUID, TOXIC, N.O.S.	3	FT1	II	3+6.1+(N1, N2, N3, CMR, F or S)	C	2	2	*	*	95	2	no	T4 ³⁾	II B ⁴⁾ (II B3)	yes	PP, EP, EX, TOX, A	2	27; 29; 44 *see 3.2.3.3
1992	FLAMMABLE LIQUID, TOXIC, N.O.S.	3	FT1	III	3+6.1+(N1, N2, N3, CMR, F or S)	C	2	2	*	*	95	2	no	T4 ³⁾	II B ⁴⁾ (II B3)	yes	PP, EP, EX, TOX, A	0	27; 29; 44 *see 3.2.3.3
1993	FLAMMABLE LIQUID, N.O.S.	3	F1	I	3+(N1, N2, N3, CMR, F)	*	*	*	*	*	*	*	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	*	1	14; 44*see 3.2.3.3

1993	FLAMMABLE LIQUID, N.O.S.	3	F1	II	3+(N1, N2, N3, CMR, F)	*	*	*	*	*	*	*	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	*	1	14; 44 *see 3.2.3.3	
1993	FLAMMABLE LIQUID, N.O.S.	3	F1	III	3+(N1, N2, N3, CMR, F)	*	*	*	*	*	*	*	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	*	0	14; 44 *see 3.2.3.3	
1993	FLAMMABLE LIQUID, N.O.S. WITH MORE THAN 10% BENZENE	3	F1	I	3+(N1, N2, N3, CMR, F)	C	*	*	*	*	*	*	yes	T4 ³⁾	II B ⁴⁾	yes	*	1	*see 3.2.3.3	
1993	FLAMMABLE LIQUID, N.O.S. WITH MORE THAN 10% BENZENE	3	F1	I	3+(N1, N2, N3, CMR, F)	C	*	*	*	*	*	*	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	*	1	44*see 3.2.3.3	
1993	FLAMMABLE LIQUID, N.O.S. WITH MORE THAN 10% BENZENE	3	F1	II	3+(N1, N2, N3, CMR, F)	C	*	*	*	*	*	*	yes	T4 ³⁾	II B ⁴⁾	yes	*	1	*see 3.2.3.3	
1993	FLAMMABLE LIQUID, N.O.S. WITH MORE THAN 10% BENZENE	3	F1	II	3+(N1, N2, N3, CMR, F)	C	*	*	*	*	*	*	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	*	1	44 *see 3.2.3.3	
1993	FLAMMABLE LIQUID, N.O.S. WITH MORE THAN 10% BENZENE	3	F1	III	3+(N1, N2, N3, CMR, F)	C	*	*	*	*	*	*	yes	T4 ³⁾	II B ⁴⁾	yes	*	0	*see 3.2.3.3	
1993	FLAMMABLE LIQUID, N.O.S. WITH MORE THAN 10% BENZENE	3	F1	III	3+(N1, N2, N3, CMR, F)	C	*	*	*	*	*	*	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	*	0	44 *see 3.2.3.3	
1993	FLAMMABLE LIQUID, N.O.S. WITH MORE THAN 10% BENZENE INITIAL BOILING POINT ≤ 60 °C	3	F1	I	3+(N1, N2, N3, CMR, F)	C	1	1				95	1	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	PP, EP, EX, TOX, A	1	29; 44
1993	FLAMMABLE LIQUID, N.O.S. WITH MORE THAN 10% BENZENE INITIAL BOILING POINT ≤ 60 °C	3	F1	II	3+(N1, N2, N3, CMR, F)	C	1	1				95	1	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	PP, EP, EX, TOX, A	1	29; 44

1993	FLAMMABLE LIQUID, N.O.S. WITH MORE THAN 10% BENZENE INITIAL BOILING POINT ≤ 60 °C	3	F1	III	3+(N1, N2, N3, CMR, F)	C	1	1		95		1	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	PP, EP, EX, TOX, A	0	29; 44
1993	FLAMMABLE LIQUID, N.O.S. WITH MORE THAN 10% BENZENE 60 °C < INITIAL BOILING POINT ≤ 85 °C	3	F1	II	3+(N1, N2, N3, CMR, F)	C	2	2	3	50	95	2	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	PP, EP, EX, TOX, A	1	23; 29; 38; 44
1993	FLAMMABLE LIQUID, N.O.S. WITH MORE THAN 10% BENZENE 60 °C < INITIAL BOILING POINT ≤ 85 °C	3	F1	III	3+(N1, N2, N3, CMR, F)	C	2	2	3	50	95	2	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	PP, EP, EX, TOX, A	0	23; 29; 38; 44
1993	FLAMMABLE LIQUID, N.O.S. WITH MORE THAN 10% BENZENE 85 °C < INITIAL BOILING POINT ≤ 115 °C	3	F1	II	3+(N1, N2, N3, CMR, F)	C	2	2		50	95	2	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	PP, EP, EX, TOX, A	1	29; 44
1993	FLAMMABLE LIQUID, N.O.S. WITH MORE THAN 10% BENZENE 85 °C < INITIAL BOILING POINT ≤ 115 °C	3	F1	III	3+(N1, N2, N3, CMR, F)	C	2	2		50	95	2	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	PP, EP, EX, TOX, A	0	29; 44
1993	FLAMMABLE LIQUID, N.O.S. WITH MORE THAN 10% BENZENE INITIAL BOILING POINT > 115 °C	3	F1	II	3+(N1, N2, N3, CMR, F)	C	2	2		35	95	2	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	PP, EP, EX, TOX, A	1	29; 44

1993	FLAMMABLE LIQUID, N.O.S. WITH MORE THAN 10% BENZENE INITIAL BOILING POINT > 115 °C	3	F1	III	3+(N1, N2, N3, CMR, F)	C	2	2		35	95		2	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	PP, EP, EX, TOX, A	0	29; 44
2920	CORROSIVE LIQUID, FLAMMABLE, N.O.S. (AQUEOUS SOLUTION OF HEXADECYLTRIMETHYL-AMMONIUM CHLORIDE (50 %) AND ETHANOL (35 %))	8	CF1	II	8+3+F	N	2	3		10	95	0,9	3	yes	T2	II B (II B3)	yes	PP, EP, EX, A	1	6; +7 °C; 17; 34; 44
2924	FLAMMABLE LIQUID, CORROSIVE, N.O.S.	3	FC	I	3+8+(N1, N2, N3, CMR, F or S)	C	1	1	*	*	95		1	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	*	1	27; 29; 44 *see 3.2.3.3
2924	FLAMMABLE LIQUID, CORROSIVE, N.O.S.	3	FC	I	3+8+(N1, N2, N3, CMR, F or S)	C	2	2	*	*	95		1	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	*	1	27; 29; 44 *see 3.2.3.3
2924	FLAMMABLE LIQUID, CORROSIVE, N.O.S.	3	FC	II	3+8+(N1, N2, N3, CMR, F or S)	C	2	2	*	*	95		2	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	*	1	27; 29; 44 *see 3.2.3.3
2924	FLAMMABLE LIQUID, CORROSIVE, N.O.S.	3	FC	III	3+8+(N1, N2, N3, CMR, F or S)	*	*	*	*	*	*		*	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	*	0	27; 34 *see 3.2.3.3
2929	TOXIC LIQUID, FLAMMABLE, ORGANIC, N.O.S.	6.1	TF1	I	6.1+3+(N1, N2, N3, CMR, F or S)	C	2	2	*	*	95		1	no	T4 ³⁾	II B ⁴⁾ (II B3)	yes	PP, EP, EX, TOX, A	2	27; 29; 44 *see 3.2.3.3

2929	TOXIC LIQUID, FLAMMABLE, ORGANIC, N.O.S.	6.1	TF1	II	6.1+3+(N1, N2, N3, CMR, F or S)	C	2	2	*	*	95		2	no	T4 ³⁾	II B ⁴⁾ (II B3)	yes	PP, EP, EX, TOX, A	2	27; 29; 44 *see 3.2.3.3
3256	ELEVATED TEMPERATURE LIQUID, FLAMMABLE, N.O.S. with flash-point above 60 °C, at or above its flash-point	3	F2	III	3+(N1, N2, N3, CMR, F or S)	*	*	*	*	*	95		*	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	*	0	7; 27; 44*see 3.2.3.3
3271	ETHERS, N.O.S.	3	F1	II	3+(N1, N2, N3, CMR, F or S)	*	*	*	*	*	*		*	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	*	1	14, 27; 29; 44 *see 3.2.3.3
3271	ETHERS, N.O.S.	3	F1	III	3+(N1, N2, N3, CMR, F or S)	*	*	*	*	*	*		*	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	*	0	14; 27; 44 *see 3.2.3.3
3272	ESTERS, N.O.S.	3	F1	II	3+(N1, N2, N3, CMR, F or S)	*	*	*	*	*	*		*	yes	T2	II B ⁴⁾ (II B3)	yes	*	1	14, 27; 29; 44 *see 3.2.3.3
3272	ESTERS, N.O.S.	3	F1	III	3+(N1, N2, N3, CMR, F or S)	*	*	*	*	*	*		*	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	*	0	14; 27; 44 *see 3.2.3.3
3286	FLAMMABLE LIQUID, TOXIC, CORROSIVE, N.O.S.	3	FT C	I	3+6.1+8+ (N1, N2, N3, CMR, F or S)	C	1	1	*	*	95		1	no	T4 ³⁾	II B ⁴⁾ (II B3)	yes	PP, EP, EX, TOX, A	2	27; 29; 44 *see 3.2.3.3

3286	FLAMMABLE LIQUID, TOXIC, CORROSIVE, N.O.S.	3	FT C	I	3+6.1+8+(N1, N2, N3, CMR, F or S)	C	2	2	*	*	95		1	no	T4 ³⁾	II B ⁴⁾ (II B3)	yes	PP, EP, EX, TOX, A	2	27; 29; 44 *see 3.2.3.3
3286	FLAMMABLE LIQUID, TOXIC, CORROSIVE, N.O.S.	3	FT C	II	3+6.1+8+(N1, N2, N3, CMR, F or S)	C	2	2	*	*	95		2	no	T4 ³⁾	II B ⁴⁾ (II B3)	yes	PP, EP, EX, TOX, A	2	27; 29; 44 *see 3.2.3.3
3295	HYDROCARBONS, LIQUID, N.O.S.	3	F1	I	3+(N1, N2, N3, CMR, F)	*	*	*	*	*	*		*	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	*	1	14; 44 *see 3.2.3.3
3295	HYDROCARBONS, LIQUID, N.O.S.	3	F1	II	3+(N1, N2, N3, CMR, F)	*	*	*	*	*	*		*	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	*	1	14; 44 *see 3.2.3.3
3295	HYDROCARBONS, LIQUID, N.O.S.	3	F1	III	3+(N1, N2, N3, CMR, F)	*	*	*	*	*	*		*	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	*	0	14; 44 *see 3.2.3.3
3295	HYDROCARBONS, LIQUID, N.O.S. WITH MORE THAN 10% BENZENE	3	F1	I	3+CMR+(N1, N2, N3)	C	*	*	*	*	*		*	yes	T4 ³⁾	II B ⁴⁾	yes	*	1	*see 3.2.3.3
3295	HYDROCARBONS, LIQUID, N.O.S. WITH MORE THAN 10% BENZENE	3	F1	I	3+CMR+(N1, N2, N3)	C	*	*	*	*	*		*	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	*	1	44 *see 3.2.3.3
3295	HYDROCARBONS, LIQUID, N.O.S. WITH MORE THAN 10% BENZENE	3	F1	II	3+CMR+(N1, N2, N3)	C	*	*	*	*	*		*	yes	T4 ³⁾	II B ⁴⁾	yes	*	1	*see 3.2.3.3
3295	HYDROCARBONS, LIQUID, N.O.S. WITH MORE THAN 10% BENZENE	3	F1	II	3+CMR+(N1, N2, N3)	C	*	*	*	*	*		*	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	*	1	44 *see 3.2.3.3

3295	HYDROCARBONS, LIQUID, N.O.S. WITH MORE THAN 10% BENZENE	3	F1	III	3+CMR+ (N1, N2, N3)	C	*	*	*	*	*	*	yes	T4 ³⁾	II B ⁴⁾	yes	*	0	*see 3.2.3.3	
3295	HYDROCARBONS, LIQUID, N.O.S. WITH MORE THAN 10% BENZENE	3	F1	III	3+CMR+ (N1, N2, N3)	C	*	*	*	*	*	*	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	*	0	44 *see 3.2.3.3	
3295	HYDROCARBONS, LIQUID, N.O.S. WITH MORE THAN 10% BENZENE INITIAL BOILING POINT ≤ 60 °C	3	F1	I	3+CMR+ (N1, N2, N3)	C	1	1			95		1	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	PP, EP, EX, TOX, A	1	29; 44
3295	HYDROCARBONS, LIQUID, N.O.S. WITH MORE THAN 10% BENZENE INITIAL BOILING POINT ≤ 60 °C	3	F1	II	3+CMR+ (N1, N2, N3)	C	1	1			95		1	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	PP, EP, EX, TOX, A	1	29; 44
3295	HYDROCARBONS, LIQUID, N.O.S. WITH MORE THAN 10% BENZENE INITIAL BOILING POINT ≤ 60 °C	3	F1	III	3+CMR+ (N1, N2, N3)	C	1	1			95		1	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	PP, EP, EX, TOX, A	0	29; 44
3295	HYDROCARBONS, LIQUID, N.O.S. WITH MORE THAN 10% BENZENE 60 °C < INITIAL BOILING POINT ≤ 85 °C	3	F1	II	3+CMR+ (N1, N2, N3)	C	2	2	3	50	95		2	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	PP, EP, EX, TOX, A	1	23; 29; 38; 44
3295	HYDROCARBONS, LIQUID, N.O.S. WITH MORE THAN 10% BENZENE 60 °C < INITIAL BOILING POINT ≤ 85 °C	3	F1	III	3+CMR+ (N1, N2, N3)	C	2	2	3	50	95		2	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	PP, EP, EX, TOX, A	0	23; 29; 38; 44

3295	HYDROCARBONS, LIQUID, N.O.S. WITH MORE THAN 10% BENZENE 85 °C < INITIAL BOILING POINT ≤ 115 °C	3	F1	II	3+CMR+ (N1, N2, N3)	C	2	2		50	95		2	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	PP, EP, EX, TOX, A	1	29; 44
3295	HYDROCARBONS, LIQUID, N.O.S. WITH MORE THAN 10% BENZENE 85 °C < INITIAL BOILING POINT ≤ 115 °C	3	F1	III	3+CMR+ (N1, N2, N3)	C	2	2		50	95		2	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	PP, EP, EX, TOX, A	0	29; 44
3295	HYDROCARBONS, LIQUID, N.O.S. WITH MORE THAN 10% BENZENE INITIAL BOILING POINT > 115°C	3	F1	II	3+CMR+ (N1, N2, N3)	C	2	2		35	95		2	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	PP, EP, EX, TOX, A	1	29; 44
3295	HYDROCARBONS, LIQUID, N.O.S. WITH MORE THAN 10% BENZENE INITIAL BOILING POINT > 115°C	3	F1	III	3+CMR+ (N1, N2, N3)	C	2	2		35	95		2	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	PP, EP, EX, TOX, A	0	29; 44
3295	HYDROCARBONS, LIQUID, N.O.S. CONTAINING ISOPRENE AND PENTADIENE, STABILIZED	3	F1	I	3+inst.+ N2+CMR	C	2	2	3	50	95	0,678	1	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	PP, EX, A	1	3; 27; 44
3494	PETROLEUM SOUR CRUDE OIL, FLAMMABLE, TOXIC	3	FT1	I	3+6.1+(N 1, N2, N3, CMR, F)	C	*	*	*	*	95		1	no	T4 ³⁾	II B ⁴⁾ (II B3)	yes	PP, EP, EX, TOX, A	2	14; 27; 44 * see 3.2.3.3
3494	PETROLEUM SOUR CRUDE OIL, FLAMMABLE, TOXIC	3	FT1	II	3+6.1+(N 1, N2, N3, CMR, F)	C	*	*	*	*	95		2	no	T4 ³⁾	II B ⁴⁾ (II B3)	yes	PP, EP, EX, TOX, A	2	14; 27; 44 * see 3.2.3.3

3494	PETROLEUM SOUR CRUDE OIL, FLAMMABLE, TOXIC	3	FT1	III	3+6.1+(N 1, N2, N3, CMR, F)	C	*	*	*	*	95		2	no	T4 ³⁾	II B ⁴⁾ (II B3)	yes	PP, EP, EX, TOX, A	0	14; 27; 44 * see 3.2.3.3
9001	SUBSTANCES WITH A FLASH-POINT ABOVE 60 °C handed over for carriage or carried at a TEMPERATURE WITHIN A RANGE OF 15K BELOW THEIR FLASH-POINT OR SUBSTANCES WITH A FLASH-POINT > 60 °C, HEATED TO LESS THAN 15 K FROM THE FLASH-POINT	3	F4		3+(N1, N2, N3, CMR, F or S)	*	*	*	*	*	*		*	yes	T4 ³⁾	II B ⁴⁾ (II B3)	yes	*	0	27; 44 *see 3.2.3.3
9002	SUBSTANCES HAVING A SELF- IGNITION TEMPERATURE ≤ 200 °C, N.O.S.	3	F5		3+(N1, N2, N3, CMR, F or S)	C	1	1	*	*	95		1	yes	T4	II B ⁴⁾ (II B3)	yes	*	0	44 *see 3.2.3.3

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

3.2.3.2 In the Footnotes related to the list of substances, add a new footnote to read as follows:

“14) No maximum experimental safe gap (MESG) has been determined in accordance with a standardized determination procedure; thus, the substance is provisionally assigned to explosion group II B3, which is considered to be safe.”

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

3.2.3.3 In the flowchart for classification of liquids of Classes 3, 6.1, 8 and 9 for carriage in tanks in inland navigation, in the third box after the bullet point “Corrosive substances that react dangerously with water;”, insert an additional bullet point to read: “Corrosive substances containing gases in solution”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

3.2.3.3 In Scheme B, Criteria for equipment of vessels of type N with closed cargo tanks in the column “Corrosive substances” amend the third row to read as follows: “Packing group I or II with $P_{d50} > 12.5$ kPa or reacting dangerously with water or with gases in solution”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

3.2.3.3 and 3.2.4.3 I Amend column (17) to read as follows:

“Column (17): Determination of whether anti-explosion protection is required for electrical equipment and systems

- Yes - For substances with a flash-point ≤ 60 °C
- For substances that must be transported while heated to a temperature of less than 15 K below their flash-point
 - For substances that must be transported while heated to a temperature of 15 K or more below their flash-point and where in column (9) (cargo tank equipment) only a possibility of cargo heating (2) and no cargo-heating system on board (4) is required
 - For flammable gases
- No - For all other substances”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

3.2.3.3 and 3.2.4.3, column (20) Amend remark 17 to read as follows: “Reference shall be made in column (20) to remark 17 for substances when reference is made to remark 4, 6 or 7.”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

3.2.4.3, sub-paragraph 9. Amend footnote * to read as follows:

“* Since there is no official international list of CMR substances of Categories IA and IB, pending the availability of such a list, the list of CMR substances of Categories IA and IB in Regulation (EC) No 1272/2008 of the European Parliament and of the Council, as amended, shall apply.”.

(Reference document: ECE/TRANS/WP.15/AC.2/62)

Chapter 7.1

7.1.3.1 Amend paragraphs 7.1.3.1.3 to 7.1.3.1.7 to read as follows:

“7.1.3.1.3 If the concentration of gases and vapours given off by the cargo or the oxygen content of the air in holds, double-wall spaces or double bottoms has to be measured before entry, the results of these measurements shall be recorded in writing. The measurement may only be effected by an expert referred to in 8.2.1.2, equipped with suitable breathing apparatus for the substance carried.

Entry into the spaces is not permitted for the purpose of measuring.

7.1.3.1.4 Carriage of cargo in bulk or without packaging

If a vessel carries dangerous goods in bulk or without packaging in its holds for which EX and/or TOX appears in column (9) of Table A of Chapter 3.2, the concentration of flammable and/or toxic gases and vapours given off by the cargo in these holds and adjacent holds shall be measured before any person enters these holds.

7.1.3.1.5 Entry into holds where dangerous goods are carried in bulk or without packaging as well as entry into double-hull spaces and double bottoms is only permitted if:

- The concentration of flammable gases and vapours given off by the cargo in the hold, double hull space or double bottom is below 10 % of the LEL, the concentration of toxic gases and vapours given off by the cargo is below national accepted exposure levels, and the percentage of oxygen is between 20 and 23.5 vol %;

or

- The concentration of flammable gases and vapours given off by the cargo is below 10% of the LEL, and the person entering the space wears a self-contained breathing apparatus and other necessary protective and rescue equipment, and is secured by a line. Entry into these spaces is only permitted if this operation is supervised by a second person for whom the same equipment is readily at hand. Another two persons capable of giving assistance in an emergency shall be on the vessel within calling distance.

In deviation of 1.1.4.6, more stringent national legislation on the entry into holds shall take precedence over the ADN.

7.1.3.1.6 Carriage in packages

In case of suspected damage to packages, the concentration of flammable and/or toxic gases and vapours given off by the cargo in holds containing dangerous goods of Classes 2, 3, 4.3, 5.2, 6.1 and 8 for which EX and/or TOX appears in column (9) of Table A of Chapter 3.2, shall be measured before any person enters these holds.

7.1.3.1.7 Entry into holds where damage is suspected to packages in which dangerous goods of Classes 2, 3, 4.3, 5.2, 6.1 and 8 are carried as well as entry into double-hull spaces and double bottoms is only permitted if:

- The concentration of flammable gases and vapours given off by the cargo in the hold, double hull space or double bottom is below 10 % of the LEL, the concentration of toxic gases and vapours given off by the cargo is below national accepted exposure levels, and the percentage of oxygen is between 20 and 23,5 vol %;

or

- The concentration of flammable gases and vapours given off by the cargo in the hold is below 10 % of the LEL and the person entering the space wears a self-contained breathing apparatus and other necessary protective and rescue equipment and is secured by a line. Entry into these spaces is only permitted if this operation is supervised by a second person for whom the same equipment is readily at hand. Another two persons capable of giving assistance in an emergency shall be on the vessel within calling distance.

In deviation of 1.1.4.6, more stringent national legislation on the entry into holds shall take precedence over the ADN.”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

7.1.3 Add a new paragraph 7.1.3.16 to read as follows:

“7.1.3.16 All measurements on board the vessel shall be performed by an expert according to 8.2.1.2, unless provided otherwise in the Regulations annexed to ADN. The results of the measurements shall be recorded in writing in the book according to paragraph 8.1.2.1 (g).”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

7.1.3 Replace “7.1.3.16 to 7.1.3.19 (Reserved)” by “7.1.3.17 to 7.1.3.19 (Reserved)”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

7.1.3.31 Amend to read as follows:

“7.1.3.31 Engines

The use of engines running on fuels having a flashpoint equal to or lower than 55 °C (e.g. petrol engines) is prohibited. This provision does not apply to:

- the petrol-operated outboard motors of lifeboats;
- the propulsion and auxiliary systems which meet the requirements of Chapter 30 and Annex 8, Section 1 of the European Standard laying down Technical Requirements for Inland Navigation vessels (ES-TRIN) as amended”.

(Reference document: ECE/TRANS/WP.15/AC.2/62)

7.1.4.3.4 Amend table note 1 to read as follows:

“1 Packages containing articles assigned to compatibility group B or substances or articles assigned to compatibility group D may be loaded together in the same hold provided that they are carried in closed containers, vehicles or wagons.”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

7.1.4.4.2 Amend the first indent to read as follows: “- closed containers;”.

(Reference document: ECE/TRANS/WP.15/AC.2/62)

~~7.1.4.4.2 — Amendment does not apply to the English text.~~

~~(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)~~

7.1.4.4.2 In the second indent, delete “with complete metal walls”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

7.1.4.12.2 Amend the last sentence to read as follows: “Where damage of the container or release of content inside the container is suspected, the holds shall be ventilated so as to reduce the concentration of flammable gases and vapours given off by the cargo to less than 10 % of the LEL or in the case of toxic gases and vapours to below national accepted exposure levels.”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

7.1.4.14.4 Amend the first indent to read “- closed containers;”. Amend the third indent to read “- sheeted vehicles or sheeted wagons;”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

* As available on the website of the Comité Européen pour l’Élaboration de Standards dans le Domaine de Navigation Intérieure – CESNI, <https://www.cesni.eu/en/documents/es-trin/> [for equivalent provisions contained in the UNECE Recommendations on Harmonized Europe wide Technical Requirements for Inland Navigation Vessels (Resolution 61 of the Inland Transport Committee Working Party on Inland Water Transport, as revised and amended <http://www.unece.org/trans/main/sc3/sc3res.html>)].

7.1.5.4.1 Amend to read as follows:

“The distances to be kept by vessels carrying dangerous goods at berth from other vessels shall not be less than the distance prescribed by the Regulations referred to in 1.1.4.6.”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

7.1.6.12, VE01 In the first sentence, replace “concentration of gases” by “concentration of flammable gases and vapours” and “lower explosive limit” by “LEL”. Amend the third sentence to read as follows: “A control measurement shall be repeated after one hour.”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

7.1.6.12, VE02 In the first sentence, replace “free from gases” by “free from toxic gases and vapours”. Amend the third sentence to read as follows: “A control measurement shall be repeated after one hour.”. In the penultimate sentence, replace “free of gas” by “free of toxic gases and vapours given off by the cargo”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

7.1.6.12, VE03 Amend the third sentence to read as follows: “After ventilation, the concentration of flammable or toxic gases and vapours given off by the cargo in these holds shall be measured.”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

7.1.6.16, IN01 Amend to read as follows:

“IN01 After loading and unloading of these substances in bulk or unpackaged and before leaving the cargo transfer site, the concentration of flammable gases and vapours given off by the cargo in the accommodation, engine rooms and adjacent holds shall be measured by the loader or unloader or by an expert according to 8.2.1.2 using a gas detector. The results of the measurement shall be recorded in writing.

Before any person enters a hold and prior to unloading, the concentration of flammable gases and vapours given off by the cargo shall be measured by the unloader of the cargo or by an expert according to 8.2.1.2. The results of the measurement shall be recorded in writing.

The hold shall not be entered or unloading started until the concentration of flammable gases and vapours given off by the cargo in the airspace above the cargo is below 50 % of the LEL.

If the concentrations of flammable gases and vapours given off by the cargo is not below 50 % of the LEL safety measures shall be taken immediately by the loader, the unloader or the responsible master.”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

7.1.6.16, IN02 Replace “gas concentration” by “concentration of toxic gases and vapours given off by the cargo”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

Chapter 7.2

7.2.3.1.4 Amend the beginning of the first paragraph to read as follows: “When the concentration of flammable or toxic gases and vapours given off by the cargo or the oxygen content has to be measured...”, remainder unchanged. In the second paragraph, replace “persons” by “an expert referred to in 8.2.1.2”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

7.2.3.1.5 Amend to read as follows:

“7.2.3.1.5 Before any person enters cargo tanks, the residual cargo tanks, the cargo pump-rooms below deck, cofferdams, double-hull spaces, double bottoms, hold spaces or other confined spaces:

- (a) When dangerous substances of Classes 2, 3, 4.1, 6.1, 8 or 9 for which a gas detector is required in column (18) of Table C of Chapter 3.2 are carried on board the vessel, it shall be established, by means of this device that the concentration of flammable gases and vapours given off by the cargo in these cargo tanks, residual cargo tanks, cargo pump-rooms below deck, cofferdams, double-hull spaces, double bottoms, or hold spaces is not more than 50% of the LEL. For the cargo pump-rooms below deck this may be determined by means of the permanent gas detection system;
- (b) When dangerous substances of Classes 2, 3, 4.1, 6.1, 8 or 9 for which a toximeter is required in column (18) of Table C of Chapter 3.2 are carried on board the vessel, it shall be established, by means of this device that the cargo tanks, residual cargo tanks, cargo pump-rooms below deck, cofferdams, double-hull spaces, double bottoms or hold spaces do not contain concentration of toxic gases and vapours given off by the cargo which exceeds national accepted exposure levels.

In deviation of 1.1.4.6, more stringent national legislation on the entry into holds shall take precedence over the ADN.”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

7.2.3.1.6 Amend to read as follows:

“7.2.3.1.6 Entry into empty cargo tanks, the residual cargo tanks, the cargo pump-rooms below deck, cofferdams, double-hull spaces, double bottoms, hold spaces or other confined spaces is only permitted if:

- The concentration of flammable gases and vapours given off by the cargo in the cargo tanks, the residual cargo tanks, the cargo pump-rooms below deck, cofferdams, double-hull spaces, double bottoms, hold spaces or other confined spaces, is below 10 % of the LEL, the concentration of toxic gases and vapours given off by the cargo is below national accepted exposure levels, and the percentage of oxygen is between 20 and 23,5 vol %,

or

- The concentration of flammable gases and vapours given off by the cargo in the cargo tanks, the residual cargo tank, the cargo pump-rooms below deck, cofferdams, double-hull spaces, double bottoms, hold spaces or other confined spaces, is below 10 % of the LEL, and the person entering the spaces wears a self-contained breathing apparatus and other necessary protective and rescue equipment, and is secured by a line. Entry into these spaces is only permitted if this operation is supervised by a second person for whom the same equipment is readily at hand. Another two persons capable of giving assistance in an emergency shall be on the vessel within calling distance. If a rescue winch has been installed, only one other person is sufficient.

In case of emergency or mechanical problems, it is allowed to enter the tank when the gas concentration given off by cargo is between 10 and 50 % of the LEL. The breathing apparatus (self-contained) in use has to be designed in such a way that the causing of sparks is avoided.

In deviation of 1.1.4.6, more stringent national legislation on the entry into cargo tanks shall take precedence over the ADN.”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

- 7.2.3.7 Amend 7.2.3.7 (title) and 7.2.3.7.0 to 7.2.3.7.2 to read as follows:
- “7.2.3.7 *Degassing of empty or unloaded cargo tanks and piping for loading and unloading***
- 7.2.3.7.0 Degassing of empty or unloaded cargo tanks and piping for loading and unloading into the atmosphere or to reception facilities is permitted under the conditions below but only if and insofar it is not prohibited on the basis of other legal requirements.
- 7.2.3.7.1 Degassing of empty or unloaded cargo tanks and piping for loading and unloading into the atmosphere
- 7.2.3.7.1.1 Empty or unloaded cargo tanks having previously contained dangerous substances of:
- Class 2 or Class 3, with a classification code including the letter “T” in column (3b) of Table C of Chapter 3.2;
 - Class 6.1; or
 - Packing group I of Class 8;
- may only be degassed by an expert according to sub-section 8.2.1.2. This may be carried out only at the locations approved by the competent authority.
- 7.2.3.7.1.2 Where degassing of cargo tanks having previously contained the dangerous goods referred to in 7.2.3.7.1.1 above is not practicable at the locations approved for this purpose by the competent authority, degassing may be carried out while the vessel is under way, provided that:
- The requirements of the first paragraph of 7.2.3.7.1.3 are complied with; the concentration of flammable gases and vapours given off by the cargo in the vented mixture at the outlet shall, however, be not more than 10 % of the LEL;
 - The crew is not exposed to a concentration of gases and vapours which exceeds national accepted exposure levels;
- 7.2.3.7.1.3 Degassing of empty or unloaded cargo tanks having contained dangerous goods other than those referred to under 7.2.3.7.1.1, when the gas concentration given off by the cargo is 10 % of the LEL or above, may be carried out while the vessel is underway or at locations approved by the competent authority by means of suitable venting equipment with the tank lids closed and by leading the gas/air mixtures through flame-arresters capable of withstanding steady burning (Explosion group / subgroup according to column (16) of Table C, Chapter 3.2). The gas concentration in the vented mixture at the outlet shall be less than 50 % of the LEL. The suitable venting equipment may be used for degassing by extraction only when a flame-arrester is fitted immediately before the ventilation fan on the extraction side (Explosion group /subgroup according to column (16) of Table C, Chapter 3.2). The gas concentration shall be measured once each hour during the two first hours after the beginning of the degassing operation by forced ventilation or by extraction, by an expert referred to in 8.2.1.2. The results of these measurements shall be recorded in writing.
- Degassing is, however, prohibited within the area of locks including their lay-bys, under bridges or within densely populated areas.
- Degassing of empty or unloaded cargo tanks having contained dangerous goods other than those referred to in 7.2.3.7.1.1, when the concentration of gases and vapours given off by the cargo is below 10 % of the LEL, is allowed, and also additional openings of the cargo tank are allowed to be opened as long as the crew is not exposed to a concentration of gases and vapour which exceeds national accepted exposure levels. Also, there is no obligation to use a flame arrester.

It is prohibited within the area of locks, including their lay-bys, under bridges or within densely populated areas.

- 7.2.3.7.1.4 Degassing operations shall be interrupted during a thunderstorm or when, due to unfavourable wind conditions, dangerous concentrations of flammable or toxic gases and vapours are to be expected outside the cargo area in front of the accommodation, the wheelhouse and service spaces. The critical state is reached as soon as concentrations given off by the cargo of flammable gases and vapours of more than 20 % of the LEL or of toxic gases and vapours exceeding the national accepted exposure levels have been detected in those areas by measurements by means of portable measurement devices.
- 7.2.3.7.1.5 The marking prescribed in 7.2.5.0.1 may be withdrawn by order of the master when, after degassing of the cargo tanks, it has been ascertained, using the equipment described in column (18) of Table C of Chapter 3.2, that the cargo tanks no longer contain flammable gases and vapours in concentrations of more than 20 % of the LEL or do not contain a concentration of toxic gases and vapours which exceeds national accepted exposure levels. The result of the measurement shall be recorded in writing.
- 7.2.3.7.1.6 Before taking measures which could cause hazards as described in section 8.3.5, all cargo tanks and pipes in the cargo area shall be made gas-free. This shall be documented in a gas-free certificate, valid on the day the works commence. The condition of being gas-free may only be declared and certified by a person approved by the competent authority.
- 7.2.3.7.2 Degassing of empty or unloaded cargo tanks and piping for loading and unloading to reception facilities
- 7.2.3.7.2.1 Empty or unloaded cargo tanks may only be degassed by an expert according to sub-section 8.2.1.2. If required by international or national law, it may only be carried out at the locations approved by the competent authority. Degassing to a mobile reception facility while the vessel is underway, is prohibited. Degassing to a mobile reception facility is prohibited while another vessel degasses to the same facility. Degassing to an on board mobile reception facility is prohibited.
- 7.2.3.7.2.2 Before the degassing operation commences, the degassing vessel shall be earthed. The master of the degassing vessel or an expert according to 8.2.1.2 mandated by him and the operator of the reception facility shall have filled in and signed a checklist confirming with 8.6.4 of ADN.

The checklist shall be printed at least in languages understood by the master or the expert and the operator of the reception facility.

If a positive response to all the questions is not possible, degassing to a reception facility is only permitted with the consent of the competent authority.

- 7.2.3.7.2.3 Degassing to reception facilities may be carried out by using the piping for loading and unloading or the venting piping to remove the gases and vapours from the cargo tanks while using the other piping respectively to prevent exceedance of the maximum permissible overpressure or vacuum of the cargo tanks.

Piping shall be part of a closed system or, if used to prevent exceedance of the maximum permissible vacuum in the cargo tanks, be equipped with a permanently installed or portable spring-loaded low-pressure valve, with a flame-arrester (Explosion group / subgroup according to column (16) of Table C of Chapter 3.2) if explosion protection is required (column (17) of Table C of Chapter 3.2). This low-pressure valve shall be so installed that under normal working conditions the vacuum valve is not activated. A permanently installed valve or the opening to which a portable valve is

connected, must remain closed with a blind flange when the vessel is not degassing to a reception facility.

All piping connected between the degassing vessel and the reception facility shall be equipped with an appropriate flame arrester (Explosion group / subgroup according to column (16) of Table C of Chapter 3.2) if explosion protection is required (column (17) of Table C of Chapter 3.2).

- 7.2.3.7.2.4 It shall be possible to interrupt degassing operations by means of switches installed at two locations on the vessel (fore and aft) and at two locations at the reception facility (directly at the access to the vessel and at the location from where the reception facility is operated). Interruption of degassing shall be effected by the means of a quick closing valve which shall be directly fitted in the connection between the degassing vessel and the reception facility. The system of disconnection shall be designed in accordance with the closed circuit principle and may be integrated in the ESD system of the cargo pumps and overfill protections prescribed in 9.3.1.21.5, 9.3.2.21.5 and 9.3.3.21.5.

Degassing operations shall be interrupted during a thunderstorm.

- 7.2.3.7.2.5 The marking prescribed in column (19) of Table C of Chapter 3.2 may be withdrawn by order of the master when, after degassing of the cargo tanks, it has been ascertained, using the equipment described in column (18) of Table C of Chapter 3.2, that the cargo tanks no longer contain flammable gases and vapours in concentrations of more than 20% of the LEL or do not contain a concentration of toxic gases and vapours which exceeds national accepted exposure levels. The result of the measurement shall be recorded in writing.
- 7.2.3.7.2.6 Before taking measures which could cause hazards as described in section 8.3.5, all cargo tanks and pipes in the cargo area shall be made gas-free. This shall be documented in a gas-free certificate, valid on the day the works commence. The condition of being gas-free may only be declared and certified by a person approved by the competent authority.”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

- 7.2.3.12.2 In the second indent, replace “gas -freeing” by “degasing”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

7.2.3 Add a new paragraph 7.2.3.16 to read as follows:

“7.2.3.16 All measurements on board the vessel shall be performed by an expert according to 8.2.1.2, unless provided otherwise in the Regulations annexed to ADN. The results of the measurements shall be recorded in writing in the book according to paragraph 8.1.2.1 (g).”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

- 7.2.3 Replace “7.2.3.16 to 7.2.3.19 (*Reserved*)” by “7.2.3.17 to 7.2.3.19 (*Reserved*)”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

7.2.3.31.1 Amend to read as follows:

“The use of engines running on fuels having a flashpoint equal to or lower than 55 °C (e.g. petrol engines) is prohibited. This provision does not apply to:

- the petrol-operated outboard motors of lifeboats;
- the propulsion and auxiliary systems which meet the requirements of Chapter 30 and Annex 8, Section 1 of the European Standard laying down Technical Requirements for Inland Navigation vessels (ES-TRIN) as amended”.

* As available on the website of the Comité Européen pour l'Élaboration de Standards dans le Domaine de Navigation Intérieure – CESNI, <https://www.cesni.eu/en/documents/es-trin/> ~~for equivalent~~

(Reference document: ECE/TRANS/WP.15/AC.2/62)

7.2.4.2.2 In the first sentence, replace “The landing” by “Mooring” and “gas -freeing” by “degasing”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

7.2.4.2.3 In the first sentence, replace “Berthing” by “Mooring” and “gas-freeing” by “degasing”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

7.2.4.7.1 Replace “loaded, unloaded or gas-freed” by “loaded or unloaded”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

7.2.4.7.2 Amend to read as follows:

“7.2.4.7.2 The reception from other vessels of unpackaged oily and greasy liquid wastes resulting from the operation of vessels and the handing over of products for the operation of vessels into the bunkers of other vessels shall not be taken to be loading or unloading within the meaning of 7.2.4.7.1 above or transhipment within the meaning of 7.2.4.9.”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

7.2.4.9 Renumber the existing note as NOTE 1. Add a new NOTE 2 to read as follows:

“NOTE 2: This prohibition also applies to transhipment between supply vessels.”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

7.2.4.10.1 Delete the last paragraph.

(Reference document: informal document INF.5)

7.2.4.12 In the fourth paragraph, replace “Gas-freeing” by “Degasing”, twice.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

7.2.4.15.3 and 7.2.4.16.3 Replace “gas-freeing” by “degasing”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

7.2.4.16.6 Replace “at the connection point” by “at the connecting-point of the vapour return piping and the venting piping”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

7.2.4.16.7 Replace “9.3.2.25.5 (d)” by “9.3.2.22.5 (d)” and “gas-freeing” by “degasing”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

7.2.4.17.1 and 7.2.4.17.2 Replace “gas-freeing” by “degasing”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

7.2.4.25.3 Delete and insert “(Reserved)”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

7.2.4.25.5 Amend to read as follows:

“7.2.4.25.5 The gas/air mixtures released during loading operations shall be returned ashore through a vapour return piping if:

- A closed cargo tank is required according to column (7) of Table C of Chapter 3.2;
- or

~~provisions contained in the UNECE Recommendations on Harmonized Europe wide Technical Requirements for Inland Navigation Vessels (Resolution 61 of the Inland Transport Committee Working Party on Inland Water Transport, as revised and amended <http://www.unece.org/trans/main/sc3/sc3res.html>).~~

- A closed cargo tank was required for the previous cargo in column (7) of Table C of Chapter 3.2 and before the loading the concentration of flammable gases of the previous cargo in the cargo tank is above 10% of the LEL or the cargo tank contains toxic gases, corrosive gases (packing group I or II) or gases with CMR-characteristics (Categories 1A or 1B) in a concentration above national accepted exposure levels.

If the substance to be loaded requires explosion protection according to column (17) of Table C of Chapter 3.2, and the use of the vapour return piping is prescribed, the connection of the vapour return piping shall be designed such that the vessel is protected against detonations and the passage of flames from the shore. The protection of the vessel against detonations and the passage of flames from the shore is not required when the cargo tanks are inerted in accordance with 7.2.4.18.”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

7.2.4.60 Amendment does not apply to the English text.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

Table 7.2.4.77 Amend the headings of the first and second columns under “Class” to read as follows:

“2, 3 (except second and third entries of UN No. 1202, packing group III, in Table C)”.

“3 (only for the second and third entries of UN No. 1202, packing group III, in Table C), 4.1”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

7.2.5.0.1 Amend the second sentence to read as follows: “When because of the cargo carried no marking with blue cones or blue lights is prescribed but the concentration of flammable or toxic gases and vapours in the cargo tanks, given off by the last cargo for which marking was required, is higher than 20% of the LEL or exceeds the national accepted exposure levels, the number of blue cones or blue lights to be carried is determined by the last cargo for which this marking was required.”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

Chapter 8.1

8.1.5.1 Amend the entry for “TOX” to read as follows: “TOX: a toximeter appropriate for the current and previous cargo, with the accessories and instructions for its use;”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

8.1.6.4 Replace “the user” by “the expert”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

Chapter 8.2

8.2.2.3.1.3 Under “Treatment of cargo tanks and adjacent spaces”, amend the first indent to read as follows:

“- degassing into the atmosphere and to reception facilities, cleaning, maintenance;”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

8.2.2.3.3.1 Under “Practice”, amend the seventh indent to read as follows:

“• Certificates for the status of being gas free and permitted work”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

8.2.2.3.3.2 Under “Practice”, in the first indent, replace “gas freeing” by “degassing”. Amend the eight indent to read as follows:

“• Certificates for the status of being gas free and permitted work”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

Chapter 8.3

8.3.5 At the end, add the following note: “**NOTE:** In addition, all other applicable regulations regarding workplace safety and safety of operations must be observed.”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

Chapter 8.6

8.6.3, ADN Checklist, question 4 Amend the first sentence to read as follows: “It must be possible to escape safely from the vessel at any time.”. In the last sentence, delete “7.1.4.77 and”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

8.6.3, ADN Checklist, question 12.2 Replace “at the connection point” by “at the connecting-point of the vapour return piping and the venting piping”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

8.6.4 Amend to read as follows:

“8.6.4 Checklist degassing to reception facilities

1

ADN Checklist

concerning the observance of safety provisions and the implementation of the necessary measures for degassing to reception facilities

– **Particulars of vessel**

..... No.
(name of vessel) (official number)

.....
(vessel type)

– **Particulars of reception facility**

.....
(reception facility) (place)

.....
(date) (time)

Reception facility approved according CDNI Yes No

– **Particulars of the cargo to be degassed as indicated in the transport document**

Quantity m ³	Proper shipping name**	UN Number or Identification number	Dangers*	Packing Group
.....
.....
.....

* Dangers indicated in column (5) of Table C, as relevant (as mentioned in the transport document in accordance with 5.4.1.1.2 (c)).

** The proper shipping name given in column (2) of Table C of Chapter 3.2, supplemented, when applicable, by the technical name in parenthesis.

Degassing rate			2
Proper shipping name**	Cargo tank number	agreed rate of degassing	
		rate m ³ /h	
.....	
.....	
.....	

Questions to the master or the person mandated by him and the person in charge at the reception facility

Degassing may only be started after all questions on the checklist have been checked off by “X”, i.e. answered with YES and the list has been signed by both persons.

Non-applicable questions have to be deleted.

If not all questions can be answered with YES, degassing is only allowed with consent of the competent authority.

** The proper shipping name given in column (2) of Table C of Chapter 3.2, supplemented, when applicable, by the technical name in parenthesis.

		vessel	3 reception facility
1.	Is the vessel well moored in view of local circumstances?	O	–
2.	Are the pipings for degassing between vessel and reception facility in satisfactory condition?	–	O
	Are they correctly connected and are appropriate flame arresters fitted in the piping between the vessel and the reception facility?	O	O
3.	Are all flanges of the connections of the piping for loading and unloading and of the venting piping not in use, correctly blanked off?	O	O
4.	Is continuous and suitable supervision of degassing ensured for the whole period of the operation?	O	O
5.	Is communication between vessel and reception facility ensured?	O	O
6.1	Is it ensured that the reception facility is such that the pressure at the connecting point cannot exceed the opening pressure of the high-velocity vent valves (pressure at connecting point __ kPa)?	–	O*
6.2	Is the air inlet part of a closed system or equipped with a spring-loaded low-pressure valve?	–	O**
6.3	When anti-explosion protection is required in Chapter 3.2, Table C, column (17) does the reception facility ensure that its piping is such that the vessel is protected against detonations and passage of flames from the reception facility.	–	O
7.	Is it known what actions are to be taken in the event of an “Emergency-stop” and an “Alarm”?	O	O

* Not applicable if vacuum is used to generate air flows.

** Only applicable if vacuum is used to generate air flows.

		vessel	reception facility ⁴
8.	<p>Check on the most important operational requirements:</p> <ul style="list-style-type: none"> - Are the required fire extinguishing systems and appliances operational? - Have all valves and other closing devices been checked for correct open or closed position? - Has smoking been generally prohibited? - Are the flame operated heating applications on board turned off? - Is the voltage cut off from the radar installations? - Is all electrical equipment marked red switched off? - Are all windows and doors closed? 	<p>O</p> <p>O</p> <p>O</p> <p>O</p> <p>O</p> <p>O</p> <p>O</p>	<p>O</p> <p>O</p> <p>O</p> <p>-</p> <p>-</p> <p>-</p> <p>-</p>
9.1	Has the starting working pressure of the vessel's piping been adjusted to the permissible working pressure of the reception facility? (agreed pressure __ kPa)	O	-
9.2	Has the starting working pressure of the reception facility piping been adjusted to the permissible working pressure of the on-board installation? (agreed pressure __ kPa)	-	O
10.	Are the cargo tank hatches and cargo tank inspection, gauging and sampling openings closed or protected by flame arresters in good condition?	O	-
<p>Checked, filled in and signed</p> <p>for the vessel:</p> <p>.....</p> <p>(name in capital letters)</p> <p>.....</p> <p>(signature)</p>		<p>for the reception facility:</p> <p>.....</p> <p>(name in capital letters)</p> <p>.....</p> <p>(signature)</p>	

Explanation

Question 1

“Well moored” means that the vessel is fastened to the pier or the reception facility in such a way that, without intervention of a third person, movements of the vessel in any direction that could hamper the degassing operation will be prevented. Established or predictable variations of the water-level at that location and special factors have to be taken into account.

Question 2

A valid inspection certificate for the hose assemblies must be available on board. The material of the piping must be able to withstand the expected rates and be suitable for degassing. The piping between vessel and reception facility must be placed so that it cannot be damaged by ordinary movements of the vessel during the degassing process or by variations of the water.

Question 4

Degassing must be supervised on board and at the reception facility so that dangers which may occur in the vicinity of the piping between vessel and reception facility can be recognized immediately. When supervision is effected by additional technical means it must be agreed between the reception facility and the vessel how it is to be ensured.

Question 5

For a safe degassing operation good communications between vessel and shore are required. For this purpose telephone and radio equipment may be used only if of an explosion protected type and located within reach of the supervisor.

Question 7

Before the start of the degassing operation the representative of the reception facility and the master or the person mandated by him must agree on the applicable procedure. The specific properties of the substances to be degassed have to be taken into account.”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

Chapter 9.1

9.1.0.31.1 Add a new last sentence to read as follows:

“This provision does not apply to internal combustion engines which are part of propulsion and auxiliary systems. These systems shall meet the requirements of Chapter 30 and Annex 8, Section 1 of the European Standard laying down Technical Requirements for Inland Navigation vessels (ES-TRIN) as amended*.”.

(Reference document: ECE/TRANS/WP.15/AC.2/62)

9.1.0.40.2.7 Amendment does not apply to the English text.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

Chapter 9.3

9.3.1.11.3 (a) Amend the first sentence to read as follows: “The hold spaces shall be separated from the accommodation, engine rooms and service spaces outside the cargo area

* As available on the website of the Comité Européen pour l'Élaboration de Standards dans le Domaine de Navigation Intérieure – CESNI, <https://www.cesni.eu/en/documents/es-trin/> ~~for equivalent provisions contained in the UNECE Recommendations on Harmonized Europe-wide Technical Requirements for Inland Navigation Vessels (Resolution 61 of the Inland Transport Committee – Working Party on Inland Water Transport, as revised and amended~~ <http://www.unece.org/trans/main/sc3/sc3res.html>).

below deck by bulkheads of Class “A-60” as defined in SOLAS 74, Chapter II-2, Regulation 3.”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

9.3.x.11.3 (c) Amend the second sentence to read as follows: “It has to be possible to check their gas-free condition.”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

9.3.x.25.10 In the first paragraph, delete “or wheelhouse” and insert “, wheelhouse” after “air system into accommodation”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

9.3.1.31.1, 9.3.2.31.1 and 9.3.3.31.1 Amend to read as follows:

“Only internal combustion engines running on fuel with having a flashpoint above 55 °C are allowed. This provision does not apply to internal combustion engines which are part of propulsion and auxiliary systems. These systems shall meet the requirements of Chapter 30 and Annex 8, Section 1 of the European Standard laying down Technical Requirements for Inland Navigation vessels (ES-TRIN) as amended*.”.

(Reference document: ECE/TRANS/WP.15/AC.2/62)

9.3.1.35.1, 9.3.2.35.1 and 9.3.3.35.1 Amend the end of the second indent to read as follows: “...and bilge-pumping is performed using eductors which are installed in the cargo area.”.

(Reference document: ECE/TRANS/WP.15/AC.2/60)

9.3.1.40.1 and 9.3.3.40.1 In the second indent, last paragraph, delete “or wheelhouse” at the end and insert “, wheelhouse” after “into the accommodation”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

9.3.x.40.2.7 Amendment does not apply to the English text.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

9.3.x.60 At the end, add the following:

“The water shall meet the quality of drinking water on board.

NOTE: Additional substances for the purpose avoiding corrosion of eyes and skin are allowed.

A connection of this special equipment with the area outside the cargo zone is accepted.

A spring-loaded non-return valve shall be fitted to ensure that no gases can escape through the shower and the eye and face bath system outside the cargo area.”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

9.3.1 and 9.3.2 Insert “9.3.x.61 (Reserved)”.

9.3.1, 9.3.2 and 9.3.3 Add a new 9.3.x.62 to read as follows:

“9.3.x.62 Valve for degassing to reception facilities

A permanently installed or portable spring-loaded low-pressure valve used during degassing operations to reception facilities, shall be fitted at the piping used to extract air. If the vessel’s substance list, according to 1.16.1.2.5, contains substances for which explosion protection is required according to column (17) of Table C of Chapter 3.2, this valve shall

* As available on the website of the Comité Européen pour l’Élaboration de Standards dans le Domaine de Navigation Intérieure – CESNI, <https://www.cesni.eu/en/documents/es-trin/> [for equivalent provisions contained in the UNECE Recommendations on Harmonized Europe-wide Technical Requirements for Inland Navigation Vessels (Resolution 61 of the Inland Transport Committee – Working Party on Inland Water Transport, as revised and amended <http://www.unece.org/trans/main/sc3/sc3res.html>)].

be fitted with a flame arrester capable of withstanding a deflagration. When the vessel is not degassing to a reception facility, the valve shall be closed with a blind flange. The low-pressure valve shall be so installed that under other normal working conditions the vacuum valve is not activated.

NOTE: *Degassing operations are part of normal working conditions.*

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

9.3.1, 9.3.2 and 9.3.3 Replace “9.3.x.61 to 9.3.x.70 (*Reserved*)” by “9.3.x.63 to 9.3.x.70 (*Reserved*)”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

9.3.2.11.3 (a) and 9.3.3.11.3 (a) Amend the one but last sentence to read as follows: “In this case an end bulkhead of Class “A-60” as defined in SOLAS 74, Chapter II-2, Regulation 3, shall be deemed equivalent to a cofferdam.”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

9.3.2.17.5 (d) Amend the last sentence to read as follows: “Penetrations through a bulkhead of Class “A-60” as defined in SOLAS 74, Chapter II-2, Regulation 3, shall have an equivalent fire protection.”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

9.3.2.17.6 Amend the first indent to read as follows:

- The pump room is separated from the engine room or from service spaces outside the cargo area by a cofferdam or a bulkhead of Class “A-60” as defined in SOLAS 74, Chapter II-2, Regulation 3, or by a service space or a hold space;”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

9.3.2.40.1 In the second indent, first paragraph, delete “or wheelhouse”. In the second paragraph, insert “, wheelhouse” after “into the accommodation”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

9.3.2.42.4 and 9.3.3.42.4 In the first sentence, replace “gas-freeing” by “degassing with a concentration given off by the cargo of 10 % of the LEL or above”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

9.3.3.11.2 Add new subparagraphs(c) and (d) to read as follows:

“(c) (*Reserved*);

(d) Side-struts linking or supporting the load-bearing components of the sides of the vessel with the load-bearing components of the longitudinal walls of cargo tanks and side-struts linking the load-bearing components of the vessel’s bottom with the tank-bottom are prohibited.”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)

9.3.3 Add a new paragraph 9.3.3.61 to read as follows:

“9.3.3.61 9.3.3.60 above does not apply to oil separator and supply vessels.”.

(Reference document: ECE/TRANS/WP.15/AC.2/64/Add.1)