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ECONOMIC COMMISSION FOR EUROPE

INLAND TRANSPORT COMMITTEE

Working Party on the Transport of Dangerous Goods

Joint Meeting of Experts on the Regulations annexed to the European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (ADN)
(ADN Safety Committee)

REPORT OF THE JOINT MEETING OF EXPERTS ON THE REGULATIONS ANNEXED TO THE EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY INLAND WATERWAYS (ADN SAFETY COMMITTEE) ON ITS FIFTEENTH SESSION*

held in Geneva from 24-28 August 2009

Addendum

Annex I

PROPOSED AMENDMENTS TO THE REGULATIONS ANNEXED TO THE ADN ADOPTED BY THE SAFETY COMMITTEE FOR ENTRY INTO FORCE ON 1 JANUARY 2011

* Distributed in German by the Central Commission for the Navigation of the Rhine under the symbol CCNR/ZKR/ADN/WP.15/AC.2/32/Add.1.

Part 1

Chapter 1.2

1.2.1 Add a definition for relative density as follows:

"*Relative density* (or specific density) describes the ratio of the density of a substance to the density of pure water at 3,98 °C (1000 kg/m³) and is dimensionless;"

(Reference document: ECE/TRANS/WP.15/AC.2/2009/10)

Chapter 1.6

1.6.7.2. Replace sub-section 1.6.7.2 (General transitional provisions) of chapter 1.6 as follows:

"1.6.7.2 *General transitional provisions*

1.6.7.2.1 *General transitional provisions for dry cargo vessels*

1.6.7.2.1.1 Vessels in service shall meet:

(a) The requirements of paragraphs mentioned in the table below within the period established therein;

(b) The requirements of paragraphs not mentioned in the table below at the date of application of these Regulations.

The construction and equipment of vessels in service shall be maintained at least at the previous standard of safety.

1.6.7.2.1.1 Table of general transitional provisions: Dry cargo

Paragraphs	Subject	Time limit and comments
9.1.0.12.1	Ventilation of holds	N.R.M. Renewal of the certificate of approval after 31 December 2018 Until then, the following requirements apply on board vessels in service: Each hold shall have appropriate natural or artificial ventilation; for the carriage of substances of Class 4.3, each hold shall be equipped with forced-air ventilation; the appliances used for this purpose must be so constructed that water cannot enter the hold.
9.1.0.12.3	Ventilation of service spaces	N.R.M. Renewal of the certificate of approval after 31 December 2018

1.6.7.2.1.1 Table of general transitional provisions: Dry cargo		
Paragraphs	Subject	Time limit and comments
9.1.0.17.2	Gas-tight openings facing holds	N.R.M. Renewal of the certificate of approval after 31 December 2018 Until then, the following requirements apply on board vessels in service: Openings of accommodation and the wheelhouse facing the holds must be capable of being tightly closed.
9.1.0.17.3	Entrances and openings in the protected area	N.R.M. Renewal of the certificate of approval after 31 December 2018 Until then, the following requirements apply on board vessels in service: Openings of engine rooms and service spaces facing the holds must be capable of being tightly closed.
9.1.0.31.2	Air intakes of engines	N.R.M. Renewal of the certificate of approval after 31 December 2034
9.1.0.32.2	Air pipes 50 cm above the deck	N.R.M. Renewal of the certificate of approval after 31 December 2018
9.1.0.34.1	Position of exhaust pipes	N.R.M. Renewal of the certificate of approval after 31 December 2018
9.1.0.35	Stripping pumps in the protected area	N.R.M. Renewal of the certificate of approval after 31 December 2018 Until then, the following requirements apply on board vessels in service: In the event of the carriage of substances of Class 4.1, UN No. 3175, of all substances of Class 4.3 in bulk or unpackaged and polymeric beads, expandable, of Class 9, UN No. 2211, the stripping of the holds may only be effected using a stripping installation located in the protected area. The stripping installation located above the engine room must be clamped.
9.1.0.40.1	Fire extinguishers, two pumps, etc.	N.R.M. Renewal of the certificate of approval after 31 December 2018
9.1.0.40.2	Fire extinguishing systems permanently fixed in engine rooms	N.R.M. Renewal of the certificate of approval after 31 December 2034

1.6.7.2.1.1 Table of general transitional provisions: Dry cargo		
Paragraphs	Subject	Time limit and comments
9.1.0.41 in conjunction with 7.1.3.41	Fire and naked light	N.R.M. Renewal of the certificate of approval after 31 December 2018 Until then, the following requirements apply on board vessels in service: Outlets of funnels shall be located not less than 2 m from the nearest point on hold hatchways. Heating and cooking appliances shall be permitted only in metal-based accommodation and wheelhouses. However: - Heating appliances fuelled with liquid fuels having a flashpoint above 55 °C shall be permitted in engine rooms - Central-heating boilers fuelled with solid fuels shall be permitted in spaces situated below deck and accessible only from the deck
9.2.0.31.2	Air intakes of engines	N.R.M. Renewal of the certificate of approval after 31 December 2034
9.2.0.34.1	Position of exhaust pipes	N.R.M. Renewal of the certificate of approval after 31 December 2018
9.2.0.41 in conjunction with 7.1.3.41	Fire and naked light	N.R.M. Renewal of the certificate of approval after 31 December 2018 Until then, the following requirements apply on board vessels in service: Outlets of funnels shall be located not less than 2 m from the nearest point on hold hatchways. Heating and cooking appliances shall be permitted only in metal-based accommodation and wheelhouses. However: - Heating appliances fuelled with liquid fuels having a flashpoint above 55 °C shall be permitted in engine rooms - Central-heating boilers fuelled with solid fuels shall be permitted in spaces situated below deck and accessible only from thedeck

1.6.7.2.1.2 (*Deleted*)

1.6.7.2.2 *General transitional provisions for tank vessels*

1.6.7.2.2.1 Vessels in service shall meet:

(a) The requirements of paragraphs mentioned in the table below within the period established therein;

(b) The requirements of paragraphs not mentioned in the table below at the date of application of these Regulations.

The construction and equipment of vessels in service shall be maintained at least at the previous standard of safety.

1.6.7.2.2.2 Table of general transitional provisions: Tank vessels

Paragraphs	Subject	Time limit and comments
1.2.1	Limited explosion risk electrical apparatus	N.R.M. Renewal of the certificate of approval after 31 December 2034 Until then, the following requirements apply on board vessels in service: Limited explosion risk electrical apparatus is: - Electrical apparatus which, during normal operation, does not cause sparks or exhibit surface temperatures exceeding 200 °C; or - Electrical apparatus with a spray-water protected housing which, during normal operation, does not exhibit surface temperatures above 200 °C
1.2.1	Hold space	N.R.M. Renewal of the certificate of approval after 31 December 2038 for Type N open vessels whose hold spaces contain auxiliary appliances and which are carrying only substances of Class 8, with remark 30 in column (20) of Table C of Chapter 3.2.
1.2.1	Flame arrester Test according to standard EN 12 874:1999	N.R.M. Renewal of the certificate of approval after 31 December 2034 Until then, the following requirements are applicable on board vessels in service: Flame arresters shall be of a type approved by the competent authority for the use prescribed.

1.6.7.2.2.2 Table of general transitional provisions: Tank vessels		
Paragraphs	Subject	Time limit and comments
1.2.1	High velocity vent valve Test according to standard EN 12 874:1999	N.R.M. Renewal of the certificate of approval after 31 December 2034 Until then, the following requirements are applicable on board vessels in service: High velocity vent valves shall be of a type approved by the competent authority for the use prescribed.
7.2.2.6	Approved gas detection system	N.R.M. Renewal of the certificate of approval after 31 December 2010
7.2.2.19.3	Vessels used for propulsion	N.R.M. Renewal of the certificate of approval after 31 December 2044
7.2.3.20	Use of cofferdams for ballasting	N.R.M. Renewal of the certificate of approval after 31 December 2038 Until then, the following requirements are applicable on board vessels in service: Cofferdams may be filled with water during unloading to provide trim and to permit residue-free drainage if possible.
7.2.3.20.1	Ballast water Prohibition against filling cofferdams with water	N.R.M. Renewal of the certificate of approval after 31 December 2038 Until then, the following requirements apply on board vessels in service: Cofferdams may be filled with ballast water only when cargo tanks are empty.
7.2.3.20.1	Proof of stability in the event of a leak connected with ballast water	N.R.M. Renewal of the certificate of approval after 31 December 2044 for Type G and Type N vessels
7.2.3.31.2	Motor vehicles only outside the cargo area	N.R.M. Renewal of the certificate of approval after 31 December 2034 for Type N vessels Until then, the following requirements apply on board vessels in service: The vehicle shall not be started on board.
7.2.3.51.3	Live sockets	N.R.M. Renewal of the certificate of approval after 31 December 2010 for Type G and Type N vessels

1.6.7.2.2.2 Table of general transitional provisions: Tank vessels		
Paragraphs	Subject	Time limit and comments
7.2.4.22.3	Sampling from other openings	N.R.M. Renewal of the certificate of approval after 31 December 2018 Until then, on board Type N open vessels in service cargo tank covers may be opened during loading for control and sampling.
9.3.2.0.1 (c) 9.3.3.0.1 (c)	Protection of vapour pipes against corrosion	N.R.M. Renewal of the certificate of approval after 31 December 2034
9.3.1.0.3 (d) 9.3.2.0.3 (d) 9.3.3.0.3 (d)	Fire-resistant materials of accommodation and wheelhouse	N.R.M. Renewal of the certificate of approval after 31 December 2034
9.3.3.8.1	Continuation of class	N.R.M. Renewal of the certificate of approval after 31 December 2044 for Type N open vessels with flame arresters and Type N open vessels. Until then, the following requirements apply on board vessels in service: Except where otherwise provided, the type of construction, the strength, the subdivision, the equipment and the gear of the vessel shall conform or be equivalent to the construction requirements for classification in the highest class of a recognized classification society.
9.3.1.10.2 9.3.2.10.2 9.3.3.10.2	Door coamings, etc.	N.R.M. Renewal of the certificate of approval after 31 December 2034 Until then, the following requirements apply on board vessels in service, with the exception of Type N open vessels: This requirement may be met by fitting vertical protection walls not less than 0.50 m in height; Until then, on board vessels in service less than 50.00 m long, the height of 0.50 m may be reduced to 0.30 m in passageways leading to the deck.
9.3.1.10.3 9.3.2.10.3 9.3.3.10.3	Height of sills of hatches and openings above the deck	N.R.M. Renewal of the certificate of approval after 31 December 2010
9.3.1.11.1 (b)	Ratio of length to diameter of pressure cargo tanks	N.R.M. Renewal of the certificate of approval after 31 December 2044

1.6.7.2.2.2 Table of general transitional provisions: Tank vessels		
Paragraphs	Subject	Time limit and comments
9.3.3.11.1 (d)	Limitation of length of cargo tanks	N.R.M. Renewal of the certificate of approval after 31 December 2044
[9.3.1.11.2 (a)	Arrangement of cargo tanks Distance between cargo tanks and side walls Height of saddles	N.R.M. Renewal of the certificate of approval after 31 December 2044 for Type G vessels whose keels were laid before 1 January 1977
9.3.1.11.2 (a)	Arrangement of cargo tanks Distance between cargo tanks and side walls Height of saddles	N.R.M. Renewal of the certificate of approval after 31 December 2044 Until then, the following requirements apply on board vessels in service whose keels were laid after 31 December 1976: Where tank volume is more than 200 m^3 or where the ratio of length to diameter is less than 7 but more than 5, the hull in the tank area shall be such that, in the event of a collision, the tanks remain intact as far as possible. This requirement shall be considered as having been met where, in the tank area, the vessel: - is double-hulled with a distance of at least 80 cm between the side plating and the longitudinal bulkhead - or is designed as follows: (a) Between the gangboard and the top of the floorplates there shall be side stringers at regular intervals of not more than 60 cm; (b) The side struts shall be supported by web frames spaced at intervals of not more than 2.00 m. The height of the web frames shall be not less than 10% of the depth and in any event not less than 30 cm. They shall be fitted with a face plate made of flat steel having a cross section of not less than 15 cm^2; (c) The side stringers referred to in (a) shall have the same height as the web frames and be fitted with a face plate made of flat steel having a cross section of not less than 7.5 cm^2.]
9.3.1.11.2 (a)	Distance between suction wells and floor plates	N.R.M. Renewal of the certificate of approval after 31 December 2044

1.6.7.2.2.2 Table of general transitional provisions: Tank vessels		
Paragraphs	Subject	Time limit and comments
9.3.1.11.2 (b) 9.3.2.11.2 (b) 9.3.3.11.2 (a)	Cargo tank fastenings	N.R.M. Renewal of the certificate of approval after 31 December 2044
9.3.1.11.2 (c) 9.3.2.11.2 (c) 9.3.3.11.2 (b)	Capacity of suction well	N.R.M. Renewal of the certificate of approval after 31 December 2044
9.3.1.11.2 (d) 9.3.2.11.2 (d)	Side struts between the hull and the cargo tanks	N.R.M. Renewal of the certificate of approval after 31 December 2044
9.3.1.11.3 (a)	End bulkheads of cargo area with “A-60” insulation. Distance of 0.50 m from cargo tanks in hold spaces	N.R.M. Renewal of the certificate of approval after 31 December 2044
9.3.2.11.3 (a) 9.3.3.11.3 (a)	Width of cofferdams of 0.60 m Hold spaces with cofferdams or “A-60” insulated bulkheads Distance of 0.50 m from cargo tanks in hold spaces	N.R.M. Renewal of the certificate of approval after 31 December 2044 Until then, the following requirements apply on board vessels in service: Type C: minimum width of cofferdams: 0.50 m; Type N: minimum width of cofferdams: 0.50 m, on board vessels with a deadweight of up to 150 t: 0.40 m; Type N open: cofferdams shall not be required with deadweight up to 150 t: The distance between cargo tanks and end bulkheads of hold spaces shall be at least 0.40 m.
9.3.3.11.4	Penetrations through the end bulkheads of hold spaces	N.R.M Renewal of the certificate of approval after 31 December 2044 for Type N open vessels whose keels were laid before 1 January 1977.
9.3.3.11.4	Distance of piping in relation to the bottom	N.R.M. Renewal of the certificate of approval after 31 December 2038
9.3.3.11.4	Shut-off devices of the loading and unloading pipes in the cargo tank from which they come	N.R.M. Renewal of the certificate of approval after 31 December 2018

1.6.7.2.2.2 Table of general transitional provisions: Tank vessels		
Paragraphs	Subject	Time limit and comments
9.3.3.11.6 (a)	Form of cofferdam arranged as a pump room	N.R.M. Renewal of the certificate of approval after 31 December 2044 for Type N vessels whose keels were laid before 1 January 1977.
9.3.1.11.7	Arrangement of service spaces located in the cargo area below decks	N.R.M. Renewal of the certificate of approval after 31 December 2018
9.3.3.11.8	Arrangement of service spaces located in the cargo area below decks	N.R.M. Renewal of the certificate of approval after 31 December 2038 for Type N open vessels
9.3.3.11.7	Distance to the outer wall	N.R.M. Renewal of the certificate of approval after 31 December 2038
9.3.3.11.7	Distance between the cargo tanks and the outer wall of the vessel	N.R.M. after 01-01-2001 Renewal of certificate of approval after 31 December 2038
9.3.3.11.7	Width of double hull Distance between the suction well and the bottom spaces	N.R.M. after 01-01-2007 Renewal of certificate approval after 31 December 2038 N.R.M. after 1 January 2003 Renewal of certificate of approval after 1 January 2038
9.3.1.11.8 9.3.3.11.9	Dimensions of openings for access to spaces within the cargo area	N.R.M. Renewal of the certificate of approval after 31 December 2018
9.3.1.11.8 9.3.2.11.10 9.3.3.11.9	Interval between reinforcing elements	N.R.M. Renewal of the certificate of approval after 31 December 2044
9.3.2.12.1 9.3.3.12.1	Ventilation opening in hold spaces	N.R.M. Renewal of the certificate of approval after 31 December 2018
9.3.1.12.2 9.3.3.12.2	Ventilation systems in double-hull spaces and double bottoms	N.R.M. Renewal of the certificate of approval after 31 December 2018
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	N.R.M. Renewal of the certificate of approval after 31 December 2018

1.6.7.2.2.2 Table of general transitional provisions: Tank vessels		
Paragraphs	Subject	Time limit and comments
9.3.1.12.6 9.3.2.12.6 9.3.3.12.6	Distance of ventilation inlets from cargo area	N.R.M. Renewal of the certificate of approval after 31 December 2044
9.3.1.12.6 9.3.2.12.6 9.3.3.12.6	Permanently installed flame screens	N.R.M. Renewal of the certificate of approval after 31 December 2018
9.3.3.12.7	Approval of flame arresters	N.R.M. Renewal of the certificate of approval after 31 December 2018 for Type N vessels whose keels were laid before 1 January 1977.
9.3.1.13 9.3.3.13	General stability	N.R.M. Renewal of the certificate of approval after 31 December 2044
9.3.3.13.3 paragraph 2	Stability (general)	N.R.M. as from 1 January 2007 Renewal of the certificate of approval after 31 December 2044
9.3.1.14 9.3.3.14	Intact stability	N.R.M. Renewal of the certificate of approval after 31 December 2044
[~~9.3.2.14.2~~	~~Stability (intact)~~	~~N.R.M.~~ ~~Renewal of the certificate of approval after 31 December 2044~~]
9.3.1.15	Stability (damaged condition)	N.R.M. Renewal of the certificate of approval after 31 December 2044
9.3.3.15	Stability (damaged condition)	N.R.M. after 01-01-2007 Renewal of certificate of approval after 31 December 2044
9.3.1.16.1 9.3.3.16.1	Distance of openings of engine rooms from the cargo area	N.R.M. Renewal of the certificate of approval after 31 December 2044
9.3.3.16.1	Internal combustion engines outside the cargo area	N.R.M. Renewal of the certificate of approval after 31 December 2034 for Type N open vessels
9.3.1.16.2 9.3.3.16.2	Hinges of doors facing the cargo area	N.R.M. Renewal of the certificate of approval after 31 December 2034 for vessels whose keels were laid before 1 January 1977 where alterations would obstruct other major openings.

1.6.7.2.2.2 Table of general transitional provisions: Tank vessels		
Paragraphs	Subject	Time limit and comments
9.3.3.16.2	Engine rooms accessible from the deck	N.R.M. Renewal of the certificate of approval after 31 December 2034 for Type N open vessels
9.3.1.17.1 9.3.3.17.1	Accommodation and wheelhouse outside the cargo area	N.R.M. Renewal of the certificate of approval after 31 December 2044 for vessels whose keels were laid before 1 January 1977, provided that there is no connection between the wheelhouse and other enclosed spaces. Renewal of the certificate of approval after 31 December 2044 for vessels up to 50 m in length whose keels were laid before 1 January 1977 and whose wheelhouses are located in the cargo area even if it provides access to another enclosed space, provided that safety is ensured by appropriate service requirements of the competent authority.
9.3.3.17.1	Accomodation and wheelhouse outside the cargo area	N.R.M. Renewal of the certificate of approval after 31 December 2044 for Type N open vessels
9.3.1.17.2 9.3.2.17.2 9.3.3.17.2	Arrangement of entrances and openings of forward superstructures	N.R.M. Renewal of the certificate of approval after 31 December 2044
9.3.1.17.2 9.3.2.17.2 9.3.3.17.2	Entrances facing the cargo area	N.R.M. Renewal of the certificate of approval after 31 December 2044 for vessels up to 50 m in length whose keels were laid before 1 January 1977, provided that gas screens are installed.
9.3.3.17.2	Entrances and openings	N.R.M. Renewal of the certificate of approval after 31 December 2044 for Type N open vessels
9.3.3.17.3	Entrances and openings must be capable of being closed	N.R.M. Renewal of the certificate of approval after 31 December 2010 for Type N open vessels
9.3.1.17.4 9.3.3.17.4	Distance of openings from the cargo area	N.R.M. Renewal of the certificate of approval after 31 December 2044
9.3.3.17.5 (b), (c)	Approval of shaft passages and displaying of instructions	N.R.M. Renewal of the certificate of approval after 31 December 2018 for Type N open vessels

1.6.7.2.2.2 Table of general transitional provisions: Tank vessels		
Paragraphs	Subject	Time limit and comments
9.3.1.17.6 9.3.3.17.6	Pump-room below deck	N.R.M. Renewal of the certificate of approval after 31 December 2018 Until then, the following requirements apply on board vessels in service: Pump-rooms below deck shall - Meet the requirements for service spaces: - For Type G vessels: 9.3.1.12.3 - For Type N vessels: 9.3.3.12.3 - Be equipped with a gas detection system referred to in 9.3.1.17.6 or 9.3.3.17.6
9.3.2.20.2 9.3.3.20.2	Intake valve	N.R.M. Renewal of the certificate of approval after 31 December 2018
9.3.3.20.2	Filling of cofferdams with pump	N.R.M. Renewal of the certificate of approval after 31 December 2018 for Type N open vessels
9.3.2.20.2 9.3.3.20.2	Filling of cofferdams within 30 minutes	N.R.M. Renewal of the certificate of approval after 31 December 2018
9.3.3.21.1 (b)	Liquid level gauge	N.R.M. Renewal of the certificate of approval after 31 December 2018 for vessels of Type N open with flame-arrester and those of Type N open Until then, on board vessels in service fitted with gauging openings, such openings shall: - Be arranged so that the degree of filling can be measured using a sounding rod - Be fitted with an automatically-closing cover
9.3.3.21.1 (g)	Sampling opening	N.R.M. Renewal of the certificate of approval after 31 December 2018 for Type N open vessels
9.3.1.21.4 9.3.2.21.4 9.3.3.21.4	Independent liquid-level alarm device	N.R.M. Renewal of the certificate of approval after 31 December 2018
9.3.1.21.5 (a) 9.3.2.21.5 (a) 9.3.3.21.5 (a)	Socket close to the shore connections and cut-out of vessel's pump	N.R.M. Renewal of the certificate of approval after 31 December 2018

1.6.7.2.2.2 Table of general transitional provisions: Tank vessels		
Paragraphs	Subject	Time limit and comments
9.3.1.21.5 (b) 9.3.2.21.5 (b) 9.3.3.21.5 (d)	Installation of on-board pump switch-off from the shore	N.R.M. Renewal of the certificate of approval after 31 December 2006
9.3.2.21.5 (c)	Device for rapid shutting off of supply	N.R.M. Renewal of the certificate of approval after 31 December 2008
9.3.1.21.7 9.3.2.21.7 9.3.3.21.7	Vacuum or over-pressure alarms in cargo tanks for the carriage of substances without remark 5 in column (20) of Table C of Chapter 3.2	N.R.M. Renewal of the certificate of approval after 31 December 2018
9.3.1.21.7 9.3.2.21.7 9.3.3.21.7	Temperature alarms in cargo tanks	N.R.M. Renewal of the certificate of approval after 31 December 2018
9.3.1.22.1 (b)	Distance of cargo tank openings above the deck	N.R.M. Renewal of the certificate of approval after 31 December 2044
9.3.3.22.1 (b)	Cargo tank openings 0.50 m above the deck	N.R.M. Renewal of the certificate of approval after 31 December 2044 for vessels whose keels were laid before 1 January 1977.
9.3.1.22.4	Prevention of spark-formation by closure devices	N.R.M. Renewal of the certificate of approval after 31 December 2018
9.3.1.22.3 9.3.2.22.4 (b) 9.3.3.22.4 (b)	Position of outlets of valves above the deck	N.R.M. Renewal of the certificate of approval after 31 December 2018
9.3.3.22.4 (b)	Pressure setting of high velocity vent valves	N.R.M. Renewal of the certificate of approval after 31 December 2018
9.3.2.23.2	Test pressure for cargo tanks	N.R.M. Renewal of the certificate of approval after 31 December 2044 for vessels whose keels were laid before 1 January 1977, for which a test pressure of 15 kPa (0.15 bar) is required. Until then, a test pressure of 10 kPa (0.10 bar) shall be sufficient.

1.6.7.2.2.2 Table of general transitional provisions: Tank vessels		
Paragraphs	Subject	Time limit and comments
9.3.3.23.2	Test pressure for cargo tanks	N.R.M. Renewal of the certificate of approval after 31 December 2044 for oil-separator vessels in service before 1 January 1999. Until then, a test pressure of 5 kPa (0.05 bar) is sufficient.
9.3.3.23.3	Test pressure for pipes for loading and unloading	N.R.M. Renewal of the certificate of approval at the latest by 1 January 2039 for oil-separator vessels in service before 1 January 1999. Until then, a test pressure of 400 kPa is sufficient.
9.3.2.25.1 9.3.3.25.1	Shut-down of cargo pumps	N.R.M. Renewal of the certificate of approval after 31 December 2018
9.3.1.25.1 9.3.2.25.1 9.3.3.25.1	Distance of pumps, etc. from accommodation, etc.	N.R.M. Renewal of the certificate of approval after 31 December 2044
9.3.1.25.2 (d) 9.3.2.25.2 (d)	Position of loading and unloading pipes on deck	N.R.M. Renewal of the certificate of approval after 31 December 2044
9.3.1.25.2 (e) 9.3.2.25.2 (e) 9.3.3.25.2 (e)	Distance of shore connections from accommodation, etc.	N.R.M. Renewal of the certificate of approval after 31 December 2034
9.3.2.25.2 (i)	Pipes for loading and unloading, and vapour pipes, shall not have flexible connections fitted with sliding seals	N.R.M. at the latest by 1 January 2019 On board vessels in service having connections with sliding seals, substances with toxic or corrosive properties (see column (5) of Table C of Chapter 3.2, hazards 6.1 and 8) may no longer be transported following renewal of the certificate of approval after 31 12-2018.
9.3.3.25.2 (h)	Pipes for loading and unloading, and vapour pipes, shall not have flexible connections fitted with sliding seals when substances with corrosive properties (see column (5) of Table C of Chapter 3.2, hazard 8) are transported	N.R.M. after 31-12-2008 On board vessels in service having connections with sliding seals, substances with corrosive properties (see column (5) of Table C of Chapter 3.2, hazard 8) may no longer be transported following renewal of the certificate of approval after 31-12-2008.
9.3.2.25.8 (a)	Ballasting suction pipes located within the cargo area but outside the cargo tanks	N.R.M. Renewal of the certificate of approval after 31 December 2018

1.6.7.2.2.2 Table of general transitional provisions: Tank vessels		
Paragraphs	Subject	Time limit and comments
9.3.2.25.9 9.3.3.25.9	Loading and unloading flow	N.R.M. Renewal of the certificate of approval after 31 December 2018
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 with the exception of Type N open carrying corrosive substances (see Chapter 3.2, Table C, column (5), hazard 8)	N.R.M. Renewal of the certificate of approval after 31 December 2018 This time limit concerns only Type N open vessels carrying corrosive substances (see Chapter 3.2, Table C, column (5), hazard 8).
9.3.1.31.2 9.3.2.31.2 9.3.3.31.2	Distance of engine air intakes from the cargo area	N.R.M. Renewal of the certificate of approval after 31 December 2044
9.3.1.31.4 9.3.2.31.4 9.3.3.31.4	Temperature of outer parts of engines, etc.	N.R.M. Renewal of the certificate of approval after 31 December 2018 Until then, the following requirements apply on board vessels in service: The temperature of outer parts shall not exceed 300 °C.
9.3.1.31.5 9.3.2.31.5 9.3.3.31.5	Temperature in the engine room	N.R.M. Renewal of the certificate of approval after 31 December 2018 Until then, the following requirements apply on board vessels in service: The temperature in the engine room shall not exceed 45 °C.
9.3.1.32.2 9.3.2.32.2 9.3.3.32.2	Openings of air pipes 0.50 m above the deck	N.R.M. Renewal of the certificate of approval after 31 December 2010
9.3.3.34.1	Exhaust pipes	N.R.M. Renewal of the certificate of approval after 31 December 2018
9.3.1.35.1 9.3.3.35.1	Stripping and ballast pumps in the cargo area	N.R.M. Renewal of the certificate of approval after 31 December 2034

1.6.7.2.2.2 Table of general transitional provisions: Tank vessels		
Paragraphs	Subject	Time limit and comments
9.3.3.35.3	Suction pipes for ballasting located within the cargo area but outside the cargo tanks	N.R.M. Renewal of the certificate of approval after 31 December 2018
9.3.1.35.4	Stripping installation of the pump-room outside the pump-room	N.R.M. Renewal of the certificate of approval after 31 December 2018
9.3.1.40.1 9.3.2.40.1 9.3.3.40.1	Fire extinguishing systems, two pumps, etc.	N.R.M. Renewal of the certificate of approval after 31 December 2018
9.3.1.40.2 9.3.2.40.2 9.3.3.40.2	Fixed fire extinguishing system in engine room	N.R.M. Renewal of the certificate of approval after 31 December 2034
9.3.1.41.1 9.3.3.41.1	Outlets of funnels located not less than 2 m from the cargo area	N.R.M. Renewal of the certificate of approval after 31 December 2044 for vessels whose keels were laid before 1 January 1977.
9.3.3.41.1	Outlets of funnels	N.R.M. at the latest by 1 January 2039 for oil-separator vessels
9.3.1.41.2 9.3.2.41.2 9.3.3.41.2 in conjunction with 7.2.3.41	Heating, cooking and refrigerating appliances	N.R.M. Renewal of the certificate of approval after 31 December 2010
9.3.3.42.2	Cargo heating system	N.R.M. Renewal of the certificate of approval after 31 December 2034 for Type N vessels Until then, the following requirements apply on board vessels in service: This can be achieved by an oil separator fitted to the condensed water return pipe.
9.3.1.51.2 9.3.2.51.2 9.3.3.51.2	Visual and audible alarm	N.R.M. Renewal of the certificate of approval after 31 December 2034
9.3.1.51.3 9.3.2.51.3 9.3.3.51.3	Temperature class and explosion group	N.R.M. Renewal of the certificate of approval after 31 December 2034

1.6.7.2.2.2 Table of general transitional provisions: Tank vessels		
Paragraphs	Subject	Time limit and comments
9.3.3.52.1 (b), (c), (d) and (e)	Electrical installations	N.R.M. Renewal of the certificate of approval after 31 December 2034 for Type N open vessels
9.3.1.52.1 (e) 9.3.3.52.1 (e)	Electrical installations of the "certified safe" type in the cargo area	N.R.M. Renewal of the certificate of approval after 31 December 2034 for vessels whose keels were laid before 1 January 1977. Until then, the following conditions shall be met during loading, unloading and gas-freeing on board vessels having non-gastight wheelhouse openings (e.g. doors, windows, etc.) giving on to the cargo area: (a) All electrical installations designed to be used shall be of a limited explosion-risk type, i.e. they shall be so designed that there is no sparking under normal operating conditions and the temperature of their outer surfaces does not rise above 200 °C, or be of a type protected against water spray the temperature of whose outer surfaces does not exceed 200 °C under normal operating conditions; (b) Electrical installations which do not meet the requirements of (a) above shall be marked in red and it shall be possible to switch them off by means of a central switch.
9.3.3.52.2	Accumulators located outside the cargo area	N.R.M. Renewal of the certificate of approval after 31 December 2034 for Type N open vessels
9.3.1.52.3 (a) 9.3.1.52.3 (b) 9.3.3.52.3 (a) 9.3.3.52.3 (b)	Electrical installations used during loading, unloading or gas-freeing	N.R.M. Renewal of the certificate of approval after 31 December 2034 for the following installations on vessels whose keels were laid before 1 January 1977: - Lighting installations in accommodation, with the exception of switches near the entrances to accommodation Radio telephone installations in accommodation and wheelhouses and combustion engine control appliances

1.6.7.2.2.2 Table of general transitional provisions: Tank vessels		
Paragraphs	Subject	Time limit and comments
		Until then, all other electrical installations shall meet the following requirements: (a) Generators, engines, etc. IP13 protection mode; (b) Control panels, lamps, etc. IP23 protection mode; (c) Appliances, etc. IP55 protection mode.
9.3.3.52.3 (a) 9.3.3.52.3 (b)	Electrical installations used during loading, unloading or gas-freeing	N.R.M. Renewal of the certificate of approval after 31 December 2034 for Type N open vessels
9.3.1.52.3 (b) 9.3.2.52.3 (b) 9.3.3.52.3 (b) in conjunction with 3 (a)	Electrical installations used during loading, unloading and gas-freeing	N.R.M. Renewal of the certificate of approval after 31 December 2034 Until then, on board vessels in service, paragraph (3) (a) shall not apply to: - Lighting installations in accommodation, with the exception of switches near entrances to accommodation; - Radiotelephone installations in accommodation and wheelhouses.
9.3.1.52.4 9.3.2.52.4 9.3.3.52.4 last sentence	Disconnection of such installations from a centralized location	N.R.M. Renewal of the certificate of approval after 31 December 2034
9.3.3.52.4	Red mark on electrical installations	N.R.M. Renewal of the certificate of approval after 31 December 2034 for Type N open vessels
9.3.3.52.5	Cut-out switch for continuously driven generator	N.R.M. Renewal of the certificate of approval after 31 December 2034 for Type N open vessels
9.3.3.52.6	Permanently fitted sockets	N.R.M. Renewal of the certificate of approval after 31 December 2034 for Type N open vessels
9.3.1.56.1 9.3.3.56.1	Metallic sheaths for all cables in the cargo area	N.R.M. Renewal of the certificate of approval after 31 December 2034 for vessels whose keels were laid before 1 January 1977.
9.3.3.56.1	Metallic sheath for all cables in the cargo area	N.R.M. by 1 January 2039 at the latest for oil-separator vessels"

1.6.7.3. Add under sub-section 1.6.7.3 Table of supplementary transitional provisions

"1.6.7.3 Table of supplementary transitional provisions		
Paragraphs	Subject	Time limit and comments
9.3.3.8.1	Classification	N.R.M. Renewal of the certificate of approval after 31 December 2044 for Type N open vessels with flame arresters and Type N open vessels"

(Reference document: ECE/TRANS/WP.15/AC.2/2009/28)

Part 2

Chapter 2.2

2.2.2.3 Replace "density" with "mass density" (8 times) and replace "relative density" with "mass density" (5 times).

(Reference document: ECE/TRANS/WP.15/AC.2/2009/10)

2.2.9.3 List of collective entries

Add the following UN Nos.

"9005 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., MOLTEN
9006 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S."

(Reference document: ECE/TRANS/WP.15/AC.2/2009/39)

Chapter 2.4

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

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

"- NOEC (No Observed Effect Concentration): the test concentration immediately below the lowest tested concentration with statistically significant adverse effect. The NOEC has not statistically significant adverse effect compared to the control;".

The fourth amendment does not apply to the English text.

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

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

(Reference document: ECE/TRANS/WP.15/AC.2/2009/20)

2.4.2.1 Rearrange the indents to read as follows:

"(a) Acute aquatic toxicity;

(b) Chronic aquatic toxicity;

(c) Potential for or actual bioaccumulation; and

(d) Degradation (biotic or abiotic) for organic chemicals.".

(Reference document: ECE/TRANS/WP.15/AC.2/2009/20)

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

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

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

The existing text becomes the new third paragraph.

(Reference document: ECE/TRANS/WP.15/AC.2/2009/20)

2.4.2.4 *Text of existing 2.4.2.6, with the following modifications*:

At the beginning, add the following two new paragraphs:

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

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

The existing text becomes the new third paragraph. Amend the last sentence to read as follows: "The NOECs or other equivalent EC_x shall be used."

(Reference document: ECE/TRANS/WP.15/AC.2/2009/20)

2.4.2.5 *Text of existing 2.4.2.4. The modifications do not apply to the English text.*

(Reference document: ECE/TRANS/WP.15/AC.2/2009/20)

2.4.2.6 *Text of existing 2.4.2.5, with the following modifications:*

At the beginning, add the following new paragraph:

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

In the second sentence of the new second paragraph, replace "OECD biodegradability tests (OECD Test Guideline 301 (A - F))" with "biodegradability

tests (A-F) of OECD Test Guideline 301". The amendments to the fourth and last sentences do not apply to the English text.

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

(Reference document: ECE/TRANS/WP.15/AC.2/2009/20)

2.4.3 Amend title to read as follows:

"**2.4.3 *Substance classification categories and criteria***"

(Reference document: ECE/TRANS/WP.15/AC.2/2009/20)

2.4.3.1 In subparagraphs (a) and (b), replace "the tables" with "table 2.4.3.1".

Replace the tables with the following table:

Table 2.4.3.1: Categories for substances hazardous to the aquatic environment *(see Note 1)*

(a) Acute (short-term) aquatic hazard	
Category Acute 1: *(Note 2)*	
96 hr LC_{50} (for fish)	≤ 1 mg/l and/or
48 hr EC_{50} (for crustacea)	≤ 1 mg/l and/or
72 or 96hr ErC_{50} (for algae or other aquatic plants)	≤ 1 mg/l *(see Note 3)*
Category Acute 2:	
96 hr LC_{50} (for fish)	> 1 but ≤ 10 mg/l and/or
48 hr EC_{50} (for crustacea)	>1 but ≤ 10 mg/l and/or
72 or 96hr ErC_{50} (for algae or other aquatic plants)	>1 but ≤ 10 mg/l *(see Note 3)*
Category Acute 3:	
96 hr LC_{50} (for fish)	>10 but ≤ 100 mg/l and/or
48 hr EC_{50} (for crustacea)	>10 but ≤ 100 mg/l and/or
72 or 96hr ErC_{50} (for algae or other aquatic plants)	>10 but ≤ 100 mg/l *(see Note 3)*
(b) Long-term aquatic hazard *(see also figure 2.4.3.1)*	
(i) Non-rapidly degradable substances (see Note 4) for which there are adequate chronic toxicity data available	
Category Chronic 1: (see *Note 2*)	
Chronic NOEC or EC_x (for fish)	≤ 0.1 mg/l and/or
Chronic NOEC or EC_x (for crustacea)	≤ 0.1 mg/l and/or
Chronic NOEC or EC_x (for algae or other aquatic plants)	≤ 0.1 mg/l
Category Chronic 2:	
Chronic NOEC or EC_x (for fish)	≤ 1 mg/l and/or
Chronic NOEC or EC_x (for crustacea)	≤ 1 mg/l and/or
Chronic NOEC or EC_x (for algae or other aquatic plants)	≤ 1 mg/l

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

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

Category Chronic 1: *(see Note 2)*

Chronic NOEC or EC_x (for fish)	≤ 0.01 mg/l and/or
Chronic NOEC or EC_x (for crustacea)	≤ 0.01 mg/l and/or
Chronic NOEC or EC_x (for algae or other aquatic plants)	≤ 0.01 mg/l

Category Chronic 2:

Chronic NOEC or EC_x (for fish)	≤ 0.1 mg/l and/or
Chronic NOEC or EC_x (for crustacea)	≤ 0.1 mg/l and/or
Chronic NOEC or EC_x (for algae or other aquatic plants)	≤ 0.1 mg/l

Category Chronic 3:

Chronic NOEC or EC_x (for fish)	≤ 1 mg/l and/or
Chronic NOEC or EC_x (for crustacea)	≤ 1 mg/l and/or
Chronic NOEC or EC_x (for algae or other aquatic plants)	≤ 1 mg/l

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

Category Chronic 1: *(see Note 2)*

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

and the substance is not rapidly degradable and/or the experimentally determined BCF is ≥ 500 (or, if absent, the log K_{ow} ≥ 4). *(see Notes 4 and 5)*

Category Chronic 2:

96 hr LC_{50} (for fish)	> 1 but ≤ 10 mg/l and/or
48 hr EC_{50} (for crustacea)	> 1 but ≤ 10 mg/l and/or
72 or 96hr ErC_{50} (for algae or other aquatic plants)	> 1 but ≤ 10 mg/l *(see Note 3)*

and the substance is not rapidly degradable and/or the experimentally determined BCF is ≥ 500 (or, if absent, the log K_{ow} ≥ 4). *(see Notes 4 and 5)*

Category Chronic 3:

96 hr LC_{50} (for fish)	> 10 but ≤ 100 mg/l and/or
48 hr EC_{50} (for crustacea)	> 10 but ≤ 100 mg/l and/or
72 or 96hr ErC_{50} (for algae or other aquatic plants)	> 10 but ≤ 100 mg/l *(see Note 3)*

and the substance is not rapidly degradable and/or the experimentally determined BCF is ≥ 500) (or, if absent, the log K_{ow} ≥ 4). *(see Notes 4 and 5).*

(c) "Safety net" classification

Category Chronic 4:

Poorly soluble substances for which no acute toxicity is recorded at levels up to the water solubility, and which are not rapidly degradable and have a log K_{ow} ≥ 4, indicating a potential to bioaccumulate, will be classified in this category unless other scientific evidence exists showing classification to be unnecessary. Such evidence would include an experimentally determined BCF < 500, or a chronic toxicity NOECs > 1 mg/l, or evidence of rapid degradation in the environment.

Substances which come under Category Chronic 4 alone are not considered to be environmentally hazardous in the sense of ADN.

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

NOTE 2: *When classifying substances as Acute 1 and/or Chronic 1 it is necessary at the same time to indicate an appropriate M factor (see 2.4.4.6.4) to apply the summation method.*

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

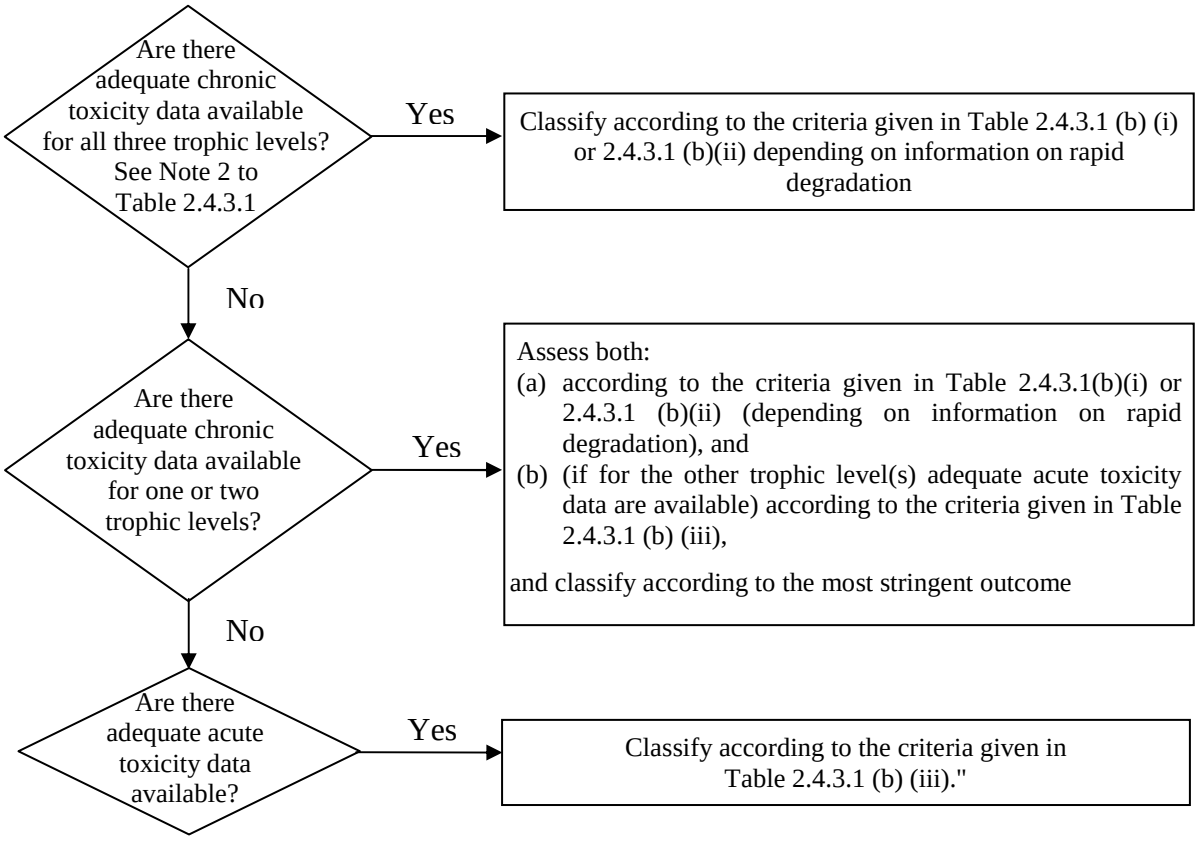
NOTE 4: *Lack of rapid degradability is based on either a lack of ready biodegradability or other evidence of lack of rapid degradation. When no useful data on degradability are available, either experimentally determined or estimated data, the substance shall be regarded as not rapidly degradable.*

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

(Reference document: ECE/TRANS/WP.15/AC.2/2009/20)

2.4.3.1 Add the following figure:

"**Figure 2.4.3.1: Categories for substances long-term hazardous to the aquatic environment**



(Reference document: ECE/TRANS/WP.15/AC.2/2009/20)

2.4.3.2 Add a new paragraph to read as follows:

"2.4.3.2 The classification scheme in Table 2.4.3.2 below summarizes the classification criteria for substances.

Table 2.4.3.2: Classification scheme for substances hazardous to the aquatic environment

Classification categories			
Acute hazard (*Note 1*)	**Long-term hazard** (*Note 2*)		
	Adequate chronic toxicity data available		**Adequate chronic toxicity data not available** (*Note 1*)
	Non-rapidly degradable substances (*Note 3*)	**Rapidly degradable substances** (*Note 3*)	
Category: Acute 1	**Category: Chronic 1**	**Category: Chronic 1**	**Category: Chronic 1**
$L(E)C_{50} \leq 1.00$	NOEC or $EC_x \leq 0.1$	NOEC or $EC_x \leq 0.01$	$L(E)C_{50} \leq 1.00$ and lack of rapid degradability and/or BCF ≥ 500 or, if absent log $K_{ow} \geq 4$
Category: Acute 2	**Category: Chronic 2**	**Category: Chronic 2**	**Category: Chronic 2**
$1.00 < L(E)C_{50} \leq 10.0$	$0.1 <$ NOEC or $EC_x \leq 1$	$0.01 <$ NOEC or $EC_x \leq 0.1$	$1.00 < L(E)C_{50} \leq 10.0$ and lack of rapid degradability and/or BCF ≥ 500 or, if absent log $K_{ow} \geq 4$
Category: Acute 3		**Category: Chronic 3**	**Category: Chronic 3**
$10.0 < L(E)C_{50} \leq 100$		$0.1 <$ NOEC or $EC_x \leq 1$	$10.0 < L(E)C_{50} \leq 100$ and lack of rapid degradability and/or BCF ≥ 500 or, if absent log $K_{ow} \geq 4$
	Category: Chronic 4 *(Note 4)* Example: *(Note 5)* No acute toxicity and lack of rapid degradability and BCF ≥ 500 or, if absent log Kow ≥ 4, unless NOECs > 1 mg/l		

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

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

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

NOTE 4: *The system also introduces a "safety net" classification (referred to as category Chronic 4) for use when the data available do not allow classification under the formal criteria but there are nevertheless some grounds for concern.*

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

NOTE 5: *For poorly soluble substances for which no acute toxicity has been demonstrated at the solubility limit, and are both not rapidly degraded and have a potential to bioaccumulate, this category should apply unless it can be demonstrated that the substance does not require classification for aquatic long-term hazards.*"

(Reference document: ECE/TRANS/WP.15/AC.2/2009/20)

2.4.4.1 In the first sentence, replace "meaning Acute Categories 1 to 3 and Chronic Categories 1 to 4" with ", meaning categories Acute 1 to 3 and Chronic 1 to 4" The second amendment does not apply to the English text.

Amend the second paragraph to read as follows:

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

(Reference document: ECE/TRANS/WP.15/AC.2/2009/20)

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

In the figure, in the middle column, modify the three bullet points to read them as sub-paragraphs (a), (b) and (c). In the new sub-paragraph (c), replace "formula" with "formulas" and insert "or EqNOECm" after "$L(E)C_{50}$" and "or “Chronic”" after "“Acute”". In the right column, replace "chronic toxicity" with "long-term" (four times).

(Reference document: ECE/TRANS/WP.15/AC.2/2009/20)

2.4.4.3 Amend to read as follows:

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

2.4.4.3.1 When the mixture as a whole has been tested to determine its aquatic toxicity, this information shall be used for classifying the mixture according to the criteria that have been agreed for substances. The classification is normally based on the data for fish, crustacea and algae/plants (2.4.2.3 and 2.4.2.4). When adequate acute or chronic data for the mixture as a whole are lacking, "bridging principles" or "summation method" shall be applied (see 2.4.4.4 and 2.4.4.5).

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

2.4.4.3.3 Classification for categories Acute 1, 2 and 3

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

Classify the mixture as Acute 1, 2 or 3 in accordance with Table 2.4.3.1 (a);

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

No need to classify for acute hazard under ADN.

2.4.4.3.4 Classification for categories Chronic 1, 2 and 3

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

(i) classify the mixture as Chronic 1, 2 or 3 in accordance with Table 2.4.3.1 (b) (ii) (rapidly degradable) if the available information allows the conclusion that all relevant ingredients of the mixture are rapidly degradable;

(ii) classify the mixture as Chronic 1, 2 or 3 in all other cases in accordance with Table 2.4.3.1 (b) (i) (non-rapidly degradable);

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

No need to classify for long-term hazard under ADN.

2.4.4.3.5 Classification for category Chronic 4

If there are nevertheless reasons for concern:

Classify the mixture as Chronic 4 (safety net classification) in accordance with Table 2.4.3.1 (c)".

(Reference document: ECE/TRANS/WP.15/AC.2/2009/20)

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

(Reference document: ECE/TRANS/WP.15/AC.2/2009/20)

2.4.4.4.2.1 Amend to read as follows:

"2.4.4.4.2.1 Where a new mixture is formed by diluting a tested mixture or a substance with a diluent which has an equivalent or lower aquatic hazard classification than the least toxic original ingredient and which is not expected to affect the aquatic hazards of other ingredients, then the resulting mixture shall be classified as equivalent to the original tested mixture or substance. Alternatively, the method explained in 2.4.4.5 may be applied.".

(Reference document: ECE/TRANS/WP.15/AC.2/2009/20)

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

(Reference document: ECE/TRANS/WP.15/AC.2/2009/20)

2.4.4.4.4 The first amendment does not apply to the English text.

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

(Reference document: ECE/TRANS/WP.15/AC.2/2009/20)

2.4.4.4.5 Amend to read as follows:

"2.4.4.4.5 *Interpolation within one toxicity category*

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

(Reference document: ECE/TRANS/WP.15/AC.2/2009/20)

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

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

(Reference document: ECE/TRANS/WP.15/AC.2/2009/20)

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

(Reference document: ECE/TRANS/WP.15/AC.2/2009/20)

2.4.4.5.2 Amend to read as follows:

"2.4.4.5.2 Mixtures may be made of a combination of both ingredients that are classified (as Acute 1 to 3 and/or Chronic 1 to 4) and those for which adequate toxicity test data are available. When adequate toxicity data are available for more than one ingredient in the mixture, the combined toxicity of those ingredients shall be calculated using the following additivity formulas (a) or (b), depending on the nature of the toxicity data:

(a) Based on acute aquatic toxicity:

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

where:

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

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

(b) Based on chronic aquatic toxicity:

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

where:

C_i = concentration of ingredient i (mass percentage) covering the rapidly degradable ingredients;
C_j = concentration of ingredient j (mass percentage) covering the non-rapidly degradable ingredients;
$NOEC_i$ = NOEC (or other recognized measures for chronic toxicity) for ingredient covering the rapidly degradable ingredients, in mg/l;
$NOEC_j$ = NOEC (or other recognized measures for chronic toxicity) for ingredient i covering the non-rapidly degradable ingredients, in mg/l;
n = number of ingredients, and i and j are running from 1 to n;
$EqNOEC_m$ = equivalent NOEC of the part of the mixture with test data;

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

The calculated equivalent toxicity shall be used to assign that portion of the mixture a long-term hazard category, in accordance with the criteria for rapidly degradable substances (Table 2.4.3.1 (b) (ii)), which is then subsequently used in applying the summation method.".

(Reference document: ECE/TRANS/WP.15/AC.2/2009/20)

2.4.4.5.3 In the first sentence, replace "each substance" with "each ingredient", "same species" with "same taxonomic group", "daphnia" with "crustacea" and "three species" with "three groups". In the second sentence, replace "species" with "taxonomic group". In the last sentence, insert "and chronic" before "toxicity" and "and/or Chronic 1, 2 or 3" after "Acute 1, 2 or 3".

(Reference document: ECE/TRANS/WP.15/AC.2/2009/20)

2.4.4.6.1 The amendment does not apply to the English text.

(Reference document: ECE/TRANS/WP.15/AC.2/2009/20)

2.4.4.6.2 Amend the heading to read "*Classification for category Acute 1, 2 and 3"*.

(Reference document: ECE/TRANS/WP.15/AC.2/2009/20)

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

2.4.4.6.2.4: Amend title and column headings of Table 2.4.4.6.2.4 as follows:

"Table 2.4.4.6.2.4 Classification of a mixture for acute hazards based on summation of the concentrations of classified ingredients

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

(Reference document: ECE/TRANS/WP.15/AC.2/2009/20)

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

(Reference document: ECE/TRANS/WP.15/AC.2/2009/20)

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

(Reference document: ECE/TRANS/WP.15/AC.2/2009/20)

2.4.4.6.3.5 Amend to read as follows:

"2.4.4.6.3.5 The classification of mixtures for long-term hazards based on this summation of the concentrations of classified ingredients is summarized in Table 2.4.4.6.3.5 below.

(Reference document: ECE/TRANS/WP.15/AC.2/2009/20)

2.4.4.6.3.5 Amend title and column headings of Table 2.4.4.6.3.5 as follows:

"**Table 2.4.4.6.3.5 Classification of a mixture for long-term hazards based on summation of the concentrations of classified ingredients**

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

(Reference document: ECE/TRANS/WP.15/AC.2/2009/20)

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

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

(Reference document: ECE/TRANS/WP.15/AC.2/2009/20)

2.4.4.6.4 Replace Table 2.4.4.6.4 with the following table:

"**Table 2.4.4.6.4: Multiplying factors for highly toxic ingredients of mixtures**

Acute toxicity	**M factor**	**Chronic toxicity**	**M factor**	
$L(E)C_{50}$ value		**NOEC value**	**NRD [a] ingredients**	**RD [b] ingredients**
$0.1 < L(E)C_{50} \leq 1$	1	$0.01 < NOEC \leq 0.1$	1	-
$0.01 < L(E)C_{50} \leq 0.1$	10	$0.001 < NOEC \leq 0.01$	10	1
$0.001 < L(E)C_{50} \leq 0.01$	100	$0.0001 < NOEC \leq 0.001$	100	10
$0.0001 < L(E)C_{50} \leq 0.001$	1 000	$0.00001 < NOEC \leq 0.0001$	1 000	100
$0.00001 < L(E)C_{50} \leq 0.0001$	10 000	$0.000001 < NOEC \leq 0.000\,01$	10 000	1 000
(continue in factor 10 intervals)		(continue in factor 10 intervals)		

[a] *Non-rapidly degradable.*

[b] *Rapidly degradable.*".

(Reference document: ECE/TRANS/WP.15/AC.2/2009/20)

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

(Reference document: ECE/TRANS/WP.15/AC.2/2009/20)

Part 3

Chapter 3.2

3.2.1 Table A, add the following entry:

(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7a)	(7b)	(8)	(9)	(10)
3495	IODINE	8	CT2	III	8+6.1	279, 802	LQ 24	E1		PP, EX, TOX, A	VE02

(Reference document: ECE/TRANS/WP.15/AC.2/2009/32)

Table A, column (6)

UN No. 3471 (II and III): Add "802".

Tableau A, column (8):

Numéro ONU 3494: Insert "T" in column (8) for the three entries

Table A, column (9) and, if appropriate, Table C, column (18):

UN Nos. 1320, 1321, 1348, 1431, 1445, 1446, 1447, 1448, 1449, 1463, 1469, 1470, 1500, 1511, 1571, 1868, 1872, 1950 (classification code 5 FC), 2441, 2464, 2573, 2719, 2741, 2925 (II, III), 2926 (II, III), 3085 (I, II, III), 3087 (I, II, III), 3126 (II, III), 3128 (II, III), 3179 (II, III), 3180 (II, III), 3191 (II, III), 3192 (II, III), 3206 (II, III), 3369, 3408 (II, III): Add "EP", 3477, 9000.

UN Nos. 2235, 2236, 3409, 9000: Add "TOX, A".
UN No. 3134 (I, II, III) and 3495: Add "TOX".
UN No. 3473: Add "PP, EX, A".
UN No. 3477: Delete "EX".

Table A, column (10):

UN Nos. 1779, 3463, 3473: Add "VE01".
UN Nos. 2235, 2236, 3409, 9000: Add "VE02".

Table A, column (11):

UN No. 1942: Add "LO04".
UN Nos. 3132 (I, II, III), 3135 (I, II, III), 3396 (I, II, III): Insert "HA08".

Table A, column (12) and, as appropriate, Table C, column (19):

UN No. 0154: Amend to read "3".
UN Nos. 1463, 3408 (II), 3471 (II): Amend to read "2".
UN Nos. 1391, 1779, 3176 (II), 3463, 3470, 3478: Amend to read "1".
UN No. 2481: Amend to read "0".

(Reference document: ECE/TRANS/WP.15/AC.2/2009/27)

3.2.3 Table C, Explanations concerning Table C

Explanations for column (20), explanation No. 5, fourth sentence

Insert "and the corresponding piping" after "cargo tanks".

Explanations for column (20), explanation 11 (f)

Insert "and the corresponding piping" after "it".

(Reference document: ECE/TRANS/WP.15/AC.2/2009/18)

3.2.3 Table C, add the three entries for UN No. 3494 as follows:

(1)	(2)	(3a)	(3b)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
UN No. or substance identification No.	Name and description	Class	Classification code	Packing group	Dangers	Type of tank vessel	Cargo tank design	Cargo tank type	Cargo tank equipment	Opening pressure of the high-velocity vent valve in kPa	Maximum degree of filling in %	Relative density at 20 °C	Type of sampling device	Pump room below deck permitted	Temperature class	Explosion group	Anti-explosion protection required	Equipment required	Number of blue cones/lights	Additional requirements/Remarks
3494	PETROLEUM CRUDE OIL, ACID, INFLAMMABLE, TOXIC	3	TF1	I	3+6.1+(N1, N2, N3, CMR, F)	C	*	*	*	*	95		1	No	T4[3)]	II B[4)]	Yes	PP, EP, EX, TOX, A	2	14; 27; *See flowchart
3494	PETROLEUM CRUDE OIL, ACID, INFLAMMABLE, TOXIC	3	TF1	II	3+6.1+(N1, N2, N3, CMR, F)	C	*	*	*	*	95		2	No	T4[3)]	II B[4)]	Yes	PP, EP, EX, TOX, A	2	14; 27; *See flowchart
3494	PETROLEUM CRUDE OIL, ACID, INFLAMMABLE, TOXIC	3	TF1	III	3+6.1+(N1, N2, N3, CMR, F)	C	*	*	*	*	95		2	No	T4[3)]	II B[4)]	Yes	PP, EP, EX, TOX, A	0	14; 27; *See flowchart

(Reference document ECE/TRANS/WP.15/AC.2/2009/27, Annex 1)

3.2.3 Table C, divide the entry for UN No. 2672 in two as follows:

(a) First entry: UN 2672

AMMONIA SOLUTION, relative density between 0.880 and 0.957 at 15 °C in water, with more than 10 % but not more than 35 % ammonia (more than 25 % but not more than 35 % ammonia).

Column 6	Column 7	Column 8	Column 9	Column 10
C	2	2	1	50

(b) Second entry: UN 2672

AMMONIA SOLUTION, relative density between 0.880 and 0.957 at 15°C in water, with more than 10 % but not more than 35% ammonia (not more than 25 % ammonia).

Column 6	Column 7	Column 8	Column 9	Column 10
N	2	2		10

(Reference document: ECE/TRANS/WP.15/AC.2/2009/32)

3.2.3 Table C, title of column (12)

Does not apply to English version.

(Reference document: ECE/TRANS/WP.15/AC.2/2009/10)

3.2.3 Table C, column (14): Insert "No" for UN numbers 1005, 1010 (3 times), 1011, 1012, 1020, 1030, 1033, 1055, 1063, 1077, 1083, 1086, 1912, 1965 (9 times), 1969, 1978 and 9000.

(Reference document: ECE/TRANS/WP.15/AC.2/2009/33)

3.2.4 Replace "density" with "relative density" in the flowchart in the description of column (12) on page 200 and under 2.2 of 3.2.4.2 on page 207.

(Reference document: ECE/TRANS/WP.15/AC.2/2009/10)

Part 5

Chapter 5.4

5.4.1.1.2 Examples of permitted dangerous goods descriptions

Amend to read as follows:

"**˝UN 1203 MOTOR SPIRIT, 3 (N2, CMR, F), II˝; or**
˝UN 1203 MOTOR SPIRIT, 3 (N2, CMR, F), PG II˝".

(Reference document: ECE/TRANS/WP.15/AC.2/2009/11)

Part 7

Chapter 7.1

7.1.6.11 Replace "0,75 kg/dm³" with "750 kg/m³" in the description of CO 02.

(Reference document: ECE/TRANS/WP.15/AC.2/2009/10)

Chapter 7.2

7.2.4.18 Amend to read as follows:

"7.2.4.18.1 In cargo tanks and the corresponding piping, inerting in the gaseous phase or blanketing of the cargo may be necessary. Inerting and blanketing of the cargo are defined as follows:

- Inerting: cargo tanks and the corresponding piping and other spaces for which this process is prescribed in column (20) of Table C of chapter 3.2 are filled with gases or vapours which prevent combustion, do not react with the cargo and maintain this state;

- Blanketing of the cargo: spaces in the cargo tanks above the cargo and the corresponding piping are filled with a liquid, gas or vapour so that the cargo is separated from the air and this state is maintained.

7.2.4.18.2 For certain substances the requirements for inerting and blanketing of the cargo in cargo tanks, in the corresponding piping and in adjacent empty spaces are given in column (20) of Table C of Chapter 3.2.

7.2.4.18.3 (*Reserved*)."

(Reference document: ECE/TRANS/WP.15/AC.2/2009/18)

7.2.4.19 Amend to read as follows:

"7.2.4.19 *(Deleted)"*

(Reference document: ECE/TRANS/WP.15/AC.2/2009/18)

Part 8

Chapter 8.2

8.2.2.3.3.1 and 8.2.2.3.3.2 Replace "density" with "mass density, relative density" (twice).

(Reference document: ECE/TRANS/WP.15/AC.2/2009/10)

Chapter 8.6

8.6.1.3 and 8.6.1.4 Under point 11 replace "density" with "relative density".

(Reference document: ECE/TRANS/WP.15/AC.2/2009/10)

Part 9

Chapter 9.3

9.1.0.40.2.5 (e) (iii), 9.3.1.40.2.5 (e) (iii) and 9.3.2.40.2.5 (e) (iii), 9.3.3.40.2.5 (e) (iii) } For "toxic substances" read "dangerous substances".

(Reference document: ECE/TRANS/WP.15/AC.2/2009/39)

9.3.3.11.4 Add a new sentence before the last sentence to read as follows: "These pipes shall be at least 0.60 m above the bottom."

(Reference document: Informal document INF.7)

9.3.3.18 Second paragraph, insert "(0.035 bar)" after "3.5 kPa"

(Reference document: ECE/TRANS/WP.15/AC.2/2009/18)

9.3.3.22.5 (a) Does not apply to English version

(Reference document: ECE/TRANS/WP.15/AC.2/2009/18)
