

Resolution MEPC 20(22)

ADOPTION OF THE CODE FOR THE CONSTRUCTION AND EQUIPMENT
OF SHIPS CARRYING DANGEROUS CHEMICALS IN BULK (BCH CODE)

adopted on 5 December 1985

THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

RECALLING Article 38 of the Convention on the International Maritime
Organization concerning the functions of the Committee,

NOTING resolution MEPC 16(22) by which it adopted amendments to the Annex
of the Protocol of 1978 relating to the International Convention for the
Prevention of Pollution from Ships, 1973, (the 1978 Protocol), to make the
provisions of the International Code for the Construction and Equipment of
Ships Carrying Dangerous Chemicals in Bulk (IBC Code) and the Code for the
Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (BCH
Code) mandatory under the International Convention for the Prevention of
Pollution from Ships, 1973 as modified by the 1978 Protocol (MARPOL 73/78),

NOTING ALSO that the BCH Code was adopted by the Assembly by resolution
A.212(VII) and subsequently incorporated ten sets of amendments adopted by the
Maritime Safety Committee,

HAVING CONSIDERED the proposed text of the BCH Code which incorporates
amendments from the marine pollution point of view developed by the Committee
in pursuance of resolution 15 of the International Conference on marine
Pollution, 1973,

1. ADOPTS the BCH Code, the text of which is given in the Annex to the
present resolution, for the purposes of Annex II of MARPOL 73/78;
2. REQUESTS the Secretary-General to transmit a copy of the present
resolution together with the text of the BCH Code to all Members of the
Organization and to all Parties to MARPOL 73/78 which are not Members of the
Organization.

ANNEX

THE CODE FOR THE CONSTRUCTION AND EQUIPMENT OF SHIPS CARRYING DANGEROUS CHEMICALS IN BULK

(The BCH Code to be annexed to the MEPC resolution
will incorporate the amendments listed below)

Preamble

Paragraph 1

In the existing text, after the word "dangerous", the words "and
noxious" are inserted.

Paragraph 7

Existing paragraph 7 is replaced by the following:

"7 In response to resolution 15 of the International Conference on Marine Pollution, 1973, the Marine Environment Protection Committee at its twenty-second session adopted with resolution MEPC ...(22) the BCH Code extended to cover the marine pollution prevention aspects for the implementation of Annex II to the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78)."

Paragraph 8

In the existing text, after the word "dangerous", the words "and
noxious" are inserted.

1.1 Purpose

In the existing text, the words "or noxious" are inserted between the words
"dangerous" and "chemical".

In the existing text the words "the neighbourhood" are replaced by the words "to the environment".

The following sentence is added to the existing text:

"For the purposes of MARPOL 73/78, the Code applies only to chemical tankers as defined in regulation 1(1) of Annex II thereof, which are engaged in the carriage of noxious liquid substances falling into Category A, B or C and identified as such by an entry of "A, B or C" in column b".

1.2 Scope

1.2.1 In the existing text of the first sentence, the words "and noxious" are inserted between the words "dangerous" and "chemical" and the words "(c) products which may present a hazard to the environment, if accidentally released." are added.

1.3 Hazards

The existing text of 1.3 is designated as 1.3.1 and in the first line the words "relating to human life" are inserted between the words "substances" and "considered".

New paragraph 1.3.2 is added to the existing text as follows:

"1.3.2 Hazards of chemicals and other substances relating to the marine environment considered by this Code are:

- .1 bioaccumulation with attendant risk to aquatic life or human health or cause tainting to seafood;
- .2 damage to living resources;
- .3 hazard to human health; and
- .4 reduction of amenities."

1.4 Definitions

In the existing text of paragraph 1.4.15 after the words "propylene oxide" the words "and ethylene oxide/propylene oxide mixtures with an ethylene oxide content of not more than 30 per cent by weight" are added.

The following definitions are added to the existing text:

"1.4.16A Noxious liquid substance means any substance designated in appendix II to Annex II of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78) or provisionally assessed under the provisions of regulation 3(4) of that Annex as falling into category A, B, C or D."

"1.4.16B Standards for Procedures and Arrangements means the Standards for the Procedures and Arrangements for the Discharge of Noxious Liquid Substances, called for by Annex II of MARPOL 73/78, adopted by the Marine Environment Protection Committee at its twenty-second session by resolution MEPC 18(22) and as may be amended by the Organization."

1.5 Equivalents

1.5.2 In the existing text the words "other Parties to MARPOL 73/78 and" are inserted after the words "circulate the same to".

1.6 Certification

1.6.3.1 In the existing text the words "to a chemical tanker" the words "engaged in international voyages" are added.

1.7 Effective date

1.7.2 The following sentence is added to the existing text of paragraph 1.7.2

"This conversion provision does not apply to the modification of a ship referred to in regulation 1(12) of Annex II of MARPOL 73/78."

1.8 New products

In the first line of the existing text between the words "chemicals" and "which" the following words are added:

"and noxious liquid substances of category A, B or C, either of".

2.2 Ship types

The following sentence is added to the existing texts of subparagraphs 2.2.4(a)(iii) and 2.2.4(b)(iii)

"This requirement does not apply to the tanks for diluted slops arising from the tank washing."

2.6 Cargo segregation

2.6.2 The first line of the existing text is amended to read:

"Cargoes, residues of cargoes or mixtures containing cargoes which react in a hazardous manner with other cargoes, residues or mixtures, should:"

Chapter IV - Special requirements

The existing text of section 4.7 is replaced by the following:

"4.7 Propylene oxide and mixtures of ethylene oxide/propylene oxide with an ethylene oxide content of not more than 30 per cent by weight.

4.7.1 Products transported under the provisions of this section should be acetylene free.

4.7.2 (a) Unless cargo tanks are properly cleaned, these products should not be carried in tanks which have contained as one of the three previous cargoes any products known to catalyse polymerization, such as:

- (i) mineral acids (e.g. sulphuric, hydrochloric, nitric);
 - (ii) carboxylic acids and anhydrides (e.g. formic, acetic);
 - (iii) halogenated carboxylic acids (e.g. chloracetic);
 - (iv) sulphonic acids (e.g. benzene sulphonic);
 - (v) caustic alkalis (e.g. sodium hydroxide, potassium hydroxide);
 - (vi) ammonia and ammonia solutions;
 - (vii) amines and amine solutions;
 - (viii) oxidizing substances.
- (b) Before loading, tanks should be thoroughly and effectively cleaned, to remove all traces of previous cargoes from tanks and associated pipework, except where the immediately prior cargo has been propylene oxide or ethylene oxide/propylene oxide mixtures. Particular care should be taken in the case of ammonia in tanks made of steel other than stainless steel.
- (c) In all cases, the effectiveness of cleaning procedures for tanks and associated pipework should be checked by suitable testing or inspection, to ascertain that no traces of acidic or alkaline materials remain that might create a hazardous situation in the presence of these products.
- (d) Tanks should be entered and inspected prior to each initial loading of these products to ensure freedom from contamination, heavy rust deposits and visible structural defects. When cargo tanks are in continuous service for these products, such inspections should be performed at intervals of not more than two years.

- (e) Tanks for the carriage of these products should be of steel or stainless steel construction.
 - (f) Tanks for the carriage of these products may be used for other cargoes after thorough cleaning of tanks and associated pipework systems by washing or purging.
- 4.7.3
- (a) All valves, flanges, fittings and accessory equipment should be of a type suitable for use with the products and should be constructed of steel or stainless steel or other material acceptable to the Administration. The chemical composition of all material used should be submitted to the Administration for approval prior to fabrication. Discs or disc faces, seats and other wearing parts of valves should be made of stainless steel containing not less than 11 per cent chromium.
 - (b) Gaskets should be constructed of materials which do not react with, dissolve in, or lower the auto-ignition temperature of, these products, and which are fire resistant and possess adequate mechanical behaviour. The surface presented to the cargo should be polytetrafluorethylene (PTFE), or materials giving a similar degree of safety by their inertness. Spirally-wound stainless steel, with a filler of PTFE or similar fluorinated polymer, may be accepted by the Administration.
 - (c) Insulation and packing, if used, should be of a material which does not react with, dissolve in, or lower the auto-ignition temperature of, these products.
 - (d) The following materials are generally found unsatisfactory for gaskets, packing and similar uses in containment systems for these products and would require testing before being approved by the Administration:
 - (i) Neoprene or natural rubber, if it comes into contact with the products.

(ii) Asbestos, or binders used with asbestos.

(iii) Materials containing oxides of magnesium, such as mineral wools.

4.7.4 Threaded joints should not be permitted in the cargo liquid and vapour lines.

4.7.5 Filling and discharge piping should extend to within 100 mm of the bottom of the tank or any sump pit.

4.7.6 (a) The containment system for a tank containing these products should have a valved vapour return connection.

(b) The products should be loaded and discharged in such a manner that venting of the tanks to atmosphere does not occur. If vapour return to shore is used during tank loading, the vapour return system connected to a containment system for the product should be independent of all other containment systems.

(c) During discharging operations, the pressure in the cargo tank must be maintained above 0.07 kp/cm^2 gauge.

4.7.7 The cargo may be discharged only by deepwell pumps, hydraulically operated submerged pumps, or inert gas displacement. Each cargo pump should be arranged to ensure that the product does not heat significantly if the discharge line from the pump is shut off or otherwise blocked.

4.7.8 Tanks carrying these products should be vented independently of tanks carrying other products. Facilities should be provided for sampling the tank contents without opening the tank to atmosphere.

4.7.9 Cargo hoses used for transfer of these products should be marked "FOR ALKYLENE OXIDE TRANSFER ONLY".

4.7.10 Cargo tanks, void spaces and other enclosed spaces, adjacent to an integral gravity cargo tank carrying propylene oxide, should either contain a compatible cargo (those cargoes specified in 4.7.2 are examples of substances considered incompatible) or be inerted by injection of a suitable inert gas. Any hold space in which an independent cargo tank is located should be inerted. Such inerted spaces and tanks should be monitored for these products and oxygen. The oxygen content of these spaces should be maintained below 2 per cent. Portable sampling equipment is satisfactory.

4.7.11 In no case should air be allowed to enter the cargo pump or piping system while these products are contained within the system.

4.7.12 Prior to disconnecting shore-lines, the pressure in liquid and vapour lines should be relieved through suitable valves installed at the loading header. Liquid and vapour from these lines should not be discharged to atmosphere.

4.7.13 Propylene oxide may be carried in pressure tanks or in independent or integral gravity tanks. Ethylene oxide/propylene oxide mixtures should be carried in independent gravity tanks or pressure tanks. Tanks should be designed for the maximum pressure expected to be encountered during loading, conveying and discharging cargo.

4.7.14 (a) Tanks for the carriage of propylene oxide with a design pressure less than 0.6 kp/cm^2 gauge and tanks for the carriage of ethylene oxide/propylene oxide mixtures with a design pressure less than 1.2 kp/cm^2 gauge should have a cooling system to maintain the cargo below the reference temperature.*

(b) The refrigeration requirement for tanks with a design pressure less than 0.6 kp/cm^2 gauge may be waived by the Administration for ships operating in restricted areas or on voyages of

* See 1.4.15.

restricted duration, and account may be taken in such cases of any insulation of the tanks. The area and times of year for which such carriage would be permitted should be included in the conditions of the Certificate of Fitness.

- 4.7.15 (a) Any cooling system should maintain the liquid temperature below the boiling temperature at the containment pressure. At least two complete cooling plants automatically regulated by variations within the tanks should be provided. Each cooling plant should be complete with the necessary auxiliaries for proper operation. The control system should also be capable of being manually operated. An alarm should be provided to indicate malfunctioning of the temperature controls. The capacity of each cooling system should be sufficient to maintain the temperature of the liquid cargo below the reference temperature* of the system.
- (b) An alternative arrangement may consist of three cooling plants, any two of which should be sufficient to maintain the liquid temperatures below the reference temperature*.
- (c) Cooling media which are separated from the products by a single wall only should be non-reactive with the products.
- (d) Cooling systems requiring compression of the products should not be used.

4.7.16 Pressure relief valve settings should not be less than 0.2 kp/cm^2 gauge and for pressure tanks not greater than 7.0 kp/cm^2 gauge for the carriage of propylene oxide and not greater than 5.3 kp/cm^2 gauge for carriage of propylene oxide/ethylene oxide mixtures.

* See 1.4.15.

4.7.17 (a) The piping system for tanks to be loaded with these products should be separated (as defined in 1.4.13) from piping systems for all other tanks, including empty tanks. If the piping system for the tanks to be loaded is not independent (as defined in 1.4.14), the required piping separation should be accomplished by the removal of spool pieces, valves, or other pipe sections, and the installation of blank flanges at these locations. The required separation applies to all liquid and vapour piping, liquid and vapour vent lines and any other possible connections, such as common inert gas supply lines.

(b) These products may be transported only in accordance with cargo handling plans that have been approved by the Administration. Each intended loading arrangement should be shown on a separate cargo handling plan. Cargo handling plans should show the entire cargo piping system and the locations for installation of blank flanges needed to meet the above piping separation requirements. A copy of each approved cargo handling plan should be maintained on board the ship. The Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk should be endorsed to include reference to the approved cargo handling plans.

(c) Before each initial loading of these products and before every subsequent return to such service, certification verifying that the required piping separation has been achieved should be obtained from a responsible person acceptable to the Port Administration and carried on board the ship. Each connection between a blank flange and a pipeline flange should be fitted with a wire and seal by the responsible person to ensure that inadvertent removal of the blank flange is impossible.

4.7.18 (a) No cargo tanks should be more than 98 per cent liquid full at the reference temperature.*

* See 4.7.14(a).

- (b) The maximum volume to which a cargo tank should be loaded is:

$$V_L = 0.98 V \frac{d_R}{d_L}$$

where V_L = maximum volume to which the tank may be loaded

V = volume of the tank

d_R = relative density of cargo at the reference
temperature*

d_L = relative density of cargo at the loading
temperature and pressure

- (c) The maximum allowable tank filling limits for each cargo tank should be indicated for each loading temperature which may be applied, and for the applicable maximum reference temperature, on a list to be approved by the Administration. A copy of the list should be permanently kept on board by the master.

4.7.19 The cargo should be carried under a suitable protective padding of nitrogen gas. An automatic nitrogen make-up system should be installed to prevent the tank pressure falling below 0.07 kp/cm^2 gauge in the event of product temperature fall due to ambient conditions or maloperation of refrigeration systems. Sufficient nitrogen should be available on board to satisfy the demand of the automatic pressure control. Nitrogen of commercially pure quality (99.9 per cent by volume) should be used for padding. A battery of nitrogen bottles connected to the cargo tanks through a pressure reduction valve satisfies the intention of the expression "automatic" in this context.

* See 1.4.15.

4.7.20 The cargo tank vapour space should be tested prior to and after loading to ensure that the oxygen content is 2 per cent by volume or less.

4.7.21 A water spray system of sufficient capacity should be provided to blanket effectively the area surrounding the loading manifold, the exposed deck piping associated with product handling, and the tank domes. The arrangement of piping and nozzles should be such as to give a uniform distribution rate of $10 \text{ l/m}^2/\text{min}$. The water spray system should be capable of both local and remote manual operation, and the arrangement should ensure that any spilled cargo is washed away. Additionally, a water hose with pressure to the nozzle, when atmospheric temperatures permit, should be connected ready for immediate use during loading and unloading operations.

4.7.22 A remotely operated, controlled closing-rate, shut-off valve should be provided at each cargo hose connection used during cargo transfer."

4.20 Hydrogen peroxide solutions over 60% but not over 70%

The existing title is amended to read "Hydrogen peroxide solutions" and a subtitle without a number is inserted to read "Hydrogen peroxide solutions over 60% but not over 70%."

4.20.1 In the existing text the words "solutions over 60% but not over 70%" are inserted between the words "peroxide" and "should".

4.20.14 The following text is added after the existing paragraph 4.20.13.

"hydrogen peroxide solutions over 8 per cent but not over 60 per cent by weight.

4.20.15 The ship's shell plating should not form any boundaries of tanks containing this product.

4.20.16 Hydrogen peroxide should be carried in tanks thoroughly and effectively cleaned of all traces of previous cargoes and their vapours or ballast. Procedures for inspection, cleaning, passivation and loading of

tanks should be in accordance with MSC/Circ.394. A certificate should be on board the vessel indicating that the procedures in the Circular have been followed. The passivation requirement may be waived by an Administration for domestic shipments of short duration. Particular care in this respect is essential to ensure the safe carriage of hydrogen peroxide.

- .1 When hydrogen peroxide is carried no other cargoes should be simultaneously carried.
- .2 Tanks which have contained hydrogen peroxide may be used for other cargoes after cleaning in accordance with the procedures outlined in MSC/Circ.394.
- .3 Consideration in design should provide minimum internal tank structure, free draining, no entrapment and ease of visual inspection.

4.20.17 Cargo tanks and associated equipment should be either pure aluminium (99.5%) or solid stainless steel of types suitable for use with hydrogen peroxide (e.g. 304, 304L, 316, 316L, 316Ti). Aluminium should not be used for piping on deck. All non-metallic materials of construction for the containment system should neither be attacked by hydrogen peroxide nor contribute to its decomposition.

4.20.18 Cargo tanks should be separated by a cofferdam from fuel oil tanks or any other space containing materials incompatible with hydrogen peroxide.

4.20.19 Temperature sensors should be installed at the top and bottom of the tank. Remote temperature readouts and continuous monitoring should be located on the navigating bridge. If the temperature in the tank rises above 35°C, visible and audible alarms should activate on the navigating bridge.

4.20.20 Fixed oxygen monitors (or gas sampling lines) should be provided in void spaces adjacent to tanks to detect leakage of the cargo into these spaces. The enhancement of flammability by oxygen enrichment should be recognized. Remote readouts, continuous monitoring (if gas sampling lines are

used, intermittent sampling is satisfactory) and visible and audible alarms similar to those for the temperature sensors should also be located on the navigating bridge. The visible and audible alarms should activate if the oxygen concentrations in these void spaces exceed 30% by volume. Two portable oxygen monitors should also be available as back-up systems.

4.20.21 As a safeguard against uncontrolled decomposition, a cargo jettisoning system should be installed to discharge the cargo overboard. The cargo should be jettisoned if the temperature rise of the cargo exceeds a rate of 2°C per hour over a five hour period or when the temperature in the tank exceeds 40°C.

4.20.22 Cargo tank venting systems with filtration should have pressure vacuum relief valves for normal controlled venting, and a device for emergency venting, should tank pressure rise rapidly as a result of an uncontrolled decomposition rate, as stipulated in 4.20.20. These venting systems should be designed in such a manner that there is no introduction of sea water into the cargo tank even under heavy sea conditions. Emergency venting should be sized on the basis of tank design pressure and tank size.

4.20.23 A fixed water spray system should be provided for diluting and washing away any concentrated solution spilled on deck. The areas covered by the waterspray should include the manifold/hose connections and the tank tops of those tanks designated for the carriage of hydrogen peroxide solutions. The minimum application rate should satisfy the following criteria:

- .1 The product should be diluted from the original concentration to 35 per cent by weight within five minutes of the spill.
- .2 The rate and estimated size of the spill should be based upon maximum anticipated loading and discharge rates, the time required to stop flow of cargo in the event of tank overfill or a piping/hose failure, and the time necessary to begin application of dilution water with actuation at the cargo control location or on the navigating bridge.

4.20.24 Hydrogen peroxide should be stabilized to prevent decomposition. A certificate of stabilization should be provided by the manufacturer specifying:

- .1 name and amount of stabilizer added;
- .2 date stabilizer was added and duration of effectiveness;
- .3 any temperature limitations qualifying the stabilizer's effective lifetime;
- .4 the action to be taken should the product become unstable during the voyage.

4.20.25 Only those hydrogen peroxide solutions which have a maximum decomposition rate of 1.0 per cent per year at 25°C should be carried. Certification from the shipper that the product meets this standard should be presented to the Master and kept on board. A technical representative of the manufacturer should be on board to monitor the transfer operations and have the capability to test the stability of the hydrogen peroxide. He should certify to the Master that the cargo has been loaded in a stable condition.

4.20.26 Protective clothing that is resistant to hydrogen peroxide should be provided for each crew member involved in cargo transfer operations. Protective clothing should include coveralls that are non-flammable, suitable gloves, boots and eye protection.

4.20.27 During transfer of hydrogen peroxide the related piping system should be separate from all other systems. Cargo hoses used for transfer of hydrogen peroxide should be marked "for hydrogen peroxide transfer only".

5.2 Cargo information

The following paragraphs 5.2.5, 5.2.6, 5.2.7 and 5.2.9 and a footnote for paragraph 5.2.7 are added to the existing text:

5.2.5 Where column "k" in the table of chapter VI refers to this paragraph, the cargo's viscosity at 20°C should be specified on a shipping document and

if the cargo's viscosity exceeds 25 mPa.s at 20°C, the temperature at which the cargo has a viscosity of 25 mPa.s should be specified in the shipping document.

5.2.6 Where column "k" in the table of chapter VI refers to this paragraph, the cargo's viscosity at 20°C should be specified on a shipping document and if the cargo's viscosity exceeds 60 mPa.s at 20°C, the temperature at which the cargo has a viscosity of 60 mPa.s should be specified in the shipping document.

5.2.7 Where column "k" in the table of chapter VI refers to this paragraph and the possibility exists that it will be unloaded within Special Areas*, the cargo's viscosity at 20°C should be specified on a shipping document and if the cargo's viscosity exceeds 25 mPa.s at 20°C, the temperature at which the cargo has a viscosity of 25 mPa.s should be specified in the shipping document.

5.2.8 Where column "k" in the table of chapter VI refers to this paragraph, the cargo's melting point should be indicated in the shipping document.

VA New Chapter VA is added to the existing text as follows:

"CHAPTER VA - ADDITIONAL MEASURES FOR THE PROTECTION
OF THE MARINE ENVIRONMENT

5A.1 GENERAL

5A.1.1 The requirements of this chapter apply to ships carrying products noted as category A, B or C noxious liquid substances in chapter VI.

5A.2 CONDITION OF CARRIAGE

5A.2.1 The condition of carriage for products listed in the Certificate of Fitness for the Carriage of Dangerous Chemicals in Bulk should reflect the requirements of regulation 5A of Annex II of MARPOL 73/78.

* Special areas are defined in regulation 1(7) of Annex II to MARPOL 73/78".

5A.2.2 A category B substance with a melting point equal to or greater than 15°C should not be carried in a cargo tank any boundary of which is formed by the ship's shell plating and should only be carried in a cargo tank fitted with a cargo heating system.

5A.3 PROCEDURES AND ARRANGEMENTS MANUAL

5A.3.1 Each ship should be provided with a Procedures and Arrangements Manual developed for the ship in accordance with the provisions of the Standards for the Procedures and Arrangements and approved by the Administration.

5A.3.2 Each ship should be fitted with equipment and arrangements identified in its Procedures and Arrangements Manual.

CHAPTER VI - SUMMARY OF MINIMUM REQUIREMENTS

Existing text of chapter VI is replaced by the following:

"EXPLANATORY NOTES

Product name (column a)*	The product names are not always identical with the names given in previous issues of the Code, or the IBC Code for explanation see index of chemicals.	
UN number (column b)	This is the number relating to each product shown in the recommendations proposed by the United Nations Committee of Experts on the Transport of Dangerous Goods (the "Orange Book"), New York, 1977, ST/SG/AC.10/1/Rev.1. UN numbers are given for information only.	
Pollution category (column c)	The letter A, B, C or D means the pollution category assigned to each product under Annex II of MARPOL 73/78. "III" means the product was evaluated and found to fall outside the categories A, B, C or D.	
Hazards (column d)	S means that the product is included in the Code because of its safety hazards; P means that the product is included in the Code because of its pollution hazards; and S/P means that the product is included in the Code because of both its safety and pollution hazards.	
Ship type (column e)	1, 2 or 3 indicates ship types I, II, or III respectively as discussed in chapter II, part A - Physical Protection.	
Tank type (column f)	1: Independent tank 2: Integral tank	G: Gravity tank P: Pressure tank

* Note by the Secretariat:

References to columns a through m in other chapters of the Code will be amended according to the column designations shown here.

Tank vents (column g)	Open: open venting Cont: controlled venting SR: safety relief valve
Tank environmental control (column h)	Inert: Inerting (see 2.19.2(a)) Pad: Liquid or gas (2.12.2(b)) Dry: Drying (see 2.19.2(c)) Vent: Natural or forced (2.19.2(d))
Electrical requirements (column i)	St: Standard electrical systems (products having a flashpoint exceeding 60°C (closed cup test)). SP: Special requirements (products having a flashpoint not exceeding 60°C (closed cup test)).
Gauging (column j)	O: Open R: Restricted C: Closed
Vapour detection (column k)	F: Flammable vapours T: Toxic vapours
Fire protection (column l)	A: Alcohol resistant foam B: Regular foam. Encompasses all non-alcohol resistant type foams including fluoroprotein and aqueous film forming foam (AFFF) C: Water-spray D: Dry chemical No: No special requirements under this Code.

Fire-extinguishing media considered to be suitable
for certain products are listed for information in
column (i) of the summary of minimum requirements.

"No" indicates nil requirement.

a	b	c	d	e	f	g	h	i	j	k	l	m
Product name	UN number	Pollution category	Hazards	Ship type	Tank type	Tank vents	Tank environmental control	Electrical requirements	Gauging	Vapour detection	Fire protection	Special requirement
Acetic acid	2789	C	S/P	3	2G	Cont.	No	SP	R	F	A	4.8.2 to 4.8.4, 4.8.6 to 4.8.8, 4.12.6, 4.17, 5.2.8
Acetic anhydride	1715	C	S/P	2	2G	Cont.	No	SP	R	F-T	A	4.8.2 to 4.8.4, 4.8.6 to 4.8.8, 4.12.6, 4.17
Acetone cyanohydrin	1541	A	S/P	2	2G	Cont.	No	St	C	T	A	4.4, 4.9, 4.12.6, 4.13, 4.14, 4.17, 4.18
Acetonitrile	1648	III	S	2	2G	Cont.	No	SP	R	F-T	A	4.9
Acrylamide solution (50% or less)	2074	D	S	2	2G	Open	No	ST	C	No	No	4.9.3, 4.10, 4.14.1, 4.15.1, 4.18.1
Acrylic acid	2218	D	S	3	2G	Cont.	No	SP	R	F-T	A	4.10, 4.12.6, 4.18.1
Acrylonitrile	1093	B	S/P	2	2G	Cont.	No	SP	C	F-T	A	4.9, 4.10, 4.12.3, 4.13.1, 4.14, 4.17
Adiponitrile	2205	D	S	3	2G	Cont.	No	St	R	T	A	-
Alkyl acrylate - vinyl pyridine copolymer in toluene		(C)	P	3	2G	Cont.	No	SP	R	F	B	4.14.1

a	b	c	d	e	f	g	h	i	j	k	l	m
Alkyl benzene sulphonic acid	2584 2586	C	S/P	3	2G	Open	No	St	O	No	B	-
Allyl alcohol	1098	B	S/P	2	2G	Cont	No	SP	C	F-T	A	4.9, 4.13.1, 4.14, 4.17
Allyl chloride	1100	B	S/P	2	2G	Cont	No	SP	C	F-T	A	4.9, 4.13.1, 4.14, 4.17
2 (2-Aminoethoxy) ethanol	3055	D	S	3	2G	Open	No	St	O	No	A,C,D	4.12.2, 4.14.1
Aminoethyl ethanolamine		(D)	S	3	2G	Open	No	St	O	No	A	4.12.1
N-Aminoethyl piperazine	2815	D	S	3	2G	Cont	No	St	R	T	A,C,D	4.12.2, 4.14.1
Ammonia aqueous, (28% or less)	2672 (O)	C	S/P	3	2G	Cont	No	SP	R	T	C	4.12.4, 4.12.9, 4.17 ^a
Ammonium nitrate solution, (93% or less)	2426	D	S	2	1G	Open	No	St	O	No	No	4.8.4, 4.8.6, 4.12.10, 4.13.2, 4.14.1, 4.19
Ammonium sulphide solution (45% or less)	2683	B	S/P	2	2G	No	No	SP	C	F-T	A,C	4.9, 4.11, 4.12.1, 4.13.1, 4.14, 4.15.1, 4.17, 4.18

a	b	c	d	e	f	g	h	i	j	k	l	m
n-Amyl acetate	1104	C	P	3	2G	Cont	No	SP	R	F	A	4.14.1
sec-Amyl acetate	1104	C	P	3	2G	Cont	No	SP	R	F	A	4.14.1
Amyl acetate, commercial	1104	C	P	3	2G	Cont	No	SP	R	F	A	4.14.1
Aniline	1547	C	S/P	2	2G	Cont	No	St	C	T	A	4.9, 4.13.1, 4.14,
Benzene and mixtures having 10% benzene content or more	1114 (t)	C	S/P	3	2G	Cont	No	SP	R	F-T	B	4.9.1, 4.13.1, 5.2.8
Benzenesulphonyl chloride	2225	D	S	3	2G	Cont	No	St	R	T	B,D	4.12.1, 4.14.1
Benzyl alcohol		C	P	3	2G	Open	No	St	O	No	A	
Benzyl chloride	1738	B	S/P	2	2G	Cont	No	St	C	T	B	4.9, 4.10, 4.13.1, 4.14, 4.17
n-Butyl acetate	1123	C	P	3	2G	Cont	No	SP	R	F	B	4.14.1

a	b	c	d	e	f	g	h	i	j	k	l	m
n-Butyl acrylate	2348	D	S	2	2G	Cont	No	SP	R	F-T	A	4.10, 4.18.1, 4.18.2
Butylamine (all isomers)	1125 1214	C	S/P	2	2G	Cont	No	SP	R	F-T	A	4.9, 4.12.1, 4.12.2, 4.13.1, 4.14.1, 4.17
Butyl benzyl phthalate		A	P	2	2G	Open	No	St	O	No	B	4.14.1
Butyl/Decyl/Cetyl/ Eicosyl methacrylate mixture		D	S	3	2G	Cont	No	St	R	No	A,C, D	4.10, 4.18.1, 4.18.2
n-Butyl ether	1149	C	S/P	3	2G	Cont	Inert	SP	R	F-T	A,D	4.2.7, 4.9
Butyl methacrylate		D	S	3	2G	Cont	No	SP	R	F-T	A,D	4.10, 4.18.1, 4.18.2
n-Butyraldehyde	1129	B	S/P	3	2G	Cont	No	SP	O	F-T	A	4.15.1
Butyric acid	2820	B	S/P	3	2G	Cont	No	St	R	No	A	4.8.2, 4.8.3, 4.8.4, 4.8.6, 4.8.7, 4.8.8, 4.12.6

a	b	c	d	e	f	g	h	i	j	k	l	m
Calcium hypochlorite solution		B	SP	3	2G	Cont	No	St	R	No	No	4.15.1
Calcium naphthenate in mineral oil		A	P	3	2G	Open	No	St	O	No	B	
Camphor oil	1130	B	S/P	2	2G	Cont	No	SP	O	F	B	4.14.1
Carbolic oil		A	S/P	2	2G	Cont	No	SP	C	F-T	A	4.9, 4.14
Carbon disulphide	1131	A	S/P	2	1G	Cont	Inert	Use None	C	F-T	C	4.1, 4.9, 4.14, 4.17
Carbon tetrachloride	1846	B	S/P	3	2G	Cont	No	St	C	T	No	4.9, 4.13.1, 4.14.1, 4.17
Cashew nut shell oil (untreated)		D	S	3	2G	Cont	No	St	R	T	B	
Cetyl/Eicosyl methacrylate mixture		III	S	3	2G	Open	No	St	O	No	A,C,D	4.10, 4.18.1, 4.18.2
Chloroacetic acid (80% or less)	1750	C	S/P	2	2G	Cont	No	St	C	No	No	4.8.2, 4.8.4, 4.8.6, 4.8.7, 4.8.8, 4.9.3, 4.12.6 (aluminium not permitted), 4.14, 5.2.8
Chlorobenzene	1134	B	S/P	2	2G	Cont	No	SP	R	F-T	B	4.14.1

a	b	c	d	e	f	g	h	i	j	k	l	m
Chloroform	1888	B	S/P	3	2G	Cont	No	St	R	T	No	4.9, 4.17
Chlorohydrins, crude		(D)	S	2	2G	Cont	No	SP	C	F-T	A	4.9, 4.14
2- or 3-Chloropropionic acid	2511 (k)	(C)	S/P	3	2G	Open	No	St	O	No	A	4.8.2 to 4.8.4, 4.8.6 to 4.8.8, 4.12.6
Chlorosulphonic acid	1754	C	S/P	1	2G	Cont	No	St	C	T	No	4.8.2 to 4.8.8, 4.9, 4.14, 4.15.2, 4.17
m-Chlorotoluene	2238	B	S/P	3	2G	Cont	No	SP	R	F-T	B,C	
o-Chlorotoluene	2238	A	S/P	3	2G	Cont	No	SP	R	F-T	B,C	
p-Chlorotoluene	2238	B	S/P	2	2G	Cont	No	SP	R	F-T	B,C	4.14.1, 5.2.8
Chlorotoluenes (mixed isomers)	2238	A	S/P	2	2G	Cont	No	SP	R	F-T	B,C	4.14.1

a	b	c	d	e	f	g	h	i	j	k	l	m
Coal tar naphtha solvent		B	S	3	2G	Cont	No	SP	R	F-T	A,D	
Creosote (coal tar)		(C)	S/P	3	2G	Open	No	St	O	No	B,D	
Creosote (wood)		A	S/P	2	2G	Open	No	St	O	No	B,D	4.14.1
Cresols (mixed isomers)	2076	A	S/P	2	2G	Open	No	St	O	No	B	4.14.1
Crotonaldehyde	1143	B	S/P	2	2G	Cont	No	SP	R	F-T	A	4.9, 4.13.1, 4.15.1, 4.17
Cyclohexane	1145	C	P	3	2G	Cont	No	SP	R	F	B	4.14.1, 5.2.8
Cyclohexanol		C	P	3	2G	Open	No	St	O	No	A	5.2.6, 5.2.8
Cyclohexanone	1915	D	S	3	2G	Cont	No	SP	R	F-T	A	4.12.5
Cyclohexylamine	2357	C	S/P	3	2G	Cont	No	SP	R	F-T	A,D	4.12.1, 4.12.2
p-Cymene	2046	C	P	3	2G	Cont	No	SP	R	F	B	4.14.1
Decene		B	P	3	2G	Cont	No	SP	R	F	B	4.14.1

a	b	c	d	e	f	g	h	i	j	k	l	m
Decyl acrylate		A	S/P	2	2G	Open	No	St	0	No	D,A,C	4.10, 4.12.2, 4.14.1, 4.18.1, 4.18.2
Decyl alcohol (all isomers)		B	P	3	2G	Open	No	St	0	No	B	5.2.8 (p)
Dibutylamine		C	S/P	3	2G	Cont	No	SP	R	F-T	B,D	4.12.4
Dibutyl phthalate		A	P	2	2G	Open	No	St	0	No	B	4.14.1
o-Dichlorobenzene	1591	B	S/P	2	2G	Cont	No	St	R	T	B,D	4.12.5, 4.14.1
1,1-Dichloroethane	2362	B	S/P	3	2G	Cont	No	SP	R	F-T	B	4.17
Dichloroethyl ether	1916	B	S/P	2	2G	Cont	No	SP	R	F-T	A	4.12.5
2,2-Dichloroisopropyl ether	2490	C	S/P	2	2G	Cont	No	St	R	T	B,C,D	4.9, 4.12.5, 4.13.1, 4.14
2,4-Dichlorophenol	2021	A	S/P	2	2G	Cont	Dry	St	R	T	B,C,D	4.12.1, 4.14.1

a	b	c	d	e	f	g	h	i	j	k	l	m
2,4-Dichlorophenoxyacetic acid, diethanolamine salt solution		(A)	S/P	3	2G	Open	No	St	O	No	No	14.12.1
2,4-Dichlorophenoxyacetic acid, dimethylamine salt (70% or less) solution		(A)	S/P	3	2G	Open	No	St	O	No	No	14.12.1
2,4-Dichlorophenoxyacetic acid, triisopropanolamine salt, solution		(A)	S/P	3	2G	Open	No	St	O	No	No	14.12.1
1,2-Dichloropropane	1279	B	S/P	2	2G	Cont	No	SP	R	F-T	B	4.9
1,3-Dichloropropane		B	S/P	2	2G	Cont	No	SP	R	F-T	B	4.9
1,3-Dichloropropene	2047	P	S/P	2	2G	Cont	No	SP	C	F-T	B	4.9, 4.13, 4.14, 4.17
Dichloropropene/ Dichloropropane mixtures		B	S/P	2	2C	Cont	No	CP	C	F-T	B, C, D	4.9, 4.13, 4.14, 4.17
2,2-Dichloropropionic acid		D	S	3	2G	Cont	Dry	St	R	No	A	4.8.2, 4.8.4, 4.8.6 to 4.8.8, 4.12.6 (aluminium not permitted)
Diethanolamine		III	S	3	2G	Open	No	St	O	No	A	4.12.2

a	b	c	d	e	f	g	h	i	j	k	l	m
Diethylamine	1154	C	S/P	3	2G	Cont	No	SP	R	F-T	A	4.12.1, 4.9, 4.17
Diethylaminoethanol	2686	C	S/P	3	2G	Cont	No	SP	R	F-T	A,D	4.12.1, 4.12.2
Diethylbenzene	2049	C	P	3	2G	Cont	No	SP	R	F	B	4.14.1
Diethylene glycol methyl ether		C	P	3	2G	Open	No	St	O	No	A	
Diethylenetriamine	2079	(D)	S	3	2G	Open	No	St	O	No	A	4.12.2
Diethyl ether	1155	III	S	2	1G	Cont	Inert	SP	C	F-T	A	4.2, 4.11, 4.12.9, 4.14, 4.17
Di-(2-ethylhexyl) phosphoric acid	1902	C	S/P	3	2G	Open	No	St	O	No	B,C,D	4.12.2
Diethyl phthalate		C	P	3	2G	Open	No	St	O	No	B	
Diethyl sulphate	1594	(B)	S/P	2	2G	Cont	No	St	C	T	A,D	4.12.3, 4.14.1
Diglycidyl ether of Bisphenol A		B	P	3	2G	Open	No	St	O	No	B	
Diisobutylamine	2361	(C)	S/P	2	2G	Cont	No	SP	R	F-T	B,D	4.9.3, 4.12.1, 4.14.1

a	b	c	d	e	f	g	h	i	j	k	l	m
Diisobutylene	2050	B	P	3	2G	Cont	No	SP	R	F	B	4.14.1
Diisobutyl phthalate		B	P	3	2G	Open	No	St	O	No	B	5.2.5
Diisopropanolamine		C	S/P	3	2G	Open	No	St	O	No	A	4.12.2, 5.2.6, 5.2.8
Diisopropylamine	1158	C	S/P	2	2G	Cont	No	SP	C	F-T	A	4.9, 4.12.2, 4.14, 4.17
Diisopropylbenzene (all isomers)		A	P	2	2G	Open	No	St	O	No	B	4.14.1
Dimethylamine solution (45% or less)	1160	C	S/P	3	2G	Cont	No	SP	R	F-T	C,D	4.9, 4.12.1, 4.17
Dimethylamine solution (greater than 45% but not greater than 55%)	1160	C	S/P	2	2G	Cont	No	SP	C	F-T	A,C,D	4.9, 4.12.1, 4.13.1, 4.14, 4.17
Dimethylamine solution (greater than 55% but not greater than 65%)	1160	C	S/P	2	2G	Cont	No	SP	C	F-T	A,C,D	4.9, 4.11, 4.12.1, 4.13.1, 4.14, 4.17
N,N-Dimethylcyclohexyl- amine	2264	C	S/P	2	2G	Cont	No	SP	R	F-T	A,C	4.9, 4.12.1, 4.13.1, 4.14.1
Dimethylethanamine	2051	D	S	3	2G	Cont	No	SP	R	F-T	A,D	4.12.2

a	b	c	d	e	f	g	h	i	j	k	l	m
Dimethylformamide	2265	D	S	3	2G	Cont	No	SP	R	F-T	A,D	
Dimethyl hydrogen phosphite			S	3	2G	Cont	No	St	R	T	A,D	4.9.1
Dimethyl phthalate		C	P	3	2G	Open	No	St	O	No	B	
Dinitrotoluene (molten)		B	S/P	2	2G (1)	Cont	No	St	C	T	B	4.9, 4.13.1, 4.14*, 5.2.5, 5.2.8, 5A.2.2 (m)
1,4-Dioxane	1165	D	S	2	2G	Cont	No	SP	C	F-T	A	4.9, 4.14
Dipentene	2052	C	P	3	2G	Cont	No	SP	R	F	B	4.14.1
Diphenyl ether		A	P	3	2G	Open	No	St	O	No	B	
Diphenylmethane diisocyanate	2489	(B)	S/P	2	2G	Cont	Dry	St ^b	C	T ^b	C ^c D	4.9, 4.12.5, 4.13.1, 4.14.1, 4.15.2, 5.2.7, 5.2.8, 5A.2.2
Diphenyl oxide/Diphenyl phenyl ether mixture		A	P	3	2G	Open	No	St	O	No	B	
Di-n-propylamine	2383	C	S/P	3	2G	Cont	No	SP	R	F-T	A	4.9.3, 4.12.2, 4.14.1

a	b	c	d	e	f	g	h	i	j	k	l	m
Dodecene, all isomers		B	P	3	2G	Open	No	St	O	No	B	
Dodecyl alcohol		B	P	3	2G	Open	No	St	O	No	B	5.2.5, 5.2.8 5A.2.2
Dodecylbenzene		C	P	3	2G	Open	No	St	O	No	B	5.2.8
Dodecyl diphenyl oxide disulphonate solution		B	S/P	3	2G	Open	No	St	O	No		5.2.5, 5.2.8
Dodecyl methacrylate		III	S	3	2G	Open	No	St	O	No	A,C	4.10
Dodecyl/Pentadecyl methacrylate mixture		III	S	3	2G	Open	No	St	O	No	A,C,D	4.10, 4.18.1, 4.18.2
Dodecyl phenol		A	P	1	2G	Open	No	St	O	No	B	4.14
Epichlorohydrin	2023	C	S/P	2	2G	Cont	No	SP	C	F-T	A	4.9, 4.13.1, 4.14, 4.17
Ethanolamine	2491	D	S	3	2G	Open	No	St	O	F-T	A	4.12.2
2-Ethoxyethyl acetate	1172	C	P	3	2G	Cont	No	SP	R	F	A	4.14.1
Ethyl acrylate	1917	B	S/P	2	2G	Cont	No	SP	R	F-T	A	4.10, 4.17, 4.18.1, 4.18.2

a	b	c	d	e	f	g	h	i	j	k	l	m
Ethylamine		C	S/P	2	1G	Cont	No	SP	C	F-T	C,D	4.9, 4.11, 4.12.2, 4.17
Ethylamine solutions, (72% or less)	2270	C	S/P	2	2G	Cont	No	SP	C	F-T	A,C	4.9, 4.11, 4.12.1, 4.13.1, 4.14, 4.17
Ethyl benzene	1175	C	P	3	2G	Cont	No	SP	R	F	B	4.14.1
N-Ethylbutylamine		(C)	S/P	3	2G	Cont	No	SP	R	F-T	A	4.9.3, 4.12.1, 4.14.1
N-Ethylcyclohexylamine		D	S	3	2G	Cont	No	SP	R	F-T	A,C	4.12.1, 4.14.1
Ethylene chlorhydrin	1135	C	S/P	2	2G	Cont	No	SP	C	F-T	D	4.9, 4.13.1, 4.14, 4.17
Ethylene cyanhydrin		(D)	S	3	2G	Open	No	St	O	No	A	
Ethylenediamine	1604	C	S/P	2	2G	Cont	No	SP	R	F-T	A	4.12.2, 5.2.8
Ethylene dibromide	1605	B	S/P	2	2G	Cont	No	St	C	T	No	4.9, 4.14.1, 4.17, 5.2.8
Ethylene dichloride	1184	B	S/P	2	2G	Cont	No	SP	R	F-T	B	4.12.4, 4.14.2
Ethylene oxide/Propylene oxide mixture with an ethylene content of not more than 30% by weight	2983	D	S	2	1G	Cont	Inert	SP	C	F-T	A,C	4.7, 4.9, 4.11, 4.14

a	b	c	d	e	f	g	h	i	j	k	l	m
2-Ethylhexyl acrylate		D	S	3	2G	Open	No	St	O	No	A	4.10, 4.18.1, 4.18.2
2-Ethylhexylamine	2276	B	S/P	2	2G	Cont	No	SP	R	F-T	A	4.9, 4.12.2
Ethylidene norbornene		B	S/P	3	2G	Cont	No	SP	R	F-T	B,C D	4.9.1, 4.12.4, 4.14.1, 4.15.1
Ethyl methacrylate	2277	(D)	S	3	2G	Cont	No	SP	R	F-T	B,D	4.10, 4.18.1, 4.18.2
2-Ethyl-3-propylacrolein		B	S/P	3	2G	Cont	No	SP	R	F-T	A	15.2.8
Ethyltoluene		(B)	P	3	2G	Cont	No	SP	R	F	A	4.14.1
Fatty alcohols(C ₁₂ -C ₂₀)		B	P	3	2G	Open	No	St	O	No	B	5.2.5, 5.2.6
Formaldehyde solutions (45% or less)	1198 ^d	C	S/P	3	2G	Cont	No	SP	R	F-T	A	4.15.1, 4.17 ^e
Formic acid	1779	D	S	3	2G	Cont	No	SP	R	T	A	4.8.2 to 4.8.4, 4.8.6 to 4.8.8, 4.12.7, 4.17
Fumaric adduct of rosin, water dispersion		B	P	3	2G	Open	No	St	O	No	No	

a	b	c	d	e	f	g	h	i	j	k	l	m
Furfural	1199	C	S/P	3	2G	Cont	No	SP	R	F-T	A	4.15.1
Furfuryl alcohol	2874	C	P	3	2G	Open	No	St	O	No	A	
Glutaraldehyde solutions (50% or less)		D	S	3	2G	Open	No	St	O	No	No	4.15.1
Glycidyl ester of tridecylacetic acid		B	P	3	2G	Open	No	St	O	No	B	
Heptanol (all isomers) (q)		(C)	P	3	2G	Cont	No	SP	R	F	A	4.14.1
Heptene (mixed isomers)		C	P	3	2G	Cont	No	SP	R	F	B	4.14.1
Heptyl acetate		(B)	P	3	2G	Open	No	St	O	No	B	
Hexamethylenediamine solution	1783	C	S/P	3	2G	Cont	No	St	R	T	A	4.12.2, 4.14.1, 5.2.8
Hexamethyleneimine	2493	C	S/P	2	2G	Cont	No	SP	R	F-T	A,C	4.12.1, 4.12.2
1-Hexene	2370	C	P	3	2G	Cont	No	SP	R	F	B	4.14.1
Hexyl acetate	1233	B	P	3	2G	Cont	No	SP	R	F	B	4.14.1

a	b	c	d	e	f	g	h	i	j	k	l	m
Hydrochloric acid	1789	D	S	3	1G	Cont	No	St	R	T	No	4.8, 4.17 ^f
Hydrogen peroxide solutions (over 60% but not over 70%)	2015	C	S/P	2	2G	Cont	No	St	C	No	No	4.14.1, 4.20.1 to 4.20.14
Hydrogen peroxide solutions (over 8% but not over 60%)	2014 2984	C	S/P	3	2G	Cont	No	St	C	No	No	4.13.2, 4.14.1, 4.20.15, 4.20.27
2-Hydroxyethyl acrylate		B	S/P	2	2G	Cont	No	St	C	T	A	4.9, 4.10, 4.14.1, 4.18.1, 4.18.2
Isoamyl acetate	1104	C	P	3	2G	Cont	No	SP	R	F	A	4.14.1
Isobutyl acetate	1213	C	P	3	2G	Cont	No	SP	R	F	B	4.14.1
Isobutyl acrylate	2527	D	S	2	2G	Cont	No	SP	R	F-T	A	4.10, 4.18.1, 4.18.2
Isobutyraldehyde	2045	C	S/P	3	2G	Cont	No	SP	O	F-T	A	4.15.1
Isophorone diamine	2289	D	S	3	2G	Cont	No	St	R	T	A	4.12.2
Isophorone diisocyanate	2290	B	S/P	2	2G	Cont	Dry	St	C	T	C ^c D	4.9, 4.12.5, 4.13.1, 4.14.1, 4.15.2

a	b	c	d	e	f	g	h	i	j	k	l	m
Isoprene	1218	C	S/P	3	2G	Cont	No	SP	R	F	B	4.10, 4.11, 4.18.1 4.18.2
Isopropanolamine		C	S/P	3	2G	Open	No	SP	O	F-T	A	4.12.2
Isopropylamine	1221	C	S/P	2	2G	Cont	No	SP	C	F-T	C,D	4.9, 4.11, 4.12.2, 4.14, 4.17
Isopropylbenzene	1918	B	P	3	2G	Cont	No	SP	R	F	B	4.14.1
Isopropyl ether	1159	D	S	3	2G	Cont	Inert	SP	R	F	A	4.2.7, 4.10.3, 4.14.1
Isovaleraldehyde	2058	C	S/P	3	2G	Cont	Inert	SP	R	F-T	A	4.2.7, 4.15.1
Maleic anhydride	2215	D	S	3	2G	Cont	No	St	R	No	A ^g C	
Mercaptobenzothiazol, sodium salt, solution		(B)	S/P	3	2G	Open	No	St	O	No	No	4.12.1, 5.2.8
Mesityl oxide	1229	D	S	3	2G	Cont	No	SP	R	F-T	A	4.14.1
Methacrylic acid	2531	D	S	3	2G	Cont	No	St	R	T	A	4.10, 4.12.6, 4.18.1
Methacrylonitrile		(B)	S/P	2	2G	Cont	No	SP	C	F-T	A	4.9, 4.10, 4.12.4, 4.13.1, 4.14, 4.17

a	b	c	d	e	f	g	h	i	j	k	l	m
Methyl acrylate	1919	C	S/P	2	2G	Cont	No	SP	R	F-T	B	4.10, 4.17, 4.18.1, 4.18.2
Methylamine solutions, (42% or less)	1235	C	S/P	2	2G	Cont	No	SP	C	F-T	A,C,D	4.9, 4.12.1, 4.13.1, 4.14, 4.17
Methylamyl acetate	1233	(C)	P	3	2G	Cont	No	SP	R	F	B	4.14.1
Methylamyl alcohol	2053	(C)	P	3	2G	Cont	No	SP	R	F	A	4.14.1
Methyl amyl ketone	1110	(C)	P	3	2G	Cont	No	SP	R	F	A	4.14.1
Methylene chloride	1593	D	S	3	2G	Cont	No	St	R	T	No	
2-Methyl-6-ethyl- aniline		C	S/P	3	2G	Open	No	St	O	No	B,C,D	
2-Methyl-5-ethyl- pyridine	2300	(B)	S/P	3	2G	Open	No	St	O	No	D	4.12.4
Methyl formate	1243	D	S	2	2G	Cont	No	SP	R	F-T	A	4.9, 4.11, 4.14, 4.17
2-Methyl-2-hydroxy- 3-butyne		III	S	3	2G	Cont	No	SP	R	F-T	A,C,D	4.12.8, 4.14.1

a	b	c	d	e	f	g	h	i	j	k	l	m
Methyl methacrylate	1247	D	S	2	2G	Cont	No	SP	R	F-T	B	4.10, 4.18.1, 4.18.2
2-Methyl-1-pentene	2288	C	P	3	2G	Cont	No	SP	R	F	B	4.14.1
2-Methylpyridine	2313	B	S/P	2	2G	Cont	No	SP	C	F	A,C	4.9.3, 4.12.4, 4.14 5.2.8
4-Methylpyridine	2313	B	S/P	2	2G	Cont	No	SP	C	F-T	A,C,D	4.9.3, 4.12.4, 4.14 5.2.8
N-Methyl-2-pyrrolidone		B	P	3	2G	Open	No	St	O	No	A	
Methyl salicylate		(B)	P	3	2G	Open	No	St	O	No	B	
alpha-Methylstyrene	2303	A	S/P	2	2G	Cont	No	SP	R	F-T	D	4.10, 4.14.1, 4.18.1 4.18.2
Morpholine	2054	D	S	3	2G	Cont	No	SP	R	F	A	4.12.2
Motor fuel anti-knock compounds	1649	A	S/P	2	1G	Cont	No	SP	C	F-T	C,B	4.6, 4.9, 4.13.2, 4.14 4.17
Naphthalene (molten)	2304	A	S/P	2	2G	Cont	No	SP	R	No	A,D	4.14.1
Neodecanoic acid		(B)	P	3	2G	Open	No	St	O	No	B	

a	b	c	d	e	f	g	h	i	j	k	l	m
Nitrating acid (mixture of sulphuric and nitric acid)	1796	(C)	S/P	2	2G	Cont	No	St	C	T	No	4.8, 4.13.1, 4.14, 4.15.2, 4.17
Nitric acid (70% and over)	2031 ^h 2032	C	S/P	2	2G	Cont	No	St	C	T	No	4.8, 4.14, 4.17
Nitric acid (less than 70%)	2031	C	S/P	2	2G	Cont	No	St	R	T	No	4.8, 4.14, 4.17
Nitrobenzene	1662	B	S/P	2	2G	Cont	No	St	C	T	D	4.9, 4.13, 4.14, 5.2.8
o-Nitrochlorobenzene	1578	B	S/P	2	2G	Cont	No	St	C	T	B, C, D	4.9, 4.13, 4.14, 5.2.5, 5.2.8, 5A.2.2
o-Nitrophenol (molten)	1663	B	S/P	2	2G	Cont	No	St	C	T	A, C, D	4.9, 4.14.1, 5.2.5, 5.2.8, 5A.2.2
1- or 2-Nitropropane	2608	D	S	3	2G	Cont	No	SP	R	F-T	A	
Nitropropane (60%)/Nitroethane (40%) mixture	1993	D	S	3	2G	Cont	No	SP	R	F-T	A, C (n)	4.12.4
(o- and p-) Nitro-toluenes	1664	C	S/P	2	2G	Cont	No	St	C	T	B	4.9, 4.13.1, 4.14, 5.2.8

a	b	c	d	e	f	g	h	i	j	k	l	m
Nonene		B	P	3	2G	Cont	No	SP	R	F	B	4.14.1
Nonyl alcohol		C	P	3	2G	Open	No	St	O	No	B	
Nonylphenol		A	P	2	2G	Open	No	St	O	No	A	4.14.1
Octanol (all isomers)		C	P	3	2G	Open	No	St	O	No	B	
Octene (all isomers)		B	P	3	2G	Cont.	No	SP	R	F	B	4.14.1
Olefins, straight chain mixtures		B	P	3	2G	Cont.	No	SP	R	F	B	4.14.1, 5.2.5, 5.2.8
alpha-Olefins (C ₆ -C ₁₈ mixtures)		B	P	3	2G	Cont.	No	SP	R	F	B	4.14.1, 5.2.5, 5.2.8
Oleum	1831	C	S/P	2	2G	Cont.	No	St	C	T	No	4.8.2 to 4.8.8, 4.9.1, 4.13.1, 4.14, 4.15.2, 4.17, 5.2.6
Paraldehyde	1264	C	S/P	3	2G	Cont.	No	SP	R	F	A	5.2.8
Pentachloroethane	1669	B	S/P	2	2G	Cont.	No	St	R	T	No	4.9, 4.13.1, 4.14.1
1,3-Pentadiene		C	S/P	3	2G	Cont.	No	SP	R	F-T	B	4.10, 4.18

a	b	c	d	e	f	g	h	i	j	k	l	m
n-Pentane	1265	C	P	3	2G	Cont	No	SP	R	F	B	4.14.1
Pentene, all isomers		C	P	3	2G	Cont	No	SP	R	F	B	4.14.1
Perchloroethylene	1897	B	S/P	3	2G	Cont	No	St	R	T	No	4.9.1, 4.9.2
Phenol	2312	B	S/P	2	2G	Cont	No	St	C	T	A	4.9, 4.14, 5.2.5 5.2.8, 5A.2.2
1-Phenyl-1-xylyl ethane		C	P	3	2G	Open	No	St	O	No	B	
Phosphoric acid	1805	D	S	3	2G	Open	No	St	O	No	No	4.8.1 to 4.8.4, 4.8.6 to 4.8.8
Phosphorus, yellow or white	2447	A	S/P	1	1G	Cont	Pad + (vent or inert)	St	C	No	No	4.5, 4.14, 4.17
Phthalic anhydride	2214	C	S/P	3	2G	Cont	No	St	R	No	D	5.2.8
Pinene	2368	A	P	3	2G	Cont	No	SP	R	F	B	4.14.1
Polyethylene polyamines	2734 ⁱ 2735	C	S/P	3	2G	Open	No	St	O	No	A	4.12.2, 5.2.8
Polyethylene polyphenyl isocyanate	2206 ⁱ 2207	D	S	2	2G	Cont	Dry	St	C	T ^b	C ^c D	4.9, 4.12.5, 4.14.1, 4.15.2

a	b	c	d	e	f	g	h	i	j	k	l	m
Potassium hydroxide solution	1814	C	S/P	3	2G	Open	No	St	O	No	No	4.12.1 Copper, brass and bronze may be used, 5.2.8
n-Propanolamine		C	S/P	3	2G	Open	No	St	O	No	A,D	4.12.2, 5.2.8
beta-Propiolactone		D	S	2	2G	Cont	No	St	R	T	A	
Propionaldehyde	1275	D	S	3	2G	Cont	No	SP	R	F-T	A	4.13.1, 4.15.1, 4.17
Propionic acid	1848	D	S	3	2G	Cont	No	SP	R	F	A	4.8.2 to 4.8.4, 4.8.6 to 4.8.8, 4.12.6, 4.17
Propionic anhydride	2496	C	S/P	3	2G	Cont	No	St	R	T	A	4.12.6
Propionitrile	2404	C	S/P	2	1G	Cont	No	SP	C	F-T	A,D	4.9, 4.13, 4.14, 4.17
n-Propylamine	1277	C	S/P	2	2G	Cont	Inert	SP	C	F-T	C,D	4.9, 4.12.2, 4.14, 4.17
Propylene dimer		(C)	P	3	2G	Cont	No	SP	R	F	B	4.14.1
Propylene oxide	1280	D	S	2	2G	Cont	Inert	SP	C	F-T	A,C	4.7, 4.9.1, 4.11, 4.14
Propylene trimer		B	P	3	2G	Cont	No	SP	R	F	B	4.14.1

a	b	c	d	e	f	g	h	i	j	k	l	m
Pyridine	1282	B	S/P	3	2G	Cont	No	SP	R	F	A	4.12.4
Rosin		A	P	3	2G	Open	No	St	O	No	B	
Rosin soap (disproportionated solution)		B	P	3	2G	Open	No	St	O	No	A	
Sodium borohydride, (15% or less)/Sodium hydroxide solution		C	S/P	3	2G	Open	No	St	O	No	No	4.12.1, 5.2.6
Sodium chlorate solution, (50% or less)		III	S	3	2G	Open	No	St	O	No	No	4.14.1, 4.15.1, 4.21
Sodium dichromate solution, (70% or less)		B	S/P	2	2G	Open	No	St	C	No	No	4.9.3, 4.12.2, 4.14
Sodium hydrosulphide solution, (45% or less)	2949	B	S/P	3	2G	Cont	Vent or pad (gas)	St	R	T	No	4.15.1, 5.2.8
Sodium hydrosulphide Ammonium sulphide solution		B	S/P	2	2G	Cont	No	SP	C	F-T	A,C	4.9, 4.11, 4.12.1, 4.13.1, 4.14, 4.15.1, 4.17, 4.18,

a	b	c	d	e	f	g	h	i	j	k	l	m
Sodium hydroxide solution	1824	D	S	3	2G	Open	No	St	O	No	No	4.12.1, Copper, brass and bronze may be used
Sodium hypochlorite solution, (15% or less)		B	S/P	3	2G	Cont	No	St	R	No	No	4.12.5, 4.15.1
Styrene monomer	2055	B	S/P	3	2G	Cont	No	SP	O	F	B	4.10, 4.12.4, 4.18.1, 4.18.2
Sulphur (molten)	2448	III	S	3	1G	Open	Vent or pad (gas)	SP	O	F-T	No	4.3
Sulphuric acid	1830	C	S/P	3	2G	Open	No	St	O	No	No	4.8, 4.15.2, 5.2.7, 5.2.8
Sulphuric acid, spent	1832	C	S/P	3	2G	Open	No	St	O	No	No	4.8, 4.15.2, 5.2.7, 5.2.8
Tall oil, crude and distilled		A	P	3	2G	Open	No	St	O	No	B	
Tall oil fatty acid (resin acids less than 20%)		(C)	P	3	2G	Open	No	St	O	No	B	
Tall oil soap (disproportionated solution)		B	P	3	2G	Open	No	St	O	No	A	

a	b	c	d	e	f	g	h	i	j	k	l	m
Tetrachloroethane	1702	B	S/P	3	2G	Cont	No	St	R	T	No	4.9, 4.13.1
Tetraethylenepentamine	2320	D	S	3	2G	Open	No	St	O	No	A	4.12.1
Tetrahydrofuran	2056	D	S	3	2G	Cont	No	SP	R	F-T	A,D	
Tetrahydronaphthalene		C	P	3	2G	Open	No	St	O	No	B	
Toluene	1294	C	P	3	2G	Cont	No	SP	R	F	B	4.14.1
Toluenediamine	1709	C	S/P	2	2G	Cont	No	St	C	T	B,C,D	4.9, 4.12.1, 4.13.1, 4.14, 4.17
Toluene diisocyanate	2078	C	S/P	2	2G	Cont	Dry	St	C	F-T	C ^C D	4.9, 4.12.4, 4.13.1, 4.14, 4.15.2, 4.17, 5.2.8
o-Toluidine	1708	C	S/P	2	2G	Cont	No	St	C	T	A,C	4.9, 4.13.1, 4.14
Tributyl phosphate		B	P	3	2G	Open	No	St	O	No	B	

a	b	c	d	e	f	g	h	i	j	k	l	m
1,2,4-Trichlorobenzene	2321	B	S/P	2	2G	Cont	No	St	R	T	C	4.14.1, 5.2.8, 5A.2.2
1,1,1-Trichloroethane	2831	B	P	3	2G	Open	No	St	O	No	B	
1,1,2-Trichloroethane		B	S/P	3	2G	Cont	No	St	R	T	No	4.9.1
Trichloroethylene	1710	B	S/P	3	2G	Cont	No	St	R	T	No	4.9, 4.13.1, 4.15.1
1,2,3-Trichloropropane		B	S/P	2	2G	Cont	No	St	C	T	B,C,D	4.9, 4.13.1, 4.14
1,1,2-Trichloro-1,2,2-trifluoroethane		C	P	3	2G	Open	No	St	O	No	No	
Triethanolamine		D	S	3	2G	Open	No	St	O	No	A	4.12.1
Triethylamine	1296	C	S/P	2	2G	Cont	No	SP	R	F-T	B	4.9, 4.12.2, 4.17
Triethylbenzene		A	P	2	2G	Open	No	St	O	No	B	4.14.1
Triethylene tetramine	2259	D	S	3	2G	Open	No	St	O	No	A	4.12.1
Triethyl phosphite	2323		S	3	2G	Cont	No	SP	R	F-T	A,D	4.9.1

a	b	c	d	e	f	g	h	i	j	k	l	m
Trimethylacetic acid		D	S	3	2G	Cont	No	St	R	No	A,C	4.8.2 to 4.8.8, 4.12.6
1,2,4-Trimethylbenzene		B	P	3	2G	Cont	No	SP	R	F	B	4.14.1
Trimethylhexamethylene diamine (2,2,4- and 2,4,4-isomers)	2327	(D)	S	3	2G	Open	No	St	O	No	A,C	4.12.1, 4.14.1
Trimethylhexamethylene diisocyanate (2,2,4- and 2,4,4-isomers)	2328	B	S/P	2	2G	Cont	Dry	St	C	T	A,C ^c	4.9, 4.13.1, 4.14.1, 4.15.2
2,2,4-Trimethyl-1,3-Pentamediol-1-isobutyrate		C	P	3	2G	Open	No	St	O	No	B	
Trimethyl phosphite	2329		S	3	2G	Cont	No	SP	R	F-T	A,D	4.9.1, 4.14.1, 4.15.2
Tritolyl phosphate (containing less than 1% ortho-isomer)		A	P	2	2G	Open	No	St	O	No	B	4.14.1
Tritolyl phosphate, (containing 1% or more ortho-isomer)	2574 ^j	A	S/P	1	2G	Cont	No	St	C	No	B	4.9.3, 4.14
Trixylyl phosphate		A	P	1	2G	Open	No	St	O	No	B	4.14

a	b	c	d	e	f	g	h	i	j	k	l	m
Turpentine	1299	B	P	3	2G	Cont	No	SP	R	F	B	4.14.1
1-Undecene		B	P	3	2G	Open	No	St	O	No	B	
Undecyl alcohol		B	P	3	2G	Open	No	St	O	No	B	5.2.5, 5.2.8, 5A.2.2r
Urea, ammonium nitrate solution, (containing aqua ammonia)		C	S/P	3	2G	Cont	No	SP	R	T	A	4.12.4, 4.12.9
n-Valeraldehyde	2058	D	S	3	2G	Cont	Inert	SP	R	F-T	A	4.2.7, 4.15.1
Vinyl acetate	1301	C	S/P	3	2G	Cont	No	SP	O	F	A	4.10, 4.18.1, 4.18.2
Vinyl ethyl ether	1302	C	S/P	2	1G	Cont	Inert	SP	C	F-T	A	4.2, 4.10, 4.11, 4.12.8, 4.14, 4.17, 4.18.1, 4.18.2
Vinylidene chloride	1303	B	S/P	2	2G	Cont	Inert	SP	R	F-T	B	4.10, 4.11, 4.12.5 4.17, 4.18.1, 4.18.2
Vinyl neodecanoate		C	S/P	3	2G	Open	No	St	O	No	B	4.10, 4.15.1, 4.18.1, 4.18.2
Vinyl toluene	2618	A	S/P	3	2G	Cont	No	SP	R	F	D	4.10, 4.12.1, 4.14.1, 4.18.1, 4.18.2

a	b	c	d	e	f	g	h	i	j	k	l	m
White spirit, low (15-20%) aromatic	1300	(B)	P	2	2G	Cont	No	SP	R	F	B	4.14.1
Xylene	1307	C	P	3	2G	Cont	No	SP	R	F	B	4.14.1, 5.2.8
Xylenol	2261	B	S/P	3	2G	Open	No	St	O	No	B	5.2.5, 5.2.8, 5A.2.2

- a Provision 4.17 applies to ammonia aqueous, 28% or less but not below 10%.
- b If the product carried contains flammable solvents such that the flashpoint is not exceeding 60°C, then special electrical systems and a flammable vapour detector are to be provided.
- c Although water is suitable for extinguishing open air fires involving chemicals to which this footnote applies, water should not be allowed to contaminate closed tanks containing these chemicals because of the risk of hazardous gas generation.
- d UN number 1198 only applies if flashpoint is below 60°C c.c.
- e Provision 4.17 applies to formaldehyde solutions 45% or less, but not below 5%.
- f Provision 4.17 applies to hydrochloric acid not below 10%.
- g Dry chemical cannot be used because of the possibility of an explosion.
- h UN number 2032 assigned to red fuming nitric acid.
- i UN number depends on boiling point of substance.
- j UN number assigned to this substance containing more than 3% of ortho-isomer.
- k UN number only applies to 2-chloropropionic acid
- l Dinitrotoluene should not be carried in deck tanks.

- m Temperature sensors should be used to monitor the cargo pump temperature to detect overheating due to pump failures.
- n Dry chemical should not be used as a fire-fighting medium
- o UN number 2672 refers to 20-35%.
- p Applies to n-Decyl alcohol only.
- q Requirements are based on those isomers having a flashpoint of 60°C or less, some isomers have a flashpoint greater than 60°C, and therefore the requirements based on flammability would not apply to such isomers.
- r Provision 5A.2.2 applies to 1-undecyl alcohol only.

CHAPTER VII - LIST OF CHEMICALS TO WHICH
THE CODE DOES NOT APPLY*

The existing text of chapter VII is replaced by the following:

1 The following are products which are not considered to come within the scope of the Code. This list may be used as a guide in considering bulk carriage of products whose hazards have not yet been evaluated.

2 Although the products listed in this chapter fall outside the scope of the Code, the attention of Administrations is drawn to the fact that some safety precautions may be needed for their safe transportation. Accordingly Administrations should prescribe appropriate safety requirements.

Chapter VII	UN number
Acetone	1090
Alcohols (C ₁₃ and above)	-
Alkyl (C ₉ -C ₁₇) benzenes	-
Aluminium sulphate solution	
Aminoethyl diethanolamine/ Aminoethyl ethanolamine, water solution	
n-Amyl alcohol	1105
sec-Amyl alcohol	1105
tert-Amyl alcohol	1105
Amyl alcohol, primary	1105
Butene Oligomer	
sec-Butyl acetate	1123
n-Butyl alcohol	1120
sec-Butyl alcohol	1120
tert-Butyl alcohol	1120

* The product names are not always identical with the names given in the various editions of the Bulk Chemical Code (resolution A.212(VII)) or the International Bulk Chemical Code (resolution MSC.4(48)).

Chapter VII	UN number
Butylene glycol	-
γ -Butyrolactone	-
Butyl stearate	-
Calcium alkyl salicylate	-
Calcium bromide solution	-
Calcium chloride solution	-
Caprolactam (molten or aqueous solutions)	-
Choline chloride solutions	-
Coconut oil fatty acid methyl ester	-
Dextrose solution	-
Diacetone alcohol	1148
Dialkyl (C ₇ -C ₁₃) phthalates	-
Dicyclopentadiene	2048
Diethylene glycol	-
Diethylene glycol butyl ether	-
Diethylene glycol butyl ether acetate	-
Diethylene glycol dibutyl ether	-
Diethylene glycol diethyl ether	-
Diethylene glycol ethyl ether	-
Diethylene glycol ethyl ether acetate	-
Diethylene glycol methyl ether acetate	-
Diethylenetriamine pentaacetic acid pentasodium salt solution	-
Di-(2-ethyl hexyl) adipate	-
Di-(2-ethyl hexyl) phthalate	-
Dineptyl phthalate	-
Dihexyl phthalate	-

Chapter VII	UN number
Diisobutyl ketone	1157
Diisodecyl phthalate	-
Diisononyl adipate	-
Dinonyl phthalate (all isomers)	-
Diisooctyl phthalate	-
Diisopropyl naphthalene	-
2,2-Dimethyloctanoic acid	-
Dioctyl phthalate	-
Dipropylene glycol	-
Dipropylene glycol methyl ether	-
Diundecyl phthalate	-
Dodecane (all isomers)	-
2-Ethoxyethanol	1171
Ethyl acetate	1173
Ethyl acetoacetate	-
Ethyl alcohol	1170
Ethylcyclohexane	-
Ethylene carbonate	-
Ethylenediamine tetraacetic acid tetrasodium salt solution	-
Ethylene glycol	-
Ethylene glycol butyl ether	2369
Ethylene glycol butyl ether acetate	-
Ethylene glycol methyl butyl ether	-
Ethylene glycol methyl ether	1188
Ethylene glycol methyl ether acetate	1189
Ethylene glycol phenyl ether	-

Chapter VII	UN number
Ethylene glycol tert-butyl ether	-
Ethylene glycol phenyl ether/ Diethylene glycol phenyl ether mixture	-
2-Ethylhexanoic acid	-
Formamide	-
Ethylene/Vinyl acetate copolymer (emulsion)	-
Glycerin	-
Glycine, sodium salt, solution	-
Ground nut oil	-
n-Heptane	1206
Hexamethylene diamine adipate, (50% in water)	-
n-Hexane	1208
1-Hexanol	2282
Hexylene glycol	-
N-(Hydroxyethyl) ethylenediamine triacetic acid, trisodium salt, solution	-
Isoamyl alcohol	1105
Isobutyl alcohol	1212
Isobutyl formate	2393
Isododecane	-
Isopentane	1265
Isopentene	2371
Isophorone	-
Isopropyl acetate	1220
Isopropyl alcohol	1219
Lactic acid	-

Chapter VII

UN number

Latex:

Styrene butadiene rubber latex	-
Carboxylated styrene-butadiene copolymer	-
Lignin sulphonic acid, salt (low COD)	-
Magnesium chloride solution	-
Magnesium hydroxide slurry	-
3-Methoxy-1-butanol	-
3-Methoxyl butyl acetate	-
Methyl acetate	1231
Methyl alcohol	1230
Methyl tert-butyl ether	2398
Methyl ethyl ketone	1193
Methyl isobutyl ketone	1245
3-Methyl-3-methoxy butanol	-
3-Methyl-3-methoxy butyl acetate	-
Molasses	-
Nonane	1920
Oleic acid	-
Octane	1262
Olefins (C ₁₃ and above, all isomers)	-
alpha-Olefins (C ₁₆ -C ₁₈)	-
n-Paraffins (C ₁₀ -C ₂₀)	-
Paraffin wax	-
Petrolatum	-
Petroleum naphtha	1255
Polyaluminium chloride solution	-
Polybutene	-
Polyethylene glycol	-

Chapter VII	UN number
Polyethylene glycol dimethyl ether	-
Polypropylene glycol	-
Polypropylene glycol methyl ether	-
Polysiloxane	-
n-Propyl acetate	1276
n-Propyl alcohol	1274
Propylene glycol	-
Propylene glycol ethyl ether	-
Propylene glycol methyl ether	-
Propylene tetramer	2580
Sodium aluminosilicate slurry	-
Sulpholane	-
Tridecanol	-
Triethylene glycol	-
Triethylene glycol butyl ether	-
Triisopropanolamine	-
Trimethylol propane polyethoxylate	-
Tripropylene glycol	-
Tripropylene glycol monomethyl ether	-
Urea solution	-
Urea, ammonium nitrate solution	-
Urea, ammonium phosphate solution	-
Urea resin solution	-
Vegetable oil (those not otherwise listed)	-
Vegetable protein hydrolized solution	-
Wine	-
1772E	

APPENDIX

MODEL FORM OF CERTIFICATE OF FITNESS FOR THE
CARRIAGE OF DANGEROUS CHEMICALS IN BULK

Existing form of the Certificate is replaced by the following:

CERTIFICATE OF FITNESS FOR THE CARRIAGE OF
DANGEROUS CHEMICALS IN BULK

(Official seal)

Issued in pursuance of the
IMO CODE FOR THE CONSTRUCTION AND EQUIPMENT
OF SHIPS CARRYING DANGEROUS CHEMICALS IN BULK

(resolution MEPC 20(22))1/

under the authority of the Government of

.....
(full official designation of country)

by

.....
(full official designation of the competent
person or organization recognized by the
Administration)

Name of ship	Distinctive number or letters	Port of registry	Gross tonnage	Ship type (Code paragraph 2.2.4) ^{2/}

Date on which keel was laid or on which the ship was at a similar stage of construction, or (in the case of a converted ship) date on which conversion to chemical tanker was commenced:

Date on which the building contract was placed:

The Certificate should be drawn up in the official language of the issuing country. If the language used is neither English nor French, the text should include a translation into one of these languages.

THIS IS TO CERTIFY:

- 1 (i) That the ship has been surveyed in accordance with the provisions of section 1.6 of the Code;
- (ii) that the survey showed that the construction and equipment of the ship:
 - *(a) complied with the relevant provisions of the Code applicable to ships referred to in 1.7.2;
 - *(b) complied with the provisions of the Code applicable to ships referred to in 1.7.3.
- 2 That the ship has been provided with a manual in accordance with the standards for procedures and arrangements as called for by Regulation 5, 5A and 8 of Annex II of MARPOL 73/78, and that the arrangements and equipment of the ship prescribed in the manual are in all respects satisfactory and comply with the applicable requirements of the said Standards;
- 3 That the ship is suitable for the carriage in bulk of the following products provided that all relevant operational provisions of the Code are observed

Products ^{3/4/}	Conditions of carriage ^{5/6/} (tank numbers etc.)
* Continued on the annexed signed and dated sheet(s) numbered 1A * Tank numbers referred to in this list are identified on the annexed signed and dated tank plan numbered 2A	

4 That, in accordance with 1.7.3/2.2.5* the provisions of the Code are modified in respect of the ship in the following manner:

5 That the ship must be loaded:

- *(a) in accordance with the loading conditions provided in the approved loading manual, stamped and dated
and signed by a responsible officer of the Administration, or of an organization recognized by the Administration;
- *(b) in accordance with the loading limitations appended to this Certificate.

Where it is required to load the ship other than in accordance with the above instruction, then the necessary calculations to justify the proposed loading conditions should be communicated to the certifying Administration who may authorize in writing the adoption of the proposed loading condition.**

6 This certificate is valid until
subject to surveys in accordance with 1.6 of the Code

Issued at 19..
(place of issue of Certificate)

The undersigned declares that he is duly authorized by the said Government to issue this Certificate.

.....
(signature of official issuing
the certificate and/or seal of
issuing authority)

Notes on completion of Certificate:

- 1/ The Certificate can be issued only to ships entitled to fly the flags of States which are Parties to MARPOL 73/78.
- 2/ Ship type: Any entry under this column must relate to all relevant recommendations, e.g. an entry "Type II" should mean Type II in all respects prescribed by the Code. This column would not usually apply in the case of an existing ship and in such a case should be noted "See paragraph 1(ii)(b)."

* Delete as appropriate.

** Instead of being incorporated in the Certificate, this text may be appended to the Certificate if duly signed and stamped.

- 3/ Products: Products listed in Chapter VI of the Code, or which have been evaluated by the Administration in accordance with 1.8 of the Code, should be listed. In respect of the latter "new" products, any special requirements provisionally prescribed should be noted.
- 4/ Products: The list of products the ship is suitable to carry should include the noxious liquid substances of Category D which are not covered by the Code and should be identified as "Chapter VII Category D".
- 5/ Conditions of carriage: The limitations on the carriage of Category B or Category C substances under 5A.2 of the Code should also be indicated.
- 6/ Conditions of carriage: If a Certificate is issued to a ship which is modified in accordance with the provision of Regulation 1(12) of Annex II to MARPOL 73/78 the Certificate should indicate in the top of the table of products and conditions of carriage the following statement: "This ship is certificated to carry only pollution hazard chemicals"

ENDORSEMENT FOR ANNUAL AND INTERMEDIATE SURVEYS

THIS IS TO CERTIFY that at a survey required by 1.6 of the Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk, the ship was found to comply with the relevant provisions of the Code.

Annual survey: Signed:
(signature of duly authorized official)

Place:

Date:

(seal or stamp of the Authority, as appropriate)

Annual*/Intermediate* survey: Signed:
(signature of duly authorized official)

Place:

Date:

(seal or stamp of the Authority, as appropriate)

Annual*/Intermediate* survey: Signed:
(signature of duly authorized official)

Place:

Date:

(seal or stamp of the Authority, as appropriate)

Annual survey: Signed:
(signature of duly authorized official)

Place:

Date:

(seal or stamp of the Authority, as appropriate)

* Delete at appropriate

ATTACHMENT 1 TO THE INTERNATIONAL CERTIFICATE OF FITNESS
FOR THE CARRIAGE OF DANGEROUS CHEMICALS IN BULK

Continued list of products to those specified in
Section 3, and their conditions of carriage

Products	Conditions of carriage (tank numbers, etc.)

Date
(as for Certificate)

.....
(Signature of official issuing the
Certificate and/or seal of
issuing authority)
