

Subject

Revised MARPOL 73/78 Annex II and IBC Code

# **ClassNK**

## **Technical Information**

No. TEC-0655  
Date 19 April 2006

To whom it may concern

Amendments to MARPOL 73/78 Annex II were adopted as noted in ClassNK Technical Information No. TEC-0608 issued on 12 November 2004. Further, amendments to the IBC Code were adopted as described in Technical Information No. TEC-0622 dated 10 March 2005. The revised Annex II and IBC Code will enter into force on 1 January 2007, and shall apply to all ships carrying dangerous chemicals or noxious liquid substances in bulk regardless of date of construction. All applicable ships shall comply with the requirements by 1 January 2007.

### 1. A summary of revised MARPOL 73/38 Annex II and IBC Code

Criteria of pollution category and ship type were reviewed due to alternations in the Hazard Profile of GESAMP (Group of Experts on the Scientific Aspects of Marine Environmental Protection). A draft of an entirely revised MARPOL 73/78 Annex II was then approved at MEPC 49 in July 2003, and was adopted at MEPC52 in October 2004. In addition, although a revised text of the IBC Code was also adopted at MEPC52, the amended IBC Code was finally adopted after deliberation of safety matters at MSC 79 in December 2004, since the Code includes not only environmental matters but also safety matters, as well. The pollution categories and ship types of each noxious liquid substance were re-classified in new Chapters 17 and 18 of the IBC Code according to new Hazard criteria based on these revisions. An overview of the major revised parts is summarized briefly below. Please refer to Attachment 1 for details.

#### (1) Main revisions to MARPOL 73/38 Annex II:

- (i) Re-classification of pollution categories;
- (ii) Revision of residual quantity of stripping systems;
- (iii) Redefinition of high-viscosity substances;
- (iv) Revision of prewash procedures within and outside of special sea areas;
- (v) Abolition of oil-like substances;
- (vi) Exemption of requirements for the carriage of vegetable oils;
- (vii) The addition of special requirements for the carriage of vegetable oils in deep tanks or independent tanks of general cargo carriers (general dry cargo ships).

#### (2) Main revisions to the IBC Code:

- (i) Upgrading of ship type requirements;
- (ii) Modification of material requirements for cargo tank and piping;
- (iii) Revision of Chapter 10 "Electrical installations";
- (iv) Abolition of Chapter 16A, "Additional measures for the protection of the marine environment".

(To be continued)

#### NOTES:

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## 2. Approval of manuals and issuance of certificates

A new chemical fitness certificate (COF) or NLS certificate documenting compliance with the new regulations shall be issued once a Confirmation Survey has been conducted to verify whether a revised Operation Manual and P&A Manual with a class approval stamp are onboard. The Operation manual is to be included the items indicated below and then may be referred to a bill of lading, shipping document, or Material safety data sheet (MSDS).

- (1) Cargo information giving following (a) to (d) for the safe carriage of the cargo
  - (a) A full description of the physical and chemical properties, including reactivity necessary for the safe containment of the cargo
  - (b) Action to be taken in the event of spills or leaks
  - (c) Counter-measures against accidental personal contact
  - (d) Fire-fighting procedures and fire-fighting media
- (2) Precautions for cargo transfer, tank cleaning, gas-freeing and ballasting

When applying for a new certificate to be issued, please send at least three copies each of the aforementioned manuals with an application letter as per Attachment 4 to the ClassNK Hull Department. In addition, in the case of UK flagged vessels, it is requested that one additional copy of the P&A Manual be submitted for approval, in accordance with instructions from the UK Administration.

The new COF and NLS certificates become valid when the revised MARPOL 73/78 Annex II and IBC Code enter into force on 1 January 2007. In this connection, ClassNK will begin to issue and send the COF or NLS certificate, as applicable, as a revised form from 1 August 2006 after class approval of the relevant manuals. Upon receipt of the new certificate, shipowners are requested to forward the new certificates to each individual ship and to replace the old certificate form with the new one on 1 January 2007. Shipowners are also kindly requested to return the old certificate form to the ClassNK Classification Department.

(To be continued)

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Attachments:

1. Outline of revised MARPOL 73/78 Annex II and IBC Code
2. Summary of minimum requirements of the revised IBC Code (IMO Resolution MSC176(79))
3. MEPC 120(52) "GUIDELINES FOR THE TRANSPORTATION OF VEGETABLE OILS IN DEEP TANKS OR IN INDEPENDENT TANKS SPECIALLY DESIGNED FOR THE CARRIAGE OF SUCH VEGETABLE OILS IN GENERAL DRY CARGO SHIPS"
4. Application Form for Issuance of Certificate of Fitness or NLS Certificate and Approval of chemical Operation Manual and P&A Manual

## Attachment 1 to ClassNK Technical Information No. TEC-0655

## Overview of Revised MARPOL 73/78 Annex II and IBC Code

## 1. Revised MARPOL 73/78 Annex II

## (1) Application and terminology

The revised Annex II shall apply to all ships carrying noxious liquid substances. The terminology used in the Annex II is as follows:

- (i) “*Chemical tanker*” means a ship constructed or adapted for the carriage in bulk of any liquid product listed in Chapter 17 of the *International Bulk Chemical Code*.
- (ii) “*NLS tanker*” means a ship constructed or adapted to carry a cargo of Noxious Liquid Substances in bulk and includes an “oil tanker” as defined in Annex I of the MARPOL Convention when certified to carry to a cargo or part cargo of Noxious Liquid Substances in Bulk
- (iii) “*Noxious Liquid Substances*” means any substance indicated in the Pollution Category column of Chapter 17 or 18 of the *International Bulk Chemical Code* or provisionally assessed under the provisions of Regulation 6.3 as falling into Category X, Y, or Z.

## (2) Provisions of revised part

## (i) Pollution Category

Since the criteria for pollution categories were revised, pollution categories have been changed from a 5 category system (A, B, C, D, and III) to 4 category system (X, Y, Z, and OS). The new pollution category of each substance is listed in column “c” in the Summary of Minimum Requirements in Attachment 2.

## (ii) Required stripping quantity

The required amounts of stripping residue based on construction date are given below Table 1-1. The amount of residue remaining after stripping in the cargo tanks and associated piping shall not exceed allowable stripping levels when discharging noxious liquid substances into the sea as set forth in Regulation 13. However, for ships constructed before 1 January 2007, the discharge into the sea of residues of category Z substances need not be below the waterline. For oil tankers constructed before 1 January 2007 which carry only category Z substances listed in Chapter 18 of the IBC Code, no quantity requirement shall apply.

(To be continued)

Table 1-1 Maximum Allowable Stripping Residue for Ships Constructed before 1 July 1986

Existing Pollution Category	Maximum Allowable Amount of Residue	New Pollution Category	Maximum Allowable Amount of Residue
A	Substantially zero	X	300 liters * (0.3m <sup>3</sup> )
B	0.3m <sup>3</sup>		
C	0.9m <sup>3</sup>	Y	300 liters * (0.3m <sup>3</sup> )
D	Dilution with water	Z	900 liters * (0.9m <sup>3</sup> )
III	No requirement	OS	No requirement

\*: Tolerance of 50 liters is permitted.

Table 1-2 Maximum Allowable Stripping Residue for Ships Constructed on or after 1 July 1986 but not later than 1 January 2007

Existing Pollution Category	Maximum Allowable Amount of Residue	New Pollution Category	Maximum Allowable Amount of Residue
A	Substantially zero	X	100 liters * (0.1m <sup>3</sup> )
B	0.1m <sup>3</sup>		
C	0.3m <sup>3</sup>	Y	100 liters * (0.1m <sup>3</sup> )
D	Dilution with water	Z	300 liters * (0.3m <sup>3</sup> )
III	No requirement	OS	No requirement

\*: Tolerance of 50 liters is permitted.

Table 1-3 Maximum Allowable Stripping Residue for Ships Constructed on or after 1 January 2007

New Pollution Category	Maximum Allowable Amount of Residue
X	75 liters **(0.075m <sup>3</sup> )
Y	75 liters **(0.075m <sup>3</sup> )
Z	75 liters **(0.075m <sup>3</sup> )
OS	No requirement

\*\* : Tolerance of 50 liters is NOT permitted.

(To be continued)

## (iii) Re-definition of high-viscosity substances

The definition of “*high-viscosity substances*” has been changed as shown in Table 1-4 below.

Table 1-4 Definition of High-Viscosity Substances

Existing requirements	<ol style="list-style-type: none"> <li>1. In the case of Category B substances and in the case of Category C substances within Special Areas, a substance with a viscosity equal to or greater than 25 mPa.sec at the unloading temperature; and</li> <li>2. In the case of Category C substances outside Special Areas, a substance with a viscosity equal to or greater than 60 mPa.sec at the unloading temperature.</li> </ol>
Revised requirement	A noxious liquid substance in Category X or Y with a viscosity equal to or greater than 50 mPa.sec at the unloading temperature.

## (iv) Prewash procedure

“Special Area” means the Baltic Sea area, the Black Sea area, and the Antarctic area under the present regulation. However, the revised Annex II designates only the Antarctic area as a Special Area. Since the allowable quantity of residue that may be discharged into the sea is given above in Tables 1-1 to 1-3, sufficient prewashing is to be achieved subject to the permissible stripping quantity level indicated after unloading.

## (a) Prewash to be performed

The degree of prewashing to be achieved is indicated below in Table 1-5.

## (b) Location of cleaning machine

The prewashing of tanks, from which category X substances have been unloaded, shall continue until the concentration of the substance is at or below 0.1% by weight. For this purpose, cleaning machines shall be located so as to wash all tank surfaces. In the case of category Y or Z substances, it is necessary to continue prewashing until the remaining quantity of cleaning water is less than the allowable stripping level specified in regulation 12 of Annex II. For high-viscosity or solidifying substances in category Y, all tank surfaces shall be washed as well as category X.

## (c) Heating device for cleaning water

According to Appendix 6 of Annex II, substances having a viscosity equal to or greater than 50mPa.sec at 20 degrees Celsius and solidifying substances shall be washed with hot water (temperature at least 60 degrees Celsius). Ships carrying such substances are required to install a heating device for cleaning water.

(To be continued)

Table 1-5 Washing Cycle and Remaining Quantity of Residue to be Achieved by Prewashing

Pollution category	Required stripping quantity (liters)	Outside Special Sea Area						Remaining quantity to be achieved by prewashing (liters)  (For cat. X, concentration of substance)
		Prewash						
		Solidifying substances or high-viscosity substances (hot water with 60 degree)			Non-solidifying substances or low-viscosity substances			
		Shadow area	Washing cycle	Minimum quantity of washing water	Shadow area	Washing cycle	Minimum quantity of washing water	
	Constructed before 1994/7/1	Constructed on or after 1994/7/1		Constructed before 1994/7/1	Constructed on or after 1994/7/1			
X	300		2 cycles			1 cycle		Discharged to reception facility until concentration is below 0.1% by weight
	100	0 %	2 cycles	Q	0 %	1 cycle	Q	
	75			Q			Q	
Y	300		1 cycle			1/2 cycle		300
	100	1 cycle	Q	1/2 cycle	Q	100		
	75		Q		Q	75		
Z	900		-			-		900
	300		-	-		-	-	300
	75		-	-		-	-	75

Discharge of used washing water and residues within Special Sea areas (the Antarctic area) is prohibited.

Note X: applicable / not applicable

Q: minimum quantity of washing water which is specified in Appendix 6-20 and 21 are obtained from the following formula:

$$Q = k (15r^{0.8} + 5r^{0.7} \times V/1000) \text{ [m}^3\text{]}$$

where

k: a factor having values as follows;

Category X, non-Solidifying, Low-Viscosity Substance,  $k=1.2$

Category X, Solidifying or High-Viscosity Substance,  $k=2.4$

(To be continued)

Category Y, non-Solidifying, Low-Viscosity Substance,  $k=0.5$   
 Category Y, Solidifying or High-Viscosity Substance,  $k=1.0$   
 $r$ : Residual quantity per tank [m<sup>3</sup>]  
 $V$ : Tank volume [m<sup>3</sup>]

## (v) Abolition of oil-like substances

The designation “(bb)” has been added to products listed in Chapters 17 and 18 of the present IBC Code for noxious liquid substances in Table 1-6, to indicate that these substances have been defined as “oil-like substances” by the MEPC. The carriage of these substances can be allowed by oil tankers that comply with Regulation 14 of the present Annex II and which are equipped with an effective fire extinguishing system. Discharge of oil-like substances in accordance with the requirements of Annex I was permitted, but Regulation 14 of Annex II has been deleted by the new revision. These tankers hold the IOPP Certificate Supplement B endorsed to indicate the carriage of oil-like substances and the list of oil-like substances. However, chemical tankers holding an effective Chemical Fitness Certificate can only carry these substances once the revised Annex II has come into force.

Table 1-6 Noxious Liquid Substances categorized as Oil-like Substances in the present Code

Aviation alkylates (C8 paraffins and iso-paraffins B.Pt. 95-120 Degree C)	Nonane (all isomers)
Cycloheptane	Octane (all isomers)
Cyclohexane	Olefin mixtures (C5-C7)
Cyclopentane	Pentane (all isomers)
p-Cymene	Pentene (all isomers)
Ethylcyclohexane	1-Phenyl-1-xylyl ethane
Heptane (all isomers)	Propylene dimer
Heptene (all isomers)	Tetrahydronaphthalene
Hexane (all isomers)	Toluene
Hexene (all isomers)	Xylenes
Isopropylcyclohexane	Diisopropyl naphthalene
Methylcyclohexane	

## (vi) Exemption of transport of vegetable oils

Exemption of carriage of vegetable oils is established as a new regulation 4.1.3 in Annex II. The application of requirements of the IBC Code can be partly exempted, subject to compliance with items indicated below and the approval of the Administration:

- (a) the NLS tanker shall meet all requirements for ship type 3 of the IBC Code except cargo tank location; and

(To be continued)



(b) cargo tanks shall be located as ship type 2 through the entire cargo tank length. In such cases, the relevant certificate shall indicate the exemption granted. In this regulation, major requirements which may be exempted from the IBC Code are damage stability for ship type 2 and maximum capacity per cargo tank, so that this regulation does not fully exempt the ship from application of the IBC Code itself. In addition, Annex II requirements, such as stripping quantity of residue and the fitting of an underwater discharge device, shall still apply to ships even if they are otherwise exempted.

## 2. Revised IBC Code

### (1) Ship Type

All products were re-evaluated and the ship type for each product has been re-classified due to revision of the ship type criteria in the GESAMP Hazard Profile. As a result of this evaluation, there are several products which have been upgraded from ship type 3 to ship type 2 products or that have been shifted from Chapter 18 to Chapter 17 in the IBC Code.

### (2) Material of cargo tank and piping (IBC Code, Chapter 6)

Chapter 6 was revised with regard to the requirements for the material to be used in tank construction, together with associated piping, pump, valves, vents and their jointing materials. However, the designation of materials such as zinc steel, stainless steel, coated steel, and so on has been removed from the new Chapter 6. As a result, the shipyard and shipper of cargo shall be responsible for providing compatibility information to the ship operator regarding notch ductility, corrosive effect, and hazardous reactions between the cargo and the material used in the tanks..

### (3) Revision of Chapter 10 “Electrical installations” (Applies to new ships only)

Electrical equipment in hazardous locations is to be installed in accordance with International Electrotechnical Commission, IEC 60092-502:1999, “Electrical installations in ships - Tankers”.

### (4) Abolition of Chapter 16A

The requirement “ADDITIONAL MEASURES FOR THE PROTECTION OF THE MARINE ENVIRONMENT” has been deleted.

## Chapter 17

### Summary of minimum requirements

Mixtures of noxious liquid substances presenting pollution hazards only, and which are assessed or provisionally assessed under regulation 6.3 of MARPOL Annex II, may be carried under the requirements of the Code applicable to the appropriate position of the entry in this chapter for Noxious Liquid Substances, not otherwise specified (n.o.s.).

#### EXPLANATORY NOTES

Product name (column a)	The product name shall be used in the shipping document for any cargo offered for bulk shipments. Any additional name may be included in brackets after the product name. In some cases, the product names are not identical with the names given in previous issues of the Code.
UN Number (column b)	Deleted
Pollution Category (column c)	The letter X, Y, Z means the Pollution Category assigned to each product under MARPOL Annex II
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: ship type 1 (2.1.2.1) 2: ship type 2 (2.1.2.2) 3: ship type 3 (2.1.2.3)
Tank type (column f)	1: independent tank (4.1.1) 2: integral tank (4.1.2) G: gravity tank (4.1.3) P: pressure tank (4.1.4)
Tank vents (column g)	Cont.: controlled venting Open: open venting
Tank environmental control (column h)	Inert: inerting (9.1.2.1) Pad: liquid or gas padding (9.1.2.2) Dry: drying (9.1.2.3) Vent: natural or forced ventilation (9.1.2.4) No: no special requirements under this Code
Electrical equipment (column i)	Temperature classes (i')      T1 to T6 - indicates no requirements blank no information  Apparatus group (i'')      IIA, IIB or IIC: - indicates no requirements blank no information  Flash point (i''')      Yes: flashpoint exceeding 60°C (10.1.6) No: flashpoint not exceeding 60°C (10.1.6) NF: nonflammable product (10.1.6)
Gauging (column j)	O: open gauging (13.1.1.1) R: restricted gauging (13.1.1.2) C: closed gauging (13.1.1.3)

Vapour detection (column k)	F: flammable vapours T: toxic vapours No: indicates no special requirements under this Code
Fire protection (column l)	A: alcohol-resistant foam or multi-purpose foam B: regular foam; encompasses all foams that are not of an alcohol-resistant type, including fluoro-protein and aqueous-film-forming foam (AFFF) C: water-spray D: dry chemical No: no special requirements under this Code
Materials of construction (column m)	Deleted
Emergency equipment (column n)	Yes: see 14.3.1 No: no special requirements under this Code
Specific and operational requirements (column o)	When specific reference is made to chapters 15 and/or 16, these requirements shall be additional to the requirements in any other column

## Chapter 17

a	c	d	e	f	g	h	i'	i''	i'''	j	k	l	n	o
Acetic acid	Z	S/P	3	2G	Cont	No	T1	IIA	No	R	F	A	Yes	15.11.2, 15.11.3, 15.11.4, 15.11.6, 15.11.7, 15.11.8, 15.19.6, 16.2.9
Acetic anhydride	Z	S/P	2	2G	Cont	No	T2	IIA	No	R	F-T	A	Yes	15.11.2, 15.11.3, 15.11.4, 15.11.6, 15.11.7, 15.11.8, 15.19.6
Acetone cyanohydrin	Y	S/P	2	2G	Cont	No	T1	IIA	Yes	C	T	A	Yes	15.13, 15.12, 15.17, 15.18, 15.19, 16.6.1, 16.6.2, 16.6.3
Acetonitrile	Z	S/P	2	2G	Cont	No	T2	IIA	No	R	F-T	A	No	15.12, 15.19.6
Acrylic acid	Y	S/P	2	2G	Cont	No	T2	IIA	No	R	F-T	A	No	15.13, 15.19.6, 16.6.1, 16.2.9
Acrylonitrile	Y	S/P	2	2G	Cont	No	T1	IIB	No	C	F-T	A	Yes	15.12, 15.13, 15.17, 15.19
Acrylonitrile-Styrene copolymer dispersion in polyether polyol	Y	P	3	2G	Open	No			Yes	O	No	AB	No	15.19.6, 16.2.6
Adiponitrile	Z	S/P	3	2G	Cont	No		IIB	Yes	R	T	A	No	16.2.9
Alachlor technical (90% or more)	X	S/P	2	2G	Open	No			Yes	O	No	AC	No	15.19.6, 16.2.9
Alcohol (C9-C11) poly (2.5-9) ethoxylate	Y	P	3	2G	Open	No			Yes	O	No	A	No	15.19.6, 16.2.9
Alcohol (C6-C17) (secondary) poly(3-6)ethoxylates	Y	P	2	2G	Open	No			Yes	O	No	A	No	15.19.6, 16.2.9
Alcohol (C6-C17) (secondary) poly(7-12)ethoxylates	Y	P	2	2G	Open	No			Yes	O	No	A	No	15.19.6, 16.2.6, 16.2.9
Alcohol (C12-C16) poly(1-6)ethoxylates	Y	P	2	2G	Open	No			Yes	O	No	A	No	15.19.6, 16.2.9
Alcohol (C12-C16) poly(20+)ethoxylates	Y	P	3	2G	Open	No			Yes	O	No	A	No	16.2.9
Alcohol (C12-C16) poly(7-19)ethoxylates	Y	P	2	2G	Open	No			Yes	O	No	A	No	15.19.6, 16.2.9
Alcohols (C13+)	Y	P	2	2G	Open	No			Yes	O	No	AB	No	15.19.6, 16.2.9
Alkanes (C6-C9)	X	P	2	2G	Cont	No			No	R	F	A	No	15.19.6
Iso- and cyclo-alkanes (C10-C11)	Z	P	3	2G	Cont	No			No	R	F	A	No	
Iso- and cyclo-alkanes (C12+)	Z	P	3	2G	Cont	No			No	R	F	A	No	
n-Alkanes (C10+)	Z	P	3	2G	Cont	No			No	R	F	AB	No	
Alkenyl (C16-C20) succinic anhydride	Z	S/P	3	2G	Cont	No			Yes	C	T	No	Yes	15.12, 15.17, 15.19
Alkylaryl phosphate mixtures (more than 40% Diphenyl tolyl phosphate, less than 0.02% ortho-isomers)	X	S/P	1	2G	Cont	No	T1	IIA	Yes	C	T	ABC	No	15.12, 15.17, 15.19
Alkylated (C4-C9) hindered phenols	Y	S/P	2	2G	Open	No	-	-	Yes	O	No	BD	No	15.19.6, 16.2.6, 16.2.9
Alkylbenzene, alkylindane, alkylindene mixture (each C12-C17)	Z	P	3	2G	Open	No			Yes	O	No	A	No	15.19.6

## Chapter 17

a	c	d	e	f	g	h	i'	i''	i'''	j	k	l	n	o
Alkyl (C5-C8) benzenes	X	P	2	2G	Open	No			Yes	O	No	A	No	15.19.6
Alkyl(C9+)benzenes	Z	P	3	2G	Open	No			Yes	O	No	AB	No	
Alkyl (C12+) dimethylamine	X	S/P	1	2G	Cont	No	-	-	Yes	C	T	BCD	Yes	15.12, 15.17, 15.19
Alkyl dithiocarbamate (C19-C35)	Y	P	3	2G	Open	No			Yes	O	No	AB	No	15.19.6, 16.2.6, 16.2.9
Alkyldithiothiadiazole (C6-C24)	Z	P	3	2G	Open	No			Yes	O	No	AB	No	
Alkyl ester copolymer (C4-C20)	Y	P	2	2G	Open	No			Yes	O	No	AB	No	15.19.6, 16.2.6, 16.2.9
Alkyl (C8-C10)/(C12-C14):(40% or less/60% or more) polyglucoside solution (55% or less)	Y	P	3	2G	Open	No			Yes	O	No	No	No	15.19.6, 16.2.6, 16.2.9
Alkyl (C8-C10)/(C12-C14):(60% or more/40% or less) polyglucoside solution(55% or less)	Y	P	3	2G	Open	No			Yes	O	No	No	No	16.2.9, 16.2.6
Alkyl (C8-C40) phenol sulphide	Z	P	3	2G	Open	No			Yes	O	No	AB	No	
Alkyl (C8-C9) phenylamine in aromatic solvents	Y	P	2	2G	Cont	No			No	R	F	A	No	15.19.6
Alkyl (C9-C15) phenyl propoxylate	Z	P	3	2G	Open	No			Yes	O	No	AB	No	
Alkyl (C8-C10)/(C12-C14):(50%/50%) polyglucoside solution (55% or less)	Y	P	3	2G	Open	No			Yes	O	No	No	No	16.2.9, 16.2.6
Alkyl (C12-C14) polyglucoside solution (55% or less)	Y	P	3	2G	Open	No			Yes	O	No	No	No	15.19.6, 16.2.9
Alkyl (C8-C10) polyglucoside solution (65% or less).	Y	P	3	2G	Open	No			Yes	O	No	No	No	16.2.6
Alkyl(C10-C20, saturated and unsaturated) phosphite	Y	P	2	2G	Open	No			Yes	O	No	A	No	16.2.9
Alkyl sulphonic acid ester of phenol	Y	P	3	2G	Open	No			Yes	O	No	AB	No	15.19.6, 16.2.6
Allyl alcohol	Y	S/P	2	2G	Cont	No	T2	IIB	No	C	F-T	A	Yes	15.12, 15.17, 15.19
Allyl chloride	Y	S/P	2	2G	Cont	No	T2	IIA	No	C	F-T	A	Yes	15.12, 15.17, 15.19
Aluminium sulphate solution	Y	P	2	2G	Open	No			Yes	O	No	A	No	15.19.6
Aminoethyl ethanolamine	Z	S/P	3	2G	Open	No	T2	IIA	Yes	O	No	A	No	
2-Amino-2-methyl-1-propanol	Z	P	3	2G	Open	No			Yes	O	No	A	No	
Ammonia aqueous (28% or less)	Y	S/P	2	2G	Cont	No			NF	R	T	ABC	Yes	
Ammonium hydrogen phosphate solution	Z	P	3	2G	Open	No			Yes	O	No	A	No	
Ammonium nitrate solution (93% or less)	Z	S/P	2	1G	Open	No			NF	O	No	No	No	15.2, 15.11.4, 15.11.6, 15.18, 15.19.6, 16.2.9
Ammonium polyphosphate solution	Z	P	3	2G	Open	No			Yes	O	No	A	No	

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Ammonium sulphate solution	Z	P	3	2G	Open	No			Yes	O	No	A	No	
Ammonium sulphide solution (45% or less)	Y	S/P	2	2G	Cont	No			No	C	F-T	A	Yes	15.12, 15.17, 15.19, 16.6.1, 16.6.2, 16.6.3
Amyl acetate (all isomers)	Y	P	3	2G	Cont	No			No	R	F	A	No	15.19.6
n-Amyl alcohol	Z	P	3	2G	Cont	No			No	R	F	AB	No	
Amyl alcohol, primary	Z	P	3	2G	Cont	No			No	R	F	AB	No	
sec-Amyl alcohol	Z	P	3	2G	Cont	No			No	R	F	AB	No	
tert-Amyl alcohol	Z	P	3	2G	Cont	No			No	R	F	A	No	
tert-Amyl methyl ether	X	P	2	2G	Cont	No	T3		No	R	F	A	No	15.19.6
Aniline	Y	S/P	2	2G	Cont	No	T1	IIA	Yes	C	T	A	No	15.12, 15.17, 15.19
Aryl polyolefins (C11-C50)	Y	P	2	2G	Open	No			Yes	O	No	AB	No	15.19.6, 16.2.6, 16.2.9
Aviation alkylates (C8 paraffins and iso-paraffins BPT 95 - 120°C)	X	P	2	2G	Cont	No			No	R	F	B	No	15.19.6
Barium long chain (C11-C50) alkaryl sulphonate	Y	S/P	2	2G	Open	No			Yes	O	No	AD	No	15.12.3, 15.19, 16.2.6, 16.2.9
Benzene and mixtures having 10% benzene or more (i)	Y	S/P	3	2G	Cont	No	T1	IIA	No	C	F-T	AB	No	15.12.1, 15.17, 15.19.6, 16.2.9
Benzenetricarboxylic acid, trioctyl ester	Y	P	2	2G	Open	No			Yes	O	No	AB	No	15.19.6, 16.2.6
Benzyl acetate	Y	P	2	2G	Open	No			Yes	O	No	A	No	
Benzyl alcohol	Y	P	3	2G	Open	No			Yes	O	No	A	No	
Bromochloromethane	Z	S/P	3	2G	Cont	No			NF	R	T	No	No	
Butyl acetate (all isomers)	Y	P	3	2G	Cont	No			No	R	F	A	No	15.19.6
Butyl acrylate (all isomers)	Y	S/P	2	2G	Cont	No	T2	IIB	No	R	F-T	A	No	15.13, 15.19.6, 16.6.1, 16.6.2
tert-Butyl alcohol	Z	P	3	2G	Cont	No			No	R	F	A	No	
Butylamine (all isomers)	Y	S/P	2	2G	Cont	No			No	R	F-T	A	Yes	15.12, 15.17, 15.19.6
Butylbenzene (all isomers)	X	P	2	2G	Cont	No			No	R	F	A	No	15.19.6
Butyl benzyl phthalate	X	P	2	2G	Open	No			Yes	O	No	A	No	15.19.6
Butyl butyrate (all isomers)	Y	P	3	2G	Cont	No			No	R	F	A	No	15.19.6
Butyl/Decyl/Cetyl/Eicosyl methacrylate mixture	Y	S/P	2	2G	Cont	No			Yes	R	No	AD	No	15.13, 16.6.1, 16.6.2, 15.19.6
Butylene glycol	Z	P	3	2G	Open	No			Yes	O	No	A	No	

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1,2-Butylene oxide	Y	S/P	3	2G	Cont	Inert	T2	IIB	No	R	F	AC	No	15.8.1 to 15.8.7, 15.8.12, 15.8.13, 15.8.16, 15.8.17, 15.8.18, 15.8.19, 15.8.21, 15.8.25, 15.8.27, 15.8.29, 15.19.6
n-Butyl ether	Y	S/P	3	2G	Cont	Inert	T4	IIB	No	R	F-T	A	No	15.4.6, 15.12, 15.19.6
Butyl methacrylate	Z	S/P	3	2G	Cont	No		IIA	No	R	F-T	AD	No	15.13, 15.19.6, 16.6.1, 16.6.2
n-Butyl propionate	Y	P	3	2G	Cont	No			No	R	F	A	No	15.19.6
Butyraldehyde (all isomers)	Y	S/P	3	2G	Cont	No	T3	IIA	No	R	F-T	A	No	15.19.6
Butyric acid	Y	S/P	3	2G	Cont	No			Yes	R	No	A	No	15.11.2, 15.11.3, 15.11.4, 15.11.6, 15.11.7, 15.11.8, 15.19.6
gamma-Butyrolactone	Y	P	3	2G	Open	No			Yes	O	No	AB	No	15.19.6
Calcium carbonate slurry	Z	P	3	2G	Open	No			Yes	O	No	AB	No	
Calcium hypochlorite solution (15% or less)	Y	S/P	2	2G	Cont	No			NF	R	No	No	No	15.19.6
Calcium hypochlorite solution (more than 15%)	X	S/P	1	2G	Cont	No			NF	R	No	No	No	15.19, 16.2.9
Calcium long-chain alkyl(C5-C10) phenate	Y	P	3	2G	Open	No			Yes	O	No	A	No	
Calcium long-chain alkyl(C11-C40) phenate	Z	P	3	2G	Open	No			Yes	O	No	A	No	
Calcium long-chain alkyl phenate sulphide (C8-C40)	Y	P	2	2G	Open	No			Yes	O	No	AB	No	15.19.6, 16.2.6, 16.2.9
epsilon-Caprolactam (molten or aqueous solutions)	Z	P	3	2G	Open	No			Yes	O	No	A	No	
Carbon disulphide	Y	S/P	2	1G	Cont	Pad+inert	T6	IIC	No	C	F-T	C	Yes	15.3, 15.12, 15.19
Carbon tetrachloride	Y	S/P	2	2G	Cont	No			NF	C	T	No	Yes	15.12, 15.17, 15.19.6
Castor oil (containing less than 2% free fatty acids)	Y	P	2 (k)	2G	Open	No	-	-	Yes	Open	No	ABCD	No	15.19.6, 16.2.6
Cetyl/Eicosyl methacrylate mixture	Y	S/P	2	2G	Open	No			Yes	O	No	AD	No	15.13, 16.6.1, 16.6.2, 15.19.6, 16.2.9
Chlorinated paraffins (C10-C13)	X	P	1	2G	Open	No			Yes	O	No	A	No	15.19, 16.2.6
Chloroacetic acid (80% or less)	Y	S/P	2	2G	Cont	No			NF	C	No	No	No	15.11.2, 15.11.4, 15.11.6, 15.11.7, 15.11.8, 15.12.3, 15.19, 16.2.9
Chlorobenzene	Y	S/P	2	2G	Cont	No	T1	IIA	No	R	F-T	AB	No	15.19.6
Chloroform	Y	S/P	3	2G	Cont	No			NF	R	T	No	Yes	15.12, 15.19.6
Chlorohydrins (crude)	Y	S/P	2	2G	Cont	No		IIA	No	C	F-T	A	No	15.12, 15.19
4-Chloro-2-methylphenoxyacetic acid, dimethylamine salt solution	Y	P	2	2G	Open	No			NF	O	No	No	No	16.2.9

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1-(4-Chlorophenyl)-4,4- dimethyl-pentan-3-one	Y	P	2	2G	Open	No			Yes	O	No	ABD	No	15.19.6, 16.2.6, 16.2.9
2- or 3-Chloropropionic acid	Z	S/P	3	2G	Open	No			Yes	O	No	A	No	15.11.2, 15.11.3, 15.11.4, 15.11.6, 15.11.7, 15.11.8, 16.2.9
Chlorosulphonic acid	Y	S/P	1	2G	Cont	No			NF	C	T	No	Yes	15.11.2, 15.11.3, 15.11.4, 15.11.5, 15.11.6, 15.11.7, 15.11.8, 15.12, 15.16.2, 15.19
m-Chlorotoluene	Y	S/P	2	2G	Cont	No			No	R	F-T	AB	No	15.19.6
o-Chlorotoluene	Y	S/P	2	2G	Cont	No			No	R	F-T	AB	No	15.19.6
p-Chlorotoluene	Y	S/P	2	2G	Cont	No			No	R	F-T	AB	No	15.19.6, 16.2.9
Chlorotoluenes (mixed isomers)	Y	S/P	2	2G	Cont	No			No	R	F-T	AB	No	15.19.6
Choline chloride solutions	Z	P	3	2G	Open	No			Yes	O	No	A	No	
Citric acid (70% or less)	Z	P	3	2G	Open	No			Yes	O	No	A	No	
Coconut oil (containing less than 5% free fatty acids)	Y	P	2 (k)	2G	Open	No	-	-	Yes	Open	No	ABCD	No	15.19.6, 16.2.6, 16.2.9
Corn Oil (containing less than 10% free fatty acids)	Y	P	2 (k)	2G	Open	No	-	-	Yes	Open	No	ABCD	No	15.19.6, 16.2.6
Cotton seed oil (containing less than 12% free fatty acids)	Y	P	2 (k)	2G	Open	No	-	-	Yes	Open	No	ABCD	No	15.19.6, 16.2.6, 16.2.9
Cresols (all isomers)	Y	S/P	2	2G	Open	No	T1	IIA	Yes	O	No	AB	No	15.19.6, 16.2.9
Cresylic acid, dephenolized	Y	S/P	2	2G	Open	No			Yes	O	No	AB	No	15.19.6
Crotonaldehyde	Y	S/P	2	2G	Cont	No	T3	IIB	No	R	F-T	A	Yes	15.12, 15.17, 15.19.6
1,5,9-Cyclododecatriene	X	S/P	1	2G	Cont	No			Yes	R	T	A	No	15.13, 15.19, 16.6.1, 16.6.2
Cycloheptane	X	P	2	2G	Cont	No			No	R	F	A	No	15.19.6
Cyclohexane	Y	P	2	2G	Cont	No			No	R	F	A	No	15.19.6, 16.2.9
Cyclohexanol	Y	P	2	2G	Open	No			Yes	O	No	AB	No	15.19.6, 16.2.9
Cyclohexanone	Z	S/P	3	2G	Cont	No	T2	IIA	No	R	F-T	A	No	15.19.6
Cyclohexanone, Cyclohexanol mixture	Y	S/P	3	2G	Cont	No			Yes	R	F-T	A	No	
Cyclohexyl acetate	Y	P	3	2G	Cont	No			No	R	F	A	No	15.19.6
Cyclohexylamine	Y	S/P	3	2G	Cont	No	T3	IIA	No	R	F-T	AC	No	15.19.6
1,3-Cyclopentadiene dimer (molten)	Y	P	2	2G	Cont	No			No	R	F	A	No	15.19.6, 16.2.6, 16.2.9
Cyclopentane	Y	P	2	2G	Cont	No			No	R	F	A	No	15.19.6



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Cyclopentene	Y	P	2	2G	Cont	No			No	R	F	A	No	15.19.6
p-Cymene	Y	P	2	2G	Cont	No			No	R	F	A	No	15.19.6
Decahydronaphthalene	Y	P	2	2G	Cont	No			No	R	F	AB	No	15.19.6
Decanoic acid	X	P	2	2G	Open	No			Yes	O	No	A	No	16.2.9
Decyl acrylate	X	S/P	1	2G	Open	No	T3	IIA	Yes	O	No	ACD	No	15.13, 15.19, 16.6.1, 16.6.2
Decyl alcohol (all isomers)	Y	P	2	2G	Open	No			Yes	O	No	A	No	15.19.6, 16.2.9(e)
Diacetone alcohol	Z	P	3	2G	Cont	No			No	R	F	A	No	
Dialkyl (C8-C9) diphenylamines	Z	P	3	2G	Open	No			Yes	O	No	AB	No	
Dialkyl (C7-C13) phthalates	X	P	2	2G	Open	No			Yes	O	No	AB	No	15.19.6, 16.2.6
Dibromomethane	Y	S/P	2	2G	Cont	No			NF	R	T	No	No	15.12.3, 15.19
Dibutylamine	Y	S/P	3	2G	Cont	No	T2	IIA	No	R	F-T	ACD	No	15.19.6
Dibutyl hydrogen phosphonate	Y	P	3	2G	Open	No			Yes	O	No	A	No	15.19.6, 16.2.9
Dibutyl phthalate	X	P	2	2G	Open	No			Yes	O	No	A	No	15.19.6
Dichlorobenzene (all isomers)	X	S/P	2	2G	Cont	No	T1	IIA	Yes	R	T	ABD	No	15.19.6
3,4-Dichloro-1-butene	Y	S/P	2	2G	Cont	No			No	C	F-T	ABC	Yes	15.12.3, 15.17, 15.19.6
Dichloroethyl ether	Y	S/P	2	2G	Cont	No	T2	IIA	No	R	F-T	A	No	15.19.6
2,2-Dichloroisopropyl ether	Y	S/P	2	2G	Cont	No			Yes	R	T	ACD	No	15.12, 15.17, 15.19
2,4-Dichlorophenol	Y	S/P	2	2G	Cont	Dry			Yes	R	T	A	No	15.19.6, 16.2.6, 16.2.9
1,1-Dichloropropane	Y	S/P	2	2G	Cont	No			No	R	F-T	AB	No	15.12, 15.19.6
1,2-Dichloropropane	Y	S/P	2	2G	Cont	No	T1	IIA	No	R	F-T	AB	No	15.12, 15.19.6
1,3-Dichloropropene	X	S/P	2	2G	Cont	No	T2	IIA	No	C	F-T	AB	Yes	15.12, 15.17, 15.18, 15.19
Dichloropropene/Dichloropropane mixtures	X	S/P	2	2G	Cont	No			No	C	F-T	ABD	Yes	15.12, 15.17, 15.18, 15.19
Diethanolamine	Y	S/P	3	2G	Open	No	T1	IIA	Yes	O	No	A	No	16.2.6, 16.2.9
Diethylamine	Y	S/P	3	2G	Cont	No	T2	IIA	No	R	F-T	A	Yes	15.12, 15.19.6
Diethylaminoethanol	Y	S/P	2	2G	Cont	No	T2	IIA	No	R	F-T	AC	No	15.19.6
Diethylbenzene	Y	P	2	2G	Cont	No			No	R	F	A	No	15.19.6
Diethylenetriamine	Y	S/P	3	2G	Open	No	T2	IIA	Yes	O	No	A	No	

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Diethyl ether	Z	S/P	2	1G	Cont	Inert	T4	IIB	No	C	F-T	A	Yes	15.4, 15.14, 15.19
Di-(2-ethylhexyl) adipate	Y	P	2	2G	Open	No			Yes	O	No	AB	No	15.19.6
Diethyl phthalate	Y	P	2	2G	Open	No			Yes	O	No	A	No	
Diethyl sulphate	Y	S/P	2	2G	Cont	No			Yes	C	T	A	No	15.19.6
Diheptyl phthalate	Y	P	2	2G	Open	No			Yes	O	No	AB	No	15.19.6
Di-n-hexyl adipate	X	P	1	2G	Open	No			Yes	O	No	A	No	15.19
Dihexyl phthalate	Y	P	2	2G	Open	No			Yes	O	No	AB	No	15.19.6
Diisobutylamine	Y	S/P	2	2G	Cont	No			No	R	F-T	ACD	No	15.12.3, 15.19.6
Diisobutylene	Y	P	2	2G	Cont	No			No	R	F	A	No	15.19.6
Diisobutyl ketone	Y	P	3	2G	Cont	No			No	R	F	A	No	15.19.6
Diisobutyl phthalate	X	P	2	2G	Open	No			Yes	O	No	A	No	15.19.6
Diisooctyl phthalate	Y	P	2	2G	Open	No			Yes	O	No	AB	No	15.19.6, 16.2.6
Diisopropanolamine	Z	S/P	3	2G	Open	No	T2	IIA	Yes	O	No	A	No	16.2.9
Diisopropylamine	Y	S/P	2	2G	Cont	No	T2	IIA	No	C	F-T	A	Yes	15.12, 15.19
Diisopropylbenzene (all isomers)	X	P	2	2G	Open	No			Yes	O	No	A	No	15.19.6
N,N-Dimethylacetamide	Z	S/P	3	2G	Cont	No	-	-	Yes	C	T	ACD	No	15.12, 15.17
N,N-Dimethylacetamide solution (40% or less)	Z	S/P	3	2G	Cont	No			Yes	R	T	B	No	15.12.1, 15.17
Dimethyl adipate	X	P	2	2G	Open	No			Yes	O	No	A	No	15.19.6, 16.2.9
Dimethylamine solution (45% or less)	Y	S/P	3	2G	Cont	No	T2	IIA	No	R	F-T	ACD	No	15.12, 15.19.6
Dimethylamine solution (greater than 45% but not greater than 55%)	Y	S/P	2	2G	Cont	No			No	C	F-T	ACD	Yes	15.12, 15.17, 15.19
Dimethylamine solution (greater than 55% but not greater than 65%)	Y	S/P	2	2G	Cont	No			No	C	F-T	ACD	Yes	15.12, 15.14, 15.17, 15.19
N,N-Dimethylcyclohexylamine	Y	S/P	2	2G	Cont	No			No	R	F-T	AC	No	15.12, 15.17, 15.19.6
Dimethyl disulphide	Y	S/P	2	2G	Cont	No	T3	IIA	No	R	F-T	B	No	15.12.3, 15.12.4, 15.19.6
N,N-Dimethyldodecylamine	X	S/P	1	2G	Open	No			Yes	O	No	B	No	15.19
Dimethylethanolamine	Y	S/P	3	2G	Cont	No	T3	IIA	No	R	F-T	AD	No	15.19.6
Dimethylformamide	Y	S/P	3	2G	Cont	No	T2	IIA	No	R	F-T	AD	No	15.19.6
Dimethyl glutarate	Y	P	3	2G	Open	No			Yes	O	No	A	No	

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Dimethyl hydrogen phosphite	Y	S/P	3	2G	Cont	No			Yes	R	T	AD	No	15.12.1, 15.19.6
Dimethyl octanoic acid	Y	P	2	2G	Open	No			Yes	O	No	A	No	16.2.6, 16.2.9
Dimethyl phthalate	Y	P	3	2G	Open	No			Yes	O	No	A	No	16.2.9
Dimethylpolysiloxane	Y	P	3	2G	Open	No			Yes	O	No	AB	No	15.19.6
2,2-Dimethylpropane-1,3-diol (molten or solution)	Z	P	3	2G	Open	No			Yes	O	No	AB	No	
Dimethyl succinate	Y	P	3	2G	Open	No			Yes	O	No	A	No	16.2.9
Dinitrotoluene (molten)	X	S/P	2	2G	Cont	No			Yes	C	T	A	No	15.12, 15.17, 15.19, 15.21, 16.2.6, 16.2.9, 16.6.4
Diocetyl phthalate	X	P	2	2G	Open	No			Yes	O	No	AB	No	15.19.6
1,4-Dioxane	Y	S/P	2	2G	Cont	No	T2	IIB	No	C	F-T	A	No	15.12, 15.19, 16.2.9
Dipentene	Y	P	3	2G	Cont	No			No	R	F	A	No	15.19.6
Diphenyl	X	P	2	2G	Open	No			Yes	O	No	B	No	15.19.6, 16.2.6, 16.2.9
Diphenyl/Diphenyl ether mixtures	X	P	2	2G	Open	No			Yes	O	No	B	No	15.19.6, 16.2.9
Diphenyl ether	X	P	2	2G	Open	No			Yes	O	No	A	No	15.19.6, 16.2.9
Diphenyl ether/Diphenyl phenyl ether mixture	X	P	2	2G	Open	No			Yes	O	No	A	No	15.19.6, 16.2.9
Diphenylol propane-epichlorohydrin resins	X	P	2	2G	Open	No			Yes	O	No	A	No	15.19.6, 16.2.6, 16.2.9
Di-n-propylamine	Y	S/P	2	2G	Cont	No			No	R	F-T	A	No	15.12.3, 15.19.6
Dipropylene glycol	Z	P	3	2G	Open	No			Yes	O	No	A	No	
Dithiocarbamate ester (C7-C35)	X	P	2	2G	Open	No			Yes	O	No	AD	No	15.19.6, 16.2.9
Diundecyl phthalate	Y	P	2	2G	Open	No			Yes	O	No	AB	No	15.19.6, 16.2.6, 16.2.9
Dodecane (all isomers)	Y	P	2	2G	Cont	No			No	R	F	AB	No	15.19.6
tert-Dodecanethiol	X	S/P	1	2G	Cont	No	-	-	Yes	C	T	ABD	Yes	15.12, 15.17, 15.19
Dodecene (all isomers)	X	P	2	2G	Open	No			Yes	O	No	A	No	15.19.6
Dodecyl alcohol	Y	P	2	2G	Open	No			Yes	O	No	A	No	15.19.6, 16.2.9
Dodecylbenzene	Z	P	3	2G	Open	No			Yes	O	No	AB	No	
Dodecyl hydroxypropyl sulphide	X	P	2	2G	Open	No			Yes	O	No	A	No	15.19.6
Dodecyl methacrylate	Z	S/P	3	2G	Open	No			Yes	O	No	A	No	15.13
Dodecyl/Octadecyl methacrylate (mixture)	Z	S/P	3	2G	Open	No			Yes	R	No	AD	No	15.13, 16.6.1, 16.6.2

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a	c	d	e	f	g	h	i'	i''	i'''	j	k	l	n	o
Dodecyl/Pentadecyl methacrylate mixture	Y	S/P	2	2G	Open	No			Yes	O	No	AD	No	15.13, 16.6.1, 16.6.2, 15.19.6
Dodecyl phenol	X	P	2	2G	Open	No			Yes	O	No	A	No	15.19.6, 16.2.6
Dodecyl Xylene	Y	P	2	2G	Open	No			Yes	O	No	AB	No	15.19.6, 16.2.6
Drilling brines (containing zinc salts)	X	P	2	2G	Open	No			Yes	O	No	No	No	15.19.6
Drilling brines, including:calcium bromide solution, calcium chloride solution and sodium chloride solution	Z	P	3	2G	Open	No			Yes	O	No	A	No	
Epichlorohydrin	Y	S/P	2	2G	Cont	No		IIB	No	C	F-T	A	Yes	15.12, 15.17, 15.19
Ethanolamine	Y	S/P	3	2G	Open	No	T2	IIA	Yes	O	F-T	A	No	16.2.9
2-Ethoxyethyl acetate	Y	P	3	2G	Cont	No			No	R	F	A	No	15.19.6
Ethoxylated long chain (C16+) alkyloxyalkylamine	Z	P	3	2G	Open	No			Yes	O	No	AB	No	
Ethyl acetate	Z	P	3	2G	Cont	No			No	R	F	AB	No	
Ethyl acetoacetate	Z	P	3	2G	Open	No			Yes	O	No	A	No	
Ethyl acrylate	Y	S/P	2	2G	Cont	No	T2	IIB	No	R	F-T	A	Yes	15.13, 15.19.6, 16.6.1, 16.6.2
Ethylamine	Y	S/P	2	1G	Cont	No	T2	IIA	No	C	F-T	CD	Yes	15.12, 15.14, 15.19.6
Ethylamine solutions (72% or less)	Y	S/P	2	2G	Cont	No			No	C	F-T	AC	Yes	15.12, 15.14, 15.17, 15.19
Ethylbenzene	Y	P	2	2G	Cont	No			No	R	F	A	No	15.19.6
Ethyl tert-butyl ether	Y	P	3	2G	Cont	No			No	R	F	A	No	15.19.6
Ethylcyclohexane	Y	P	2	2G	Cont	No			No	R	F	A	No	15.19.6
N-Ethylcyclohexylamine	Y	S/P	2	2G	Cont	No			No	R	F-T	A	No	15.19.6
S-Ethyl dipropylthiocarbamate	Y	P	2	2G	Open	No			Yes	O	No	A	No	16.2.9
Ethylene chlorohydrin	Y	S/P	2	2G	Cont	No	T2	IIA	No	C	F-T	AD	Yes	15.12, 15.17, 15.19
Ethylene cyanohydrin	Y	S/P	3	2G	Open	No		IIB	Yes	O	No	A	No	
Ethylenediamine	Y	S/P	2	2G	Cont	No	T2	IIA	No	R	F-T	A	No	15.19.6, 16.2.9
Ethylene dibromide	Y	S/P	2	2G	Cont	No			NF	C	T	No	Yes	15.12, 15.19.6, 16.2.9
Ethylene dichloride	Y	S/P	2	2G	Cont	No	T2	IIA	No	R	F-T	AB	No	15.19
Ethylene glycol	Y	P	3	2G	Open	No			Yes	O	No	A	No	15.19.6
Ethylene glycol butyl ether acetate	Y	P	3	2G	Open	No			Yes	O	No	A	No	
Ethylene glycol diacetate	Y	P	3	2G	Open	No			Yes	O	No	A	No	

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Ethylene glycol monoalkyl ethers	Y	S/P	3	2G	Cont	No			No	R	F	A	No	15.19.6, 16.2.9
Ethylene oxide/Propylene oxide mixture with an ethylene oxide content of not more than 30% by mass	Y	S/P	2	1G	Cont	Inert	T2	IIB	No	C	F-T	AC	No	15.8, 15.12, 15.14, 15.19
Ethyl-3-ethoxypropionate	Y	P	3	2G	Cont	No			No	R	No	A	No	15.19.6
2-Ethylhexanoic acid	Y	P	3	2G	Open	No			Yes	O	No	AB	No	15.19.6
2-Ethylhexyl acrylate	Y	S/P	3	2G	Open	No	T3	IIB	Yes	O	No	A	No	15.13, 15.19.6, 16.6.1, 16.6.2
2-Ethylhexylamine	Y	S/P	2	2G	Cont	No			No	R	F-T	A	No	15.12, 15.19.6
2-Ethyl-2-(hydroxymethyl) propane-1,3-diol, C8-C10 ester	Y	P	2	2G	Open	No			Yes	O	No	AB	No	15.19.6, 16.2.6, 16.2.9
Ethylidene norbornene	Y	S/P	2	2G	Cont	No			No	R	F-T	AD	No	15.12.1, 15.19.6
Ethyl methacrylate	Y	S/P	3	2G	Cont	No	T2	IIA	No	R	F-T	AD	No	15.13, 15.19.6, 16.6.1, 16.6.2
N-Ethylmethylallylamine	Y	S/P	2	2G	Cont	No	T2	IIB	No	C	F	AC	Yes	15.12.3, 15.17, 15.19
2-Ethyl-3-propylacrolein	Y	S/P	3	2G	Cont	No		IIA	No	R	F-T	A	No	15.19.6, 16.2.9
Ethyl toluene	Y	P	2	2G	Cont	No			No	R	F	A	No	15.19.6
Fatty acid (saturated C13+)	Y	P	2	2G	Open	No			Yes	O	No	AB	No	15.19.6, 16.2.9
Fatty acids, essentially linear, C6-C18, 2-ethylhexyl ester.	Y	P	2	2G	Open	No			Yes	O	No	AB	No	15.19.6
Ferric chloride solutions	Y	S/P	3	2G	Open	No			NF	O	No	No	No	15.11, 15.19.6, 16.2.9
Ferric nitrate/Nitric acid solution	Y	S/P	2	2G	Cont	No			NF	R	T	No	Yes	15.11, 15.19
Fish oil (containing less than 4% free fatty acids)	Y	P	2 (k)	2G	Open	No	-	-	Yes	Open	No	ABCD	NO	15.19.6, 16.2.6, 16.2.9
Formaldehyde solutions (45% or less)	Y	S/P	3	2G	Cont	No	T2	IIB	No	R	F-T	A	Yes	15.19.6, 16.2.9
Formamide	Y	P	3	2G	Open	No			Yes	O	No	A	No	15.19.6, 16.2.9
Formic acid	Y	S/P	3	2G	Cont	No	T1	IIA	No	R	T(g )	A	Yes	15.11.2, 15.11.3, 15.11.4, 15.11.6, 15.11.7, 15.11.8, 15.19.6, 16.2.9
Furfural	Y	S/P	3	2G	Cont	No	T2	IIB	No	R	F-T	A	No	15.19.6
Furfuryl alcohol	Y	P	3	2G	Open	No			Yes	O	No	A	No	
Glutaraldehyde solutions (50% or less)	Y	S/P	3	2G	Open	No			NF	O	No	No	No	15.19.6
Glyceryl triacetate	Z	P	3	2G	Open	No			Yes	O	No	AB	No	
Glycidyl ester of C10 trialkylacetic acid	Y	P	2	2G	Open	No			Yes	O	No	A	No	15.19.6
Glycine, sodium salt solution	Z	P	3	2G	Open	No			Yes	O	No	A	No	

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Glycolic acid solution (70% or less)	Z	S/P	3	2G	Open	No	-	-	NF	O	No	No	No	15.19.6, 16.2.9
Glyoxal solution (40% or less)	Y	P	3	2G	Open	No			Yes	O	No	A	No	15.19.6, 16.2.9
Glyphosate solution (not containing surfactant)	Y	P	2	2G	Open	No			Yes	O	No	A	No	15.19.6, 16.2.9
Groundnut oil (containing less than 4% free fatty acids)	Y	P	2 (k)	2G	Open	No	-	-	Yes	Open	No	ABCD	No	15.19.6, 16.2.6, 16.2.9
Heptane (all isomers)	X	P	2	2G	Cont	No			No	R	F	A	No	15.19.6, 16.2.9
n-Heptanoic acid	Z	P	3	2G	Open	No			Yes	O	No	AB	No	
Heptanol (all isomers) (d)	Y	P	3	2G	Cont	No			No	R	F	A	No	15.19.6
Heptene (all isomers)	Y	P	3	2G	Cont	No			No	R	F	A	No	15.19.6
Heptyl acetate	Y	P	2	2G	Open	No			Yes	O	No	A	No	15.19.6
1-Hexadecylnaphthalene / 1,4-bis(hexadecyl)naphthalene mixture	Y	P	2	2G	Open	No			Yes	O	No	AB	No	15.19.6, 16.2.6
Hexamethylenediamine adipate (50% in water)	Z	P	3	2G	Open	No			Yes	O	No	A	No	
Hexamethylenediamine (molten)	Y	S/P	2	2G	Cont	No			Yes	C	T	C	Yes	15.12, 15.17, 15.18, 15.19.6, 16.2.9
Hexamethylenediamine solution	Y	S/P	3	2G	Cont	No			Yes	R	T	A	No	15.19.6
Hexamethylene diisocyanate	Y	S/P	2	1G	Cont	Dry	T1	IIB	Yes	C	T	AC(b) D	Yes	15.12, 15.17, 15.16.2, 15.18, 15.19
Hexamethylene glycol	Z	P	3	2G	Open	No			Yes	O	No	A	No	
Hexamethyleneimine	Y	S/P	2	2G	Cont	No			No	R	F-T	AC	No	15.19.6
Hexane (all isomers)	Y	P	2	2G	Cont	No			No	R	F	A	No	15.19.6
1,6-Hexanediol, distillation overheads	Y	S/P	3	2G	Cont	No	-	-	Yes	R	T	ABCD	No	15.12.3, 15.12.4, 15.19.6, 16.2.9
Hexanoic acid	Y	P	3	2G	Open	No			Yes	O	No	AB	No	15.19.6
Hexanol	Y	P	3	2G	Open	No			Yes	O	No	AB	No	15.19.6
Hexene (all isomers)	Y	P	3	2G	Cont	No			No	R	F	A	No	15.19.6
Hexyl acetate	Y	P	2	2G	Cont	No			No	R	F	A	No	15.19.6
Hydrochloric acid	Z	S/P	3	1G	Cont	No			NF	R	T	No	Yes	15.11
Hydrogen peroxide solutions (over 60% but not over 70% by mass)	Y	S/P	2	2G	Cont	No			NF	C	No	No	No	15.5.1, 15.19.6
2-Hydroxyethyl acrylate	Y	S/P	2	2G	Cont	No			Yes	C	T	A	No	15.12, 15.13, 15.19.6, 16.6.1, 16.6.2
N-(Hydroxyethyl)ethylenediaminetriacetic acid, trisodium salt solution	Y	P	3	2G	Open	No			Yes	O	No	A	No	15.19.6
2-Hydroxy-4-(methylthio)butanoic acid	Z	P	3	2G	Open	No			Yes	O	No	A	No	

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Isoamyl alcohol	Z	P	3	2G	Cont	No			No	R	F	AB	No	
Isobutyl alcohol	Z	P	3	2G	Cont	No			No	R	F	AB	No	
Isobutyl formate	Z	P	3	2G	Cont	No			No	R	F	AB	No	
Isobutyl methacrylate	Z	S/P	3	2G	Cont	No		IIA	No	C	F-T	BD	Yes	15.12, 15.13, 15.17, 15.19, 16.6.1, 16.6.2
Isophorone	Y	S/P	3	2G	Cont	No			Yes	R	No	A	No	
Isophoronediamine	Y	S/P	3	2G	Cont	No			Yes	R	T	A	No	16.2.9
Isophorone diisocyanate	X	S/P	2	2G	Cont	Dry			Yes	C	T	ABD	No	15.12, 15.16.2, 15.17, 15.19.6
Isoprene	Y	S/P	3	2G	Cont	No	T3	IIB	No	R	F	B	No	15.13, 15.14, 15.19.6, 16.6.1, 16.6.2
Isopropanolamine	Y	S/P	3	2G	Open	No	T2	IIA	Yes	O	F-T	A	No	16.2.9, 15.19.6, 16.2.6
Isopropyl acetate	Z	P	3	2G	Cont	No			No	R	F	AB	No	
Isopropylamine	Y	S/P	2	2G	Cont	No	T2	IIA	No	C	F-T	CD	Yes	15.12, 15.14, 15.19
Isopropylcyclohexane	Y	P	2	2G	Cont	No			No	R	F	A	No	15.19.6, 16.2.9
Isopropyl ether	Y	S/P	3	2G	Cont	Inert			No	R	F	A	No	15.4.6, 15.13.3, 15.19.6
Lactic acid	Z	P	3	2G	Open	No			Yes	O	No	A	No	
Lactonitrile solution (80% or less)	Y	S/P	2	1G	Cont	No			Yes	C	T	ACD	Yes	15.1, 15.12, 15.17, 15.18, 15.19, 16.6.1, 16.2.2, 16.6.3
Lard (containing less than 1% free fatty acids)	Y	P	2 (k)	2G	Open	No	-	-	Yes	Open	No	ABCD	No	15.19.6, 16.2.6, 16.2.9
Lauric acid	X	P	2	2G	Open	No			Yes	O	No	A	No	15.19.6, 16.2.6, 16.2.9
Linseed oil (containing less than 2% free fatty acids)	Y	P	2 (k)	2G	Open	No	-	-	Yes	Open	No	ABCD	No	15.19.6, 16.2.6
Liquid chemical wastes	X	S/P	2	2G	Cont	No			No	C	F-T	A	Yes	15.12, 15.19.6, 20.5.1
Long-chain alkaryl polyether (C11-C20)	Y	P	2	2G	Open	No			Yes	O	No	AB	No	16.2.6, 16.2.9
L-Lysine solution (60% or less)	Z	P	3	2G	Open	No			Yes	O	No	A	No	
Magnesium chloride solution	Z	P	3	2G	Open	No			Yes	O	No	A	No	
Maleic anhydride	Y	S/P	3	2G	Cont	No			Yes	R	No	AC(f)	No	16.2.9
Mercaptobenzothiazol, sodium salt solution	X	S/P	2	2G	Open	No			NF	O	No	No	No	15.19.6, 16.2.9
Mesityl oxide	Z	S/P	3	2G	Cont	No	T2	IIB	No	R	F-T	A	No	15.19.6
Metam sodium solution	X	S/P	1	2G	Open	No			NF	O	No	No	No	15.19, 16.2.9
Methacrylic acid	Y	S/P	3	2G	Cont	No			Yes	R	T	A	No	15.13, 16.6.1, 15.19.6, 16.2.9

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Methacrylic resin in Ethylene dichloride	Y	S/P	2	2G	Cont	No	T2	IIA	No	R	F-T	AB	No	15.19, 16.2.9
Methacrylonitrile	Y	S/P	2	2G	Cont	No			No	C	F-T	A	Yes	15.12, 15.13, 15.17, 15.19
3-Methoxy-1-butanol	Z	P	3	2G	Cont	No			No	R	F	A	No	
3-Methoxybutyl acetate	Y	P	3	2G	Open	No			Yes	O	No	AB	No	15.19.6
N-(2-Methoxy-1-methyl ethyl)-2-ethyl-6-methyl chloroacetanilide	X	P	1	2G	Open	No			Yes	O	No	A	No	15.19, 16.2.6
Methyl acetate	Z	P	3	2G	Cont	No			No	R	F	A	No	
Methyl acetoacetate	Z	P	3	2G	Open	No			Yes	O	No	A	No	
Methyl acrylate	Y	S/P	2	2G	Cont	No	T1	IIB	No	R	F-T	A	Yes	15.13, 15.19.6, 16.6.1, 16.6.2
Methyl alcohol	Y	P	3	2G	Cont	No			No	R	F	A	No	15.19.6
Methylamine solutions (42% or less)	Y	S/P	2	2G	Cont	No			No	C	F-T	ACD	Yes	15.12, 15.17, 15.19
Methylamyl acetate	Y	P	2	2G	Cont	No			No	R	F	A	No	15.19.6
Methylamyl alcohol	Z	P	3	2G	Cont	No			No	R	F	A	No	15.19.6
Methyl amyl ketone	Z	P	3	2G	Cont	No			No	R	F	A	No	15.19.6
Methylbutenol	Y	P	3	2G	Cont	No			No	R	F	A	No	15.19.6, 16.2.9
Methyl tert-butyl ether	Z	P	3	2G	Cont	No			No	R	F	AB	No	
Methyl butyl ketone	Y	P	3	2G	Cont	No			No	R	F	AB	No	15.19.6
Methylbutynol	Z	P	3	2G	Cont	No			No	R	F	A	No	
Methyl butyrate	Y	P	3	2G	Cont	No			No	R	F	A	No	15.19.6
Methylcyclohexane	Y	P	2	2G	Cont	No			No	R	F	A	No	15.19.6
Methylcyclopentadiene dimer	Y	P	2	2G	Cont	No			No	R	F	B	No	15.19.6
Methylcyclopentadienyl manganese tricarbonyl	X	S/P	1	1G	Cont	No	-	-	Yes	C	T	ABCD	Yes	15.12, 15.18, 15.19, 16.2.9
Methyl diethanolamine	Y	S/P	3	2G	Open	No			Yes	O	No	A	No	16.2.6
2-Methyl-6-ethyl aniline	Y	S/P	3	2G	Open	No			Yes	O	No	AD	No	
Methyl ethyl ketone	Z	P	3	2G	Cont	No			No	R	F	A	No	
2-Methyl-5-ethyl pyridine	Y	S/P	3	2G	Open	No		IIA	Yes	O	No	AD	No	15.19.6
Methyl formate	Z	S/P	2	2G	Cont	No			No	R	F-T	A	Yes	15.12, 15.14, 15.19
2-Methyl-2-hydroxy-3-butyne	Z	S/P	3	2G	Cont	No		IIA	No	R	F-T	ABD	No	15.19.6, 16.2.9



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Methyl isobutyl ketone	Z	P	3	2G	Cont	No			No	R	F	AB	No	
Methyl methacrylate	Y	S/P	2	2G	Cont	No	T2	IIA	No	R	F-T	A	No	15.13, 15.19.6, 16.6.1, 16.6.2
3-Methyl-3-methoxybutanol	Z	P	3	2G	Open	No			Yes	O	No	A	No	
Methyl naphthalene (molten)	X	S/P	2	2G	Cont	No			Yes	R	No	AD	No	15.19.6
2-Methylpyridine	Z	S/P	2	2G	Cont	No			No	C	F	A	No	15.12.3, 15.19.6
3-Methylpyridine	Z	S/P	2	2G	Cont	No			No	C	F	AC	No	15.12.3, 15.19
4-Methylpyridine	Z	S/P	2	2G	Cont	No			No	C	F-T	A	No	15.12.3, 15.19, 16.2.9
N-Methyl-2-pyrrolidone	Y	P	3	2G	Open	No			Yes	O	No	A	No	15.19.6
Methyl salicylate	Y	P	3	2G	Open	No			Yes	O	No	A	No	15.19.6
alpha-Methylstyrene	Y	S/P	2	2G	Cont	No	T1	IIB	No	R	F-T	AD(j)	No	15.13, 15.19.6, 16.6.1, 16.6.2
3-(methylthio)propionaldehyde	Y	S/P	2	2G	Cont	No	T3	IIA	Yes	C	T	BC	Yes	15.12, 15.17, 15.19
Morpholine	Y	S/P	3	2G	Cont	No	T2	IIA	No	R	F	A	No	15.19.6
Motor fuel anti-knock compounds (containing lead alkyls)	X	S/P	1	1G	Cont	No	T4	IIA	No	C	F-T	AC	Yes	15.6, 15.12, 15.18, 15.19
Naphthalene (molten)	X	S/P	2	2G	Cont	No	T1	IIA	Yes	R	No	AD	No	15.19.6, 16.2.9
Neodecanoic acid	Y	P	2	2G	Open	No			Yes	O	No	A	No	
Nitrating acid (mixture of sulphuric and nitric acids)	Y	S/P	2	2G	Cont	No			NF	C	T	No	Yes	15.11, 15.16.2, 15.17, 15.19
Nitric acid (70% and over)	Y	S/P	2	2G	Cont	No			NF	C	T	No	Yes	15.11, 15.19
Nitric acid (less than 70%)	Y	S/P	2	2G	Cont	No			NF	R	T	No	Yes	15.11, 15.19
Nitrilotriacetic acid, trisodium salt solution	Y	P	3	2G	Open	No			Yes	O	No	A	No	15.19.6
Nitrobenzene	Y	S/P	2	2G	Cont	No	T1	IIA	Yes	C	T	AD	No	15.12, 15.17, 15.18, 15.19, 16.2.9
Nitroethane	Y	S/P	3	2G	Cont	No		IIB	No	R	F-T	A(f)	No	15.19.6, 16.6.1, 16.6.2, 16.6.4
Nitroethane(80%)/ Nitropropane(20%)	Y	S/P	3	2G	Cont	No		IIB	No	R	F-T	A(f)	No	15.19.6, 16.6.1, 16.6.2, 16.6.3
o-Nitrophenol (molten)	Y	S/P	2	2G	Cont	No			Yes	C	T	AD	No	15.12, 15.19.6, 16.2.6, 16.2.9
1- or 2-Nitropropane	Y	S/P	3	2G	Cont	No	T2	IIB	No	R	F-T	A	No	15.19.6
Nitropropane (60%)/Nitroethane (40%) mixture	Y	S/P	3	2G	Cont	No			No	R	F-T	A(f)	No	15.19.6
Nonane (all isomers)	X	P	2	2G	Cont	No			No	R	F	BC	No	15.19.6
Nonanoic acid (all isomers)	Y	P	3	2G	Open	No			Yes	O	No	AB	No	15.19.6, 16.2.9

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Nonene (all isomers)	Y	P	2	2G	Cont	No			No	R	F	A	No	15.19.6
Nonyl alcohol (all isomers)	Y	P	2	2G	Open	No			Yes	O	No	A	No	15.19.6
Nonyl methacrylate monomer	Y	P	2	2G	Open	No			Yes	O	No	AB	No	15.19.6, 16.2.9
Nonylphenol	X	P	1	2G	Open	No			Yes	O	No	A	No	15.19, 16.2.6, 16.2.9
Noxious liquid, NF, (1) n.o.s. (trade name ....., contains .....) ST1, Cat. X	X	P	1	2G	Open	No	-	-	Yes	O	No	A	No	15.19, 16.2.6
Noxious liquid, F, (2) n.o.s. (trade name ....., contains .....) ST1, Cat. X	X	P	1	2G	Cont	No	T3	IIA	No	R	No	A	No	15.19, 16.2.6
Noxious liquid, NF, (3) n.o.s. (trade name ....., contains .....) ST2, Cat. X	X	P	2	2G	Open	No	-		Yes	O	No	A	No	15.19, 16.2.6
Noxious liquid, F, (4) n.o.s. (trade name ....., contains .....) ST2, Cat. X	X	P	2	2G	Cont	No	T3	IIA	No	R	No	A	No	15.19, 16.2.6
Noxious liquid, NF, (5) n.o.s. (trade name ....., contains .....) ST2, Cat. Y	Y	P	2	2G	Open	No	-		Yes	O	No	A	No	15.19, 16.2.6, 16.2.9(l)
Noxious liquid, F, (6) n.o.s. (trade name ....., contains .....) ST2, Cat. Y	Y	P	2	2G	Cont	No	T3	IIA	No	R	No	A	No	15.19, 16.2.6, 16.2.9(l)
Noxious liquid, NF, (7) n.o.s. (trade name ....., contains .....) ST3, Cat. Y	Y	P	3	2G	Open	No	-	-	Yes	O	No	A	No	15.19, 16.2.6, 16.2.9(l)
Noxious liquid, F, (8) n.o.s. (trade name ....., contains .....) ST3, Cat. Y	Y	P	3	2G	Cont	No	T3	IIA	No	R	No	A	No	15.19, 16.2.6, 16.2.9(l)
Noxious liquid, NF, (9) n.o.s. (trade name ....., contains .....) ST3, Cat. Z	Z	P	3	2G	Open	No	-		Yes	O	No	A	No	
Noxious liquid, F, (10) n.o.s. (trade name ....., contains .....) ST3, Cat. Z	Z	P	3	2G	Cont	No	T3	IIA	No	R	No	A	No	
Octane (all isomers)	X	P	2	2G	Cont	No			No	R	F	A	No	15.19.6
Octanoic acid (all isomers)	Z	P	3	2G	Open	No			Yes	O	No	AB	No	
Octanol (all isomers)	Y	P	2	2G	Open	No			Yes	O	No	A	No	
Octene (all isomers)	Y	P	2	2G	Cont	No			No	R	F	A	No	15.19.6
Octyl aldehydes	Y	P	2	2G	Cont	No			No	R	F	A	No	15.19.6, 16.2.9
Olefin-Alkyl ester copolymer (molecular weight 2000+)	Y	P	2	2G	Open	No			Yes	O	No	AB	No	15.19.6, 16.2.6, 16.2.9
Olefins (C13+, all isomers)	Y	P	2	2G	Open	No			Yes	O	No	AB	No	15.19.6, 16.2.9
Oleic acid	Y	P	2	2G	Open	No			Yes	O	No	AB	No	15.19.6, 16.2.9
Oleum	Y	S/P	2	2G	Cont	No			NF	C	T	No	Yes	15.11.2 to 15.11.8, 15.12.1, 15.16.2, 15.17, 15.19, 16.2.6
Olive oil (containing less than 3.3% free fatty acids)	Y	P	2 (k)	2G	Open	No	-	-	Yes	Open	No	ABCD	No	15.19.6, 16.2.6, 16.2.9
Palm kernel oil (containing less than 5% free fatty acids)	Y	P	2 (k)	2G	Open	No	T3	IIB	Yes	Open	No	AB	No	15.19.6, 16.2.6, 16.2.9
Palm oil (containing less than 5% free fatty acids)	Y	P	2 (k)	2G	Open	No	-	-	Yes	Open	No	ABCD	No	15.19.6, 16.2.6, 16.2.9
Palm olein (containing less than 5% free fatty acids)	Y	P	2 (k)	2G	Open	No	-	-	Yes	Open	No	ABCD	No	15.19.6, 16.2.6, 16.2.9

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Palm stearin (containing less than 5% free fatty acids)	Y	P	2 (k)	2G	Open	No	-	-	Yes	Open	No	ABCD	No	15.19.6, 16.2.6, 16.2.9
Paraffin wax	Y	P	2	2G	Open	No			Yes	O	No	AB	No	15.19.6, 16.2.6, 16.2.9
Paraldehyde	Z	S/P	3	2G	Cont	No	T3	IIB	No	R	F	A	No	15.19.6, 16.2.9
Paraldehyde-ammonia reaction product	Y	S/P	2	2G	Cont	No			No	C	F-T	A	No	15.12.3, 15.19
Pentachloroethane	Y	S/P	2	2G	Cont	No			NF	R	T	No	No	15.12, 15.17, 15.19.6
1,3-Pentadiene	Y	S/P	3	2G	Cont	No			No	R	F-T	AB	No	15.13, 15.19.6, 16.6.1, 16.6.2, 16.6.3
Pentane (all isomers)	Y	P	3	2G	Cont	No			No	R	F	A	No	15.14, 15.19.6
Pentanoic acid	Y	P	3	2G	Open	No			Yes	O	No	AB	No	15.19.6
n-Pentanoic acid (64%)/2-Methyl butyric acid (36%) mixture	Y	S/P	2	2G	Open	No	T2		Yes	C	No	AD	No	15.11.2, 15.11.3, 15.11.4, 15.11.6, 15.11.7, 15.11.8, 15.12.3, 15.19
Pentene (all isomers)	Y	P	3	2G	Cont	No			No	R	F	A	No	15.14, 15.19.6
n-Pentyl propionate	Y	P	3	2G	Cont	No			No	R	F	A	No	15.19.6
Perchloroethylene	Y	S/P	2	2G	Cont	No			NF	R	T	No	No	15.12.1, 15.12.2, 15.19.6
Petrolatum	Z	P	3	2G	Open	No			Yes	O	No	AB	No	16.2.6, 16.2.9
Phenol	Y	S/P	2	2G	Cont	No	T1	IIA	Yes	C	T	A	No	15.12, 15.19, 16.2.9
1-Phenyl-1-xylyl ethane	Y	P	3	2G	Open	No			Yes	O	No	AB	No	
Phosphoric acid	Z	S/P	3	2G	Open	No			NF	O	No	No	No	15.11.1, 15.11.2, 15.11.3, 15.11.4, 15.11.6, 15.11.7, 15.11.8, 16.2.9
Phosphorous, yellow or white	X	S/P	1	1G	Cont	Pad+(vent or inert)			No(c)	C	No	C	Yes	15.7, 15.19, 16.2.9
Phthalic anhydride (molten)	Y	S/P	2	2G	Cont	No	T1	IIA	Yes	R	No	AD	No	16.2.9, 15.19.6, 16.2.6
alpha-Pinene	X	P	2	2G	Cont	No			No	R	F	A	No	15.19.6
beta-Pinene	X	P	2	2G	Cont	No			No	R	F	A	No	15.19.6
Pine oil	X	P	2	2G	Open	No			Yes	O	No	A	No	16.2.6, 16.2.9
Polyalkyl (C18-C22) acrylate in Xylene	Y	P	3	2G	Cont	No			No	R	F	A	No	15.19.6, 16.2.6, 16.2.9
Polyalkyl (C10-C20) methacrylate	Y	P	2	2G	Open	No			Yes	O	No	AB	No	15.19.6, 16.2.6, 16.2.9
Polyalkyl (C10-C18) methacrylate/ethylene-propylene copolymer mixture	Y	P	2	2G	Open	No			Yes	O	No	AB	No	15.19.6, 16.2.6, 16.2.9
Poly(2+)cyclic aromatics	X	P	1	2G	Cont	No			Yes	R	No	AD	No	15.19, 16.2.6, 16.2.9

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Polyethylene glycol	Z	P	3	2G	Open	No			Yes	O	No	A	No	
Polyethylene glycol dimethyl ether	Z	P	3	2G	Open	No			Yes	O	No	A	No	
Polyferric sulphate solution	Y	S/P	3	2G	Open	No			NF	O	No	No	No	
Polyisobutenamine in aliphatic (C10-C14) solvent	Y	P	3	2G	Open	No	T3	IIA	Yes	O	No	A	No	
Polyisobutenyl anhydride adduct	Z	P	3	2G	Open	No			Yes	O	No	AB	No	
Poly(4+)isobutylene	Y	P	2	2G	Open	No			Yes	O	No	AB	No	15.19.6, 16.2.9
Polyolefin amide alkeneamine (C17+)	Y	P	2	2G	Open	No			Yes	O	No	AB	No	15.19.6, 16.2.6
Polyolefin amide alkeneamine borate (C28-C250)	Y	P	2	2G	Open	No			Yes	O	No	AB	No	15.19.6, 16.2.6, 16.2.9
Polyolefinamine (C28-C250)	Y	P	2	2G	Open	No			Yes	O	No	A	No	16.2.9
Polyolefinamine in alkyl (C2-C4) benzenes	Y	P	2	2G	Cont	No			No	R	F	A	No	15.19.6, 16.2.6, 16.2.9
Polyolefinamine in aromatic solvent	Y	P	2	2G	Cont	No			No	R	F	A	No	15.19.6, 16.2.6, 16.2.9
Polyolefin anhydride	Y	P	2	2G	Open	No			Yes	O	No	AB	No	15.19.6, 16.2.6, 16.2.9
Polyolefin ester (C28-C250)	Y	P	2	2G	Open	No			Yes	O	No	AB	No	15.19.6, 16.2.6, 16.2.9
Polyolefin phenolic amine (C28-C250)	Y	P	2	2G	Open	No			Yes	O	No	AB	No	15.19.6, 16.2.6, 16.2.9
Polyolefin phosphorosulphide, barium derivative (C28-C250)	Y	P	2	2G	Open	No			Yes	O	No	AB	No	16.2.6, 16.2.9
Poly(20)oxyethylene sorbitan monooleate	Y	P	2	2G	Open	No			Yes	O	No	A	No	15.19.6, 16.2.6, 16.2.9
Polypropylene glycol	Z	P	3	2G	Open	No			Yes	O	No	A	No	
Polysiloxane	Y	P	3	2G	Cont	No			No	R	F	AB	No	15.19.6, 16.2.9
Potassium hydroxide solution	Y	S/P	3	2G	Open	No			NF	O	No	No	No	15.19.6
Potassium oleate	Y	P	2	2G	Open	No			Yes	O	No	A	No	15.19.6, 16.2.6, 16.2.9
Potassium thiosulphate (50% or less)	Y	P	3	2G	Open	No			NF	O	No	No	No	16.2.9
n-Propanolamine	Y	S/P	3	2G	Open	No			Yes	O	No	AD	No	16.2.9, 15.19.6
beta-Propiolactone	Y	S/P	2	2G	Cont	No		IIA	Yes	R	T	A	No	
Propionaldehyde	Y	S/P	3	2G	Cont	No			No	R	F-T	A	Yes	15.17, 15.19.6
Propionic acid	Y	S/P	3	2G	Cont	No	T1	IIA	No	R	F	A	Yes	15.11.2, 15.11.3, 15.11.4, 15.11.6, 15.11.7, 15.11.8, 15.19.6
Propionic anhydride	Y	S/P	3	2G	Cont	No	T2	IIA	Yes	R	T	A	No	
Propionitrile	Y	S/P	2	1G	Cont	No	T1	IIB	No	C	F-T	AD	Yes	15.12, 15.17, 15.18, 15.19

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n-Propyl acetate	Y	P	3	2G	Cont	No			No	R	F	AB	No	15.19.6
n-propyl alcohol	Y	P	3	2G	Cont	No			No	R	F	A	No	15.19.6
n-Propylamine	Z	S/P	2	2G	Cont	Inert	T2	IIA	No	C	F-T	AD	Yes	15.12, 15.19
Propylbenzene (all isomers)	Y	P	3	2G	Cont	No			No	R	F	A	No	15.19.6
Propylene glycol methyl ether acetate	Z	P	3	2G	Cont	No			No	R	F	A	No	
Propylene glycol monoalkyl ether	Z	P	3	2G	Cont	No			No	R	F	AB	No	
Propylene glycol phenyl ether	Z	P	3	2G	Open	No			Yes	O	No	AB	No	
Propylene oxide	Y	S/P	2	2G	Cont	Inert	T2	IIB	No	C	F-T	AC	No	15.8, 15.12.1, 15.14, 15.19
Propylene tetramer	X	P	2	2G	Cont	No			No	R	F	A	No	15.19.6
Propylene trimer	Y	P	2	2G	Cont	No			No	R	F	A	No	15.19.6
Pyridine	Y	S/P	2	2G	Cont	No	T1	IIA	No	R	F	A	No	15.19.6
Rapeseed oil (low erucic acid, containing less than 4% free fatty acids)	Y	P	2 (k)	2G	Open	No	-	-	Yes	Open	No	ABCD	No	15.19.6, 16.2.6, 16.2.9
Rosin	Y	P	2	2G	Open	No			Yes	O	No	A	No	15.19.6, 16.2.6, 16.2.9
Sodium aluminosilicate slurry	Z	P	3	2G	Open	No			Yes	O	No	AB	No	
Sodium benzoate	Z	P	3	2G	Open	No			Yes	O	No	A	No	
Sodium borohydride (15% or less)/Sodium hydroxide solution	Y	S/P	3	2G	Open	No			NF	O	No	No	No	15.19.6, 16.2.6, 16.2.9
Sodium carbonate solution	Z	P	3	2G	Open	No			Yes	O	No	A	No	
Sodium chlorate solution (50% or less)	Z	S/P	3	2G	Open	No			NF	O	No	No	No	15.9, 15.19.6, 16.2.9
Sodium dichromate solution (70% or less)	Y	S/P	2	2G	Open	No			NF	C	No	No	No	15.12.3, 15.19
Sodium hydrogen sulphide (6% or less)/Sodium carbonate (3% or less) solution	Z	P	3	2G	Open	No			NF	O	No	No	No	15.19.6, 16.2.9
Sodium hydrogen sulphite solution (45% or less)	Z	S/P	3	2G	Open	No			NF	O	No	No	No	16.2.9
Sodium hydrosulphide/Ammonium sulphide solution	Y	S/P	2	2G	Cont	No			No	C	F-T	A	Yes	15.12, 15.14, 15.17, 15.19, 16.6.1, 16.6.2, 16.6.3
Sodium hydrosulphide solution (45% or less)	Z	S/P	3	2G	Cont	Vent or pad (gas)			NF	R	T	No	No	15.19.6, 16.2.9
Sodium hydroxide solution	Y	S/P	3	2G	Open	No			NF	O	No	No	No	16.2.6, 16.2.9
Sodium hypochlorite solution (15% or less)	Y	S/P	2	2G	Cont	No	-	-	-	R	No	No	No	15.19.6
Sodium nitrite solution	Y	S/P	2	2G	Open	No			NF	O	No	No	No	15.12.3.1, 15.12.3.2, 15.19, 16.2.9

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Sodium silicate solution	Y	P	3	2G	Open	No			NF	O	No	No	No	16.2.9
Sodium sulphide solution (15% or less)	Y	S/P	3	2G	Cont	No			NF	C	T	No	No	15.19.6, 16.2.9
Sodium sulphite solution (25% or less)	Y	P	3	2G	Open	No			NF	O	No	No	No	15.19.6, 16.2.9
Sodium thiocyanate solution (56% or less)	Y	P	3	2G	Open	No			Yes	O	No	No	No	15.19.6, 16.2.9
Soyabean oil (containing less than 0.5% free fatty acids)	Y	P	2 (k)	2G	Open	No	-	-	Yes	Open	No	ABCD	No	15.19.6, 16.2.6
Sulpholane	Y	P	3	2G	Open	No			Yes	O	No	A	No	15.19.6, 16.2.9
Sulphonated polyacrylate solution	Z	P	3	2G	Cont	No			No	R	F	A	No	
Sulphur (molten)	Z	S	3	1G	Open	Vent or pad (gas)	T3		Yes	O	F-T	No	No	15.10, 16.2.9
Sulphuric acid	Y	S/P	3	2G	Open	No			NF	O	No	No	No	15.11, 15.16.2, 15.19.6
Sulphuric acid, spent	Y	S/P	3	2G	Open	No			NF	O	No	No	No	15.11, 15.16.2, 15.19.6
Sulphurized fat (C14-C20)	Z	P	3	2G	Open	No			Yes	O	No	AB	No	
Sunflower seed oil (containing less than 7% free fatty acids)	Y	P	2 (k)	2G	Open	No	-	-	Yes	Open	No	ABCD	No	15.19.6, 16.2.6
Tallow (containing less than 15% free fatty acids)	Y	P	2 (k)	2G	Open	No	-	-	Yes	Open	No	ABCD	No	15.19.6, 16.2.6, 16.2.9
Tetrachloroethane	Y	S/P	2	2G	Cont	No			NF	R	T	No	No	15.12, 15.17, 15.19.6
Tetraethylene glycol	Z	P	3	2G	Open	No			Yes	O	No	A	No	
Tetraethylene pentamine	Y	S/P	2	2G	Open	No			Yes	O	No	A	No	
Tetrahydrofuran	Z	S	3	2G	Cont	No	T3	IIB	No	R	F-T	A	No	15.19.6
Tetrahydronaphthalene	Y	P	2	2G	Open	No			Yes	O	No	A	No	
Tetramethylbenzene (all isomers)	X	P	2	2G	Open	No			Yes	O	No	A	No	16.2.9
Titanium dioxide slurry	Z	P	3	2G	Open	No			Yes	O	No	AB	No	
Toluene	Y	P	3	2G	Cont	No			No	R	F	A	No	15.19.6
Toluenediamine	Y	S/P	2	2G	Cont	No			Yes	C	T	AD	Yes	15.12, 15.17, 15.19, 16.2.9, 16.2.6
Toluene diisocyanate	Y	S/P	2	2G	Cont	Dry	T1	IIA	Yes	C	F-T	AC(b) D	Yes	15.12, 15.16.2, 15.17, 15.19, 16.2.9
o-Toluidine	Y	S/P	2	2G	Cont	No			Yes	C	T	A	No	15.12, 15.17, 15.19
Tributyl phosphate	Y	P	3	2G	Open	No			Yes	O	No	A	No	15.19.6
1,2,3-Trichlorobenzene (molten)	X	S/P	1	2G	Cont	No			Yes	C	T	ACD	Yes	15.12.1, 15.17, 15.19, 16.2.9, 16.2.6

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1,2,4-Trichlorobenzene	X	S/P	1	2G	Cont	No			Yes	R	T	AB	No	15.19, 16.2.9
1,1,1-Trichloroethane	Y	P	3	2G	Open	No			Yes	O	No	A	No	
1,1,2-Trichloroethane	Y	S/P	3	2G	Cont	No			NF	R	T	No	No	15.12.1, 15.19.6
Trichloroethylene	Y	S/P	2	2G	Cont	No	T2	IIA	Yes	R	T	No	No	15.12, 15.17, 15.19.6
1,2,3-Trichloropropane	Y	S/P	2	2G	Cont	No			Yes	C	T	ABD	No	15.12, 15.17, 15.19
1,1,2-Trichloro-1,2,2-Trifluoroethane	Y	P	2	2G	Open	No			NF	O	No	No	No	
Tricresyl phosphate (containing 1% or more ortho-isomer)	Y	S/P	1	2G	Cont	No	T2	IIA	Yes	C	No	AB	No	15.12.3, 15.19, 16.2.6
Tridecane	Y	P	2	2G	Open	No			Yes	O	No	AB	No	15.19.6
Tridecanoic acid	Y	P	2	2G	Open	No			Yes	O	No	A	No	15.19.6, 16.2.6, 16.2.9
Tridecyl acetate	Z	P	3	2G	Open	No			Yes	O	No	AB	No	
Triethanolamine	Z	S/P	3	2G	Open	No		IIA	Yes	O	No	A	No	16.2.9
Triethylamine	Y	S/P	2	2G	Cont	No	T2	IIA	No	R	F-T	AC	Yes	15.12, 15.19.6
Triethylbenzene	X	P	2	2G	Open	No			Yes	O	No	A	No	15.19.6
Triethylenetetramine	Y	S/P	2	2G	Open	No	T2	IIA	Yes	O	No	A	No	
Triethyl phosphate	Z	P	3	2G	Open	No			Yes	O	No	A	No	
Triethylphosphite	Z	S/P	3	2G	Cont	No			No	R	F-T	AB	No	15.12.1, 15.19.6, 16.2.9
Triisopropanolamine	Z	P	3	2G	Open	No			Yes	O	No	A	No	
Triisopropylated phenyl phosphates	X	P	2	2G	Open	No			Yes	O	No	A	No	15.19.6, 16.2.6
Trimethylacetic acid	Y	S/P	3	2G	Cont	No			Yes	R	No	A	No	15.11.2, 15.11.3, 15.11.4, 15.11.5, 15.11.6, 15.11.7, 15.11.8, 15.19.6, 16.2.6, 16.2.9
Trimethylamine solution (30% or less)	Z	S/P	2	2G	Cont	No			No	C	F-T	AC	Yes	15.12, 15.14, 15.19, 16.2.9
Trimethylbenzene (all isomers)	X	P	2	2G	Cont	No			No	R	F	A	No	15.19.6
2,2,4-Trimethyl-1,3-pentanediol diisobutyrate	Z	P	3	2G	Open	No			Yes	O	No	AB	No	
2,2,4-Trimethyl-1,3-pentanediol-1-isobutyrate	Y	P	2	2G	Open	No			Yes	O	No	A	No	
1,3,5-Trioxane	Y	S/P	3	2G	Cont	No			No	R	F	AD	No	15.19.6, 16.2.9
Tripropylene glycol	Z	P	3	2G	Open	No			Yes	O	No	A	No	
Trixylyl phosphate	X	P	2	2G	Open	No			Yes	O	No	A	No	15.19.6, 16.2.6

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Tung oil (containing less than 2.5% free fatty acids)	Y	P	2 (k)	2G	Open	No	-	-	Yes	Open	No	ABCD	No	15.19.6, 16.2.6, 16.2.9
Turpentine	X	P	2	2G	Cont	No			No	R	F	A	No	15.19.6
Undecanoic acid	Y	P	2	2G	Open	No			Yes	O	No	A	No	16.2.6, 16.2.9
1-Undecene	X	P	2	2G	Open	No			Yes	O	No	A	No	15.19.6
Undecyl alcohol	X	P	2	2G	Open	No			Yes	O	No	A	No	15.19.6, 16.2.9
Urea/Ammonium nitrate solution	Z	P	3	2G	Open	No			Yes	O	No	A	No	
Urea/Ammonium nitrate solution (containing aqua ammonia)	Z	S/P	3	2G	Cont	No			NF	R	T	A	No	16.2.9
Urea/Ammonium phosphate solution	Y	P	2	2G	Open	No			Yes	O	No	A	No	15.19.6
Urea solution	Z	P	3	2G	Open	No			Yes	O	No	A	No	
Valeraldehyde (all isomers)	Y	S/P	3	2G	Cont	Inert	T3	IIB	No	R	F-T	A	No	15.4.6, 15.19.6
Vegetable protein solution (hydrolysed)	Z	P	3	2G	Open	No			Yes	O	No	A	No	
Vinyl acetate	Y	S/P	3	2G	Cont	No	T2	IIA	No	R	F	A	No	15.13, 15.19.6, 16.6.1, 16.6.2
Vinyl ethyl ether	Z	S/P	2	1G	Cont	Inert	T3	IIB	No	C	F-T	A	Yes	15.4, 15.13, 15.14, 15.19, 16.6.1, 16.6.2
Vinylidene chloride	Y	S/P	2	2G	Cont	Inert	T2	IIA	No	R	F-T	B	Yes	15.13, 15.14, 15.19.6, 16.6.1, 16.6.2
Vinyl neodecanoate	Y	S/P	2	2G	Open	No			Yes	O	No	AB	No	15.13, 15.19.6, 16.6.1, 16.6.2
Vinyltoluene	Y	S/P	2	2G	Cont	No		IIA	No	R	F	AB	No	15.13, 15.19.6, 16.6.1, 16.6.2
Waxes	Z	P	3	2G	Open	No			Yes	O	No	AB	No	16.2.6, 16.2.9
Xylenes	Y	P	2	2G	Cont	No			No	R	F	A	No	15.19.6, 16.2.9 (h)
Xylenol	Y	S/P	3	2G	Open	No		IIA	Yes	O	No	AB	No	15.19.6, 16.2.9
Zinc alkaryl dithiophosphate (C7-C16)	Y	P	2	2G	Open	No			Yes	O	No	AB	No	16.2.6, 16.2.9
Zinc alkenyl carboxamide	Y	P	2	2G	Open	No			Yes	O	No	AB	No	15.19.6, 16.2.6
Zinc alkyl dithiophosphate (C3-C14)	Y	P	2	2G	Open	No			Yes	O	No	AB	No	15.19.6, 16.2.6



- a If the product to be carried contains flammable solvents such that the flashpoint does not exceed 60°C, then special electrical systems and a flammable-vapour detector shall be provided.
- b Although water is suitable for extinguishing open-air fires involving chemicals to which this footnote applies, water shall not be allowed to contaminate closed tanks containing these chemicals because of the risk of hazardous gas generation.
- c Phosphorus, yellow or white is carried above its autoignition temperature and therefore flashpoint is not appropriate. Electrical equipment requirements may be similar to those for substances with a flashpoint above 60°C.
- d 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.
- e Applies to n-decyl alcohol only.
- f Dry chemical shall not be used as fire extinguishing media.
- g Confined spaces shall be tested for both formic acid vapours and carbon monoxide gas, a decomposition product.
- h Applies to p-xylene only.
- i For mixtures containing no other components with safety hazards and where the pollution category is Y or less
- j only certain alcohol-resistant foams are effective
- k Requirements for Ship Type identified in *column e* might be subject to regulation 4.1.3 of Annex II of MARPOL 73/78
- l Applicable when the melting point is equal to or greater than 0°C.

## Chapter 18

### List of products to which the Code does not apply

18.1 The following are products, which have been reviewed for their safety and pollution hazards and determined not to present hazards to such an extent as to warrant application of the Code.

18.2 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 shall prescribe appropriate safety requirements.

18.3 Some liquid substances are identified as falling into Pollution Category Z and, therefore, subject to certain requirements of Annex II of MARPOL 73/78.

18.4 Liquid mixtures which are assessed or provisionally assessed under regulation 6.3 of MARPOL Annex II as falling into Pollution Category Z or OS, and which do not present safety hazards, may be carried under the appropriate entry in this chapter for “Noxious or Non-Noxious Liquid Substances, not otherwise specified (n.o.s.)”.

#### EXPLANATORY NOTES

Product name	The product name shall be used in the shipping document for any cargo offered for bulk shipments. Any additional name may be included in brackets after the product name. In some cases, the product names are not identical with the names given in previous issues of the Code.
Pollution Category	The letter Z means the Pollution Category assigned to each product under Annex II of MARPOL 73/78. OS means the product was evaluated and found to fall outside Categories X, Y, or Z.

## Chapter 18

Product name	Pollution Category
Acetone	Z
Alcoholic beverages, n.o.s.	Z
Apple juice	OS
n-Butyl alcohol	Z
sec-Butyl alcohol	Z
Clay slurry	OS
Coal slurry	OS
Diethylene glycol	Z
Ethyl alcohol	Z
Ethylene carbonate	Z
Glucose solution	OS
Glycerine	Z
Glycerol monooleate	Z
Hexamethylenetetramine solutions	Z
Hexylene glycol	Z
Isopropyl alcohol	Z
Kaolin slurry	OS
Magnesium hydroxide slurry	Z
N-Methylglucamine solution (70% or less)	Z
Methyl propyl ketone	Z
Molasses	OS
Noxious liquid, (11) n.o.s. (trade name ....., contains .....) Cat. Z	Z
Non-noxious liquid, (12) n.o.s. (trade name ....., contains .....) Cat. OS	OS
Polyaluminium chloride solution	Z
Potassium formate solutions	Z
Propylene carbonate	Z
Propylene glycol	Z
Sodium acetate solutions	Z
Sodium sulphate solutions	Z
Tetraethyl silicate monomer/oligomer (20% in ethanol)	Z
Triethylene glycol	Z
Water	OS

**RESOLUTION MEPC.120(52)**

**adopted on 15 October 2004**

**GUIDELINES FOR THE TRANSPORT OF VEGETABLE OILS IN DEEPTANKS OR IN INDEPENDENT TANKS SPECIALLY DESIGNED FOR THE CARRIAGE OF SUCH VEGETABLE OILS IN GENERAL DRY CARGO SHIPS**

THE MARINE ENVIRONMENT PROTECTION COMMITTEE,

RECALLING article 38(a) of the Convention on the International Maritime Organization concerning the function of the Committee conferred upon it by international conventions for the prevention and control of marine pollution,

RECALLING ALSO resolution MEPC.118(52) by which it adopted the revised Annex II of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (hereinafter referred to as "MARPOL 73/78"),

RECALLING FURTHER resolution MEPC.119(52) by which it adopted amendments to the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk (IBC Code),

CONSIDERING that the Maritime Safety Committee, at its seventy-second session, considered and approved the proposed amendments to the IBC Code with a view to adoption under the provisions of the International Convention for the Safety of Life at Sea, 1974 (1974 SOLAS Convention).

RECOGNIZING the current practices for the transport of vegetable oils in deep tanks in general dry cargo ships,

RECOGNIZING ALSO the current practices of the transport of vegetable oils in independent tanks specially designed to carry these vegetable oils on board of general dry cargo ships,

NOTING the need for the continuation of the current mode of transport of these vegetable oils on specifically identified trades, where the lack of availability of NLS tankers is demonstrated,

BEING CONVINCED that adequate precaution is needed to provide the protection of the marine environment at the level as required by Annex II of MARPOL 73/78, as amended,

1. ADOPTS the Guidelines for the transport of vegetable oils in deep tanks or in independent tanks specially designed for the carriage of such vegetable oils in general dry cargo ships, the text of which is set out in the Annex to this resolution; and
2. INVITES the Parties to note that the guidelines shall take effect on 1 January 2007.

# **GUIDELINES FOR THE TRANSPORT OF VEGETABLE OILS IN DEEPTANKS OR IN INDEPENDENT TANKS SPECIALLY DESIGNED FOR THE CARRIAGE OF SUCH VEGETABLE OILS IN GENERAL DRY CARGO SHIPS**

## **1 Preamble**

1.1 The Guidelines have been developed to allow general dry cargo ships, which are currently certified to carry vegetable oil in bulk, to continue to carry these vegetable oils on specific trades. These guidelines only apply under the following conditions:

- .1 the vegetable oils are carried in deeptanks or independent tanks in general dry cargo ships specifically designed for the carriage of such oils under an NLS Certificate issued before 1 January 2007;
- .2 the products allowed to be carried are restricted to those unmodified vegetable oils (primarily triglycerides) which are listed in the IBC Code with a pollution hazard only; and
- .3 the ship complies with all discharge requirements under Annex II to MARPOL 73/78.

1.2 The Guidelines have been developed in accordance with the provisions set forth in regulation 11.2 of Annex II to MARPOL 73/78 and in recognition of the need for standards, which provide an alternative to the International Code for the Construction and Equipment of Ship Carrying Dangerous Chemicals in Bulk.

## **2 Carriage in deeptanks**

2.1 An Administration may grant a relaxation for the carriage requirements, as required by the IBC Code, when vegetable oils are carried in deeptanks in general dry cargo ships between States for which it is demonstrated that, as a result of their geographical location, the transport of vegetable oils from the exporting State to the receiving State would not be viable using NLS tankers as required by Annex II to MARPOL 73/78. This relaxation shall be endorsed on the ship's Certificate. Such relaxation shall be communicated to the IMO by the Administration.

2.2 Every general dry cargo ship, falling under paragraph 2 of the guidelines, shall be subject to Annex II to MARPOL 73/78 regarding the discharge requirements and the carriage of a Manual and shall be certified to carry vegetable oils by means of the issue of a certificate under regulation 10.1 of that Annex.

2.3 Before granting a relaxation, the Administration shall receive a confirmation in writing that both the Government of the country of loading and the Government of the country of unloading concur with the proposed relaxation. These confirmations shall be retained on board.

## **3 Carriage in independent tanks**

3.1 An Administration may grant a relaxation for the carriage requirements as required by the IBC Code when vegetable oils are carried in independent tanks in general dry cargo ships specially designed for the carriage of these vegetable oils. This relaxation shall be endorsed on the ship's Certificate. Such relaxation shall be communicated to the IMO by the Administration.

3.2 The following criteria on construction and trade for such relaxation shall apply:

- .1 the independent tanks shall be situated at least 760 mm from the shell plating; and
- .2 such carriage of vegetable oils shall be restricted to specifically identified trades.

3.3 Every general dry cargo ship falling under paragraph 3 of the guidelines shall be subject to Annex II to MARPOL 73/78 regarding the discharge requirements and the carriage of a Manual and shall be certified to carry vegetable oils by means of the issue of a certificate under regulation 10.1 of that Annex.

3.4 Before granting a relaxation the Administration shall receive a confirmation in writing that both the Government of the country of loading and the Government of the country of unloading concur with the proposed relaxation. These confirmations shall be retained on board.

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