

Subject

Regarding amendments of IBC Code which will enter into force from 1 June 2014

# **ClassNK**

## **Technical Information**

No. TEC-0983  
Date 14 March 2014

To whom it may concern

Amendments to the IBC Code (MSC340(91)/MEPC225(64)), which are applicable to chemical tankers, will enter into force from 1 June 2014. In the new amendments, a part of the contents in Chapters 17, 18 and 19 will be revised. A brief overview of each chapter and the main focus of the amendments are summarized below. In addition, a summary table of new cargoes and existing cargoes, the requirements of which have been revised, has been prepared as a reference as shown in attachment 1.

[Overview of Amended Chapters]

Chapter 17: Summary of minimum requirements for products to which the IBC Code applies

Chapter 18: List of products to which the IBC Code does not apply

Chapter 19: Comparison table of Index names and Product names to which the IBC Code applies

[Main focus]

1. New entry of some products which were assessed since the last amendments of 2009 (for Chapters 17, 18, and 19)
2. Revision of minimum requirements for some existing cargoes (for Chapter 17 only)
  - Addition of requirements for electrical equipment which had been blank (for columns i' and i'')  
e.g.) Alkanes (C6-C9): Blank → Temperature classes (i') T3, Apparatus group (i'') IIA
  - Revision of requirements other than electrical equipment (Ship Type, Special requirements, etc.)

Due to the revision of minimum requirements as mentioned above, any countermeasures such as the omission of target cargoes or changes in tank group on the certificate, or the replacement of instruments may be required for a few ships carrying them by the date of entry into force. In this regard, ClassNK is investigating these items for each ship and will individually contact owners or management companies of ships concerned for which any countermeasures is required.

On the other hand, new certificates (i.e. certificate describing new resolution number) will be issued for ships which are not required to take any countermeasures described above and sent to each owner or management company in order from the ClassNK Head Office by the middle of May in line with the effective guidelines for the issuance of the certificates.

(To be continued)

NOTES:

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In addition, since new certificates will become effective from the date of entry into force (1 June 2014), existing certificates will still remain valid and need to be provided onboard ship until then. You are kindly requested to address the exchange of certificates on board carefully. After the date of entry into force, we would appreciate it if you could send the invalid certificate to the following department at Head Office at your convenience or hand it over to the attending surveyor at the next scheduled periodical or occasional survey.

The BCH Code will not be amended at this time. Therefore, ships constructed before 1 July 1986 are not subject to the above changes.

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Attachment:

1. Summary table of new and existing cargoes, the requirements of which have been revised

**Summary of Revised Minimum Requirements in Chapter 17 &18**

a	c	d	e	f	g	h	i			j	k	l	n	Special Requirements
							i'	i''	i'''					
(Polyisobutene) amino products in aliphatic hydrocarbons	<u>Y</u>	<u>S/P</u>	<u>2</u>	<u>2G</u>	<u>Open</u>	<u>No</u>			<u>Yes</u>	<u>O</u>	<u>No</u>	<u>A B C</u>	<u>No</u>	<u>15.19.6 16.2.6</u>
1,1-Dichloropropane							<u>T4</u>	<u>IIA</u>						
1,3,5-Trioxane							<u>T2</u>	<u>II B</u>						
1,3-Cyclopentadiene dimer (molten)							<u>T1</u>	<u>II B</u>						
1,3-Pentadiene		<u>P→S/P</u>					<u>T1</u>	<u>II A</u>						
1,3-Pentadiene (greater than 50%), cyclopentene and isomers, mixtures	<u>Y</u>	<u>S/P</u>	<u>2</u>	<u>2G</u>	<u>Cont</u>	<u>Inert</u>	<u>T3</u>	<u>II B</u>	<u>No</u>	<u>C</u>	<u>F-T</u>	<u>A B C</u>	<u>Yes</u>	<u>15.12 15.13 15.17 15.19</u>
1,6-Dichlorohexane									<u>No→ Yes</u>					
2-Butoxyethanol(58%)/Hyperbranched polyesteramide(42%) (mixture)	<u>Y</u>	<u>S/P</u>	<u>2</u>	<u>2G</u>	<u>Cont</u>	<u>No</u>			<u>Yes</u>	<u>C</u>	<u>I</u>	<u>A C</u>	<u>No</u>	<u>15.12.3 15.12.4 15.19</u>
2-Ethoxyethyl acetate							<u>T2</u>	<u>IIA</u>						
2-Ethyl-3-propylacrolein							<u>T3</u>							
2-Ethylhexylamine							<u>T3</u>	<u>IIA</u>						
2-Methyl-2-hydroxy-3-butyne							<u>T3</u>							
2-Methylglutaronitrile with 2-Ethylsuccinonitrile (12% or less)	<u>Z</u>	<u>S</u>	<u>2</u>	<u>2G</u>	<u>Cont</u>	<u>No</u>			<u>Yes</u>	<u>C</u>	<u>I</u>	<u>A B C</u>	<u>Yes</u>	<u>15.12 15.17 15.19</u>
2-Methylpyridine							<u>T1</u>	<u>IIA</u>						
2-Propene-1-aminium, N,N-dimethyl-N-2-propenyl-, chloride, homopolymer solution	<u>Y</u>	<u>S/P</u>	<u>3</u>	<u>2G</u>	<u>Open</u>	<u>No</u>		<u>NF</u>		<u>O</u>	<u>No</u>	<u>None</u>	<u>No</u>	<u>15.19.6</u>
3,4-Dichloro-1-butene							<u>T1</u>	<u>IIA</u>						
3-Methoxy-1-butanol							<u>T2</u>	<u>IIA</u>						
3-Methylpyridine							<u>T1</u>	<u>IIA</u>						
4-Methylpyridine							<u>T1</u>	<u>IIA</u>						

<u>Acrylic acid / ethenesulfonic acid copolymer with phosphonate groups, sodium salt solution</u>	<u>Z</u>	<u>P</u>	<u>3</u>	<u>2G</u>	<u>Open</u>	<u>No</u>			<u>Yes</u>	<u>O</u>	<u>No</u>	<u>A B C</u>	<u>No</u>	
<u>Alcohols (C12+), primary, linear</u>	<u>Y</u>	<u>S/P</u>	<u>2</u>	<u>2G</u>	<u>Open</u>	<u>No</u>			<u>Yes</u>	<u>O</u>	<u>No</u>	<u>A B C</u>	<u>No</u>	<u>15.19.6 16.2.6 16.2.9</u>
<u>Alkanes (C10-C26), linear and branched (flashpoint ≤ 60°C)</u>	<u>Y</u>	<u>S/P</u>	<u>3</u>	<u>2G</u>	<u>Cont</u>	<u>No</u>	<u>T3</u>	<u>II A</u>	<u>No</u>	<u>R</u>	<u>F</u>	<u>A B C</u>	<u>No</u>	<u>15.19.6</u>
<u>Alkanes (C6-C9)</u>							<u>T3</u>	<u>IIA</u>						
<u>Alkanes(C10-C26), linear and branched, (flashpoint &gt;60°C)</u>	<u>Y</u>	<u>S/P</u>	<u>3</u>	<u>2G</u>	<u>Open</u>	<u>No</u>			<u>Yes</u>	<u>O</u>	<u>No</u>	<u>A B C</u>	<u>No</u>	<u>15.19.6</u>
<u>Alkenoic acid, polyhydroxy ester borated</u>	<u>Y</u>	<u>S/P</u>	<u>2</u>	<u>2G</u>	<u>Cont</u>	<u>No</u>			<u>Yes</u>	<u>R</u>	<u>I</u>	<u>A B C</u>	<u>No</u>	<u>15.12.3 15.12.4 15.19.6 16.2.6</u>
<u>Alkyl (C18+) toluenes</u>	<u>Y</u>	<u>S/P</u>	<u>2</u>	<u>2G</u>	<u>Open</u>	<u>No</u>			<u>Yes</u>	<u>O</u>	<u>No</u>	<u>A B C</u>	<u>No</u>	<u>15.19.6 16.2.9</u>
<u>Alkyl (C18-C28) toluenesulphonic acid, calcium salts, high overbase</u>	<u>Y</u>	<u>S/P</u>	<u>3</u>	<u>2G</u>	<u>Cont</u>	<u>No</u>			<u>Yes</u>	<u>C</u>	<u>I</u>	<u>A B C</u>	<u>Yes</u>	<u>15.12 15.17 15.19 16.2.6</u>
<u>Alkyl (C18-C28) toluenesulphonic acid, calcium salts, low overbase</u>	<u>Y</u>	<u>S/P</u>	<u>2</u>	<u>2G</u>	<u>Cont</u>	<u>No</u>			<u>Yes</u>	<u>C</u>	<u>I</u>	<u>A B C</u>	<u>Yes</u>	<u>15.12 15.17 15.19 16.2.6</u>
<u>Alkyl (C3-C4) benzenes</u>							<u>T4</u>	<u>IIA</u>						
<u>Alkyl (C8-C9) phenylamine in aromatic solvents</u>							<u>T4</u>	<u>IIB</u>						
<u>Alkyl acrylate-vinylpyridine copolymer in toluene</u>							<u>T4</u>	<u>IIB</u>						
<u>Alkyl(C12-C16) propoxyamine ethoxylate</u>	<u>X</u>	<u>S/P</u>	<u>2</u>	<u>2G</u>	<u>Cont</u>	<u>No</u>			<u>Yes</u>	<u>C</u>	<u>I</u>	<u>A C</u>	<u>Yes</u>	<u>15.12 15.17 15.19 16.2.6</u>
<u>Alkyl(C18-C28)toluenesulfonic acid</u>	<u>Y</u>	<u>S/P</u>	<u>2</u>	<u>2G</u>	<u>Cont</u>	<u>No</u>			<u>Yes</u>	<u>C</u>	<u>I</u>	<u>A B C</u>	<u>Yes</u>	<u>15.11.2~15.11.4 15.11.6~15.11.8 15.12 15.17 15.19 16.2.6 16.2.9</u>
<u>Alkyl(C18-C28)toluenesulfonic acid, calcium salts, borated</u>	<u>Y</u>	<u>S/P</u>	<u>3</u>	<u>2G</u>	<u>Cont</u>	<u>No</u>			<u>Yes</u>	<u>C</u>	<u>I</u>	<u>A B C</u>	<u>Yes</u>	<u>15.12 15.17 15.19 16.2.6</u>
<u>alpha-Methylbenzyl alcohol with acetophenone (15% or less)</u>	<u>Y</u>	<u>S/P</u>	<u>2</u>	<u>2G</u>	<u>Cont</u>	<u>No</u>			<u>Yes</u>	<u>C</u>	<u>I</u>	<u>A B C</u>	<u>Yes</u>	<u>15.12 15.17 15.19 16.2.6 16.2.9</u>
<u>alpha-Olefins (C6-C18) mixtures</u>							<u>T4</u>	<u>IIA</u>						

alpha-Pinene							T3	IIA						
<u>Aluminium chloride/Hydrogen chloride solution</u>	Y	S/P	2	2G	Cont	No		NF		C	I	None	Yes	15.11 15.12 15.17 15.19
<u>Aluminium hydroxide, sodium hydroxide, sodium carbonate solution (40% or less)</u>	Y	S/P	2	2G	Cont	No		NF		C	I	None	Yes	15.12 15.17 15.19
<u>Ammonium chloride solution (less than 25%)</u>	Z	S/P	3	2G	Open	No		NF		O	No	None	No	
Ammonium sulphide solution (45% or less)							T4	IIB						
Amyl acetate (allisomers)							T2	IIA						
Amyl alcohol, primary							T2	IIA						
Aviation alkylates (C8 paraffins and iso-paraffins BPT 95 -120°C )							T4	IIA						
beta-Pinene							T4	IIB						
<u>Bio-fuel blends of Diesel/gas oil and Alkanes (C10-C26), linear and branched with a flashpoint &gt;60°C (&gt;25% but &lt;99% by volume)</u>	X	S/P	2	2G	Cont	No			Yes	C	I	A B C	No	15.12 15.17 15.19.6
<u>Bio-fuel blends of Diesel/gas oil and Alkanes (C10-C26), linear and branched with a flashpoint ≤60°C (&gt;25% but &lt;99% by volume)</u>	X	S/P	2	2G	Cont	No	T3	II A	No	C	F-T	A B C	No	15.12 15.17 15.19.6
<u>Bio-fuel blends of Diesel/gas oil and FAME (&gt;25% but &lt;99% by volume)</u>	X	S/P	2	2G	Cont	No			Yes	C	I	A B C	No	15.12 15.17 15.19.6
<u>Bio-fuel blends of Diesel/gas oil and vegetable oil (&gt;25% but &lt;99% by volume)</u>	X	S/P	2	2G	Cont	No			Yes	C	I	A B C	No	15.12 15.17 15.19.6
<u>Bio-fuel blends of Gasoline and Ethyl alcohol (&gt;25% but &lt;99% by volume)</u>	X	S/P	2	2G	Cont	No	T3	II A	No	C	F-T	A	No	15.12 15.17 15.19.6
Bis(2-ethylhexyl) terephthalate	Y	S/P	2	2G	Open	No			Yes	O	No	A B C	No	15.19.6 16.2.6

Butyl acetate (all isomers)							<u>T2</u>	<u>IIA</u>						
Butyl butyrate (all isomers)							<u>T1</u>	<u>IIA</u>						
Butyl methacrylate							<u>T1</u>							
Butylamine (all isomers)							<u>T2</u>	<u>IIA</u>						
Butylbenzene (all isomers)							<u>T4</u>	<u>IIA</u>						
<u>Calcium alkaryl sulphonate (C11-C50)</u>	<u>Z</u>	<u>S/P</u>	<u>3</u>	<u>2G</u>	<u>Cont</u>	<u>No</u>			<u>Yes</u>	<u>C</u>	<u>I</u>	<u>A B C</u>	<u>Yes</u>	<u>15.12 15.17 15.19</u>
<u>Calcium alkyl (C10-C28) salicylate</u>	<u>Y</u>	<u>S/P</u>	<u>2</u>	<u>2G</u>	<u>Cont</u>	<u>No</u>			<u>Yes</u>	<u>R</u>	<u>I</u>	<u>A B C</u>	<u>No</u>	<u>15.12.3 15.12.4 15.19.6 16.2.9</u>
<u>Calcium long-chain alkyl (C18-C28) salicylate</u>	<u>Y</u>	<u>S/P</u>	<u>2</u>	<u>2G</u>	<u>Cont</u>	<u>No</u>			<u>Yes</u>	<u>C</u>	<u>I</u>	<u>A B C</u>	<u>Yes</u>	<u>15.12 15.17 15.19 16.2.6 16.2.9</u>
Calcium long-chain alkyl phenate sulphide (C8-C40)		<u>P→S/P</u>												<u>15.19.6 16.2.6 16.2.9</u> → <u>15.19.6 16.2.6</u>
<u>Camelina oil</u>	<u>Y</u>	<u>S/P</u>	<u>2k</u>	<u>2G</u>	<u>Open</u>	<u>No</u>			<u>Yes</u>	<u>O</u>	<u>No</u>	<u>A B C</u>	<u>No</u>	<u>15.19.6 16.2.6</u>
Carbon disulphide						<u>Inert</u> <u>±</u> <u>Pad</u>								
Cashew nut shell oil (untreated)		<u>S→S/P</u>												
<u>Cesium formate solution</u>	<u>Y</u>	<u>S/P</u>	<u>3</u>	<u>2G</u>	<u>Open</u>	<u>No</u>		<u>NF</u>		<u>O</u>	<u>No</u>	<u>None</u>	<u>No</u>	<u>15.19.6</u>
Chlorohydrins (crude)							<u>T3</u>							
Chlorotoluenes (mixed isomers)							<u>T4</u>	<u>IIA</u>						
Cycloheptane							<u>T4</u>	<u>IIA</u>						
Cyclohexane							<u>T3</u>	<u>IIA</u>						
Cyclohexyl acetate							<u>T4</u>	<u>IIA</u>						
Cyclopentane							<u>T2</u>	<u>IIA</u>						

Cyclopentene							<u>T2</u>	<u>IIA</u>						
Decahydronaphthalene							<u>T3</u>	<u>IIA</u>						
Decene							<u>T3</u>	<u>IIA</u>						
<u>Decyl/Dodecyl/Tetradecyl alcohol mixture</u>	<u>Y</u>	<u>S/P</u>	<u>2</u>	<u>2G</u>	<u>Cont</u>	<u>No</u>			<u>Yes</u>	<u>R</u>	<u>I</u>	<u>A B C</u>	<u>No</u>	<u>15.12.3 15.12.4 15.19.6 16.2.9</u>
Diacetone alcohol							<u>T1</u>	<u>IIA</u>						
<u>Dialkyl (C9-C10) phthalates</u>	<u>Y</u>	<u>S/P</u>	<u>2</u>	<u>2G</u>	<u>Open</u>	<u>No</u>			<u>Yes</u>	<u>O</u>	<u>No</u>	<u>A B C</u>	<u>No</u>	<u>15.19.6 16.2.6</u>
<u>Dialkyl thiophosphates sodium salts solution</u>	<u>Y</u>	<u>S/P</u>	<u>2</u>	<u>2G</u>	<u>Cont</u>	<u>No</u>			<u>Yes</u>	<u>R</u>	<u>I</u>	<u>A C</u>	<u>No</u>	<u>15.12.3 15.12.4 15.19.6 16.2.9</u>
<u>Dibutyl terephthalate</u>	<u>Y</u>	<u>P</u>	<u>2</u>	<u>2G</u>	<u>Open</u>	<u>No</u>			<u>Yes</u>	<u>O</u>	<u>No</u>	<u>A B C</u>	<u>No</u>	<u>15.19.6 16.2.9</u>
Dichloropropene/Dichloropropane mixtures							<u>T2</u>	<u>IIA</u>						
<u>Dicyclopentadiene, Resin Grade, 81-89%</u>	<u>Y</u>	<u>S/P</u>	<u>2</u>	<u>2G</u>	<u>Cont</u>	<u>Inert</u>	<u>T2</u>	<u>II B</u>	<u>No</u>	<u>C</u>	<u>F-T</u>	<u>A B C</u>	<u>Yes</u>	<u>15.12 15.13 15.17 15.19</u>
Diethylbenzene							<u>T2</u>	<u>IIA</u>						
Diisobutyl ketone							<u>T2</u>	<u>IIA</u>						
Diisobutylamine							<u>T4</u>	<u>IIB</u>						
Diisobutylene							<u>T2</u>	<u>IIA</u>						
Dimethylamine (greater than 55% but not greater than 65%)							<u>T2</u>	<u>IIB</u>						
Dimethylamine solution (greater than 45% but not greater than 55%)							<u>T2</u>	<u>IIB</u>						
Di-n-propylamine							<u>T3</u>	<u>IIB</u>						
Dipentene							<u>T3</u>	<u>IIA</u>						
Dodecane (all isomers)							<u>T3</u>	<u>IIA</u>						

Dodecyl/Octadecyl methacrylate mixture			<u>3→2</u>											
Epichlorohydrin							T2							
<u>Ethoxylated tallow amine (&gt; 95%)</u>	X	S/P	2	2G	Cont	Inert			Yes	C	I	A B C	Yes	<u>15.12 15.17 15.19 16.2.6 16.2.9</u>
Ethyl acetate							T2	IIA						
Ethyl amyl ketone							T2	IIA						
Ethyl butyrate							T4	IIA						
Ethyl propionate							T1	IIA						
Ethyl tert-butyl ether							T2	IIB						
Ethyl toluene							T4	IIA						
Ethyl-3-ethoxypropionate							T2	IIA						
Ethylamine solutions (72% or less)							T2	IIA						
Ethylbenzene							T2	IIA						
Ethylcyclohexane							T4	IIA						
Ethylene glycol monoalkyl ethers							T2	IIB						
Ethylidene norbornene							T3	IIB						
<u>Formic acid (85% or less acid)</u>	Y	S/P	3	2G	Cont	No			Yes	R	I (g)	A	Yes	<u>15.11.2~15.11.4 15.11.6~15.11.8 15.12.3~15.12.4 15.19.6 16.2.9</u>
<u>Formic acid (over 85%)</u>	Y	S/P	3	2G	Cont	No	T1	II A	No	R	F-T (g)	A	Yes	<u>15.11.2~15.11.4 15.11.6~15.11.8 15.12.3~15.12.4 15.19.6 16.2.9</u>

<u>Formic acid mixture (containing up to 18% propionic acid and up to 25% sodium formate)</u>	<u>Z</u>	<u>S/P</u>	<u>3</u>	<u>2G</u>	<u>Cont</u>	<u>No</u>			<u>Yes</u>	<u>R</u>	<u>I</u> <u>(g)</u>	<u>A C</u>	<u>No</u>	<u>15.11.2 15.11.3 15.11.4 15.11.6</u> <u>15.11.7 15.11.8 15.12.3 15.12.4</u> <u>15.19.6</u>
<u>Grape Seed Oil</u>	<u>Y</u>	<u>S/P</u>	<u>2k</u>	<u>2G</u>	<u>Open</u>	<u>No</u>			<u>Yes</u>	<u>O</u>	<u>No</u>	<u>A B C</u>	<u>No</u>	<u>15.19.6 16.2.6</u>
Heptane (all isomers)							<u>T3</u>	<u>IIA</u>						
Heptanol (all isomers) (d)							<u>T3</u>	<u>IIA</u>						
Heptene (all isomers)							<u>T4</u>	<u>IIA</u>						
Hexamethylenediamine (molten)												<u>C→</u> <u>AC</u>		<u>15.12 15.17 15.18 15.19.6 16.2.9</u> <u>→15.12 15.17 15.18 15.19 16.2.9</u>
Hexamethyleneimine							<u>T4</u>	<u>IIB</u>						
Hexane (all isomers)							<u>T3</u>	<u>IIA</u>						
Hexene (all isomers)							<u>T3</u>	<u>IIA</u>						
Hexyl acetate							<u>T2</u>	<u>IIA</u>						
Isoamyl alcohol							<u>T2</u>	<u>IIA</u>						
Iso-and cyclo-alkanes (C10-C11)							<u>T3</u>	<u>IIA</u>						
Iso-and cyclo-alkanes (C12+)							<u>T3</u>	<u>IIA</u>						
Isobutyl alcohol							<u>T2</u>	<u>IIA</u>						
Isobutyl formate							<u>T4</u>	<u>IIA</u>						
Isobutyl methacrylate							<u>T2</u>	<u>IIA</u>						
Isopropyl acetate							<u>T1</u>	<u>IIA</u>						
Isopropyl ether							<u>T2</u>	<u>IIA</u>						

Isopropylamine (70% or less) solution							<u>T2</u>	<u>IIA</u>						
Isopropylcyclohexane							<u>T4</u>	<u>IIA</u>						
<u>Jatropha oil</u>	<u>Y</u>	<u>P</u>	<u>2k</u>	<u>2G</u>	<u>Open</u>	<u>No</u>			<u>Yes</u>	<u>O</u>	<u>No</u>	<u>A B C</u>	<u>No</u>	<u>15.19.6 16.2.6</u>
<u>Ligninsulphonic acid, magnesium salt solution</u>	<u>Z</u>	<u>P</u>	<u>3</u>	<u>2G</u>	<u>Open</u>	<u>No</u>			<u>Yes</u>	<u>O</u>	<u>No</u>	<u>A C</u>	<u>No</u>	
<u>Maleic anhydride-sodium allylsulfonate copolymer solution</u>	<u>Z</u>	<u>P</u>	<u>3</u>	<u>2G</u>	<u>Open</u>	<u>No</u>			<u>Yes</u>	<u>O</u>	<u>No</u>	<u>A B C</u>	<u>No</u>	
m-Chlorotoluene							<u>T4</u>	<u>IIA</u>						
Metam sodium solution			<u>1→2</u>		<u>Open→ Cont</u>					<u>O→C</u>	<u>No→T</u>		<u>No→ Yes</u>	<u>15.19 16.2.9 →15.12 15.17 15.19</u>
Methacrylonitrile							<u>T1</u>	<u>IIA</u>						
Methyl acetate							<u>T1</u>	<u>IIA</u>						
Methyl alcohol							<u>T1</u>	<u>IIA</u>						
Methyl amyl ketone							<u>T2</u>	<u>IIA</u>						
Methyl butyl ketone							<u>T2</u>	<u>IIA</u>						
Methyl butynol							<u>T4</u>	<u>IIB</u>						
Methyl butyrate							<u>T4</u>	<u>IIA</u>						
Methyl ethyl ketone							<u>T1</u>	<u>IIA</u>						
Methyl formate							<u>T1</u>	<u>IIA</u>						
Methyl isobutyl ketone							<u>T1</u>	<u>IIA</u>						

Methyl tert-butyl ether							<u>T1</u>	<u>IIA</u>						
Methylamine solutions (42% or less)							<u>T2</u>	<u>IIA</u>						
Methylamyl acetate							<u>T2</u>	<u>IIA</u>						
Methylamyl alcohol							<u>T2</u>	<u>IIA</u>						
Methylbutenol							<u>T4</u>	<u>IIA</u>						
Methylcyclohexane							<u>T3</u>	<u>IIA</u>						
Methylcyclopentadiene dimer							<u>T4</u>	<u>IIB</u>						
Myrcene							<u>T3</u>	<u>IIA</u>						
N,N-Dimethylcyclohexylamine							<u>T3</u>	<u>IIB</u>						
n-Alkanes (C10+)							<u>T3</u>	<u>IIA</u>						
<u>n-Alkanes (C9-C11)</u>	<u>Y</u>	<u>S/P</u>	<u>3</u>	<u>2G</u>	<u>Cont</u>	<u>No</u>	<u>T3</u>	<u>II A</u>	<u>No</u>	<u>R</u>	<u>F-T</u>	<u>A B C</u>	<u>No</u>	<u>15.12.3 15.12.4 15.19.6</u>
n-Amyl alcohol							<u>T2</u>	<u>IIA</u>						
n-Butyl propionate							<u>T2</u>	<u>IIA</u>						
N-Ethylcyclohexylamine							<u>T3</u>	<u>IIB</u>						
Nitroethane							<u>T2</u>							
Nitroethane(80%)/Nitropropane(20%)							<u>T2</u>							
Nitroethane, 1-Nitropropane (each 15% or more) mixture							<u>T2</u>	<u>IIB</u>						

Nitropropane (60%)/Nitroethane (40%) mixture							T4	IIB						
<u>N-Methylaniline</u>	<u>Y</u>	<u>S/P</u>	<u>2</u>	<u>2G</u>	<u>Cont</u>	<u>No</u>			<u>Yes</u>	<u>R</u>	<u>I</u>	<u>A B C</u>	<u>No</u>	<u>15.12.3 15.12.4 15.19.6</u>
Nonane (all isomers)							T4	IIA						
Nonene (all isomers)							T3	IIA						
n-Pentyl propionate							T4	IIA						
n-Propyl acetate							T1	IIA						
n-Propyl alcohol							T2	IIA						
o-Chlorotoluene							T1	IIA						
<u>Octamethylcyclotetrasiloxane</u>	<u>Y</u>	<u>P</u>	<u>2</u>	<u>2G</u>	<u>Cont</u>	<u>No</u>	T2	II A	<u>No</u>	<u>R</u>	<u>F</u>	<u>A C</u>	<u>No</u>	<u>15.19.6 16.2.9</u>
Octane (all isomers)							T3	IIA						
Octene (all isomers)							T3	IIA						
Octyl aldehydes			<u>3→2</u>				T4	IIB						
<u>Olefin Mixture (C7-C9) C8 rich, stabilised</u>	<u>X</u>	<u>S/P</u>	<u>2</u>	<u>2G</u>	<u>Cont</u>	<u>No</u>	T3	II B	<u>No</u>	<u>R</u>	<u>F</u>	<u>A B C</u>	<u>No</u>	<u>15.13 15.19.6</u>
Olefin mixtures (C5-C15)							T3	IIA						
Olefin mixtures (C5-C7)							T3	IIA						
<u>Palm kernel fatty acid distillate</u>	<u>Y</u>	<u>S/P</u>	<u>2</u>	<u>2G</u>	<u>Cont</u>	<u>No</u>			<u>Yes</u>	<u>R</u>	<u>I</u>	<u>A B C</u>	<u>No</u>	<u>15.19.6 16.2.6 16.2.9</u>
Paraldehyde-ammonia reaction product							T4	IIB						

p-Chlorotoluene							T1	IIA						
p-Cymene							T2	IIA						
Pentane (all isomers)							T2	IIA						
Pentene (all isomers)							T3	IIA						
Phosphate esters, alkyl (C12-C14) amine							T4	IIB						
Phosphorus, yellow or white							Inert→ Pad +(vent or inert)							
<u>Poly (4+) isobutylene (MW&gt;224)</u>	X	P	2	2G	Open	No			Yes	O	No	A B	No	15.19.6 16.2.6 16.2.9
<u>Poly(ethylene glycol) methylbutenyl ether (MW&gt;1000)</u>	Z	P	3	2G	Open	No			Yes	O	No	A C	No	16.2.9
Polyalkyl (C18-C22) acrylate in xylene							T4	IIB						
<u>Polyalkylalkenaminesuccinimide, molybdenum oxysulphide</u>	Y	P	2	2G	Open	No			Yes	O	No	A B C	No	15.19.6 16.2.6
<u>Polyisobutylene (MW≤224)</u>	Y	P	2	2G	Open	No			Yes	O	No	A B	No	15.19.6 16.2.9
<u>Polyolefin amide alkeneamine polyol</u>	Y	P	2	2G	Open	No			Yes	O	No	A B C	No	15.19.6 16.2.6 16.2.9
Polyolefinamine in alkyl (C2-C4) benzenes							T4	IIB						
Polyolefinamine in aromatic solvent							T4	IIB						

Polysiloxane							T4	IIB						
Propionaldehyde							T4	IIB						
Propylbenzene (all isomers)							T2	IIA						
Propylene glycol methyl ether acetate							T2	IIA						
Propylene glycol monoalkyl ether							T3	IIA						
Propylene tetramer							T3	IIA						
Propylene trimer							T3	IIA						
sec-Amyl alcohol							T2	IIA						
<u>Sodium bromide solution (less than 50%)</u>	<u>Y</u>	<u>S/P</u>	<u>3</u>	<u>2G</u>	<u>Open</u>	<u>No</u>		<u>NF</u>		<u>R</u>	<u>No</u>	<u>None</u>	<u>No</u>	<u>15.19.6</u>
Sodium hydrosulphide / Ammonium sulphide solution							T4	IIB						
Sodium hydrosulphide solution (45% or less)							<u>Pad→</u> <u>Vent or</u> <u>pad</u> <u>(gas)</u>							
Sodium methylate 21-30% in methanol														<u>15.12 15.17 15.19 16.2.6 (only if &gt;28%), 16.2.9</u>
<u>Soybean oil fatty acid methyl ester</u>	<u>Y</u>	<u>P</u>	<u>2</u>	<u>2G</u>	<u>Open</u>	<u>No</u>			<u>Yes</u>	<u>O</u>	<u>No</u>	<u>A B C</u>	<u>No</u>	<u>15.19.6 16.2.6</u>
Sulphur (molten)							<u>Pad→</u> <u>Vent or</u> <u>pad</u> <u>(gas)</u>							

Tall oil pitch					<u>Cont</u> → <u>Open</u>					<u>C</u> → <u>O</u>	<u>T</u> → <u>No</u>		<u>Yes</u> → <u>No</u>	<u>15.12 15.17 15.19 16.2.6 16.2.9</u> → <u>15.19.6 16.2.6</u>
<u>Tall oil soap, crude</u>	<u>Y</u>	<u>S/P</u>	<u>2</u>	<u>2G</u>	<u>Cont</u>	<u>No</u>			<u>Yes</u>	<u>C</u>	<u>I</u>	<u>A B C</u>	<u>Yes</u>	<u>15.12 15.17 15.19 16.2.6</u>
Tall oil, crude					<u>Cont</u> → <u>Open</u>					<u>C</u> → <u>O</u>	<u>T</u> → <u>No</u>		<u>Yes</u> → <u>No</u>	<u>15.12 15.17 15.19 16.2.6</u> → <u>15.19.6 16.2.6</u>
tert-Amyl alcohol							<u>T2</u>	<u>IIA</u>						
<u>tert-Amyl ethyl ether</u>	<u>Z</u>	<u>P</u>	<u>3</u>	<u>2G</u>	<u>Cont</u>	<u>No</u>	<u>T3</u>	<u>IIA</u>	<u>No</u>	<u>R</u>	<u>F</u>	<u>A B C</u>	<u>No</u>	<u>15.19.6</u>
tert-Amyl methyl ether							<u>T3</u> → <u>T2</u>	<u>IIB</u>						
tert-Butyl alcohol							<u>T1</u>	<u>IIA</u>						
Toluene							<u>T1</u>	<u>IIA</u>						
Triethylphosphite							<u>T3</u>	<u>IIA</u>						
Trimethyl benzene (all isomers)							<u>T1</u>	<u>IIA</u>						
Trimethylamine solution (30% or less)							<u>T3</u>	<u>IIB</u>						
Turpentine							<u>T1</u>	<u>IIA</u>						
Vinyltoluene							<u>T1</u>							
White spirit, low (15-20%) aromatic							<u>T3</u>	<u>IIA</u>						
<u>Wood lignin with sodium acetate/oxalate</u>	<u>Z</u>	<u>S/P</u>	<u>3</u>	<u>2G</u>	<u>Open</u>	<u>No</u>		<u>NF</u>		<u>O</u>	<u>No</u>	<u>None</u>	<u>No</u>	
Xylenes							<u>T1</u>	<u>IIA</u>						

