



# 散装运输危险液体化学品 船舶构造与设备规范

2020

变更通告

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## 简要编写说明

(1) 根据我社 IMO 决议转化要求, 将 IMO 海安会与环保会分别以 MSC.460(101) 和 MEPC.318(74)决议批准的 IBC 规则第 1 章、第 15 章、第 16 章、第 17 章、第 18 章、第 19 章以及 21 章的修订内容纳入本次变更通告, 修订涉及第 1 章 1.3 和 1.5.1.2, 第 15 章 15.8.25.1 和 15.15.1, 第 16 章 16.2.7, 第 17 章全文、第 18 章全文、第 19 章全文、第 21 章全文。

(2) 本变更通告于 2021 年 1 月 1 日生效。其中下划线为新增内容, ~~删除线~~为被删除内容。

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# 第3篇 国际散装运输危险化学品船舶构造与设备规则

## 第 1 章 总则\*

\* 本变更通告第 1 章修订内容，将于 2021 年 1 月 1 日生效。

现有 1.3 由下文替代：

### 1.3 定义

除另有明文规定外，下列定义为(附加定义在各章中给出)：

CCS1.3 适装证书：系指根据《IBC 规则》及其修正案签发的国际散装运输危险化学品适装证书。

1.3.1 起居处所：系指公共处所、走廊、盥洗室、居住室、办公室、医务室、电影院、娱乐室、理发室、无炊具的配膳室以及类似处所。公共处所是指用作大厅、餐室、休息室及类似的永久性围蔽处所。

1.3.2 主管机关：系指船旗国政府。对于主管机关（港口），见港口当局定义。

1.3.3 周年日：系指“国际散装运输危险化学品适装证书”到期日期对应的每年的该月和该日。

1.3.4 沸点：系指货物呈现蒸气压力等于大气压力时的温度。

1.3.5 船宽(B)：系指船舶最大宽度，对金属船体，在船中部量至肋骨型线；对其他材料的船体，在船中部量至船体外表面。船宽(B) 以m 计量。

1.3.6 货物区域：系指船上包括液货舱、污液舱、货泵舱(包括泵舱)、邻接液货舱或污液舱的隔离舱、压载舱或留空处所的部分，以及在上述处所上方的船上该部分的整个长度和宽度内的甲板区域。如果货舱处所内设有独立舱，则最后一个货舱处所后面或最前一个货舱处所前面的隔离舱、压载舱或留空处所不应作为货物区域。

1.3.7 货泵舱：系指操作本规则所列货物用的泵及其附属设施的处所。

1.3.8 货物服务处所：系指位于货物区域内的工作间、物料间，以及面积在2m<sup>2</sup>以上的储存货物装卸设备的处所。

1.3.9 液货舱：系指用于装运货物的容器。

1.3.10 化学品液货船：系指建造或改建成用于散装运输本规则第17章所列任何液体

货物的货船。

1.3.11 隔离舱：系指两个相邻钢质舱壁或甲板之间的隔离处所。该处所可以是空舱或压载舱。

1.3.12 控制站：系指设有船舶无线电设备或主要航行设备或应急电源的处所，或者火警显示器或失火控制设备集中的处所。但不包括在货物区域内通常设置的专用失火控制设备。

1.3.13 危险化学品：系指根据本规则第17章中货物安全标准所认定的会引起安全危害的液体化学品。

1.3.14 密度：系指某一货品的质量与其容积之比值(以 $\text{kg/m}^3$ 表示)。该规定适用于液体、气体及蒸气。

1.3.15 易爆性/可燃性极限/范围：系指在给定的试验装置中，对燃料-氧化剂混合物施以一个足够强的着火源，使其足以能形成燃烧的条件。

1.3.16 闪点：系指货物释放出的易燃蒸气足以被点燃的摄氏温度。本规则所列数值是用认可的闪点装置按“闭杯试验”测定的。

1.3.17 除气：系指为使有害气体或蒸气浓度降至可安全进入液舱的水平，使用便携式或固定式通风系统使新鲜空气进入液舱的过程。

1.3.18 货舱处所：系指由船舶结构围蔽的处所，且其内部设有独立液货舱。

1.3.19 独立的：系指例如管系或透气系统决不与另一系统连接，并且也没有任何可能与其他系统进行潜在的连接。

1.3.20 船长(L)：系指从龙骨上缘量至最小型深85%处的水线总长的96%，或在该水线处从首柱前缘量至舵杆中心线的长度，取其较大者。船舶设计成倾斜龙骨时，计量长度的水线应与设计水线平行。船长(L) 以m 计量。

1.3.21 A类机器处所：系指装有下列设施的处所以及通往这些处所的围蔽通道：

- .1 用于主推进的内燃机；或
- .2 用于主推进以外的其他用途且合计输出功率不小于375kW 的内燃机；或
- .3 任何燃油锅炉或燃油装置或除锅炉以外的任何其他燃油设备，例如惰性气体发生器、焚烧炉等。

1.3.22 机器处所：系指所有A 类处所和装有推进机械、锅炉、燃油装置、蒸气机和

内燃机、发电机和主要电力机械、加油站、制冷机、减摇装置、通风机和空调机和类似处所，以及通往这些处所的围蔽通道。

1.3.23 MARPOL：系指经修订的《经1978 年议定书修正的1973 年国际防止船舶造成污染公约》。

1.3.24 有毒液体物质：系指在《IBC 规则》第17 或18 章中列入污染类别栏、或在现行MEPC.2/Circular中规定的或根据MARPOL 附则II 第6.3 条规定经临时评估的被列为X、Y 或Z 类的物质。

1.3.25 燃油装置：系指准备为燃油锅炉输送燃油，或者准备为内燃机输送加热燃油的设备，并包括用于处理油类压力超过0.18MPa( 表压) 的所有压力油泵、过滤器和加热器。

1.3.27 组织：系指国际海事组织(IMO)。

1.3.27 渗透率：系指在该处所内，假定被水浸占的容积与该处所总容积之比。

1.3.28 港口当局：系指船舶装货或卸货的港口所在国的有关当局。

1.3.29 货品：系指有毒液体物质及危险化学品的总称。

1.3.30 泵舱：系指位于货物区域内，装有用于装卸压载水及燃油的泵及其辅助设备的处所。

1.3.31 驱气：系指使惰性气体进入已经处于惰化状态的液货舱，进一步减少氧气含量；和/ 或减少液货舱中碳氢气体或其他易燃蒸气的含量，使得即使空气随后进入液舱，也无法支持燃烧。

1.3.32 认可组织：系指主管机关按MARPOL附则II第8.2.2条和SOLAS第XI-1/1条认可的组织。

1.3.33 公认的标准：系指为主管机关所接受的适用的国际或国家标准，或为由符合本组织所通过的标准并被主管机关所认可的组织制定和维护的标准。

1.3.34 基准温度：系指货物蒸气压力与压力释放阀的设定压力值相当时的温度。

1.3.35 分隔：系指例如一货物管系或货物透气系统不与另一货物管系或货物透气系统相连接。

1.3.36 服务处所：系指厨房、备有炊具的配膳室、物料间、邮件室和贵重物品室、储藏室、不属于机器处所组成部分的工作间和类似处所，以及通往这些处所的围蔽通道。

1.3.37 SOLAS: 系指经修正的1974 年国际海上人命安全公约。

1.3.38 蒸气压力: 系指在规定温度下在液体上面的饱和蒸气的平衡压力, 用Pa 表示。

1.3.39 留空处所: 系指货物区域内的液货舱外面的封闭处所, 但不包括货舱处所、压载舱、燃油舱、货泵舱、泵舱和人员正常使用的任何处所。”

## **1.5 检验与发证**

~~1.5.1.2 主管机关对被指定的验船师或其认可的机构至少应授予以下权力:—~~

- ~~1. 要求船舶进行修理; 和~~
- ~~2. 应港口国有关当局要求进行检验。—~~

~~主管机关应将被指定的验船师或认可的机构的具体责任以及对他们授权的条件通知本组织, 以便分发给各缔约国政府。—~~

1.5.1.2 上述1.3.32所述的认可组织应符合SOLAS和MARPOL公约以及经MSC.349(92)和MEPC.237(65)决议通过并可能经修正的《认可组织规则》(RO规则)第1和第2部分的规定。

## 第 15 章 特殊要求\*

\* 本变更通告第 15 章修订内容，将于 2021 年 1 月 1 日生效。

### 15.8 环氧丙烷及环氧乙烷/环氧丙烷混合物而有环氧乙烷的含量不超过 30%(按质量计)

15.8.25.1 用于装载这些货物的液货舱的管系应与所有其他液舱包括空液舱的管系分隔(见3.1.4 的定义)，若用于液货舱的装载管系并非独立的(见~~1.3.18~~[1.3.19](#))，要求达到所需的管系分隔可采用可拆短管、阀或其他管段，并在这些位置安装盲板法兰。所需的分隔适用于所有液体和蒸气管系、液体和蒸气透气管路以及任何其他可能的连接管路，例如公用惰性气体供给管路等；

### ~~15.15 点燃温度低和易燃性范围宽的货物 [删除]~~

#### [15.15 散装液体的硫化氢（H<sub>2</sub>S）探测设备](#)

[15.15.1 载运容易形成H<sub>2</sub>S的散装液体的船舶上应设有硫化氢（H<sub>2</sub>S）探测设备。应注意，使用清除剂和杀生物剂可能不能100%有效控制H<sub>2</sub>S的形成。可采用符合本规则13.2.1要求的用于检测H<sub>2</sub>S的有毒蒸气探测仪来满足这一要求。](#)

## 第 16 章 操作要求\*

\* 本变更通告第 16 章修订内容，将于 2021 年 1 月 1 日生效。

### 16.2 货物资料

~~16.2.7 删除。~~

16.2.7 如果第 17 章表格中 o 栏指向本段,则货物应满足 MARPOL 附则 II 第 13.7.1.4 条中的预洗规定。

## 第 17 章 最低要求一栏表\*

\* 本变更通告第 17 章修订内容，将于 2021 年 1 月 1 日生效。

第 17 章的整个文本由下文替代：

17.1 仅具有污染危害性，及按照防污公约附则 II 第 6.3 条经评估或临时评估为有毒液体物质混合物可根据本章相应适用条目位置在未另列明的（n.o.s）有毒液体物质下按本规则要求运输。

### 17.2 对表中栏目的注释如下：

|                  |                                                                                      |                          |
|------------------|--------------------------------------------------------------------------------------|--------------------------|
| 货物名称<br>(a 栏)    | 任何散装运输货物的运输文件中应使用货物名称。任何附加的名称可放在货物名称后的括号内。在某些情况下，货物名称可能与本规则以前版本所提供的名称不一致。            |                          |
| 联合国编号<br>(b 栏)   | 已删除                                                                                  |                          |
| 污染类别<br>(c 栏)    | 字母 X, Y 或 Z 系指按防污公约附则 II 所确定的每一货物的污染类别。                                              |                          |
| 危害性<br>(d 栏)     | S 系指本规则所包括的具有安全危害性的货物；<br>P 系指本规则所包括的具有污染危害性的货物；<br>S/P 系指本规则所包括的同时具有安全危害性和污染危害性的货物。 |                          |
| 船型<br>(e 栏)      | 1:                                                                                   | 1 型船舶 (2.1.2.1)          |
|                  | 2:                                                                                   | 2 型船舶 (2.1.2.2)          |
|                  | 3:                                                                                   | 3 型船舶 (2.1.2.3)          |
| 舱型<br>(f 栏)      | 1:                                                                                   | 独立液货舱 (4.1.1)            |
|                  | 2:                                                                                   | 整体液货舱 (4.1.2)            |
|                  | G:                                                                                   | 重力液货舱 (4.1.3)            |
|                  | P:                                                                                   | 压力液货舱 (4.1.4)            |
| 液货舱透气<br>(g 栏)   | Cont.:                                                                               | 控制式透气                    |
|                  | Open:                                                                                | 开式透气                     |
| 液货舱环境控制<br>(h 栏) | Inert:                                                                               | 惰化法 (9.1.2.1)            |
|                  | Pad:                                                                                 | 用液体或气体作隔绝法 (9.1.2.2)     |
|                  | Dry:                                                                                 | 干燥法 (9.1.2.3)            |
|                  | Vent:                                                                                | 自然或强力通风法 (9.1.2.4)       |
|                  | No:                                                                                  | 本规则无特殊要求 (SOLAS 可能要求惰化法) |
| 电气设备<br>(i 栏)    | 温度等级 (i')                                                                            | T1 至 T6                  |
|                  | -                                                                                    | 无要求                      |
|                  | 空白                                                                                   | 无资料                      |

|           |            |                                         |
|-----------|------------|-----------------------------------------|
|           | 设备分类 (i'') | IIA, IIB 或 IIC                          |
|           | -          | 无要求                                     |
|           | 空白         | 无资料                                     |
|           | 闪点: (i''') | Yes: 闪点超过 60°C (10.1.6)                 |
|           |            | No: 闪点不超过 60°C (10.1.6)                 |
|           |            | NF: 非易燃货物 (10.1.6)                      |
| 测量        | O:         | 开式测量 (13.1.1.1)                         |
| (j 栏)     | R:         | 限制式测量 (13.1.1.2)                        |
|           | C:         | 闭式测量 (13.1.1.3)                         |
| 蒸气探测      | F:         | 易燃蒸气                                    |
| (k 栏)     | T:         | 有毒蒸气                                    |
|           | No:        | 本规则无特殊要求                                |
| 防火        | A:         | 抗乙醇泡沫或多用途泡沫                             |
| (l 栏)     | B:         | 普通泡沫, 包括所有非抗乙醇泡沫, 其中包括氟化蛋白质和水膜泡沫 (AFFF) |
|           | C:         | 洒水 (喷水)                                 |
|           | D:         | 化学干粉                                    |
|           | No:        | 本规则无特殊要求                                |
| 构造材料      |            | 已删除                                     |
| (m 栏)     |            |                                         |
| 应急设备      | Yes:       | 见 14.3.1                                |
| (n 栏)     | No:        | 本规则无特殊要求                                |
| 特殊要求及操作要求 |            | 当专门参照第 15 和/或 16 章时, 这些要求应为任何其他栏内的附加要求。 |
| (o 栏)     |            |                                         |

| 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   | C | F  | AC  | Yes | 15.11.2, 15.11.3, 15.11.4, 15.11.6, 15.11.7, 15.11.8, 15.17, 15.19, 16.2.9                                  |
| Acetic anhydride                                                                          | Z | S/P | 2 | 2G | Cont | No | T2 | IIA | No   | R | FT | AC  | Yes | 15.11.2, 15.11.3, 15.11.4, 15.11.6, 15.11.7, 15.11.8, 15.12.3, 15.12.4, 15.19.6                             |
| Acetochlor                                                                                | X | S/P | 2 | 2G | Open | No |    |     | Yes  | O | No | AC  | No  | 15.19.6, 16.2.6, 16.2.9                                                                                     |
| Acetone cyanohydrin                                                                       | Y | S/P | 1 | 1G | Cont | No | -  | -   | Yes  | C | T  | AC  | Yes | 15.12, 15.13, 15.17, 15.19, 16.6.1, 16.6.2, 16.6.3                                                          |
| Acetonitrile                                                                              | Z | S/P | 3 | 2G | Cont | No | T2 | IIA | No   | R | FT | AC  | No  | 15.12.3, 15.12.4, 15.19.6                                                                                   |
| Acetonitrile (Low purity grade)                                                           | Y | S/P | 3 | 2G | Cont | No | T1 | IIA | No   | R | FT | AC  | No  | 15.12.3, 15.12.4, 15.19.6                                                                                   |
| Acid oil mixture from soya bean, corn (maize) and sunflower oil refining                  | Y | S/P | 2 | 2G | Open | No | -  | -   | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6, 16.2.7, 16.2.9                                                                             |
| Acrylamide solution (50% or less)                                                         | Y | S/P | 3 | 2G | Cont | No |    |     | NF   | C | T  | No  | No  | 15.12, 15.13, 15.17, 15.19, 16.2.9, 16.6.1                                                                  |
| Acrylic acid                                                                              | Y | S/P | 2 | 2G | Cont | No | T2 | IIA | No   | C | FT | AC  | Yes | 15.11.2, 15.11.3, 15.11.4, 15.11.6, 15.11.7, 15.11.8, 15.12.3, 15.12.4, 15.13, 15.17, 15.19, 16.2.9, 16.6.1 |
| Acrylic acid/ethenesulphonic acid copolymer with phosphonate groups, sodium salt solution | Z | P   | 3 | 2G | Open | No |    |     | Yes  | O | No | ABC | No  |                                                                                                             |
| Acrylonitrile                                                                             | Y | S/P | 2 | 2G | Cont | No | T1 | IIB | No   | C | FT | AC  | 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 | ABC | No  | 15.19.6, 16.2.6                                                                                             |
| Adiponitrile                                                                              | Z | S/P | 2 | 2G | Cont | No | -  | -   | Yes  | C | T  | AC  | Yes | 15.12, 15.17, 15.19, 16.2.9                                                                                 |

| a                                                          | c | d   | e | f  | g    | h  | i' | i'' | i''' | j | k  | l   | n   | o                                         |
|------------------------------------------------------------|---|-----|---|----|------|----|----|-----|------|---|----|-----|-----|-------------------------------------------|
| Alachlor technical (90% or more)                           | X | S/P | 2 | 2G | Cont | No |    |     | Yes  | C | T  | AC  | No  | 15.12, 15.17, 15.19.6, 16.2.9             |
| Alcohol (C9-C11) poly (2.5-9) ethoxylate                   | Y | S/P | 3 | 2G | Cont | No |    |     | Yes  | R | T  | AC  | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.9         |
| Alcohol (C6-C17) (secondary) poly(3-6) ethoxylates         | Y | S/P | 2 | 2G | Cont | No |    |     | Yes  | C | T  | AC  | Yes | 15.12, 15.17, 15.19, 16.2.9               |
| Alcohol (C6-C17) (secondary) poly(7-12) ethoxylates        | Y | S/P | 2 | 2G | Cont | No |    |     | Yes  | C | T  | AC  | Yes | 15.12, 15.17, 15.19, 16.2.6, 16.2.9       |
| Alcohol (C10-C18) poly(7) ethoxylate                       | Y | S/P | 3 | 2G | Cont | No |    |     | Yes  | R | T  | AC  | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9 |
| Alcohol (C12-C16) poly(1-6) ethoxylates                    | Y | S/P | 2 | 2G | Cont | No |    |     | Yes  | R | T  | AC  | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.9         |
| Alcohol (C12-C16) poly(20+) ethoxylates                    | Y | S/P | 3 | 2G | Cont | No |    |     | Yes  | R | T  | AC  | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.9         |
| Alcohol (C12-C16) poly(7-19) ethoxylates                   | Y | S/P | 2 | 2G | Cont | No |    |     | Yes  | C | T  | AC  | Yes | 15.12, 15.17, 15.19, 16.2.9               |
| Alcohols (C13+)                                            | Y | P   | 2 | 2G | Open | No |    |     | Yes  | O | No | ABC | No  | 15.19.6, 16.2.9                           |
| Alcohols (C12+), primary, linear                           | Y | S/P | 2 | 2G | Open | No | -  | -   | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6, 16.2.9                   |
| Alcohols (C8-C11), primary, linear and essentially linear  | Y | S/P | 2 | 2G | Cont | No | -  | -   | Yes  | R | T  | ABC | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9 |
| Alcohols (C12-C13), primary, linear and essentially linear | Y | S/P | 2 | 2G | Open | No | -  | -   | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6, 16.2.9                   |
| Alcohols (C14-C18), primary, linear and essentially linear | Y | S/P | 2 | 2G | Open | No | -  | -   | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6                           |
| Alkanes (C6-C9)                                            | X | S/P | 2 | 2G | Cont | No | T3 | IIA | No   | C | FT | AC  | No  | 15.12, 15.17, 15.19.6                     |
| Iso- and cyclo-alkanes (C10-C11)                           | Y | S/P | 3 | 2G | Cont | No | T3 | IIA | No   | R | F  | AC  | No  | 15.19.6                                   |
| Iso- and cyclo-alkanes (C12+)                              | Y | S/P | 3 | 2G | Cont | No | T3 | IIA | No   | R | F  | AC  | No  | 15.19.6                                   |
| n-Alkanes (C9-C11)                                         | Y | S/P | 3 | 2G | Cont | No | T3 | IIA | No   | R | F  | ABC | No  | 15.19.6                                   |
| n-Alkanes (C10 – C20)                                      | Y | P   | 2 | 2G | Open | No | -  | -   | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6, 16.2.9                   |

| a                                                                                                    | c | d   | e | f  | g    | h  | i' | i'' | i''' | j | k  | l   | n   | o                                         |
|------------------------------------------------------------------------------------------------------|---|-----|---|----|------|----|----|-----|------|---|----|-----|-----|-------------------------------------------|
| Alkaryl polyethers (C9-C20)                                                                          | Y | S/P | 2 | 2G | Cont | No |    |     | Yes  | C | T  | ABC | Yes | 15.12, 15.17, 15.19, 16.2.6               |
| Alkenoic acid, polyhydroxy ester borated                                                             | Y | S/P | 2 | 2G | Cont | No | -  | -   | Yes  | R | T  | ABC | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.6         |
| Alkenyl (C11+) amide                                                                                 | X | S/P | 2 | 2G | Open | No | -  | -   | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6, 16.2.9                   |
| Alkenyl (C16-C20) succinic anhydride                                                                 | Z | S/P | 3 | 2G | Cont | No |    |     | Yes  | C | T  | ABC | Yes | 15.12, 15.17, 15.19                       |
| Alkyl acrylate/vinylpyridine copolymer in toluene                                                    | Y | S/P | 2 | 2G | Cont | No | T1 | IIB | No   | C | FT | ABC | No  | 15.12, 15.17, 15.19.6, 16.2.9             |
| Alkylaryl phosphate mixtures (more than 40% Diphenyl tolyl phosphate, less than 0.02% ortho-isomers) | X | S/P | 2 | 2G | Open | No | -  | -   | Yes  | O | No | ABC | No  | 15.19.6                                   |
| Alkylated (C4-C9) hindered phenols                                                                   | Y | S/P | 2 | 2G | Cont | No | -  | -   | Yes  | R | T  | ABC | No  | 15.12.3, 15.12.4, 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 | AC  | No  |                                           |
| Alkyl benzene distillation bottoms                                                                   | Y | S/P | 2 | 2G | Open | No | -  | -   | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6                           |
| Alkylbenzene mixtures (containing at least 50% of toluene)                                           | Y | S/P | 3 | 2G | Cont | No | T1 | IIA | No   | C | FT | ABC | No  | 15.12, 15.17, 15.19.6                     |
| Alkylbenzenes mixtures (containing naphthalene)                                                      | X | S/P | 2 | 2G | Cont | No |    |     | Yes  | C | T  | ABC | No  | 15.12, 15.17, 15.19.6                     |
| Alkyl (C3-C4) benzenes                                                                               | Y | S/P | 2 | 2G | Cont | No | T1 | IIA | No   | R | FT | ABC | No  | 15.12.3, 15.12.4, 15.19.6                 |
| Alkyl (C5-C8) benzenes                                                                               | X | S/P | 2 | 2G | Cont | No |    |     | Yes  | R | T  | AC  | No  | 15.12.3, 15.12.4, 15.19.6                 |
| Alkyl (C9+) benzenes                                                                                 | Y | S/P | 3 | 2G | Open | No | -  | -   | Yes  | O | No | ABC | No  | 15.19.6                                   |
| Alkyl (C11-C17) benzene sulphonic acid                                                               | Y | S/P | 2 | 2G | Cont | No | -  | -   | Yes  | R | T  | AC  | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.6         |

| a                                                                                       | c | d   | e | f  | g    | h  | i' | i'' | i''' | j | k  | l   | n   | o                                                  |
|-----------------------------------------------------------------------------------------|---|-----|---|----|------|----|----|-----|------|---|----|-----|-----|----------------------------------------------------|
| Alkylbenzene sulphonic acid, sodium salt solution                                       | Y | S/P | 2 | 2G | Cont | No | -  | -   | NF   | C | T  | No  | Yes | 15.12, 15.17, 15.19, 16.2.6, 16.2.9                |
| Alkyl/cyclo (C4-C5) alcohols                                                            | Y | S/P | 3 | 2G | Cont | No | T2 | IIB | No   | R | FT | AC  | No  | 15.12.3, 15.12.4, 15.19.6                          |
| Alkyl (C10-C15, C12 rich) phenol poly (4-12) ethoxylate                                 | Y | S/P | 2 | 2G | Cont | No |    |     | Yes  | R | T  | ABC | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.6                  |
| Alkyl (C12+) dimethylamine                                                              | X | S/P | 1 | 2G | Cont | No | -  | -   | Yes  | C | T  | ABC | Yes | 15.12, 15.17, 15.19                                |
| Alkyl dithiocarbamate (C19-C35)                                                         | Y | P   | 3 | 2G | Open | No |    |     | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6, 16.2.9                            |
| Alkyldithiothiadiazole (C6-C24)                                                         | Y | P   | 3 | 2G | Open | No | -  | -   | Yes  | O | No | AC  | No  | 15.19.6, 16.2.6                                    |
| Alkyl ester copolymer (C4-C20)                                                          | Y | P   | 2 | 2G | Open | No |    |     | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6, 16.2.9                            |
| Alkyl (C7-C9) nitrates                                                                  | Y | S/P | 2 | 2G | Cont | No |    |     | Yes  | C | T  | ABC | Yes | 15.12, 15.17, 15.19, 15.20, 16.6.1, 16.6.2, 16.6.3 |
| Alkyl (C8-C10)/(C12-C14):(40% or less/60% or more) polyglucoside solution (55% or less) | Y | S/P | 3 | 2G | Cont | No |    |     | Yes  | C | T  | AC  | Yes | 15.12, 15.17, 15.19, 16.2.6, 16.2.9                |
| Alkyl (C8-C10)/(C12-C14):(60% or more/40% or less) polyglucoside solution(55% or less)  | Y | S/P | 3 | 2G | Cont | No |    |     | Yes  | R | T  | AC  | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9          |
| Alkyl (C7-C11) phenol poly(4-12) ethoxylate                                             | Y | S/P | 2 | 2G | Cont | No |    |     | Yes  | R | T  | AC  | No  | 15.12.3, 15.12.4, 15.19.6                          |
| Alkyl (C8-C40) phenol sulphide                                                          | Z | S/P | 3 | 2G | Open | No |    |     | Yes  | O | No | ABC | No  |                                                    |
| Alkyl (C8-C9) phenylamine in aromatic solvents                                          | Y | S/P | 2 | 2G | Cont | No | T1 | IIB | No   | R | FT | ABC | No  | 15.12.3, 15.12.4, 15.19.6                          |
| Alkyl (C9-C15) phenyl propoxylate                                                       | Z | S/P | 3 | 2G | Cont | No |    |     | Yes  | R | T  | ABC | No  | 15.12.3, 15.12.4, 15.19.6                          |
| Alkyl (C8-C10) polyglucoside solution (65% or less)                                     | Y | S/P | 3 | 2G | Cont | No |    |     | Yes  | R | T  | AC  | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.6                  |

| a                                                                              | c | d   | e | f  | g    | h  | i' | i'' | i''' | j | k  | l   | n   | o                                                                                         |
|--------------------------------------------------------------------------------|---|-----|---|----|------|----|----|-----|------|---|----|-----|-----|-------------------------------------------------------------------------------------------|
| Alkyl (C8-C10)/(C12-C14):(50%/50%) polyglucoside solution (55% or less)        | Y | S/P | 3 | 2G | Cont | No |    |     | Yes  | C | T  | AC  | Yes | 15.12, 15.17, 15.19, 16.2.6, 16.2.9                                                       |
| Alkyl (C12-C14) polyglucoside solution (55% or less)                           | Y | S/P | 3 | 2G | Cont | No |    |     | Yes  | C | T  | AC  | Yes | 15.12, 15.17, 15.19, 16.2.9                                                               |
| Alkyl (C12-C16) propoxyamine ethoxylate                                        | X | S/P | 2 | 2G | Cont | No | -  | -   | Yes  | C | T  | AC  | Yes | 15.12, 15.17, 15.19, 16.2.6                                                               |
| Alkyl (C10-C20, saturated and unsaturated) phosphite                           | Y | P   | 2 | 2G | Open | No |    |     | Yes  | O | No | ABC | No  | 15.19.6, 16.2.9                                                                           |
| Alkyl sulphonic acid ester of phenol                                           | Y | P   | 3 | 2G | Open | No |    |     | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6                                                                           |
| Alkyl (C18+) toluenes                                                          | Y | S/P | 2 | 2G | Open | No | -  | -   | Yes  | O | No | ABC | No  | 15.19.6, 16.2.9                                                                           |
| Alkyl (C18-C28) toluenesulphonic acid                                          | Y | S/P | 2 | 2G | Cont | No | -  | -   | Yes  | C | T  | ABC | Yes | 15.11.2, 15.11.3, 15.11.4, 15.11.6, 15.11.7, 15.11.8, 15.12, 15.17, 15.19, 16.2.6, 16.2.9 |
| Alkyl (C18-C28) toluenesulphonic acid, calcium salts, borated                  | Y | S/P | 3 | 2G | Open | No | -  | -   | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6                                                                           |
| Alkyl (C18-C28) toluenesulphonic acid, calcium salts, low overbase             | Y | S/P | 2 | 2G | Cont | No | -  | -   | Yes  | R | T  | ABC | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.6                                                         |
| Alkyl (C18-C28) toluenesulphonic acid, calcium salts, high overbase            | Y | S/P | 3 | 2G | Open | No | -  | -   | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6                                                                           |
| Allyl alcohol                                                                  | Y | S/P | 2 | 2G | Cont | No | T2 | IIB | No   | C | FT | AC  | Yes | 15.12, 15.17, 15.19                                                                       |
| Allyl chloride                                                                 | Y | S/P | 2 | 2G | Cont | No | T2 | IIA | No   | C | FT | AC  | No  | 15.12, 15.17, 15.19                                                                       |
| Aluminium chloride/Hydrogen chloride solution                                  | Y | S/P | 2 | 2G | Cont | No | -  | -   | NF   | C | T  | No  | Yes | 15.11, 15.12, 15.17, 15.19                                                                |
| Aluminium hydroxide, sodium hydroxide, sodium carbonate solution (40% or less) | Y | S/P | 2 | 2G | Cont | No |    |     | NF   | C | T  | No  | Yes | 15.12, 15.17, 15.19                                                                       |
| Aluminium sulphate solution                                                    | Y | S/P | 2 | 2G | Cont | No |    |     | NF   | C | T  | No  | Yes | 15.12, 15.17, 15.19                                                                       |
| 2-(2-Aminoethoxy) ethanol                                                      | Z | S/P | 3 | 2G | Cont | No |    |     | Yes  | C | T  | AD  | Yes | 15.12, 15.17, 15.19                                                                       |

| a                                                        | c | d   | e | f  | g    | h     | i' | i'' | i''' | j | k  | l  | n   | o                                                                      |
|----------------------------------------------------------|---|-----|---|----|------|-------|----|-----|------|---|----|----|-----|------------------------------------------------------------------------|
| Aminoethyldiethanolamine/Aminoethylethanolamine solution | Z | S/P | 3 | 2G | Cont | No    | -  | -   | Yes  | C | T  | AC | Yes | 15.12, 15.17, 15.19, 16.2.9                                            |
| Aminoethyl ethanolamine                                  | Z | S/P | 3 | 2G | Cont | No    | -  | -   | Yes  | C | T  | AC | Yes | 15.12, 15.17, 15.19                                                    |
| N-Aminoethylpiperazine                                   | Z | S/P | 3 | 2G | Cont | No    |    |     | Yes  | C | T  | AC | Yes | 15.12, 15.17, 15.19                                                    |
| 2-Amino-2-methyl-1-propanol                              | Z | S/P | 3 | 2G | Cont | No    |    |     | Yes  | C | T  | AC | Yes | 15.12, 15.17, 15.19                                                    |
| Ammonia aqueous (28% or less)                            | Y | S/P | 2 | 2G | Cont | No    |    |     | NF   | C | T  | No | Yes | 15.12, 15.17, 15.19                                                    |
| Ammonium chloride solution (less than 25%) (*)           | Z | S/P | 3 | 2G | Open | No    | -  | -   | NF   | O | No | No | No  |                                                                        |
| Ammonium hydrogen phosphate solution                     | Z | P   | 3 | 2G | Open | No    |    |     | Yes  | O | No | AC | No  |                                                                        |
| Ammonium lignosulphonate solutions                       | Z | P   | 3 | 2G | Open | No    | -  | -   | Yes  | O | No | AC | No  | 16.2.9                                                                 |
| Ammonium nitrate solution (93% or less) (*)              | Z | S/P | 2 | 1G | Cont | No    |    |     | NF   | R | T  | No | No  | 15.2, 15.11.4, 15.11.6,<br>15.12.3, 15.12.4, 15.18,<br>15.19.6, 16.2.9 |
| Ammonium polyphosphate solution                          | Z | P   | 3 | 2G | Open | No    | -  | -   | Yes  | O | No | AC | No  |                                                                        |
| Ammonium sulphate solution                               | Z | P   | 3 | 2G | Open | No    |    |     | NF   | O | No | No | No  |                                                                        |
| Ammonium sulphide solution (45% or less) (*)             | Y | S/P | 2 | 2G | Cont | Inert | T4 | IIB | No   | C | FT | AC | No  | 15.12, 15.17, 15.19, 16.6.1,<br>16.6.2, 16.6.3                         |
| Ammonium thiosulphate solution (60% or less)             | Z | S/P | 3 | 2G | Open | No    |    |     | NF   | O | No | No | No  |                                                                        |

| a                                                                  | c | d   | e | f  | g    | h  | i' | i'' | i''' | j | k  | l   | n   | o                                       |
|--------------------------------------------------------------------|---|-----|---|----|------|----|----|-----|------|---|----|-----|-----|-----------------------------------------|
| Amyl acetate (all isomers)                                         | Y | S/P | 3 | 2G | Cont | No | T2 | IIA | No   | R | F  | ABC | No  | 15.19.6                                 |
| n-Amyl alcohol                                                     | Z | S/P | 2 | 2G | Cont | No | T2 | IIA | No   | C | FT | ABC | Yes | 15.12, 15.17, 15.19                     |
| Amyl alcohol, primary                                              | Z | S/P | 3 | 2G | Cont | No | T2 | IIA | No   | R | FT | ABC | No  | 15.12.3, 15.12.4, 15.19.6               |
| sec-Amyl alcohol                                                   | Z | S/P | 3 | 2G | Cont | No | T2 | IIA | No   | R | FT | ABC | No  | 15.12.3, 15.12.4, 15.19.6               |
| tert-Amyl alcohol                                                  | Z | S/P | 3 | 2G | Cont | No | T2 | IIA | No   | R | F  | AC  | No  | 15.19.6                                 |
| tert-Amyl ethyl ether                                              | Z | P   | 3 | 2G | Cont | No | T3 | IIA | No   | R | F  | ABC | No  | 15.19.6                                 |
| tert-Amyl methyl ether                                             | X | S/P | 2 | 2G | Cont | No | T2 | IIB | No   | R | FT | AC  | No  | 15.12.3, 15.12.4, 15.19.6               |
| Aniline                                                            | Y | S/P | 2 | 2G | Cont | No | T1 | IIA | Yes  | C | T  | AC  | Yes | 15.12, 15.17, 15.19                     |
| Aryl polyolefins (C11-C50)                                         | Y | P   | 2 | 2G | Open | No |    |     | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6, 16.2.9                 |
| Aviation alkylates (C8 paraffins and iso-paraffins BPT 95 - 120°C) | X | S/P | 2 | 2G | Cont | No | T3 | IIA | No   | R | F  | ABC | No  | 15.19.6                                 |
| Barium long chain (C11-C50) alkaryl sulphonate                     | Y | S/P | 2 | 2G | Cont | No |    |     | Yes  | R | T  | ABC | No  | 15.12.3, 15.12.4, 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 | FT | ABC | No  | 15.12, 15.17, 15.19.6, 16.2.9           |
| Benzene sulphonyl chloride                                         | Y | S/P | 3 | 2G | Cont | No |    |     | Yes  | C | T  | ABC | Yes | 15.12, 15.17, 15.19, 16.2.9             |
| Benzenetricarboxylic acid, trioctyl ester                          | Y | S/P | 2 | 2G | Cont | No |    |     | Yes  | R | T  | ABC | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.6       |
| Benzyl acetate                                                     | Y | S/P | 2 | 2G | Cont | No |    |     | Yes  | R | T  | AC  | No  | 15.12.3, 15.12.4, 15.19.6               |
| Benzyl alcohol                                                     | Y | S/P | 3 | 2G | Cont | No |    |     | Yes  | R | T  | AC  | No  | 15.12.3, 15.12.4, 15.19.6               |

| a                                                                                                                                      | c | d   | e | f  | g    | h  | i' | i'' | i''' | j | k  | l   | n   | o                              |
|----------------------------------------------------------------------------------------------------------------------------------------|---|-----|---|----|------|----|----|-----|------|---|----|-----|-----|--------------------------------|
| Benzyl chloride                                                                                                                        | Y | S/P | 2 | 2G | Cont | No | T1 | IIA | No   | C | FT | ABC | Yes | 15.12, 15.13, 15.17, 15.19     |
| Bio-fuel blends of Diesel/gas oil and FAME (>25% but <99% by volume)                                                                   | X | S/P | 2 | 2G | Cont | No | -  | -   | Yes  | C | T  | ABC | No  | 15.12, 15.17, 15.19.6          |
| Bio-fuel blends of Diesel/gas oil and vegetable oil (>25% but <99% by volume)                                                          | X | S/P | 2 | 2G | Cont | No | -  | -   | Yes  | C | T  | ABC | No  | 15.12, 15.17, 15.19.6          |
| Bio-fuel blends of Gasoline and Ethyl alcohol (>25% but <99% by volume)                                                                | X | S/P | 2 | 2G | Cont | No | T3 | IIA | No   | R | FT | AC  | No  | 15.12, 15.17, 15.19.6          |
| Bis (2-ethylhexyl) terephthalate                                                                                                       | Y | S/P | 2 | 2G | Open | No |    |     | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6                |
| Brake fluid base mix: Poly(2-8)alkylene (C2-C3) glycols/Polyalkylene (C2-C10) glycols monoalkyl (C1-C4) ethers and their borate esters | Z | P   | 3 | 2G | Open | No | -  | -   | Yes  | O | No | AC  | No  |                                |
| Bromochloromethane                                                                                                                     | Z | P   | 3 | 2G | Open | No |    |     | NF   | O | No | No  | No  |                                |
| Butene oligomer                                                                                                                        | X | P   | 2 | 2G | Cont | No | T4 | IIB | No   | R | F  | ABC | No  | 15.19.6                        |
| 2-Butoxyethanol (58%)/Hyperbranched polyesteramide (42%) (mixture)                                                                     | Y | S/P | 2 | 2G | Cont | No |    |     | Yes  | C | T  | AC  | No  | 15.12.3, 15.12.4, 15.19        |
| Butyl acetate (all isomers)                                                                                                            | Y | P   | 3 | 2G | Cont | No | T2 | IIA | No   | R | F  | AC  | No  | 15.19.6                        |
| Butyl acrylate (all isomers)                                                                                                           | Y | S/P | 3 | 2G | Cont | No | T2 | IIB | No   | R | F  | ABC | No  | 15.13, 15.19.6, 16.6.1, 16.6.2 |
| tert-Butyl alcohol                                                                                                                     | Z | P   | 3 | 2G | Cont | No | T1 | IIA | No   | R | F  | AC  | No  | 15.19.6                        |
| Butylamine (all isomers)                                                                                                               | Y | S/P | 2 | 2G | Cont | No | T2 | IIA | No   | C | FT | AC  | Yes | 15.12, 15.17, 15.19            |
| Butylbenzene (all isomers)                                                                                                             | X | S/P | 2 | 2G | Cont | No | T2 | IIA | No   | R | FT | ABC | No  | 15.12.3, 15.12.4, 15.19.6      |
| Butyl benzyl phthalate                                                                                                                 | X | S/P | 2 | 2G | Cont | No |    |     | Yes  | C | T  | AC  | No  | 15.12, 15.17, 15.19.6          |

| a                                              | c | d   | e | f  | g    | h     | i' | i'' | i''' | j | k  | l   | n  | o                                                                                                                                 |
|------------------------------------------------|---|-----|---|----|------|-------|----|-----|------|---|----|-----|----|-----------------------------------------------------------------------------------------------------------------------------------|
| Butyl butyrate (all isomers)                   | Y | S/P | 3 | 2G | Cont | No    | T1 | IIA | No   | R | F  | ABC | No | 15.19.6                                                                                                                           |
| Butyl/Decyl/Cetyl/Eicosyl methacrylate mixture | Y | S/P | 2 | 2G | Open | No    | T3 | IIA | No   | R | F  | ABC | No | 15.13, 15.19.6, 16.6.1, 16.6.2                                                                                                    |
| Butylene glycol                                | Z | S/P | 3 | 2G | Open | No    |    |     | Yes  | O | No | AC  | No |                                                                                                                                   |
| 1,2-Butylene oxide                             | Y | S/P | 3 | 2G | Cont | Inert | T2 | IIB | No   | C | FT | 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, 15.12, 15.17, 15.19.6 |
| n-Butyl ether                                  | Y | S/P | 3 | 2G | Cont | Inert | T4 | IIB | No   | R | F  | AC  | No | 15.4.6, 15.19                                                                                                                     |
| Butyl methacrylate                             | Z | S/P | 3 | 2G | Cont | No    | T3 | IIA | No   | R | F  | ABC | No | 15.13, 15.19.6, 16.6.1, 16.6.2                                                                                                    |
| n-Butyl propionate                             | Y | P   | 3 | 2G | Cont | No    | T2 | IIA | No   | R | F  | ABC | No | 15.19.6                                                                                                                           |
| Butyraldehyde (all isomers)                    | Y | S/P | 3 | 2G | Cont | No    | T3 | IIA | No   | R | F  | AC  | No | 15.19.6                                                                                                                           |
| Butyric acid                                   | Y | S/P | 3 | 2G | Cont | No    |    |     | Yes  | O | No | AC  | 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 | S/P | 3 | 2G | Cont | No    |    |     | Yes  | C | T  | ABC | No | 15.12, 15.17, 15.19.6                                                                                                             |
| Calcium alkaryl sulphonate (C11-C50)           | Z | S/P | 3 | 2G | Open | No    | -  | -   | Yes  | O | No | ABC | No |                                                                                                                                   |
| Calcium alkyl (C10-C28) salicylate             | Y | S/P | 2 | 2G | Cont | No    | -  | -   | Yes  | R | T  | ABC | No | 15.12.3, 15.12.4, 15.19.6, 16.2.9                                                                                                 |
| Calcium hydroxide slurry                       | Y | S/P | 2 | 2G | Cont | No    | -  | -   | Yes  | R | T  | AC  | No | 15.12.3, 15.12.4, 15.19.6, 16.2.9                                                                                                 |

| a                                                             | c | d   | e    | f  | g    | h         | i' | i'' | i''' | j | k  | l   | n   | o                                |
|---------------------------------------------------------------|---|-----|------|----|------|-----------|----|-----|------|---|----|-----|-----|----------------------------------|
| Calcium hypochlorite solution (15% or less)                   | Y | S/P | 2    | 2G | Cont | No        |    |     | NF   | R | T  | No  | No  | 15.12.3, 15.12.4, 15.19.6        |
| Calcium hypochlorite solution (more than 15%)                 | X | S/P | 1    | 2G | Cont | No        |    |     | NF   | R | T  | No  | No  | 15.12.3, 15.12.4, 15.19          |
| Calcium lignosulphonate solutions                             | Z | P   | 3    | 2G | Open | No        | -  | -   | NF   | O | No | No  | No  | 16.2.9                           |
| Calcium long-chain alkyl (C5-C10) phenate                     | Y | P   | 3    | 2G | Open | No        |    |     | Yes  | O | No | AC  | No  | 15.19.6                          |
| Calcium long-chain alkyl (C11-C40) phenate                    | Y | S/P | 2    | 2G | Open | No        | -  | -   | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6                  |
| Calcium long-chain alkyl phenate sulphide (C8-C40)            | Y | S/P | 2    | 2G | Open | No        |    |     | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6                  |
| Calcium long-chain alkyl salicylate (C13+)                    | Y | S/P | 2    | 2G | Open | No        |    |     | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6, 16.2.9          |
| Calcium long-chain alkyl (C18-C28) salicylate                 | Y | S/P | 2    | 2G | Open | No        | -  | -   | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6, 16.2.9          |
| Calcium nitrate/Magnesium nitrate/Potassium chloride solution | Z | S/P | 3    | 2G | Open | No        | -  | -   | NF   | O | No | No  | No  | 16.2.9                           |
| Calcium nitrate solution (50% or less)                        | Z | S   | 3    | 2G | Open | No        | -  | -   | NF   | O | No | No  | No  | 16.2.9                           |
| Camelina oil                                                  | Y | S/P | 2(k) | 2G | Open | No        |    |     | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6, 16.2.7          |
| epsilon-Caprolactam (molten or aqueous solutions)             | Z | S/P | 3    | 2G | Cont | No        |    |     | Yes  | R | T  | AC  | No  | 15.12.3, 15.12.4, 15.19.6        |
| Carbolic oil                                                  | Y | S/P | 2    | 2G | Cont | No        |    |     | Yes  | C | FT | ABC | Yes | 15.12, 15.17, 15.19, 16.2.9      |
| Carbon disulphide                                             | Y | S/P | 1    | 1G | Cont | Pad+inert | T6 | IIC | No   | C | FT | C   | Yes | 15.3, 15.12, 15.17, 15.18, 15.19 |
| Carbon tetrachloride                                          | Y | S/P | 2    | 2G | Cont | No        |    |     | NF   | C | T  | No  | No  | 15.12, 15.17, 15.19.6            |

| a                                                                                                   | c | d   | e    | f  | g    | h  | i' | i'' | i''' | j | k  | l   | n   | o                                                                                        |
|-----------------------------------------------------------------------------------------------------|---|-----|------|----|------|----|----|-----|------|---|----|-----|-----|------------------------------------------------------------------------------------------|
| Cashew nut shell oil (untreated)                                                                    | Y | S/P | 2    | 2G | Cont | No |    |     | Yes  | R | T  | ABC | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.7, 16.2.9                                        |
| Castor oil                                                                                          | Y | S/P | 2(k) | 2G | Open | No | -  | -   | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6, 16.2.7, 16.2.9                                                          |
| Cesium formate solution (*)                                                                         | Y | S/P | 3    | 2G | Open | No | -  | -   | NF   | O | No | No  | No  | 15.19.6                                                                                  |
| Cetyl/Eicosyl methacrylate mixture                                                                  | Y | S/P | 2    | 2G | Open | No |    |     | Yes  | O | No | ABC | No  | 15.13, 15.19.6, 16.2.9, 16.6.1, 16.6.2                                                   |
| Chlorinated paraffins (C10-C13)                                                                     | X | S/P | 1    | 2G | Cont | No |    |     | NF   | C | T  | No  | No  | 15.12, 15.17, 15.19, 16.2.6                                                              |
| Chlorinated paraffins (C14-C17) (with 50% chlorine or more, and less than 1% C13 or shorter chains) | X | S/P | 1    | 2G | Cont | No | -  | -   | Yes  | C | T  | AC  | No  | 15.12, 15.17, 15.19                                                                      |
| Chloroacetic acid (80% or less)                                                                     | Y | S/P | 2    | 2G | Cont | No |    |     | NF   | C | T  | No  | Yes | 15.11.2, 15.11.3, 15.11.4, 15.11.6, 15.11.7, 15.11.8, 15.12, 15.17, 15.18, 15.19, 16.2.9 |
| Chlorobenzene                                                                                       | Y | S/P | 2    | 2G | Cont | No | T1 | IIA | No   | R | FT | ABC | No  | 15.12.3, 15.12.4, 15.19.6                                                                |
| Chloroform                                                                                          | Y | S/P | 3    | 2G | Cont | No |    |     | NF   | C | T  | No  | No  | 15.12, 15.17, 15.19.6                                                                    |
| Chlorohydrins (crude)                                                                               | Y | S/P | 2    | 2G | Cont | No | T3 | IIA | No   | C | FT | AC  | Yes | 15.12, 15.17, 15.19                                                                      |
| 4-Chloro-2-methylphenoxyacetic acid, dimethylamine salt solution                                    | Y | S/P | 2    | 2G | Cont | No |    |     | NF   | R | T  | No  | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.9                                                        |
| o-Chloronitrobenzene                                                                                | Y | S/P | 2    | 2G | Cont | No |    |     | Yes  | C | T  | ABC | No  | 15.12.3, 15.12.4, 15.19, 16.2.6, 16.2.9                                                  |
| 1-(4-Chlorophenyl)-4,4- dimethyl-pentan-3-one                                                       | Y | S/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 | 2    | 2G | Cont | No |    |     | Yes  | C | T  | AC  | No  | 15.11.2, 15.11.3, 15.11.4, 15.11.6, 15.11.7, 15.11.8, 15.12.3, 15.12.4, 15.19, 16.2.9    |

| a                                               | c | d   | e    | f  | g    | h  | i' | i'' | i''' | j | k  | l    | n   | o                                                                                                  |
|-------------------------------------------------|---|-----|------|----|------|----|----|-----|------|---|----|------|-----|----------------------------------------------------------------------------------------------------|
| 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, 15.17, 15.18, 15.19 |
| m-Chlorotoluene                                 | Y | S/P | 2    | 2G | Cont | No | T4 | IIA | No   | R | FT | ABC  | No  | 15.12.3, 15.12.4, 15.19                                                                            |
| o-Chlorotoluene                                 | Y | P   | 2    | 2G | Cont | No | T1 | IIA | No   | R | F  | ABC  | No  | 15.19.6                                                                                            |
| p-Chlorotoluene                                 | Y | P   | 2    | 2G | Cont | No | T1 | IIA | No   | R | F  | ABC  | No  | 15.19.6, 16.2.9                                                                                    |
| Chlorotoluenes (mixed isomers)                  | Y | P   | 2    | 2G | Cont | No | T4 | IIA | No   | R | F  | ABC  | No  | 15.19.6                                                                                            |
| Choline chloride solutions                      | Z | P   | 3    | 2G | Open | No |    |     | Yes  | O | No | AC   | No  |                                                                                                    |
| Citric acid (70% or less)                       | Z | S/P | 3    | 2G | Cont | No |    |     | Yes  | C | T  | AC   | Yes | 15.12, 15.17, 15.19                                                                                |
| Coal tar                                        | X | S/P | 2    | 2G | Cont | No | T2 | IIA | Yes  | C | T  | BD   | No  | 15.12, 15.17, 15.19.6, 16.2.6, 16.2.9                                                              |
| Coal tar naphtha solvent                        | Y | S/P | 2    | 2G | Cont | No | T3 | IIA | No   | C | FT | ABC  | No  | 15.12, 15.17, 15.19.6, 16.2.9                                                                      |
| Coal tar pitch (molten) (*)                     | X | S/P | 2    | 1G | Cont | No | T2 | IIA | Yes  | C | T  | ABCD | No  | 15.12, 15.17, 15.19.6, 16.2.6, 16.2.9                                                              |
| Cocoa butter                                    | Y | S/P | 2(k) | 2G | Open | No | -  | -   | Yes  | O | No | ABC  | No  | 15.19.6, 16.2.6, 16.2.7, 16.2.9                                                                    |
| Coconut oil                                     | Y | S/P | 2(k) | 2G | Open | No | -  | -   | Yes  | O | No | ABC  | No  | 15.19.6, 16.2.6, 16.2.7, 16.2.9                                                                    |
| Coconut oil fatty acid                          | Y | S/P | 2    | 2G | Open | No | -  | -   | Yes  | O | No | ABC  | No  | 15.19.6, 16.2.6, 16.2.7, 16.2.9                                                                    |
| Coconut oil fatty acid methyl ester             | Y | P   | 2    | 2G | Open | No | -  | -   | Yes  | O | No | ABC  | No  | 15.19.6                                                                                            |
| Copper salt of long chain (C17+) alkanolic acid | Y | P   | 2    | 2G | Open | No | -  | -   | Yes  | O | No | ABC  | No  | 15.19.6, 16.2.6, 16.2.9                                                                            |
| Corn Oil                                        | Y | S/P | 2(k) | 2G | Open | No | -  | -   | Yes  | O | No | ABC  | No  | 15.19.6, 16.2.6, 16.2.7, 16.2.9                                                                    |
| Cotton seed oil                                 | Y | S/P | 2(k) | 2G | Open | No | -  | -   | Yes  | O | No | ABC  | No  | 15.19.6, 16.2.6, 16.2.7, 16.2.9                                                                    |

| a                                                     | c | d   | e | f  | g    | h  | i' | i'' | i''' | j | k  | l   | n   | o                                     |
|-------------------------------------------------------|---|-----|---|----|------|----|----|-----|------|---|----|-----|-----|---------------------------------------|
| Creosote (coal tar)                                   | X | S/P | 1 | 2G | Cont | No | T2 | IIA | Yes  | C | T  | AD  | No  | 15.12, 15.17, 15.19.6, 16.2.6, 16.2.9 |
| Cresols (all isomers)                                 | Y | S/P | 1 | 2G | Cont | No | T1 | IIA | Yes  | C | T  | ABC | Yes | 15.12, 15.18, 15.19, 16.2.9           |
| Cresol/Phenol/Xylenol mixture                         | Y | S/P | 2 | 2G | Cont | No |    |     | Yes  | C | T  | AC  | Yes | 15.12, 15.17, 15.19                   |
| Cresylic acid, dephenolized                           | Y | S/P | 2 | 2G | Cont | No |    |     | Yes  | C | T  | ABC | Yes | 15.12, 15.17, 15.19                   |
| Cresylic acid, sodium salt solution                   | Y | S/P | 2 | 2G | Cont | No | T4 | IIB | No   | C | FT | AC  | Yes | 15.12, 15.17, 15.19, 16.2.9           |
| Crotonaldehyde                                        | X | S/P | 1 | 1G | Cont | No | T3 | IIB | No   | C | FT | AC  | Yes | 15.12, 15.17, 15.18, 15.19            |
| 1,5,9-Cyclododecatriene                               | X | S/P | 2 | 2G | Open | No |    |     | Yes  | O | No | AC  | No  | 15.13, 15.19.6, 16.6.1, 16.6.2        |
| Cycloheptane                                          | X | S/P | 2 | 2G | Cont | No | T4 | IIA | No   | R | F  | AC  | No  | 15.19.6                               |
| Cyclohexane                                           | Y | S/P | 2 | 2G | Cont | No | T3 | IIA | No   | R | F  | AC  | No  | 15.19.6, 16.2.9                       |
| Cyclohexane-1,2-dicarboxylic acid, diisononyl ester   | Y | S/P | 2 | 2G | Open | No |    |     | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6                       |
| Cyclohexane oxidation products, sodium salts solution | Z | P   | 3 | 2G | Open | No |    |     | NF   | O | No | No  | No  |                                       |
| Cyclohexanol                                          | Y | P   | 2 | 2G | Open | No |    |     | Yes  | O | No | ABC | No  | 15.19.6, 16.2.9                       |
| Cyclohexanone                                         | Z | S/P | 3 | 2G | Cont | No | T2 | IIA | No   | R | F  | AC  | No  | 15.19.6                               |
| Cyclohexanone, Cyclohexanol mixture                   | Y | S/P | 3 | 2G | Cont | No |    |     | Yes  | R | F  | AC  | No  | 15.19.6                               |
| Cyclohexyl acetate                                    | Y | S/P | 3 | 2G | Cont | No | T2 | IIA | No   | R | FT | AC  | No  | 15.12.3, 15.12.4, 15.19.6             |
| Cyclohexylamine                                       | Y | S/P | 3 | 2G | Cont | No | T3 | IIA | No   | C | FT | AC  | Yes | 15.12, 15.17, 15.19                   |

| a                                            | c | d   | e | f  | g    | h  | i' | i'' | i''' | j | k  | l   | n  | o                                              |
|----------------------------------------------|---|-----|---|----|------|----|----|-----|------|---|----|-----|----|------------------------------------------------|
| 1,3-Cyclopentadiene dimer (molten)           | Y | S/P | 2 | 2G | Cont | No | T1 | IIB | No   | R | FT | AC  | No | 15.12.3, 15.12.4, 15.19, 16.2.6, 16.2.9        |
| Cyclopentane                                 | Y | P   | 2 | 2G | Cont | No | T2 | IIA | No   | R | F  | AC  | No | 15.19.6                                        |
| Cyclopentene                                 | Y | S/P | 3 | 2G | Cont | No | T2 | IIA | No   | R | F  | AC  | No | 15.19.6                                        |
| p-Cymene                                     | Y | S/P | 2 | 2G | Cont | No | T2 | IIA | No   | R | F  | AC  | No | 15.19.6                                        |
| Decahydronaphthalene                         | Y | S/P | 2 | 2G | Cont | No | T3 | IIA | No   | R | FT | ABC | No | 15.12.3, 15.12.4, 15.19.6                      |
| Decanoic acid                                | X | S/P | 2 | 2G | Cont | No |    |     | Yes  | R | T  | AC  | No | 15.12.3, 15.12.4, 15.19.6, 16.2.9              |
| Decene                                       | X | P   | 2 | 2G | Cont | No | T3 | IIA | No   | R | F  | AC  | No | 15.19.6                                        |
| Decyl acrylate                               | X | S/P | 1 | 2G | Cont | No | -  | -   | Yes  | R | T  | ABC | No | 15.12.3, 15.12.4, 15.13, 15.19, 16.6.1, 16.6.2 |
| Decyl alcohol (all isomers)                  | Y | P   | 2 | 2G | Open | No |    |     | Yes  | O | No | AC  | No | 15.19.6, 16.2.9(e)                             |
| Decyl/Dodecyl/Tetradecyl alcohol mixture     | Y | S/P | 2 | 2G | Cont | No | -  | -   | Yes  | R | T  | ABC | No | 15.12.3, 15.12.4, 15.19.6, 16.2.9              |
| Decyloxytetrahydrothiophene dioxide          | X | S/P | 2 | 2G | Open | No |    |     | Yes  | O | No | AC  | No | 15.19.6, 16.2.9                                |
| Diacetone alcohol                            | Z | S/P | 3 | 2G | Cont | No | T1 | IIA | No   | R | FT | AC  | No | 15.12.3, 15.12.4, 15.19.6                      |
| Dialkyl (C8-C9) diphenylamines               | Z | P   | 3 | 2G | Open | No |    |     | Yes  | O | No | ABC | No |                                                |
| Dialkyl (C7-C13) phthalates                  | X | S/P | 2 | 2G | Cont | No |    |     | Yes  | C | T  | ABC | No | 15.12, 15.17, 15.19.6, 16.2.6                  |
| Dialkyl (C9-C10) phthalates                  | Y | S/P | 2 | 2G | Open | No | -  | -   | Yes  | O | No | ABC | No | 15.19.6, 16.2.6                                |
| Dialkyl thiophosphates sodium salts solution | Y | S/P | 2 | 2G | Cont | No | -  | -   | Yes  | R | T  | AC  | No | 15.12.3, 15.12.4, 15.19.6, 16.2.9              |

| a                                                                         | c | d   | e | f  | g    | h   | i' | i'' | i''' | j | k  | l   | n   | o                                            |
|---------------------------------------------------------------------------|---|-----|---|----|------|-----|----|-----|------|---|----|-----|-----|----------------------------------------------|
| 2,6-Diaminohexanoic acid phosphonate mixed salts solution                 | Z | S/P | 3 | 2G | Cont | No  |    |     | NF   | R | No | No  | No  | 15.11, 15.17, 15.19.6                        |
| Dibromomethane                                                            | Y | S/P | 2 | 2G | Open | No  |    |     | NF   | O | No | No  | No  | 15.19.6                                      |
| Dibutylamine                                                              | Y | S/P | 2 | 2G | Cont | No  | T2 | IIA | No   | C | FT | ABC | Yes | 15.12, 15.17, 15.19                          |
| Dibutyl hydrogen phosphonate                                              | Y | S/P | 2 | 2G | Cont | No  |    |     | Yes  | C | T  | AC  | Yes | 15.12, 15.17, 15.19, 16.2.9                  |
| 2,6-Di-tert-butylphenol                                                   | X | S/P | 2 | 2G | Open | No  | -  | -   | Yes  | O | No | ABC | No  | 15.19.6, 16.2.9                              |
| Dibutyl phthalate                                                         | X | S/P | 2 | 2G | Cont | No  |    |     | Yes  | C | T  | AC  | No  | 15.12, 15.17, 15.19.6                        |
| Dibutyl terephthalate                                                     | Y | P   | 2 | 2G | Open | No  | -  | -   | Yes  | O | No | ABC | No  | 15.19.6, 16.2.9                              |
| Dichlorobenzene (all isomers)                                             | X | S/P | 2 | 2G | Cont | No  | T1 | IIA | Yes  | C | T  | ABD | No  | 15.12, 15.17, 15.19.6                        |
| 3,4-Dichloro-1-butene                                                     | Y | S/P | 2 | 2G | Cont | No  | T1 | IIA | No   | R | FT | ABC | No  | 15.12.3, 15.12.4, 15.19.6                    |
| 1,1-Dichloroethane                                                        | Z | S/P | 3 | 2G | Cont | No  | T2 | IIA | No   | R | F  | AC  | No  | 15.19.6                                      |
| Dichloroethyl ether                                                       | Y | S/P | 2 | 2G | Cont | No  | T2 | IIA | No   | C | FT | AC  | Yes | 15.12, 15.17, 15.18, 15.19                   |
| 1,6-Dichlorohexane                                                        | Y | P   | 2 | 2G | Open | No  | -  | -   | Yes  | O | No | ABC | No  | 15.19.6                                      |
| 2,2'-Dichloroisopropyl ether                                              | Y | S/P | 2 | 2G | Cont | No  |    |     | Yes  | R | T  | ABC | No  | 15.12.3, 15.12.4, 15.19                      |
| Dichloromethane                                                           | Y | S/P | 3 | 2G | Cont | No  | T1 | IIA | No   | C | FT | ABC | No  | 15.12, 15.17, 15.19.6                        |
| 2,4-Dichlorophenol                                                        | Y | S/P | 2 | 2G | Cont | Dry |    |     | Yes  | C | T  | AD  | Yes | 15.12, 15.16.2, 15.17, 15.19, 16.2.6, 16.2.9 |
| 2,4-Dichlorophenoxyacetic acid, diethanolamine salt solution              | Y | S/P | 3 | 2G | Cont | No  |    |     | NF   | C | T  | No  | Yes | 15.12, 15.17, 15.19, 16.2.9                  |
| 2,4-Dichlorophenoxyacetic acid, dimethylamine salt solution (70% or less) | Y | S/P | 3 | 2G | Cont | No  |    |     | NF   | C | T  | No  | Yes | 15.12, 15.17, 15.19, 16.2.9                  |

| a                                                                 | c | d   | e | f  | g    | h     | i' | i'' | i''' | j | k  | l   | n   | o                                                                                 |
|-------------------------------------------------------------------|---|-----|---|----|------|-------|----|-----|------|---|----|-----|-----|-----------------------------------------------------------------------------------|
| 2,4-Dichlorophenoxyacetic acid, triisopropanolamine salt solution | Y | S/P | 3 | 2G | Cont | No    |    |     | NF   | C | T  | No  | Yes | 15.12, 15.17, 15.19, 16.2.6, 16.2.9                                               |
| 1,1-Dichloropropane                                               | Y | S/P | 2 | 2G | Cont | No    | T1 | IIA | No   | R | F  | ABC | No  | 15.19.6                                                                           |
| 1,2-Dichloropropane                                               | Y | S/P | 3 | 2G | Cont | No    | T1 | IIA | No   | R | FT | ABC | No  | 15.12.3, 15.12.4, 15.19.6                                                         |
| 1,3-Dichloropropene                                               | X | S/P | 2 | 2G | Cont | No    | T2 | IIA | No   | C | FT | ABC | Yes | 15.12, 15.17, 15.19                                                               |
| Dichloropropene/Dichloropropane mixtures                          | X | S/P | 2 | 2G | Cont | No    | T2 | IIA | No   | C | FT | ABD | No  | 15.12, 15.17, 15.19                                                               |
| 2,2-Dichloropropionic acid                                        | Y | S/P | 2 | 2G | Cont | Dry   |    |     | Yes  | C | T  | AD  | Yes | 15.11.2, 15.11.4, 15.11.6, 15.11.7, 15.11.8, 15.12, 15.16.2, 15.17, 15.19, 16.2.9 |
| Dicyclopentadiene, Resin Grade, 81-89%                            | Y | S/P | 2 | 2G | Cont | Inert | T2 | IIB | No   | C | FT | ABC | Yes | 15.12, 15.13, 15.17, 15.19                                                        |
| Diethanolamine                                                    | Y | S/P | 3 | 2G | Cont | No    | T1 | IIA | Yes  | C | T  | AC  | No  | 15.12, 15.17, 15.19.6, 16.2.6, 16.2.9                                             |
| Diethylamine                                                      | Y | S/P | 3 | 2G | Cont | No    | T2 | IIA | No   | C | FT | AC  | Yes | 15.12, 15.17, 15.19                                                               |
| Diethylaminoethanol                                               | Y | S/P | 2 | 2G | Cont | No    | T2 | IIA | No   | R | FT | AC  | No  | 15.12.3, 15.12.4, 15.19.6                                                         |
| 2,6-Diethylaniline                                                | Y | S/P | 2 | 2G | Cont | No    |    |     | Yes  | R | T  | ABC | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.9                                                 |
| Diethylbenzene                                                    | Y | S/P | 2 | 2G | Cont | No    | T2 | IIA | No   | R | FT | AC  | No  | 15.12.3, 15.12.4, 15.19.6                                                         |
| Diethylene glycol                                                 | Z | S/P | 3 | 2G | Cont | No    |    |     | Yes  | R | T  | AC  | No  | 15.12.3, 15.12.4, 15.19.6                                                         |
| Diethylene glycol dibutyl ether                                   | Z | S/P | 3 | 2G | Open | No    | -  | -   | Yes  | O | No | AC  | No  |                                                                                   |
| Diethylene glycol diethyl ether                                   | Z | S/P | 3 | 2G | Cont | No    | -  | -   | Yes  | R | T  | AC  | No  | 15.12.3, 15.12.4, 15.19.6                                                         |

| a                                                             | c | d   | e | f  | g    | h     | i' | i'' | i''' | j | k  | l   | n   | o                                         |
|---------------------------------------------------------------|---|-----|---|----|------|-------|----|-----|------|---|----|-----|-----|-------------------------------------------|
| Diethylene glycol phthalate                                   | Y | S/P | 3 | 2G | Cont | No    | -  | -   | Yes  | R | T  | AC  | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.6         |
| Diethylenetriamine                                            | Y | S/P | 3 | 2G | Cont | No    | -  | -   | Yes  | C | T  | ABC | No  | 15.12, 15.17, 15.19                       |
| Diethylenetriaminepentaacetic acid, pentasodium salt solution | Z | P   | 3 | 2G | Open | No    | -  | -   | Yes  | O | No | AC  | No  |                                           |
| Diethyl ether (*)                                             | Z | S/P | 2 | 1G | Cont | Inert | T4 | IIB | No   | R | F  | AC  | No  | 15.4, 15.14, 15.19                        |
| Di-(2-ethylhexyl) adipate                                     | Y | S/P | 2 | 2G | Cont | No    |    |     | Yes  | C | T  | ABC | No  | 15.12, 15.17, 15.19.6                     |
| Di-(2-ethylhexyl) phosphoric acid                             | Y | S/P | 2 | 2G | Cont | No    |    |     | Yes  | R | T  | AD  | No  | 15.12.3, 15.12.4, 15.19.6                 |
| Diethyl phthalate                                             | Y | S/P | 2 | 2G | Open | No    |    |     | Yes  | O | No | AC  | No  | 15.19.6                                   |
| Diethyl sulphate                                              | Y | S/P | 2 | 2G | Cont | No    |    |     | Yes  | C | T  | AC  | Yes | 15.12, 15.17, 15.19                       |
| Diglycidyl ether of bisphenol A                               | X | S/P | 2 | 2G | Cont | No    |    |     | Yes  | R | T  | AC  | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9 |
| Diglycidyl ether of bisphenol F                               | Y | S/P | 2 | 2G | Cont | No    |    |     | Yes  | C | T  | AC  | No  | 15.12, 15.17, 15.19.6, 16.2.6             |
| Diheptyl phthalate                                            | Y | S/P | 2 | 2G | Open | No    |    |     | Yes  | O | No | ABC | No  | 15.19.6                                   |
| Di-n-hexyl adipate                                            | X | S/P | 1 | 2G | Open | No    |    |     | Yes  | O | No | AC  | No  | 15.19                                     |
| Dihexyl phthalate                                             | Y | S/P | 2 | 2G | Cont | No    |    |     | Yes  | C | T  | ABC | No  | 15.12, 15.17, 15.19.6                     |
| Diisobutylamine                                               | Y | S/P | 2 | 2G | Cont | No    | T4 | IIB | No   | C | FT | ABC | No  | 15.12.3, 15.12.4, 15.19                   |
| Diisobutylene                                                 | Y | P   | 2 | 2G | Cont | No    | T2 | IIA | No   | R | F  | AC  | No  | 15.19.6                                   |
| Diisobutyl ketone                                             | Y | S/P | 3 | 2G | Cont | No    | T2 | IIA | No   | R | FT | AC  | No  | 15.12.3, 15.12.4, 15.19.6                 |
| Diisobutyl phthalate                                          | X | S/P | 2 | 2G | Cont | No    |    |     | Yes  | C | T  | AC  | No  | 15.12, 15.17, 15.19.6                     |
| Diisononyl adipate                                            | Y | S/P | 2 | 2G | Open | No    | -  | -   | Yes  | O | No | AC  | No  | 15.19.6                                   |
| Diisooctyl phthalate                                          | Y | S/P | 2 | 2G | Open | No    |    |     | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6                           |
| Diisopropanolamine                                            | Z | P   | 3 | 2G | Open | No    | -  | -   | Yes  | O | No | AC  | No  | 16.2.9                                    |
| Diisopropylamine                                              | Y | S/P | 3 | 2G | Cont | No    | T2 | IIA | No   | R | FT | AC  | No  | 15.12.3, 15.12.4, 15.17, 15.19.6          |

| a                                                                  | c | d   | e | f  | g    | h  | i' | i'' | i''' | j | k  | l   | n   | o                              |
|--------------------------------------------------------------------|---|-----|---|----|------|----|----|-----|------|---|----|-----|-----|--------------------------------|
| Diisopropylbenzene (all isomers)                                   | X | S/P | 2 | 2G | Cont | No |    |     | Yes  | R | T  | AC  | No  | 15.12.3, 15.12.4, 15.19.6      |
| Diisopropylnaphthalene                                             | Y | S/P | 2 | 2G | Open | No | -  | -   | Yes  | O | No | AC  | No  | 15.19.6                        |
| N,N-Dimethylacetamide                                              | Z | S/P | 3 | 2G | Cont | No | -  | -   | Yes  | R | T  | AC  | No  | 15.12.3, 15.12.4, 15.19.6      |
| N,N-Dimethylacetamide solution (40% or less)                       | Z | S/P | 3 | 2G | Cont | No |    |     | NF   | R | T  | No  | No  | 15.12.3, 15.12.4, 15.19.6      |
| Dimethyl adipate                                                   | Y | P   | 2 | 2G | Open | No |    |     | Yes  | O | No | ABC | No  | 15.19.6, 16.2.9                |
| Dimethylamine solution (45% or less)                               | Y | S/P | 3 | 2G | Cont | No | T2 | IIA | No   | R | FT | AC  | No  | 15.12.3, 15.12.4, 15.19        |
| Dimethylamine solution (greater than 45% but not greater than 55%) | Y | S/P | 3 | 2G | Cont | No | T2 | IIB | No   | R | FT | AC  | No  | 15.12.3, 15.12.4, 15.19        |
| Dimethylamine solution (greater than 55% but not greater than 65%) | Y | S/P | 3 | 2G | Cont | No | T2 | IIB | No   | R | FT | AC  | No  | 15.12.3, 15.12.4, 15.14, 15.19 |
| N,N-Dimethylcyclohexylamine                                        | Y | S/P | 2 | 2G | Cont | No | T3 | IIB | No   | C | FT | AC  | Yes | 15.12, 15.17, 15.19            |
| Dimethyl disulphide                                                | Y | S/P | 2 | 2G | Cont | No | T3 | IIA | No   | R | FT | ABC | No  | 15.12.3, 15.12.4, 15.19.6      |
| N,N-Dimethyldodecylamine                                           | Y | S/P | 2 | 2G | Cont | No |    |     | Yes  | C | T  | ABC | Yes | 15.12, 15.17, 15.19            |
| Dimethylethanolamine                                               | Y | S/P | 3 | 2G | Cont | No | T3 | IIA | No   | R | FT | AC  | No  | 15.12.3, 15.12.4, 15.19.6      |
| Dimethylformamide                                                  | Y | S/P | 3 | 2G | Cont | No | T2 | IIA | No   | C | FT | AC  | No  | 15.12, 15.17, 15.19.6          |
| Dimethyl glutarate                                                 | Y | S/P | 3 | 2G | Cont | No |    |     | Yes  | R | T  | AC  | No  | 15.12.3, 15.12.4, 15.19.6      |

| a                                                           | c | d   | e | f  | g    | h  | i' | i'' | i''' | j | k  | l   | n  | o                                                  |
|-------------------------------------------------------------|---|-----|---|----|------|----|----|-----|------|---|----|-----|----|----------------------------------------------------|
| Dimethyl hydrogen phosphite                                 | Y | S/P | 3 | 2G | Cont | No | T4 | IIB | No   | R | F  | AC  | No | 15.19.6                                            |
| Dimethyl octanoic acid                                      | Y | S/P | 2 | 2G | Cont | No |    |     | Yes  | R | T  | AC  | No | 15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9          |
| Dimethyl phthalate                                          | Y | S/P | 3 | 2G | Open | No |    |     | Yes  | O | No | AC  | No | 15.19.6, 16.2.9                                    |
| Dimethylpolysiloxane                                        | Y | P   | 2 | 2G | Open | No |    |     | Yes  | O | No | ABC | No | 15.19.6                                            |
| 2,2-Dimethylpropane-1,3-diol (molten or solution)           | Z | P   | 3 | 2G | Open | No | -  | -   | Yes  | O | No | ABC | No | 16.2.9                                             |
| Dimethyl succinate                                          | Y | P   | 2 | 2G | Open | No |    |     | Yes  | O | No | AC  | No | 15.19.6, 16.2.9                                    |
| Dinitrotoluene (molten)                                     | X | S/P | 2 | 2G | Cont | No |    |     | Yes  | C | T  | AC  | No | 15.12, 15.17, 15.19, 15.21, 16.2.6, 16.2.9, 16.6.4 |
| Dinonyl phthalate                                           | Y | S/P | 2 | 2G | Open | No | -  | -   | Yes  | O | No | AC  | No | 15.19.6                                            |
| Dioctyl phthalate                                           | Y | S/P | 2 | 2G | Open | No |    |     | Yes  | O | No | ABC | No | 15.19.6                                            |
| 1,4-Dioxane                                                 | Y | S/P | 3 | 2G | Cont | No | T2 | IIB | No   | C | FT | AC  | No | 15.12, 15.17, 15.19.6, 16.2.9                      |
| Dipentene                                                   | Y | S/P | 2 | 2G | Cont | No | T3 | IIA | No   | C | FT | AC  | No | 15.12.3, 15.12.4, 15.19.6                          |
| Diphenyl                                                    | X | S/P | 2 | 2G | Open | No |    |     | Yes  | O | No | ABC | No | 15.19.6, 16.2.6, 16.2.9                            |
| Diphenylamine (molten)                                      | Y | S/P | 2 | 2G | Open | No | -  | -   | Yes  | O | No | ABC | No | 15.19.6, 16.2.6, 16.2.9                            |
| Diphenylamine, reaction product with 2,2,4-Trimethylpentene | Y | S/P | 2 | 2G | Open | No |    |     | Yes  | O | No | AC  | No | 15.19, 16.2.6                                      |
| Diphenylamines, alkylated                                   | Y | S/P | 2 | 2G | Open | No |    |     | Yes  | O | No | AC  | No | 15.19, 16.2.6, 16.2.9                              |
| Diphenyl/Diphenyl ether mixtures                            | X | S/P | 2 | 2G | Open | No |    |     | Yes  | O | No | ABC | No | 15.19.6, 16.2.9                                    |
| Diphenyl ether                                              | X | P   | 2 | 2G | Open | No |    |     | Yes  | O | No | AC  | No | 15.19.6, 16.2.9                                    |
| Diphenyl ether/Diphenyl phenyl ether mixture                | X | P   | 2 | 2G | Open | No |    |     | Yes  | O | No | AC  | No | 15.19.6, 16.2.9                                    |

| a                                            | c | d   | e | f  | g    | h   | i' | i'' | i'''   | j | k    | l      | n   | o                                            |
|----------------------------------------------|---|-----|---|----|------|-----|----|-----|--------|---|------|--------|-----|----------------------------------------------|
| Diphenylmethane diisocyanate                 | Y | S/P | 2 | 2G | Cont | Dry | -  | -   | Yes(a) | C | T(a) | AB(b)D | Yes | 15.12, 15.16.2, 15.17, 15.19, 16.2.6, 16.2.9 |
| Diphenylol propane-epichlorohydrin resins    | X | S/P | 2 | 2G | Cont | No  |    |     | Yes    | R | T    | AC     | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9    |
| Di-n-propylamine                             | Y | S/P | 2 | 2G | Cont | No  | T3 | IIB | No     | C | FT   | AC     | Yes | 15.12.3, 15.12.4, 15.17, 15.19.6             |
| Dipropylene glycol                           | Z | P   | 3 | 2G | Open | No  |    |     | Yes    | O | No   | AC     | No  |                                              |
| Dithiocarbamate ester (C7-C35)               | X | S/P | 2 | 2G | Open | No  |    |     | Yes    | O | No   | ABC    | No  | 15.19.6                                      |
| Ditridecyl adipate                           | Y | S/P | 2 | 2G | Cont | No  | -  | -   | Yes    | R | T    | AC     | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.6            |
| Ditridecyl phthalate                         | Y | S/P | 2 | 2G | Open | No  | -  | -   | Yes    | O | No   | AC     | No  | 15.19.6                                      |
| Diundecyl phthalate                          | Y | S/P | 2 | 2G | Open | No  |    |     | Yes    | O | No   | ABC    | No  | 15.19.6, 16.2.6, 16.2.9                      |
| Dodecane (all isomers)                       | Y | S/P | 2 | 2G | Cont | No  | T3 | IIA | No     | R | F    | ABC    | No  | 15.19.6                                      |
| tert-Dodecanethiol                           | Y | S/P | 3 | 2G | Cont | No  |    |     | Yes    | R | T    | ABC    | No  | 15.12.3, 15.12.4, 15.19.6                    |
| 1-Dodecene                                   | Y | S/P | 3 | 2G | Open | No  |    |     | Yes    | O | No   | ABC    | No  | 15.19.6                                      |
| Dodecene (all isomers)                       | X | S/P | 2 | 2G | Cont | No  |    |     | Yes    | R | T    | ABC    | No  | 15.12.3, 15.12.4, 15.19.6                    |
| Dodecyl alcohol                              | Y | S/P | 2 | 2G | Open | No  |    |     | Yes    | O | No   | AC     | No  | 15.19.6, 16.2.9                              |
| n-Dodecyl mercaptan                          | X | S/P | 1 | 2G | Cont | No  |    |     | Yes    | C | T    | ABC    | Yes | 15.12, 15.17, 15.19                          |
| Dodecylamine/Tetradecylamine mixture         | Y | S/P | 2 | 2G | Cont | No  |    |     | Yes    | C | T    | ABC    | Yes | 15.12, 15.17, 15.19, 16.2.9                  |
| Dodecylbenzene                               | Y | S/P | 2 | 2G | Cont | No  | -  | -   | Yes    | R | T    | ABC    | No  | 15.12.3, 15.12.4, 15.19.6                    |
| Dodecyl diphenyl ether disulphonate solution | X | S/P | 2 | 2G | Cont | No  |    |     | NF     | C | T    | No     | Yes | 15.12, 15.17, 15.19, 16.2.6                  |

| a                                                | c | d   | e | f  | g    | h     | i' | i'' | i''' | j | k  | l   | n   | o                                          |
|--------------------------------------------------|---|-----|---|----|------|-------|----|-----|------|---|----|-----|-----|--------------------------------------------|
| Dodecyl hydroxypropyl sulphide                   | X | P   | 2 | 2G | Open | No    |    |     | Yes  | O | No | AC  | No  | 15.19.6                                    |
| Dodecyl methacrylate                             | Y | S/P | 3 | 2G | Open | No    |    |     | Yes  | O | No | AC  | No  | 15.13, 15.19.6                             |
| Dodecyl/Octadecyl methacrylate mixture           | Y | S/P | 2 | 2G | Open | No    | -  | -   | Yes  | O | No | AC  | No  | 15.13, 15.19.6, 16.2.6, 16.6.1, 16.6.2     |
| Dodecyl/Pentadecyl methacrylate mixture          | Y | S/P | 2 | 2G | Open | No    |    |     | Yes  | O | No | ABC | No  | 15.13, 15.19.6, 16.6.1, 16.6.2             |
| Dodecyl phenol                                   | X | S/P | 2 | 2G | Cont | No    |    |     | Yes  | C | T  | AC  | Yes | 15.12, 15.17, 15.19, 16.2.6                |
| Dodecyl Xylene                                   | Y | S/P | 2 | 2G | Open | No    |    |     | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6                            |
| Drilling brines (containing zinc chloride)       | X | S/P | 2 | 2G | Open | No    |    |     | NF   | O | No | No  | Yes | 15.19.6                                    |
| Drilling brines (containing calcium bromide)     | Z | S/P | 3 | 2G | Open | No    |    |     | NF   | O | No | No  | No  | 15.19.6                                    |
| Epichlorohydrin                                  | Y | S/P | 2 | 2G | Cont | No    | T2 | IIB | No   | C | FT | AC  | Yes | 15.12, 15.17, 15.19                        |
| Ethanolamine                                     | Y | S/P | 3 | 2G | Cont | No    | T2 | IIA | Yes  | C | FT | AC  | Yes | 15.12, 15.17, 15.19, 16.2.9                |
| 2-Ethoxyethyl acetate                            | Y | S/P | 3 | 2G | Cont | No    | T2 | IIA | No   | C | FT | AC  | No  | 15.12, 15.17, 15.19.6                      |
| Ethoxylated long chain (C16+) alkyloxyalkylamine | Y | S/P | 2 | 2G | Cont | No    | -  | -   | Yes  | C | T  | ABC | Yes | 15.12, 15.17, 15.19, 16.2.9                |
| Ethoxylated tallow amine (>95%)                  | X | S/P | 2 | 2G | Cont | Inert | -  | -   | Yes  | C | T  | ABC | Yes | 15.12, 15.17, 15.19, 16.2.6, 16.2.9        |
| Ethyl acetate                                    | Z | S/P | 3 | 2G | Cont | No    | T2 | IIA | No   | R | F  | ABC | No  | 15.19.6                                    |
| Ethyl acetoacetate                               | Z | S/P | 3 | 2G | Open | No    |    |     | Yes  | O | No | AC  | No  |                                            |
| Ethyl acrylate                                   | Y | S/P | 2 | 2G | Cont | No    | T2 | IIB | No   | C | FT | AC  | No  | 15.12, 15.13, 15.17, 15.19, 16.6.1, 16.6.2 |
| Ethylamine (*)                                   | Y | S/P | 2 | 1G | Cont | No    | T2 | IIA | No   | C | F  | AC  | No  | 15.12.3.2, 15.14, 15.19                    |
| Ethylamine solutions (72% or less)               | Y | S/P | 3 | 2G | Cont | No    | T2 | IIA | No   | C | F  | AC  | No  | 15.12.3.2, 15.14, 15.19                    |

| a                                                          | c | d   | e | f  | g    | h  | i' | i'' | i''' | j | k  | l   | n   | o                                 |
|------------------------------------------------------------|---|-----|---|----|------|----|----|-----|------|---|----|-----|-----|-----------------------------------|
| Ethyl amyl ketone                                          | Y | S/P | 2 | 2G | Cont | No | T2 | IIA | No   | R | FT | AC  | No  | 15.12.3, 15.12.4, 15.19.6         |
| Ethylbenzene                                               | Y | S/P | 2 | 2G | Cont | No | T2 | IIA | No   | C | FT | AC  | No  | 15.12, 15.17, 15.19.6             |
| Ethyl tert-butyl ether                                     | Y | S/P | 2 | 2G | Cont | No | T2 | IIB | No   | R | FT | AC  | No  | 15.12.3, 15.12.4, 15.19.6         |
| Ethyl butyrate                                             | Y | S/P | 2 | 2G | Cont | No | T2 | IIA | No   | R | FT | AC  | No  | 15.12.3, 15.12.4, 15.19.6         |
| Ethylcyclohexane                                           | Y | S/P | 2 | 2G | Cont | No | T3 | IIA | No   | R | F  | AC  | No  | 15.19.6                           |
| N-Ethylcyclohexylamine                                     | Y | S/P | 2 | 2G | Cont | No | T3 | IIB | No   | C | FT | AC  | No  | 15.12.3, 15.12.4, 15.19           |
| S-Ethyl dipropylthiocarbamate                              | Y | S/P | 2 | 2G | Cont | No |    |     | Yes  | C | T  | AC  | No  | 15.12, 15.17, 15.19.6, 16.2.9     |
| Ethylene carbonate                                         | Z | S/P | 3 | 2G | Cont | No |    |     | Yes  | R | T  | AC  | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.9 |
| Ethylene chlorohydrin                                      | Y | S/P | 1 | 2G | Cont | No | T2 | IIA | No   | C | FT | AC  | Yes | 15.12, 15.17, 15.18, 15.19        |
| Ethylene cyanohydrin                                       | Y | S/P | 2 | 2G | Cont | No |    | IIB | Yes  | R | T  | AC  | No  | 15.12.3, 15.12.4, 15.19.6         |
| Ethylenediamine                                            | Y | S/P | 2 | 2G | Cont | No | T2 | IIA | No   | C | FT | AC  | Yes | 15.12, 15.17, 15.19, 16.2.9       |
| Ethylenediaminetetraacetic acid, tetrasodium salt solution | Y | S/P | 3 | 2G | Cont | No | -  | -   | Yes  | R | T  | AC  | No  | 15.12.3, 15.12.4, 15.19.6         |
| Ethylene dibromide                                         | Y | S/P | 2 | 2G | Cont | No |    |     | NF   | C | T  | No  | No  | 15.12, 15.17, 15.19, 16.2.9       |
| Ethylene dichloride                                        | Y | S/P | 3 | 2G | Cont | No | T2 | IIA | No   | C | FT | ABC | No  | 15.12, 15.17, 15.19               |
| Ethylene glycol                                            | Z | S/P | 3 | 2G | Open | No |    |     | Yes  | O | No | AC  | No  | 15.19.6                           |
| Ethylene glycol acetate                                    | Y | S/P | 3 | 2G | Cont | No | -  | -   | Yes  | C | T  | AC  | Yes | 15.12, 15.17, 15.19               |
| Ethylene glycol butyl ether acetate                        | Y | S/P | 3 | 2G | Open | No |    |     | Yes  | O | No | AC  | No  | 15.19.6                           |
| Ethylene glycol diacetate                                  | Y | S/P | 2 | 2G | Open | No |    |     | Yes  | O | No | AC  | No  | 15.19.6                           |

| a                                                                                                  | c | d   | e | f  | g    | h     | i' | i'' | i''' | j | k  | l   | n   | o                                                |
|----------------------------------------------------------------------------------------------------|---|-----|---|----|------|-------|----|-----|------|---|----|-----|-----|--------------------------------------------------|
| Ethylene glycol methyl ether acetate                                                               | Y | S/P | 3 | 2G | Cont | No    |    |     | Yes  | C | T  | AC  | No  | 15.12, 15.17, 15.19.6                            |
| Ethylene glycol monoalkyl ethers                                                                   | Y | S/P | 3 | 2G | Cont | No    | T2 | IIB | No   | C | FT | AC  | No  | 15.12.3, 15.12.4, 15.19, 16.2.9                  |
| Ethylene glycol phenyl ether                                                                       | Z | S/P | 3 | 2G | Open | No    | -  | -   | Yes  | O | No | AC  | No  | 16.2.9,                                          |
| Ethylene glycol phenyl ether/Diethylene glycol phenyl ether mixture                                | Z | S/P | 3 | 2G | Cont | No    | -  | -   | Yes  | R | T  | AC  | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.9                |
| Ethylene glycol (>75%)/sodium alkyl carboxylates/borax mixture                                     | Y | S/P | 3 | 2G | Cont | No    |    |     | Yes  | C | T  | AC  | No  | 15.12, 15.17, 15.19.6                            |
| Ethylene glycol (>85%)/sodium alkyl carboxylates mixture                                           | Z | S/P | 3 | 2G | Open | No    | -  | -   | Yes  | O | No | AC  | No  | 15.19.6                                          |
| 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 | FT | AC  | Yes | 15.8, 15.12, 15.14, 15.17, 15.19                 |
| Ethylene-vinyl acetate copolymer (emulsion)                                                        | Y | S/P | 3 | 2G | Cont | No    | -  | -   | Yes  | R | T  | AC  | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9        |
| Ethyl-3-ethoxypropionate                                                                           | Y | P   | 2 | 2G | Cont | No    | T2 | IIA | No   | R | F  | AC  | No  | 15.19.6                                          |
| 2-Ethylhexanoic acid                                                                               | Y | S/P | 3 | 2G | Cont | No    |    |     | Yes  | R | T  | ABC | No  | 15.12.3, 15.12.4, 15.19.6                        |
| 2-Ethylhexyl acrylate                                                                              | Y | S/P | 3 | 2G | Cont | No    | -  | -   | Yes  | R | T  | ABC | No  | 15.12.3, 15.12.4, 15.13, 15.19.6, 16.6.1, 16.6.2 |
| 2-Ethylhexylamine                                                                                  | Y | S/P | 2 | 2G | Cont | No    | T3 | IIA | No   | C | FT | AC  | Yes | 15.12, 15.17, 15.19.6                            |
| 2-Ethyl-2-(hydroxymethyl) propane-1,3-diol (C8-C10) ester                                          | Y | P   | 2 | 2G | Open | No    |    |     | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6, 16.2.9                          |
| Ethylidene norbornene                                                                              | Y | S/P | 2 | 2G | Cont | No    | T3 | IIB | No   | R | FT | ABC | No  | 15.12.3, 15.12.4, 15.19.6                        |

| a                                                                   | c | d   | e    | f  | g    | h  | i' | i'' | i''' | j | k  | l   | n   | o                                         |
|---------------------------------------------------------------------|---|-----|------|----|------|----|----|-----|------|---|----|-----|-----|-------------------------------------------|
| Ethyl methacrylate                                                  | Y | S/P | 3    | 2G | Cont | No | T2 | IIA | No   | R | F  | ABC | 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 | FT | AC  | No  | 15.12.3, 15.12.4, 15.19                   |
| Ethyl propionate                                                    | Y | S/P | 3    | 2G | Cont | No | T1 | IIA | No   | R | FT | AC  | No  | 15.12.3, 15.12.4, 15.19.6                 |
| 2-Ethyl-3-propylacrolein                                            | Y | S/P | 3    | 2G | Cont | No | T3 | IIA | No   | R | F  | AC  | No  | 15.19.6, 16.2.9                           |
| Ethyl toluene                                                       | Y | P   | 2    | 2G | Cont | No | T1 | IIA | No   | R | F  | ABC | No  | 15.19.6                                   |
| Fatty acid (saturated C13+)                                         | Y | S/P | 2    | 2G | Open | No |    |     | Yes  | O | No | ABC | No  | 15.19.6, 16.2.9                           |
| Fatty acid methyl esters (m)                                        | Y | S/P | 2    | 2G | Cont | No | -  | -   | Yes  | R | T  | ABC | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9 |
| Fatty acids, (C8-C10)                                               | Y | S/P | 2    | 2G | Cont | No | -  | -   | Yes  | C | T  | ABC | Yes | 15.12, 15.17, 15.19, 16.2.6, 16.2.9       |
| Fatty acids, (C12+)                                                 | Y | S/P | 2    | 2G | Open | No | -  | -   | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6, 16.2.7, 16.2.9           |
| Fatty acids, (C16+)                                                 | Y | P   | 2    | 2G | Open | No | -  | -   | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6                           |
| Fatty acids, essentially linear (C6-C18) 2-ethylhexyl ester         | Y | S/P | 2    | 2G | Open | No |    |     | Yes  | O | No | ABC | No  | 15.19.6                                   |
| Ferric chloride solutions                                           | Y | S/P | 3    | 2G | Cont | No |    |     | NF   | C | T  | No  | Yes | 15.11, 15.12, 15.17, 15.19, 16.2.9        |
| Ferric nitrate/Nitric acid solution                                 | Y | S/P | 2    | 2G | Cont | No |    |     | NF   | C | T  | No  | Yes | 15.11, 15.12, 15.17, 15.19                |
| Fish oil                                                            | Y | S/P | 2(k) | 2G | Open | No | -  | -   | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6, 16.2.7, 16.2.9           |
| Fish silage protein concentrate (containing 4% or less formic acid) | Y | P   | 2    | 2G | Open | No |    |     | NF   | O | No | No  | No  | 15.19.6, 16.2.6                           |
| Fish protein concentrate (containing 4% or less formic acid)        | Z | P   | 3    | 2G | Open | No | -  | -   | NF   | O | No | No  | No  |                                           |
| Fluorosilicic acid solution (20-30%)                                | Y | S/P | 3    | 2G | Cont | No |    |     | NF   | C | T  | No  | Yes | 15.11, 15.12, 15.17, 15.19                |

| a                                                                                      | c | d   | e | f  | g    | h  | i' | i'' | i''' | j | k     | l   | n   | o                                                                                            |
|----------------------------------------------------------------------------------------|---|-----|---|----|------|----|----|-----|------|---|-------|-----|-----|----------------------------------------------------------------------------------------------|
| Formaldehyde solutions (45% or less)                                                   | Y | S/P | 3 | 2G | Cont | No | T2 | IIB | No   | C | FT    | AC  | Yes | 15.12, 15.17, 15.19, 16.2.9                                                                  |
| Formamide                                                                              | Y | S/P | 3 | 2G | Cont | No |    |     | Yes  | C | T     | AC  | No  | 15.12, 15.17, 15.19.6, 16.2.9                                                                |
| Formic acid (85% or less acid)                                                         | Y | S/P | 3 | 2G | Cont | No | -  | -   | Yes  | C | T(g)  | AC  | Yes | 15.11.2, 15.11.3, 15.11.4, 15.11.6, 15.11.7, 15.11.8, 15.12.3, 15.12.4, 15.17, 15.19, 16.2.9 |
| Formic acid (over 85%)                                                                 | Y | S/P | 3 | 2G | Cont | No | T1 | IIA | No   | C | FT(g) | AC  | Yes | 15.11.2, 15.11.3, 15.11.4, 15.11.6, 15.11.7, 15.11.8, 15.12.3, 15.12.4, 15.17, 15.19, 16.2.9 |
| Formic acid mixture (containing up to 18% propionic acid and up to 25% sodium formate) | Z | S/P | 3 | 2G | Cont | No | -  | -   | Yes  | R | T(g)  | AC  | No  | 15.11.2, 15.11.3, 15.11.4, 15.11.6, 15.11.7, 15.11.8, 15.12.3, 15.12.4, 15.19.6              |
| Furfural                                                                               | Y | S/P | 3 | 2G | Cont | No | T2 | IIB | No   | C | FT    | AC  | Yes | 15.12, 15.17, 15.19                                                                          |
| Furfuryl alcohol                                                                       | Y | S/P | 3 | 2G | Cont | No | -  | -   | Yes  | C | T     | AC  | Yes | 15.12, 15.17, 15.19                                                                          |
| Glucitol/glycerol blend propoxylated (containing less than 10% amines)                 | Z | S/P | 3 | 2G | Cont | No | -  | -   | Yes  | R | T     | ABC | No  | 15.12.3, 15.12.4, 15.19.6                                                                    |
| Glucitol/glycerol blend propoxylated (containing 10% or more amines)                   | Y | S/P | 2 | 2G | Cont | No |    |     | Yes  | R | T     | ABC | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.6                                                            |
| Glutaraldehyde solutions (50% or less)                                                 | Y | S/P | 3 | 2G | Cont | No |    |     | NF   | C | T     | No  | Yes | 15.12, 15.17, 15.19                                                                          |
| Glycerine                                                                              | Z | S   | 3 | 2G | Open | No |    |     | Yes  | O | No    | AC  | No  | 16.2.9                                                                                       |
| Glycerol monooleate                                                                    | Y | S/P | 2 | 2G | Open | No | -  | -   | Yes  | O | No    | AC  | No  | 15.19.6, 16.2.6, 16.2.9                                                                      |
| Glycerol propoxylated                                                                  | Z | S/P | 3 | 2G | Cont | No | -  | -   | Yes  | R | T     | ABC | No  | 15.12.3, 15.12.4, 15.19.6                                                                    |
| Glycerol, propoxylated and ethoxylated                                                 | Z | P   | 3 | 2G | Open | No | -  | -   | Yes  | O | No    | ABC | No  |                                                                                              |

| a                                                              | c | d   | e    | f  | g    | h  | i' | i'' | i''' | j | k  | l   | n   | o                                                                                                         |
|----------------------------------------------------------------|---|-----|------|----|------|----|----|-----|------|---|----|-----|-----|-----------------------------------------------------------------------------------------------------------|
| Glycerol/sucrose blend propoxylated and ethoxylated            | Z | P   | 3    | 2G | Open | No | -  | -   | Yes  | O | No | ABC | No  |                                                                                                           |
| Glyceryl triacetate                                            | Z | S/P | 3    | 2G | Open | No |    |     | Yes  | O | No | ABC | No  | 15.19.6                                                                                                   |
| Glycidyl ester of C10 trialkylacetic acid                      | Y | S/P | 2    | 2G | Cont | No |    |     | Yes  | R | T  | AC  | No  | 15.12.3, 15.12.4, 15.19.6                                                                                 |
| Glycine, sodium salt solution                                  | Z | S/P | 3    | 2G | Open | No |    |     | NF   | O | No | No  | No  |                                                                                                           |
| Glycolic acid solution (70% or less)                           | Z | S/P | 3    | 2G | Cont | No | -  | -   | NF   | C | T  | No  | Yes | 15.12.3, 15.12.4, 15.17, 15.19, 16.2.9                                                                    |
| Glyoxal solution (40% or less)                                 | Y | S/P | 3    | 2G | Cont | No |    |     | Yes  | C | T  | AC  | Yes | 15.12, 15.17, 15.19, 16.2.9                                                                               |
| Glyoxylic acid solution (50% or less)                          | Y | S/P | 3    | 2G | Cont | No | -  | -   | Yes  | C | T  | ACD | Yes | 15.11.2, 15.11.3, 15.11.4, 15.11.6, 15.11.7, 15.11.8, 15.12, 15.17, 15.19, 16.2.9, 16.6.1, 16.6.2, 16.6.3 |
| Glyphosate solution (not containing surfactant)                | Y | S/P | 2    | 2G | Cont | No |    |     | Yes  | C | T  | AC  | Yes | 15.12, 15.17, 15.19, 16.2.9                                                                               |
| Grape Seed Oil                                                 | Y | S/P | 2(k) | 2G | Open | No |    |     | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6, 16.2.7                                                                                   |
| Groundnut oil                                                  | Y | P   | 2(k) | 2G | Open | No | -  | -   | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6, 16.2.7, 16.2.9                                                                           |
| Heptane (all isomers)                                          | X | P   | 2    | 2G | Cont | No | T3 | IIA | No   | R | F  | AC  | No  | 15.19.6                                                                                                   |
| n-Heptanoic acid                                               | Z | S/P | 3    | 2G | Cont | No |    |     | Yes  | R | No | ABC | No  | 15.19.6, 15.17                                                                                            |
| Heptanol (all isomers) (d)                                     | Y | S/P | 3    | 2G | Cont | No | T3 | IIA | No   | R | FT | ABC | No  | 15.12.3, 15.12.4, 15.19.6                                                                                 |
| Heptene (all isomers)                                          | Y | P   | 2    | 2G | Cont | No | T3 | IIA | No   | R | F  | ABC | No  | 15.19.6                                                                                                   |
| Heptyl acetate                                                 | Y | S/P | 2    | 2G | Cont | No |    |     | Yes  | R | T  | AC  | No  | 15.12.3, 15.12.4, 15.19.6                                                                                 |
| 1-Hexadecylnaphthalene / 1,4-bis(hexadecyl)naphthalene mixture | Y | S/P | 2    | 2G | Open | No |    |     | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6                                                                                           |
| Hexamethylenediamine (molten)                                  | Y | S/P | 3    | 2G | Cont | No | -  | -   | Yes  | C | T  | AC  | Yes | 15.12, 15.17, 15.19, 16.2.9                                                                               |

| a                                                                      | c | d   | e | f  | g    | h   | i' | i'' | i''' | j | k  | l      | n   | o                                          |
|------------------------------------------------------------------------|---|-----|---|----|------|-----|----|-----|------|---|----|--------|-----|--------------------------------------------|
| Hexamethylenediamine adipate (50% in water)                            | Z | P   | 3 | 2G | Open | No  |    |     | Yes  | O | No | AC     | No  |                                            |
| Hexamethylenediamine solution                                          | Y | S/P | 3 | 2G | Cont | No  |    |     | Yes  | C | T  | AC     | Yes | 15.12, 15.17, 15.19                        |
| Hexamethylene diisocyanate                                             | Y | S/P | 2 | 2G | Cont | Dry | T1 | IIB | Yes  | C | T  | AC(b)D | Yes | 15.12, 15.16.2, 15.17, 15.18, 15.19        |
| Hexamethylene glycol                                                   | Z | S/P | 3 | 2G | Open | No  |    |     | Yes  | O | No | AC     | No  |                                            |
| Hexamethyleneimine                                                     | Y | S/P | 2 | 2G | Cont | No  | T2 | IIB | No   | R | FT | AC     | No  | 15.12.3, 15.12.4, 15.19                    |
| Hexamethylenetetramine solutions                                       | Z | S   | 3 | 2G | Open | No  |    |     | Yes  | O | No | AC     | No  | 15.19.6                                    |
| Hexane (all isomers)                                                   | Y | S/P | 2 | 2G | Cont | No  | T3 | IIA | No   | C | FT | AC     | No  | 15.12, 15.17, 15.19.6                      |
| 1,6-Hexanediol, distillation overheads                                 | Y | S/P | 3 | 2G | Cont | No  | -  | -   | Yes  | R | T  | AC     | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.9          |
| Hexanoic acid                                                          | Y | S/P | 3 | 2G | Cont | No  |    |     | Yes  | C | T  | ABC    | Yes | 15.12, 15.17, 15.19                        |
| Hexanol                                                                | Y | S/P | 2 | 2G | Cont | No  |    |     | Yes  | C | T  | ABC    | Yes | 15.12, 15.17, 15.19                        |
| Hexene (all isomers)                                                   | Y | S/P | 3 | 2G | Cont | No  | T3 | IIA | No   | R | F  | AC     | No  | 15.19.6                                    |
| Hexyl acetate                                                          | Y | S/P | 2 | 2G | Cont | No  | T2 | IIA | No   | R | F  | AC     | No  | 15.19.6                                    |
| Hexylene glycol                                                        | Z | S   | 3 | 2G | Cont | No  |    |     | Yes  | C | T  | AC     | Yes | 15.12, 15.17, 15.19                        |
| Hydrocarbon wax                                                        | X | S/P | 2 | 2G | Cont | No  | -  | -   | Yes  | C | T  | ABC    | No  | 15.12, 15.17, 15.19.6, 16.2.6, 16.2.9      |
| Hydrochloric acid (*)                                                  | Z | S/P | 3 | 1G | Cont | No  |    |     | NF   | C | T  | No     | Yes | 15.11, 15.12, 15.17, 15.19                 |
| Hydrogen peroxide solutions (over 60% but not over 70% by mass)        | Y | S/P | 2 | 2G | Cont | No  |    |     | NF   | R | T  | No     | No  | 15.5.1, 15.12.3, 15.12.4, 15.19.6          |
| Hydrogen peroxide solutions (over 8% but not over 60% by mass)         | Y | S/P | 3 | 2G | Cont | No  |    |     | NF   | R | T  | No     | No  | 15.5.2, 15.18, 15.12.3, 15.12.4, 15.19.6   |
| 2-Hydroxyethyl acrylate                                                | Y | S/P | 2 | 2G | Cont | No  |    |     | Yes  | C | T  | AC     | Yes | 15.12, 15.13, 15.17, 15.19, 16.6.1, 16.6.2 |
| N-(Hydroxyethyl)ethylenediaminetriacetic acid, trisodium salt solution | Y | S/P | 3 | 2G | Cont | No  |    |     | Yes  | C | T  | AC     | No  | 15.12, 15.17, 15.19.6                      |

| a                                     | c | d   | e    | f  | g    | h     | i' | i'' | i''' | j | k  | l   | n   | o                                                   |
|---------------------------------------|---|-----|------|----|------|-------|----|-----|------|---|----|-----|-----|-----------------------------------------------------|
| 2-Hydroxy-4-(methylthio)butanoic acid | Z | S/P | 3    | 2G | Cont | No    |    |     | Yes  | C | T  | AC  | Yes | 15.12, 15.17, 15.19                                 |
| Illipe oil                            | Y | P   | 2(k) | 2G | Open | No    | -  | -   | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6, 16.2.7, 16.2.9                     |
| Isoamyl alcohol                       | Z | S/P | 3    | 2G | Cont | No    | T2 | IIA | No   | R | FT | ABC | No  | 15.12.3, 15.12.4, 15.19.6                           |
| Isobutyl alcohol                      | Z | S/P | 3    | 2G | Cont | No    | T2 | IIA | No   | R | F  | ABC | No  | 15.19.6                                             |
| Isobutyl formate                      | Z | P   | 3    | 2G | Cont | No    | T2 | IIA | No   | R | F  | ABC | No  | 15.19.6                                             |
| Isobutyl methacrylate                 | Z | S/P | 3    | 2G | Cont | No    | T1 | IIA | No   | R | F  | ABC | No  | 15.13, 15.19.6, 16.6.1, 16.6.2                      |
| Isophorone                            | Y | S/P | 3    | 2G | Cont | No    |    |     | Yes  | R | T  | AC  | No  | 15.12.3, 15.12.4, 15.19.6                           |
| Isophoronediamine                     | Y | S/P | 3    | 2G | Cont | No    |    |     | Yes  | C | T  | AC  | Yes | 15.12, 15.17, 15.19, 16.2.9                         |
| Isophorone diisocyanate               | Y | S/P | 2    | 2G | Cont | Dry   |    |     | Yes  | C | T  | ABD | Yes | 15.12, 15.16.2, 15.17, 15.19                        |
| Isoprene                              | Y | S/P | 2    | 2G | Cont | No    | T3 | IIB | No   | C | FT | ABC | No  | 15.12, 15.13, 15.14, 15.17, 15.19.6, 16.6.1, 16.6.2 |
| Isopropanolamine                      | Y | S/P | 3    | 2G | Cont | No    | T2 | IIA | Yes  | R | No | AC  | No  | 15.19.6, 16.2.6, 16.2.9                             |
| Isopropyl acetate                     | Z | P   | 3    | 2G | Cont | No    | T1 | IIA | No   | R | F  | ABC | No  | 15.19.6                                             |
| Isopropylamine                        | Y | S/P | 3    | 2G | Cont | No    | T2 | IIA | No   | C | FT | AC  | No  | 15.12.3.2, 15.14, 15.19                             |
| Isopropylamine (70% or less) solution | Y | S/P | 3    | 2G | Cont | No    | T2 | IIA | No   | C | FT | AC  | No  | 15.12.3.2, 15.19                                    |
| Isopropylcyclohexane                  | Y | S/P | 2    | 2G | Cont | No    | T3 | IIA | No   | R | F  | AC  | No  | 15.19.6, 16.2.9                                     |
| Isopropyl ether                       | Y | S/P | 3    | 2G | Cont | Inert | T2 | IIA | No   | R | F  | AC  | No  | 15.4.6, 15.13, 15.19.6, 16.6.1, 16.6.2              |
| Jatropha oil                          | Y | P   | 2(k) | 2G | Open | No    | -  | -   | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6, 16.2.7                             |
| Lactic acid                           | Z | S/P | 3    | 2G | Cont | No    |    |     | Yes  | C | T  | AC  | Yes | 15.12, 15.17, 15.19                                 |

| a                                                                         | c | d   | e    | f  | g    | h  | i' | i'' | i''' | j | k  | l   | n   | o                                                         |
|---------------------------------------------------------------------------|---|-----|------|----|------|----|----|-----|------|---|----|-----|-----|-----------------------------------------------------------|
| Lactonitrile solution (80% or less)                                       | Y | S/P | 1    | 1G | Cont | No |    |     | NF   | C | T  | No  | Yes | 15.12, 15.13, 15.17, 15.18, 15.19, 16.6.1, 16.6.2, 16.6.3 |
| Lard                                                                      | Y | S/P | 2(k) | 2G | Open | No | -  | -   | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6, 16.2.7, 16.2.9                           |
| Latex, ammonia (1% or less)- inhibited                                    | Y | S/P | 2    | 2G | Open | No | -  | -   | Yes  | O | No | AC  | No  | 15.19.6, 16.2.6, 16.2.9                                   |
| Latex: Carboxylated styrene-Butadiene copolymer; Styrene-Butadiene rubber | Z | S/P | 3    | 2G | Open | No | -  | -   | Yes  | O | No | AC  | No  | 16.2.9                                                    |
| Lauric acid                                                               | X | S/P | 2    | 2G | Cont | No |    |     | Yes  | R | T  | AC  | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9                 |
| Ligninsulphonic acid, magnesium salt solution                             | Z | P   | 3    | 2G | Open | No | -  | -   | Yes  | O | No | AC  | No  |                                                           |
| Ligninsulphonic acid, sodium salt solution                                | Z | P   | 3    | 2G | Open | No | -  | -   | Yes  | O | No | AC  | No  | 16.2.9                                                    |
| Linseed oil                                                               | Y | S/P | 2(k) | 2G | Open | No | -  | -   | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6, 16.2.9                                   |
| Liquid chemical wastes                                                    | X | S/P | 2    | 2G | Cont | No |    |     | No   | C | FT | AC  | No  | 15.12, 15.17, 15.19, 20.5.1, 20.7                         |
| Long-chain alkaryl polyether (C11-C20)                                    | Y | S/P | 2    | 2G | Cont | No |    |     | Yes  | R | T  | ABC | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9                 |
| Long-chain alkaryl sulphonic acid (C16-C60)                               | Y | S/P | 2    | 2G | Cont | No | -  | -   | Yes  | R | T  | AC  | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.9                         |
| Long-chain alkylphenate/Phenol sulphide mixture                           | Y | S/P | 2    | 2G | Cont | No | -  | -   | Yes  | R | T  | AC  | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9                 |
| Long-chain alkylphenol (C14-C18)                                          | Y | S/P | 2    | 2G | Cont | No |    |     | Yes  | R | T  | ABC | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.6                         |
| Long-chain alkylphenol (C18-C30)                                          | Y | S/P | 2    | 2G | Cont | No |    |     | Yes  | R | T  | ABC | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.6                         |

| a                                                                                                                 | c | d   | e    | f  | g    | h  | i' | i'' | i''' | j | k  | l     | n   | o                                              |
|-------------------------------------------------------------------------------------------------------------------|---|-----|------|----|------|----|----|-----|------|---|----|-------|-----|------------------------------------------------|
| L-Lysine solution (60% or less)                                                                                   | Z | P   | 3    | 2G | Open | No |    |     | Yes  | O | No | AC    | No  |                                                |
| Magnesium chloride solution                                                                                       | Z | P   | 3    | 2G | Open | No |    |     | Yes  | O | No | AC    | No  |                                                |
| Magnesium hydroxide slurry                                                                                        | Z | S   | 3    | 2G | Open | No | -  | -   | NF   | O | No | No    | No  | 16.2.9                                         |
| Magnesium long-chain alkaryl sulphonate (C11-C50)                                                                 | Y | S/P | 2    | 2G | Cont | No | -  | -   | Yes  | R | T  | AC    | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9      |
| Magnesium long-chain alkyl salicylate (C11+)                                                                      | Y | S/P | 2    | 2G | Open | No |    |     | Yes  | O | No | ABC   | No  | 15.19.6, 16.2.6, 16.2.9                        |
| Maleic anhydride                                                                                                  | Y | S/P | 3    | 2G | Cont | No |    |     | Yes  | C | T  | AC(f) | Yes | 15.12, 15.17, 15.19, 16.2.9                    |
| Maleic anhydride-sodium allylsulphonate copolymer solution                                                        | Z | P   | 3    | 2G | Open | No |    |     | Yes  | O | No | ABC   | No  |                                                |
| Mango kernel oil                                                                                                  | Y | P   | 2(k) | 2G | Open | No | -  | -   | Yes  | O | No | ABC   | No  | 15.19.6, 16.2.6, 16.2.7, 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 | FT | AC    | No  | 15.12.3, 15.12.4, 15.19.6                      |
| Metam sodium solution                                                                                             | X | S/P | 2    | 2G | Cont | No | -  | -   | NF   | C | T  | No    | No  | 15.12.3, 15.12.4, 15.19                        |
| Methacrylic acid                                                                                                  | Y | S/P | 3    | 2G | Cont | No |    |     | Yes  | C | T  | AC    | No  | 15.13, 15.12.3, 15.12.4, 15.19, 16.2.9, 16.6.1 |
| Methacrylic acid - alkoxypoly (alkylene oxide) methacrylate copolymer, sodium salt aqueous solution (45% or less) | Z | S/P | 3    | 2G | Open | No | -  | -   | NF   | O | No | No    | No  | 16.2.9                                         |
| Methacrylic resin in ethylene dichloride                                                                          | Y | S/P | 3    | 2G | Cont | No | T2 | IIA | No   | C | FT | ABC   | No  | 15.12, 15.17, 15.19, 16.2.9                    |
| Methacrylonitrile                                                                                                 | Y | S/P | 2    | 2G | Cont | No | T1 | IIA | No   | C | FT | AC    | Yes | 15.12, 15.13, 15.17, 15.19                     |

| a                                                               | c | d   | e | f  | g    | h  | i' | i'' | i''' | j | k  | l   | n   | o                                                             |
|-----------------------------------------------------------------|---|-----|---|----|------|----|----|-----|------|---|----|-----|-----|---------------------------------------------------------------|
| 3-Methoxy-1-butanol                                             | Z | S/P | 3 | 2G | Cont | No | T2 | IIA | No   | R | F  | AC  | No  | 15.19.6                                                       |
| 3-Methoxybutyl acetate                                          | Y | S/P | 3 | 2G | Open | No |    |     | Yes  | O | No | ABC | No  | 15.19.6                                                       |
| N-(2-Methoxy-1-methyl ethyl)-2-ethyl-6-methyl chloroacetanilide | X | S/P | 1 | 2G | Cont | No |    |     | Yes  | R | T  | AC  | No  | 15.12.3, 15.12.4, 15.19, 16.2.6                               |
| Methyl acetate                                                  | Z | P   | 3 | 2G | Cont | No | T1 | IIA | No   | R | F  | AC  | No  | 15.19.6                                                       |
| Methyl acetoacetate                                             | Z | S/P | 3 | 2G | Cont | No |    |     | Yes  | R | T  | AC  | No  | 15.12.3, 15.12.4, 15.19.6                                     |
| Methyl acrylate                                                 | Y | S/P | 3 | 2G | Cont | No | T1 | IIB | No   | C | FT | AC  | No  | 15.12, 15.17, 15.13, 15.19                                    |
| Methyl alcohol (*)                                              | Y | S/P | 3 | 2G | Cont | No | T1 | IIA | No   | C | FT | AC  | No  | 15.12.1, 15.12.2, 15.12.3.2, 15.12.3.3, 15.12.4, 15.17, 15.19 |
| Methylamine solutions (42% or less)                             | Y | S/P | 2 | 2G | Cont | No | T2 | IIA | No   | C | FT | AC  | Yes | 15.12, 15.17, 15.19                                           |
| Methylamyl acetate                                              | Y | P   | 2 | 2G | Cont | No | T2 | IIA | No   | R | F  | ABC | No  | 15.19.6                                                       |
| Methylamyl alcohol                                              | Z | S/P | 3 | 2G | Cont | No | T2 | IIA | No   | R | FT | ABC | No  | 15.12.3, 15.12.4, 15.19.6                                     |
| Methyl amyl ketone                                              | Z | S/P | 3 | 2G | Cont | No | T2 | IIA | No   | R | F  | ABC | No  | 15.19.6                                                       |
| N-Methylaniline                                                 | Y | S/P | 2 | 2G | Cont | No | -  | -   | Yes  | R | T  | ABC | No  | 15.12.3, 15.12.4, 15.19.6                                     |
| alpha-Methylbenzyl alcohol with acetophenone (15% or less)      | Y | S/P | 2 | 2G | Cont | No | -  | -   | Yes  | C | T  | ABC | Yes | 15.12, 15.17, 15.19, 16.2.6, 16.2.9                           |
| Methylbutenol                                                   | Y | S/P | 3 | 2G | Cont | No | T4 | IIA | No   | R | FT | AC  | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.9                             |
| Methyl tert-butyl ether                                         | Z | P   | 3 | 2G | Cont | No | T1 | IIA | No   | R | F  | ABC | No  | 15.19.6                                                       |
| Methyl butyl ketone                                             | Y | S/P | 3 | 2G | Cont | No | T2 | IIA | No   | C | FT | ABC | No  | 15.12, 15.17, 15.19.6                                         |
| Methylbutynol                                                   | Z | S/P | 3 | 2G | Cont | No | T4 | IIB | No   | R | F  | AC  | No  | 15.19.6                                                       |

| a                                                               | c | d   | e | f  | g    | h  | i' | i'' | i''' | j | k  | l   | n   | o                                  |
|-----------------------------------------------------------------|---|-----|---|----|------|----|----|-----|------|---|----|-----|-----|------------------------------------|
| Methyl butyrate                                                 | Y | S/P | 3 | 2G | Cont | No | T4 | IIA | No   | R | FT | AC  | No  | 15.12.3, 15.12.4, 15.19.6          |
| Methylcyclohexane                                               | Y | S/P | 2 | 2G | Cont | No | T3 | IIA | No   | R | F  | AC  | No  | 15.19.6                            |
| Methylcyclopentadiene dimer                                     | Y | S/P | 2 | 2G | Cont | No | T4 | IIB | No   | R | FT | ABC | No  | 15.12.3, 15.12.4, 15.19.6          |
| Methylcyclopentadienyl manganese tricarbonyl                    | X | S/P | 2 | 2G | Cont | No | -  | -   | Yes  | C | T  | ABC | Yes | 15.12, 15.17, 15.18, 15.19, 16.2.9 |
| Methyl diethanolamine                                           | Y | S/P | 3 | 2G | Cont | No |    |     | Yes  | R | T  | AC  | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.6  |
| 2-Methyl-6-ethyl aniline                                        | Y | S/P | 3 | 2G | Cont | No |    |     | Yes  | R | T  | ABC | No  | 15.12.3, 15.12.4, 15.19.6          |
| Methyl ethyl ketone                                             | Z | S/P | 3 | 2G | Cont | No | T1 | IIA | No   | R | F  | AC  | No  | 15.19.6                            |
| 2-Methyl-5-ethyl pyridine                                       | Y | S/P | 2 | 2G | Cont | No | -  | -   | Yes  | C | T  | ABC | Yes | 15.12, 15.17, 15.19                |
| Methyl formate                                                  | Z | S/P | 2 | 2G | Cont | No | T1 | IIA | No   | R | FT | AC  | No  | 15.12.3, 15.12.4, 15.14, 15.19.6   |
| 2-Methylglutaronitrile with 2-Ethylsuccinonitrile (12% or less) | Z | S/P | 3 | 2G | Cont | No | -  | -   | Yes  | C | T  | ABC | Yes | 15.12, 15.17, 15.19                |
| 2-Methyl-2-hydroxy-3-butyne                                     | Z | S/P | 3 | 2G | Cont | No | T3 | IIA | No   | R | F  | AC  | No  | 15.19.6, 16.2.9                    |
| Methyl isobutyl ketone                                          | Z | S/P | 3 | 2G | Cont | No | T1 | IIA | No   | R | FT | ABC | No  | 15.12.3, 15.12.4, 15.19.6          |
| Methyl methacrylate                                             | Y | S/P | 3 | 2G | Cont | No | T2 | IIA | No   | R | F  | AC  | No  | 15.13, 15.19.6                     |
| 3-Methyl-3-methoxybutanol                                       | Z | S/P | 3 | 2G | Cont | No |    |     | Yes  | R | T  | AC  | No  | 15.12.3, 15.12.4, 15.19.6          |
| Methyl naphthalene (molten)                                     | X | S/P | 2 | 2G | Cont | No |    |     | Yes  | R | T  | ABC | No  | 15.12.3, 15.12.4, 15.19.6          |
| N-Methylglucamine solution (70% or less)                        | Z | S   | 3 | 2G | Cont | No |    |     | Yes  | C | T  | AC  | Yes | 15.12, 15.17, 15.19, 16.2.9        |
| 2-Methyl-1,3-propanediol                                        | Z | P   | 3 | 2G | Open | No | -  | -   | Yes  | O | No | AC  | No  |                                    |

| a                                                                      | c | d   | e | f  | g    | h     | i' | i'' | i''' | j | k  | l     | n   | o                                            |
|------------------------------------------------------------------------|---|-----|---|----|------|-------|----|-----|------|---|----|-------|-----|----------------------------------------------|
| 2-Methylpyridine                                                       | Z | S/P | 3 | 2G | Cont | No    | T1 | IIA | No   | C | F  | AC    | No  | 15.12.3.2, 15.19                             |
| 3-Methylpyridine                                                       | Z | S/P | 3 | 2G | Cont | No    | T1 | IIA | No   | C | FT | AC    | No  | 15.12.3, 15.12.4, 15.19                      |
| 4-Methylpyridine                                                       | Z | S/P | 3 | 2G | Cont | No    | T1 | IIA | No   | C | FT | AC    | No  | 15.12.3, 15.12.4, 15.19, 16.2.9              |
| N-Methyl-2-pyrrolidone                                                 | Y | S/P | 3 | 2G | Cont | No    |    |     | Yes  | C | T  | AC    | No  | 15.12, 15.17, 15.19.6                        |
| Methyl propyl ketone                                                   | Z | S   | 3 | 2G | Cont | No    | T1 | IIA | No   | R | FT | ABC   | No  | 15.12.3, 15.12.4, 15.19.6                    |
| Methyl salicylate                                                      | Y | S/P | 3 | 2G | Cont | No    |    |     | Yes  | C | T  | AC    | No  | 15.12, 15.17, 15.19.6                        |
| alpha-Methylstyrene                                                    | Y | S/P | 2 | 2G | Cont | No    | T1 | IIB | No   | C | FT | AD(j) | No  | 15.12, 15.13, 15.17, 15.19.6, 16.6.1, 16.6.2 |
| 3-(methylthio)propionaldehyde                                          | Y | S/P | 2 | 2G | Cont | No    | T3 | IIA | No   | R | FT | ABC   | No  | 15.12, 15.17, 15.19.6                        |
| Molybdenum polysulphide long chain alkyl dithiocarbamide complex       | Y | S/P | 2 | 2G | Cont | No    | -  | -   | Yes  | R | T  | ABC   | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9    |
| Morpholine                                                             | Y | S/P | 3 | 2G | Cont | No    | T2 | IIA | No   | C | FT | AC    | No  | 15.12.3, 15.12.4, 15.19                      |
| Motor fuel anti-knock compound (containing lead alkyls)                | X | S/P | 1 | 1G | Cont | Inert | T4 | IIA | No   | C | FT | AC    | Yes | 15.6, 15.12, 15.17, 15.18, 15.19             |
| Myrcene                                                                | X | S/P | 2 | 2G | Cont | No    | T3 | IIA | No   | R | FT | AC    | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.9            |
| Naphthalene (molten)                                                   | X | S/P | 2 | 2G | Cont | No    | T1 | IIA | Yes  | C | T  | ABC   | No  | 15.12, 15.17, 15.19.6, 16.2.9                |
| Naphthalene crude (molten)                                             | Y | S/P | 2 | 2G | Cont | No    |    |     | Yes  | C | T  | ABC   | No  | 15.12, 15.17, 15.19.6, 16.2.6, 16.2.9        |
| Naphthalenesulphonic acid-Formaldehyde copolymer, sodium salt solution | Z | S/P | 3 | 2G | Open | No    | -  | -   | Yes  | O | No | AC    | No  | 16.2.9                                       |
| Neodecanoic acid                                                       | Y | S/P | 2 | 2G | Cont | No    |    |     | Yes  | R | T  | AC    | No  | 15.12.3, 15.12.4, 15.19.6                    |
| Nitrating acid (mixture of sulphuric and nitric acids)                 | Y | S/P | 1 | 1G | Cont | No    |    |     | NF   | C | T  | No    | Yes | 15.11, 15.12, 15.16.2, 15.17, 15.18, 15.19   |

| a                                                      | c | d   | e | f  | g    | h  | i' | i'' | i''' | j | k  | l      | n   | o                                                         |
|--------------------------------------------------------|---|-----|---|----|------|----|----|-----|------|---|----|--------|-----|-----------------------------------------------------------|
| Nitric acid (70% and over)                             | Y | S/P | 2 | 2G | Cont | No |    |     | NF   | C | T  | No     | Yes | 15.11, 15.12, 15.16.2, 15.17, 15.19                       |
| Nitric acid (less than 70%)                            | Y | S/P | 2 | 2G | Cont | No |    |     | NF   | C | T  | No     | Yes | 15.11, 15.12, 15.17, 15.19                                |
| Nitrilotriacetic acid, trisodium salt solution         | Y | S/P | 3 | 2G | Cont | No |    |     | Yes  | C | T  | AC     | No  | 15.12, 15.17, 15.19.6                                     |
| Nitrobenzene                                           | Y | S/P | 2 | 2G | Cont | No | -  | -   | Yes  | C | T  | ABC    | No  | 15.12, 15.17, 15.19, 16.2.9                               |
| Nitroethane                                            | Y | S/P | 3 | 2G | Cont | No | T2 | IIB | No   | R | FT | ABC(f) | No  | 15.12.3, 15.12.4, 15.19.6, 16.6.1, 16.6.2, 16.6.4         |
| Nitroethane (80%)/ Nitropropane(20%)                   | Y | S/P | 3 | 2G | Cont | No | T2 | IIB | No   | R | FT | ABC(f) | No  | 15.12.3, 15.12.4, 15.19.6, 16.6.1, 16.6.2, 16.6.3         |
| Nitroethane, 1-Nitropropane (each 15% or more) mixture | Y | S/P | 3 | 2G | Cont | No | T2 | IIB | No   | R | FT | ABC(f) | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.6.1, 16.6.2, 16.6.3 |
| o-Nitrophenol (molten)                                 | Y | S/P | 2 | 2G | Cont | No | T4 | IIB | No   | R | F  | ABC    | No  | 15.19.6, 16.2.6, 16.2.9                                   |
| 1- or 2-Nitropropane                                   | Y | S/P | 3 | 2G | Cont | No | T2 | IIB | No   | C | FT | AC     | No  | 15.12, 15.17, 15.19                                       |
| Nitropropane (60%)/Nitroethane (40%) mixture           | Y | S/P | 2 | 2G | Cont | No | T2 | IIB | No   | C | FT | ABC(f) | No  | 15.12, 15.17, 15.19.6                                     |
| o- or p-Nitrotoluenes                                  | Y | S/P | 2 | 2G | Cont | No |    | IIB | Yes  | C | T  | ABC    | No  | 15.12, 15.17, 15.19.6                                     |
| Nonane (all isomers)                                   | X | S/P | 2 | 2G | Cont | No | T3 | IIA | No   | R | F  | ABC    | No  | 15.19.6                                                   |
| Nonanoic acid (all isomers)                            | Y | S/P | 2 | 2G | Cont | No |    |     | Yes  | C | T  | ABC    | Yes | 15.12, 15.17, 15.19, 16.2.9                               |
| Non-edible industrial grade palm oil                   | Y | S/P | 2 | 2G | Cont | No | -  | -   | Yes  | R | T  | ABC    | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.7, 16.2.9         |
| Nonene (all isomers)                                   | Y | P   | 2 | 2G | Cont | No | T3 | IIA | No   | R | F  | AC     | No  | 15.19.6                                                   |
| Nonyl alcohol (all isomers)                            | Y | S/P | 2 | 2G | Cont | No |    |     | Yes  | R | T  | AC     | No  | 15.12.3, 15.12.4, 15.19.6                                 |

| a                                                                             | c | d   | e | f  | g    | h  | i' | i'' | i''' | j | k  | l   | n   | o                                   |
|-------------------------------------------------------------------------------|---|-----|---|----|------|----|----|-----|------|---|----|-----|-----|-------------------------------------|
| Nonyl methacrylate monomer                                                    | Y | S/P | 2 | 2G | Open | No |    |     | Yes  | O | No | ABC | No  | 15.19.6, 16.2.9                     |
| Nonylphenol                                                                   | X | S/P | 1 | 2G | Cont | No |    |     | Yes  | C | T  | AC  | Yes | 15.12, 15.17, 15.19, 16.2.6, 16.2.9 |
| Nonylphenol poly(4+)ethoxylate                                                | Y | S/P | 2 | 2G | Cont | No | -  | -   | Yes  | R | T  | AC  | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.6   |
| Noxious liquid, NF, (1) n.o.s. (trade name ....., contains .....) ST1, Cat. X | X | P   | 1 | 2G | Open | No | -  | -   | Yes  | O | No | AC  | 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 | F  | AC  | 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 | AC  | 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 | F  | AC  | 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 | AC  | No  | 15.19, 16.2.6, 16.2.9(I)            |
| Noxious liquid, F, (6) n.o.s. (trade name ....., contains .....) ST2, Cat. Y  | Y | P   | 2 | 2G | Cont | No | T3 | IIA | No   | R | F  | AC  | No  | 15.19, 16.2.6, 16.2.9(I)            |
| Noxious liquid, NF, (7) n.o.s. (trade name ....., contains .....) ST3, Cat. Y | Y | P   | 3 | 2G | Open | No | -  | -   | Yes  | O | No | AC  | No  | 15.19, 16.2.6, 16.2.9(I)            |

| a                                                                             | c | d   | e | f  | g    | h  | i' | i'' | i''' | j | k  | l   | n   | o                          |
|-------------------------------------------------------------------------------|---|-----|---|----|------|----|----|-----|------|---|----|-----|-----|----------------------------|
| Noxious liquid, F, (8) n.o.s. (trade name ....., contains .....) ST3, Cat. Y  | Y | P   | 3 | 2G | Cont | No | T3 | IIA | No   | R | F  | AC  | 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 | AC  | No  |                            |
| Noxious liquid, F, (10) n.o.s. (trade name ....., contains .....) ST3, Cat. Z | Z | P   | 3 | 2G | Cont | No | T3 | IIA | No   | R | F  | AC  | No  | 15.19.6                    |
| Octamethylcyclotetrasiloxane                                                  | Y | P   | 2 | 2G | Cont | No | T2 | IIA | No   | R | F  | AC  | No  | 15.19.6, 16.2.9            |
| Octane (all isomers)                                                          | X | P   | 2 | 2G | Cont | No | T3 | IIA | No   | R | F  | AC  | No  | 15.19.6                    |
| Octanoic acid (all isomers)                                                   | Y | S/P | 2 | 2G | Cont | No | -  | -   | Yes  | C | T  | ABC | Yes | 15.12, 15.17, 15.19        |
| Octanol (all isomers)                                                         | Y | S/P | 2 | 2G | Cont | No |    |     | Yes  | R | T  | AC  | No  | 15.12.3, 15.12.4, 15.19.6  |
| Octene (all isomers)                                                          | Y | P   | 2 | 2G | Cont | No | T3 | IIA | No   | R | F  | AC  | No  | 15.19.6                    |
| n-Octyl acetate                                                               | Y | S/P | 3 | 2G | Open | No |    |     | Yes  | O | No | AC  | No  | 15.19.6, 16.2.9            |
| Octyl aldehydes                                                               | Y | S/P | 2 | 2G | Cont | No | T4 | IIB | No   | R | F  | AC  | No  | 15.19.6, 16.2.9            |
| Octyl decyl adipate                                                           | Y | S/P | 2 | 2G | Open | No | -  | -   | Yes  | O | No | AC  | No  | 15.19.6, 16.2.9            |
| n-Octyl mercaptan                                                             | X | S/P | 1 | 2G | Open | No |    |     | Yes  | O | No | ABC | No  | 15.19                      |
| Offshore contaminated bulk liquid P (o)                                       | X | P   | 2 | 2G | Open | No | -  | -   | Yes  | O | No | AC  | No  | 15.19.6                    |
| Offshore contaminated bulk liquid S (o)                                       | X | S/P | 2 | 2G | Cont | No | T3 | IIA | No   | C | FT | AC  | Yes | 15.12, 15.15, 15.17, 15.19 |
| Olefin-Alkyl ester copolymer (molecular weight 2000+)                         | Y | P   | 2 | 2G | Open | No |    |     | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6, 16.2.9    |
| Olefin Mixture (C7-C9) C8 rich, stabilized                                    | X | P   | 2 | 2G | Cont | No | T3 | IIB | No   | R | F  | ABC | No  | 15.13, 15.19.6             |
| Olefin mixtures (C5-C7)                                                       | Y | S/P | 3 | 2G | Cont | No | T3 | IIA | No   | R | F  | AC  | No  | 15.19.6                    |
| Olefin mixtures (C5-C15)                                                      | X | S/P | 2 | 2G | Cont | No | T3 | IIA | No   | R | FT | AC  | No  | 15.12.3, 15.12.4, 15.19.6  |

| a                                        | c | d   | e    | f  | g    | h   | i' | i'' | i''' | j | k  | l   | n   | o                                                        |
|------------------------------------------|---|-----|------|----|------|-----|----|-----|------|---|----|-----|-----|----------------------------------------------------------|
| Olefins (C13+, all isomers)              | Y | P   | 2    | 2G | Open | No  |    |     | Yes  | O | No | ABC | No  | 15.19.6, 16.2.9                                          |
| alpha-Olefins (C6-C18) mixtures          | X | S/P | 2    | 2G | Cont | No  | T4 | IIA | No   | R | FT | AC  | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.9                        |
| Oleic acid                               | Y | S/P | 2    | 2G | Cont | No  |    |     | Yes  | R | T  | ABC | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.9                        |
| Oleum                                    | Y | S/P | 2    | 2G | Cont | Dry | -  | -   | NF   | C | T  | No  | Yes | 15.11.2 to 15.11.8, 15.12, 15.16.2, 15.17, 15.19, 16.2.6 |
| Oleylamine                               | X | S/P | 2    | 2G | Cont | No  |    |     | Yes  | C | T  | AC  | Yes | 15.12, 15.17, 15.19, 16.2.9                              |
| Olive oil                                | Y | S/P | 2(k) | 2G | Open | No  | -  | -   | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6, 16.2.7, 16.2.9                          |
| Oxygenated aliphatic hydrocarbon mixture | Z | S/P | 3    | 2G | Open | No  | -  | -   | Yes  | O | No | ABC | No  |                                                          |
| Palm acid oil                            | Y | S/P | 2    | 2G | Open | No  | -  | -   | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6, 16.2.7, 16.2.9                          |
| Palm fatty acid distillate               | Y | S/P | 2    | 2G | Open | No  | -  | -   | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6, 16.2.7, 16.2.9                          |
| Palm kernel acid oil                     | Y | S/P | 2    | 2G | Cont | No  |    |     | Yes  | R | T  | ABC | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.7, 16.2.9        |
| Palm kernel fatty acid distillate        | Y | S/P | 2    | 2G | Cont | No  | -  | -   | Yes  | R | T  | ABC | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.7, 16.2.9        |
| Palm kernel oil                          | Y | S/P | 2(k) | 2G | Open | No  | -  | -   | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6, 16.2.7, 16.2.9                          |
| Palm kernel olein                        | Y | P   | 2(k) | 2G | Open | No  | -  | -   | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6, 16.2.7, 16.2.9                          |
| Palm kernel stearin                      | Y | P   | 2(k) | 2G | Open | No  | -  | -   | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6, 16.2.7, 16.2.9                          |
| Palm mid-fraction                        | Y | P   | 2(k) | 2G | Open | No  | -  | -   | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6, 16.2.7, 16.2.9                          |
| Palm oil                                 | Y | P   | 2(k) | 2G | Open | No  | -  | -   | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6, 16.2.7, 16.2.9                          |

| a                                                                     | c | d   | e    | f  | g    | h     | i' | i'' | i''' | j | k  | l   | n   | o                                                                         |
|-----------------------------------------------------------------------|---|-----|------|----|------|-------|----|-----|------|---|----|-----|-----|---------------------------------------------------------------------------|
| Palm oil fatty acid methyl ester                                      | Y | P   | 2    | 2G | Open | No    | -  | -   | Yes  | O | No | AC  | No  | 15.19.6, 16.2.9                                                           |
| Palm olein                                                            | Y | P   | 2(k) | 2G | Open | No    | -  | -   | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6, 16.2.7, 16.2.9                                           |
| Palm stearin                                                          | Y | P   | 2(k) | 2G | Open | No    | -  | -   | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6, 16.2.7, 16.2.9                                           |
| Paraffin wax, highly-refined                                          | Y | P   | 2    | 2G | Open | No    | -  | -   | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6, 16.2.7, 16.2.9                                           |
| Paraffin wax, semi-refined                                            | X | S/P | 2    | 2G | Cont | No    | -  | -   | Yes  | C | T  | ABC | No  | 15.12, 15.17, 15.19.6, 16.2.6, 16.2.9                                     |
| Paraldehyde                                                           | Z | S/P | 3    | 2G | Cont | No    | T3 | IIB | No   | R | F  | AC  | No  | 15.19.6, 16.2.9                                                           |
| Paraldehyde-ammonia reaction product                                  | Y | S/P | 2    | 2G | Cont | No    | T1 | IIB | No   | C | FT | ABC | Yes | 15.12, 15.17, 15.19                                                       |
| Pentachloroethane                                                     | Y | S/P | 2    | 2G | Cont | No    |    |     | NF   | C | T  | No  | No  | 15.12, 15.17, 15.19.6                                                     |
| 1,3-Pentadiene                                                        | Y | P   | 3    | 2G | Cont | No    | T1 | IIA | No   | R | F  | ABC | No  | 15.13, 15.19.6, 16.6.1, 16.6.2, 16.6.3                                    |
| 1,3-Pentadiene (greater than 50%), cyclopentene and isomers, mixtures | Y | S/P | 2    | 2G | Cont | Inert | T3 | IIB | No   | C | FT | ABC | Yes | 15.12, 15.13, 15.17, 15.19                                                |
| Pentaethylenehexamine                                                 | X | S/P | 2    | 2G | Cont | No    |    |     | Yes  | C | T  | ABC | Yes | 15.12, 15.17, 15.19                                                       |
| Pentane (all isomers)                                                 | Y | P   | 3    | 2G | Cont | No    | T2 | IIA | No   | R | F  | AC  | No  | 15.14, 15.19.6                                                            |
| Pentanoic acid                                                        | Y | S/P | 2    | 2G | Cont | No    |    |     | Yes  | C | T  | ABC | Yes | 15.12, 15.17, 15.19                                                       |
| n-Pentanoic acid (64%)/2-Methyl butyric acid (36%) mixture            | Y | S/P | 2    | 2G | Cont | No    |    |     | Yes  | C | T  | ABC | Yes | 15.11.2, 15.11.3, 15.11.4, 15.11.6, 15.11.7, 15.11.8, 15.12, 15.17, 15.19 |
| Pentene (all isomers)                                                 | Y | P   | 2    | 2G | Cont | No    | T3 | IIA | No   | R | F  | AC  | No  | 15.14, 15.19.6                                                            |
| n-Pentyl propionate                                                   | Y | S/P | 3    | 2G | Cont | No    | T2 | IIA | No   | R | FT | ABC | No  | 15.12.3, 15.12.4, 15.19.6                                                 |
| Perchloroethylene                                                     | Y | S/P | 2    | 2G | Cont | No    |    |     | NF   | C | T  | No  | No  | 15.12, 15.17, 15.19.6                                                     |

| a                                                        | c | d   | e | f  | g    | h                   | i' | i'' | i'''  | j | k  | l   | n   | o                                                                                          |
|----------------------------------------------------------|---|-----|---|----|------|---------------------|----|-----|-------|---|----|-----|-----|--------------------------------------------------------------------------------------------|
| Phenol                                                   | Y | S/P | 2 | 2G | Cont | No                  | T1 | IIA | Yes   | C | T  | AC  | Yes | 15.12, 15.17, 15.19, 16.2.9                                                                |
| 1-Phenyl-1-xylyl ethane                                  | Y | S/P | 2 | 2G | Open | No                  |    |     | Yes   | O | No | ABC | No  | 15.19.6                                                                                    |
| Phosphate esters, alkyl (C12-C14) amine                  | Y | S/P | 2 | 2G | Cont | No                  | T4 | IIB | No    | R | FT | ABC | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9                                                  |
| Phosphoric acid                                          | Z | S/P | 3 | 2G | Cont | No                  |    |     | NF    | C | T  | No  | Yes | 15.11.1, 15.11.2, 15.11.3, 15.11.4, 15.11.6, 15.11.7, 15.11.8, 15.12, 15.17, 15.19, 16.2.9 |
| Phosphorus, yellow or white (*)                          | X | S/P | 1 | 1G | Cont | Pad+(vent or inert) |    |     | No(c) | C | No | ABC | No  | 15.7, 15.19, 16.2.9                                                                        |
| Phthalic anhydride (molten)                              | Y | S/P | 2 | 2G | Cont | No                  | T1 | IIA | Yes   | C | T  | ABC | Yes | 15.12, 15.17, 15.19, 16.2.6, 16.2.9                                                        |
| alpha-Pinene                                             | X | S/P | 2 | 2G | Cont | No                  | T3 | IIA | No    | R | F  | ABC | No  | 15.19.6                                                                                    |
| beta-Pinene                                              | X | S/P | 2 | 2G | Cont | No                  | T1 | IIB | No    | R | F  | ABC | No  | 15.19.6                                                                                    |
| Pine oil                                                 | X | S/P | 2 | 2G | Open | No                  |    |     | Yes   | O |    | ABC | No  | 15.19.6, 16.2.6, 16.2.9                                                                    |
| Piperazine, 68% solution                                 | Y | S/P | 2 | 2G | Cont | No                  |    |     | Yes   | C | T  | AC  | Yes | 15.12, 15.17, 15.19, 16.2.6, 16.2.9                                                        |
| Polyacrylic acid solution (40% or less)                  | Z | S/P | 3 | 2G | Open | No                  | -  | -   | Yes   | O | No | AC  | No  |                                                                                            |
| Polyalkyl (C18-C22) acrylate in xylene                   | Y | S/P | 2 | 2G | Cont | No                  | T1 | IIB | No    | R | FT | ABC | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9                                                  |
| Polyalkylalkenaminesuccinimide, molybdenum oxysulphide   | Y | P   | 2 | 2G | Open | No                  | -  | -   | Yes   | O | No | ABC | No  | 15.19.6, 16.2.6                                                                            |
| Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether          | Z | P   | 3 | 2G | Open | No                  | -  | -   | Yes   | O | No | AC  | No  |                                                                                            |
| Poly(2-8)alkylene glycol monoalkyl (C1-C6) ether acetate | Y | P   | 2 | 2G | Open | No                  | -  | -   | Yes   | O | No | ABC | No  | 15.19.6                                                                                    |
| Polyalkyl (C10-C20) methacrylate                         | Y | P   | 2 | 2G | Open | No                  |    |     | Yes   | O | No | ABC | No  | 15.19.6, 16.2.6, 16.2.9                                                                    |

| a                                                                     | c | d   | e | f  | g    | h  | i' | i'' | i''' | j | k  | l   | n   | o                                   |
|-----------------------------------------------------------------------|---|-----|---|----|------|----|----|-----|------|---|----|-----|-----|-------------------------------------|
| Polyalkyl (C10-C18) methacrylate/ethylene-propylene copolymer mixture | Y | P   | 2 | 2G | Open | No |    |     | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6, 16.2.9             |
| Polyaluminium chloride solution                                       | Z | S   | 3 | 2G | Open | No |    |     | NF   | O | No | No  | No  |                                     |
| Polybutene                                                            | Y | P   | 2 | 2G | Open | No | -  | -   | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6                     |
| Polybutenyl succinimide                                               | Y | P   | 2 | 2G | Open | No | -  | -   | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6, 16.2.9             |
| Poly(2+)cyclic aromatics                                              | X | S/P | 1 | 2G | Cont | No |    |     | Yes  | C | T  | ABC | No  | 15.12, 15.17, 15.19, 16.2.6, 16.2.9 |
| Polyether (molecular weight 1350+)                                    | Y | P   | 2 | 2G | Open | No | -  | -   | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6                     |
| Polyethylene glycol                                                   | Z | P   | 3 | 2G | Open | No |    |     | Yes  | O | No | AC  | No  |                                     |
| Polyethylene glycol dimethyl ether                                    | Z | S/P | 3 | 2G | Open | No |    |     | Yes  | O | No | AC  | No  |                                     |
| Poly(ethylene glycol) methylbutenyl ether (MW>1000)                   | Z | P   | 3 | 2G | Open | No | -  | -   | Yes  | O | No | AC  | No  | 16.2.9                              |
| Polyethylene polyamines                                               | Y | S/P | 2 | 2G | Cont | No | -  | -   | Yes  | C | T  | AC  | Yes | 15.12, 15.17, 15.19, 16.2.6, 16.2.9 |
| Polyethylene polyamines (more than 50% C5 -C20 paraffin oil)          | Y | S/P | 2 | 2G | Cont | No |    |     | Yes  | C | T  | AC  | Yes | 15.12, 15.17, 15.19, 16.2.9         |
| Polyferric sulphate solution                                          | Y | S/P | 3 | 2G | Cont | No |    |     | NF   | C | T  | No  | Yes | 15.12, 15.17, 15.19                 |
| Poly(iminoethylene)-graft-N-poly(ethyleneoxy) solution (90% or less)  | Z | S/P | 3 | 2G | Open | No | -  | -   | NF   | O | No | No  | No  | 16.2.9                              |
| Polyisobutenamine in aliphatic (C10-C14) solvent                      | Y | S/P | 2 | 2G | Cont | No | -  | -   | Yes  | R | T  | ABC | No  | 15.12.3, 15.12.4, 15.19.6           |
| (Polyisobutene) amino products in aliphatic hydrocarbons              | Y | S/P | 2 | 2G | Open | No |    |     | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6                     |

| a                                                                             | c | d   | e | f  | g    | h   | i' | i'' | i'''   | j | k    | l   | n   | o                                         |
|-------------------------------------------------------------------------------|---|-----|---|----|------|-----|----|-----|--------|---|------|-----|-----|-------------------------------------------|
| Polyisobutenyl anhydride adduct                                               | Z | S/P | 3 | 2G | Open | No  |    |     | Yes    | O | No   | ABC | No  |                                           |
| Poly(4+)isobutylene (MW>224)                                                  | X | P   | 2 | 2G | Open | No  |    |     | Yes    | O | No   | ABC | No  | 15.19.6, 16.2.6, 16.2.9                   |
| Polyisobutylene (MW≤224)                                                      | Y | P   | 2 | 2G | Open | No  |    |     | Yes    | O | No   | ABC | No  | 15.19.6, 16.2.9                           |
| Polyglycerin, sodium salt solution (containing less than 3% sodium hydroxide) | Z | S   | 2 | 2G | Cont | No  |    |     | Yes    | C | T    | AC  | Yes | 15.12, 15.17, 15.19. 16.2.9               |
| Polymethylene polyphenyl isocyanate                                           | Y | S/P | 3 | 2G | Cont | Dry |    |     | Yes(a) | C | T(a) | AD  | Yes | 15.12, 15.16.2, 15.17, 15.19.6, 16.2.9    |
| Polyolefin (molecular weight 300+)                                            | Y | P   | 2 | 2G | Open | No  | -  | -   | Yes    | O | No   | ABC | No  | 15.19.6, 16.2.6, 16.2.9                   |
| Polyolefin amide alkeneamine (C17+)                                           | Y | S/P | 2 | 2G | Open | No  |    |     | Yes    | O | No   | ABC | No  | 15.19.6, 16.2.6                           |
| Polyolefin amide alkeneamine borate (C28-C250)                                | Y | P   | 2 | 2G | Open | No  |    |     | Yes    | O | No   | ABC | No  | 15.19.6, 16.2.6, 16.2.9                   |
| Polyolefin amide alkeneamine polyol                                           | Y | P   | 2 | 2G | Open | No  | -  | -   | Yes    | O | No   | ABC | No  | 15.19.6, 16.2.6, 16.2.9                   |
| Polyolefinamine (C28-C250)                                                    | Y | S/P | 2 | 2G | Cont | No  |    |     | Yes    | R | T    | ABC | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.9         |
| Polyolefinamine in alkyl (C2-C4) benzenes                                     | Y | S/P | 2 | 2G | Cont | No  | T2 | IIB | No     | R | FT   | ABC | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9 |
| Polyolefinamine in aromatic solvent                                           | Y | S/P | 2 | 2G | Cont | No  | T2 | IIB | No     | R | FT   | ABC | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9 |
| Polyolefin aminoester salts (molecular weight 2000+)                          | Y | S/P | 2 | 2G | Open | No  | -  | -   | Yes    | O | No   | ABC | No  | 15.19.6, 16.2.6, 16.2.9                   |
| Polyolefin anhydride                                                          | Y | S/P | 2 | 2G | Cont | No  |    |     | Yes    | R | T    | ABC | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9 |
| Polyolefin ester (C28-C250)                                                   | Y | P   | 2 | 2G | Open | No  |    |     | Yes    | O | No   | ABC | No  | 15.19.6, 16.2.6, 16.2.9                   |

| a                                                                               | c | d   | e | f  | g    | h     | i' | i'' | i''' | j | k  | l   | n   | o                                                                         |
|---------------------------------------------------------------------------------|---|-----|---|----|------|-------|----|-----|------|---|----|-----|-----|---------------------------------------------------------------------------|
| Polyolefin phenolic amine (C28-C250)                                            | Y | S/P | 2 | 2G | Open | No    |    |     | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6, 16.2.9                                                   |
| Polyolefin phosphorusulphide, barium derivative (C28-C250)                      | Y | P   | 2 | 2G | Open | No    |    |     | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6, 16.2.9                                                   |
| Poly(20)oxyethylene sorbitan monooleate                                         | Y | P   | 3 | 2G | Open | No    |    |     | Yes  | O | No | AC  | No  | 15.19.6, 16.2.6, 16.2.9                                                   |
| Poly(5+)propylene                                                               | Y | P   | 3 | 2G | Open | No    | -  | -   | Yes  | O | No | ABC | No  | 15.19.6, 16.2.9                                                           |
| Polypropylene glycol                                                            | Z | S/P | 3 | 2G | Open | No    |    |     | Yes  | O | No | AC  | No  | 15.19.6                                                                   |
| Polysiloxane                                                                    | Y | P   | 2 | 2G | Cont | No    | T2 | IIB | No   | R | F  | ABC | No  | 15.19.6, 16.2.9                                                           |
| Potassium chloride solution                                                     | Z | P   | 3 | 2G | Open | No    | -  | -   | NF   | O | No | No  | No  | 16.2.9                                                                    |
| Potassium hydroxide solution (*)                                                | Y | S/P | 3 | 2G | Open | No    |    |     | NF   | C | No | No  | No  | 15.12.3.2, 15.19                                                          |
| Potassium formate solutions (*)                                                 | Z | S   | 3 | 2G | Open | No    |    |     | NF   | R | No | No  | No  | 15.19.6                                                                   |
| Potassium oleate                                                                | Y | S/P | 2 | 2G | Open | No    |    |     | Yes  | O | No | AC  | No  | 15.19.6, 16.2.6, 16.2.9                                                   |
| Potassium thiosulphate (50% or less)                                            | Y | S/P | 3 | 2G | Cont | No    |    |     | NF   | R | T  | No  | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.9                                         |
| n-Propanolamine                                                                 | Y | S/P | 3 | 2G | Cont | No    |    |     | Yes  | C | T  | ABC | Yes | 15.12, 15.17, 15.19, 16.2.9                                               |
| 2-Propene-1-aminium, N,N-dimethyl-N-2-propenyl-, chloride, homopolymer solution | Y | P   | 3 | 2G | Open | No    | -  | -   | NF   | O | No | No  | No  | 15.19.6                                                                   |
| beta-Propiolactone                                                              | Y | S/P | 1 | 2G | Cont | No    |    | IIA | Yes  | C | T  | AC  | Yes | 15.12, 15.17, 15.18, 15.19                                                |
| Propionaldehyde                                                                 | Y | S/P | 3 | 2G | Cont | Inert | T4 | IIB | No   | R | F  | AC  | No  | 15.19.6                                                                   |
| Propionic acid                                                                  | Y | S/P | 3 | 2G | Cont | No    | T1 | IIA | No   | C | FT | AC  | Yes | 15.11.2, 15.11.3, 15.11.4, 15.11.6, 15.11.7, 15.11.8, 15.12, 15.17, 15.19 |

| a                                                                       | c | d   | e    | f  | g    | h     | i' | i'' | i''' | j | k  | l   | n   | o                                |
|-------------------------------------------------------------------------|---|-----|------|----|------|-------|----|-----|------|---|----|-----|-----|----------------------------------|
| Propionic anhydride                                                     | Y | S/P | 2    | 2G | Cont | No    | T2 | IIA | Yes  | C | T  | AC  | Yes | 15.12, 15.17, 15.19              |
| Propionitrile                                                           | Y | S/P | 1    | 1G | Cont | No    | T1 | IIB | No   | C | FT | AC  | Yes | 15.12, 15.17, 15.18, 15.19       |
| n-Propyl acetate                                                        | Y | P   | 3    | 2G | Cont | No    | T1 | IIA | No   | R | F  | ABC | No  | 15.19.6                          |
| n-Propyl alcohol                                                        | Y | S/P | 3    | 2G | Cont | No    | T2 | IIA | No   | C | FT | AC  | No  | 15.12, 15.17, 15.19.6            |
| n-Propylamine                                                           | Z | S/P | 2    | 2G | Cont | Inert | T2 | IIA | No   | C | FT | AC  | Yes | 15.12, 15.17, 15.19              |
| Propylbenzene (all isomers)                                             | Y | P   | 3    | 2G | Cont | No    | T2 | IIA | No   | R | F  | ABC | No  | 15.19.6                          |
| Propylene carbonate                                                     | Z | S   | 3    | 2G | Cont | No    |    |     | Yes  | C | T  | ABC | Yes | 15.12, 15.17, 15.19              |
| Propylene glycol methyl ether acetate                                   | Z | P   | 3    | 2G | Cont | No    | T2 | IIA | No   | R | F  | AC  | No  |                                  |
| Propylene glycol monoalkyl ether                                        | Z | S/P | 3    | 2G | Cont | No    | T3 | IIA | No   | R | F  | AC  | No  | 15.19.6                          |
| Propylene glycol phenyl ether                                           | Z | S/P | 3    | 2G | Open | No    |    |     | Yes  | O | No | ABC | No  |                                  |
| Propylene oxide                                                         | Y | S/P | 2    | 2G | Cont | Inert | T2 | IIB | No   | C | FT | AC  | No  | 15.8, 15.12, 15.14, 15.17, 15.19 |
| Propylene tetramer                                                      | X | S/P | 2    | 2G | Cont | No    | T3 | IIA | No   | R | F  | ABC | No  | 15.19.6                          |
| Propylene trimer                                                        | Y | S/P | 2    | 2G | Cont | No    | T3 | IIA | No   | R | F  | ABC | No  | 15.19.6                          |
| Pyridine                                                                | Y | S/P | 3    | 2G | Cont | No    | T1 | IIA | No   | R | FT | AC  | No  | 15.12.3, 15.12.4, 15.19.6        |
| Pyrolysis gasoline (containing benzene)                                 | Y | S/P | 2    | 2G | Cont | No    | T3 | IIA | No   | C | FT | ABC | No  | 15.12, 15.17, 15.19.6            |
| Rapeseed oil                                                            | Y | P   | 2(k) | 2G | Open | No    | -  | -   | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6, 16.2.7, 16.2.9  |
| Rapeseed oil (low erucic acid containing less than 4% free fatty acids) | Y | P   | 2(k) | 2G | Open | No    | -  | -   | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6, 16.2.7, 16.2.9  |
| Rape seed oil fatty acid methyl esters                                  | Y | S/P | 2    | 2G | Open | No    | -  | -   | Yes  | O | No | ABC | No  | 15.19.6                          |
| Resin oil, distilled                                                    | Y | S/P | 2    | 2G | Cont | No    | T1 | IIA | No   | C | FT | ABC | No  | 15.12, 15.17, 15.19.6            |
| Rice bran oil                                                           | Y | S/P | 2(k) | 2G | Open | No    | -  | -   | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6, 16.2.7, 16.2.9  |

| a                                                                            | c | d   | e    | f  | g    | h                 | i' | i'' | i''' | j | k  | l   | n   | o                                                  |
|------------------------------------------------------------------------------|---|-----|------|----|------|-------------------|----|-----|------|---|----|-----|-----|----------------------------------------------------|
| Rosin                                                                        | Y | S/P | 2    | 2G | Cont | No                |    |     | Yes  | R | T  | AC  | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9          |
| Safflower oil                                                                | Y | S/P | 2(k) | 2G | Open | No                | -  | -   | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6, 16.2.7, 16.2.9                    |
| Shea butter                                                                  | Y | S/P | 2(k) | 2G | Open | No                | -  | -   | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6, 16.2.7, 16.2.9                    |
| Sodium alkyl (C14-C17) sulphonates (60-65% solution)                         | Y | S/P | 2    | 2G | Cont | No                |    |     | NF   | R | T  | No  | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9          |
| Sodium aluminosilicate slurry                                                | Z | P   | 3    | 2G | Open | No                |    |     | NF   | O | No | No  | No  | 16.2.9                                             |
| Sodium benzoate                                                              | Z | S/P | 3    | 2G | Open | No                |    |     | Yes  | O | No | AC  | No  | 16.2.9                                             |
| Sodium borohydride (15% or less)/Sodium hydroxide solution (*)               | Y | S/P | 3    | 2G | Open | No                |    |     | NF   | C | No | No  | No  | 15.19, 16.2.6, 16.2.9                              |
| Sodium bromide solution (less than 50%) (*)                                  | Y | S/P | 3    | 2G | Open | No                | -  | -   | NF   | R | No | No  | No  | 15.19.6                                            |
| Sodium carbonate solution (*)                                                | Z | S/P | 3    | 2G | Open | No                |    |     | NF   | R | No | No  | No  | 15.19.6                                            |
| Sodium chlorate solution (50% or less) (*)                                   | Z | S/P | 3    | 2G | Open | No                |    |     | NF   | R | No | No  | No  | 15.9, 15.12, 15.19, 16.2.9                         |
| Sodium dichromate solution (70% or less)                                     | Y | S/P | 1    | 1G | Cont | No                |    |     | NF   | C | T  | No  | Yes | 15.12, 15.17, 15.18, 15.19                         |
| Sodium hydrogen sulphide (6% or less)/Sodium carbonate (3% or less) solution | Z | S/P | 3    | 2G | Open | No                |    |     | NF   | O | No | No  | No  | 15.19.6, 16.2.9                                    |
| Sodium hydrogen sulphite solution (45% or less)                              | Z | 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                | T4 | IIB | No   | C | FT | AC  | Yes | 15.12, 15.15, 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  | Yes | 15.12, 15.15, 15.19.6, 16.2.9                      |
| Sodium hydroxide solution (*)                                                | Y | S/P | 3    | 2G | Open | No                |    |     | NF   | C | No | No  | No  | 15.19, 16.2.6, 16.2.9                              |

| a                                          | c | d   | e    | f  | g    | h                 | i' | i'' | i''' | j | k  | l   | n   | o                                                  |
|--------------------------------------------|---|-----|------|----|------|-------------------|----|-----|------|---|----|-----|-----|----------------------------------------------------|
| Sodium hypochlorite solution (15% or less) | Y | S/P | 2    | 2G | Cont | No                | -  | -   | NF   | R | No | No  | No  | 15.17, 15.19.6                                     |
| Sodium methylate 21-30% in methyl alcohol  | Y | S/P | 2    | 2G | Cont | No                | T1 | IIA | No   | C | FT | AC  | Yes | 15.12, 15.17, 15.19, 16.2.6 (only if >28%), 16.2.9 |
| Sodium nitrite solution                    | Y | S/P | 3    | 2G | Cont | No                |    |     | NF   | C | T  | No  | No  | 15.12.3, 15.12.4, 15.19, 16.2.6, 16.2.9            |
| Sodium petroleum sulphonate                | Y | S/P | 2    | 2G | Cont | No                |    |     | Yes  | R | T  | ABC | Yes | 15.12.3, 15.12.4, 15.19.6, 16.2.6                  |
| Sodium poly(4+)acrylate solutions          | Z | S/P | 3    | 2G | Open | No                | -  | -   | Yes  | O | No | AC  | No  | 16.2.9                                             |
| Sodium silicate solution                   | Y | S/P | 3    | 2G | Cont | No                |    |     | NF   | C | T  | No  | Yes | 15.12, 15.17, 15.19, 16.2.9                        |
| Sodium sulphate solutions                  | Z | S   | 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  | Yes | 15.12, 15.17, 15.19, 16.2.9                        |
| Sodium sulphite solution (25% or less)     | Y | S/P | 3    | 2G | Open | No                |    |     | NF   | O | No | No  | No  | 15.19.6, 16.2.9                                    |
| Sodium thiocyanate solution (56% or less)  | Y | S/P | 3    | 2G | Open | No                |    |     | NF   | O | No | No  | No  | 15.19.6, 16.2.9                                    |
| Soyabean oil                               | Y | S/P | 2(k) | 2G | Open | No                | -  | -   | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6, 16.2.7, 16.2.9                    |
| Soybean Oil Fatty Acid Methyl Ester        | Y | P   | 2    | 2G | Open | No                |    |     | Yes  | O | No | ABC | No  | 15.19.6, 16.2.9                                    |
| Styrene monomer                            | Y | S/P | 3    | 2G | Cont | No                | T1 | IIA | No   | C | FT | ABC | No  | 15.12, 15.13, 15.17, 15.19.6, 16.6.1, 16.6.2       |
| Sulphohydrocarbon (C3-C88)                 | Y | P   | 2    | 2G | Open | No                | -  | -   | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6, 16.2.9                            |
| Sulpholane                                 | Y | S/P | 3    | 2G | Open | No                |    |     | Yes  | O | No | AC  | No  | 15.19.6, 16.2.9                                    |
| Sulphur (molten) (*)                       | Z | S   | 3    | 1G | Open | Vent or pad (gas) | T3 |     | Yes  | O | FT | No  | No  | 15.10, 16.2.9                                      |

| a                                                   | c | d   | e    | f  | g    | h  | i' | i'' | i''' | j | k  | l   | n   | o                                           |
|-----------------------------------------------------|---|-----|------|----|------|----|----|-----|------|---|----|-----|-----|---------------------------------------------|
| Sulphuric acid                                      | Y | S/P | 2    | 2G | Cont | No |    |     | NF   | C | T  | No  | Yes | 15.11, 15.12, 15.16.2, 15.17, 15.19, 16.2.9 |
| Sulphuric acid, spent                               | Y | S/P | 2    | 2G | Cont | No |    |     | NF   | C | T  | No  | Yes | 15.11, 15.12, 15.16.2, 15.17, 15.19         |
| Sulphurized fat (C14-C20)                           | Z | S/P | 3    | 2G | Open | No |    |     | Yes  | O | No | ABC | No  |                                             |
| Sulphurized polyolefinamide alkene (C28-C250) amine | Z | P   | 3    | 2G | Open | No | -  | -   | Yes  | O | No | AC  | No  |                                             |
| Sunflower seed oil                                  | Y | S/P | 2(k) | 2G | Open | No | -  | -   | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6, 16.2.7, 16.2.9             |
| Tall oil, crude                                     | Y | S/P | 2    | 2G | Open | No | -  | -   | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6                             |
| Tall oil, distilled                                 | Y | P   | 2    | 2G | Open | No | -  | -   | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6                             |
| Tall oil fatty acid (resin acids less than 20%)     | Y | S/P | 2    | 2G | Open | No | -  | -   | Yes  | O | No | ABC | No  | 15.19.6                                     |
| Tall oil pitch                                      | Y | P   | 2    | 2G | Open | No | -  | -   | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6, 16.2.9                     |
| Tall oil soap, crude                                | Y | S/P | 2    | 2G | Cont | No |    |     | Yes  | C | T  | ABC | Yes | 15.12, 15.17, 15.19, 16.2.6                 |
| Tallow                                              | Y | P   | 2(k) | 2G | Open | No | -  | -   | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6, 16.2.7, 16.2.9             |
| Tallow fatty acid                                   | Y | P   | 2    | 2G | Open | No | -  | -   | Yes  | O | No | AC  | No  | 15.19.6, 16.2.6, 16.2.7, 16.2.9             |
| Tetrachloroethane                                   | Y | S/P | 2    | 2G | Cont | No |    |     | NF   | R | T  | No  | No  | 15.12.3, 15.12.4, 15.19                     |
| Tetraethylene glycol                                | Z | P   | 3    | 2G | Open | No |    |     | Yes  | O | No | AC  | No  |                                             |
| Tetraethylene pentamine                             | Y | S/P | 2    | 2G | Cont | No |    |     | Yes  | C | T  | AC  | Yes | 15.12, 15.17, 15.19                         |
| Tetrahydrofuran                                     | Z | S   | 3    | 2G | Cont | No | T3 | IIB | No   | R | F  | AC  | No  | 15.19.6                                     |
| Tetrahydronaphthalene                               | Y | S/P | 2    | 2G | Cont | No |    |     | Yes  | R | T  | ABC | No  | 15.12.3, 15.12.4, 15.19.6                   |
| Tetramethylbenzene (all isomers)                    | X | S/P | 2    | 2G | Open | No |    |     | Yes  | O | No | ABC | No  | 15.19.6, 16.2.9                             |
| Titanium dioxide slurry                             | Z | P   | 3    | 2G | Open | No |    |     | NF   | O | No | No  | No  |                                             |

| a                                                          | c | d   | e | f  | g    | h   | i' | i'' | i''' | j | k  | l       | n   | o                                           |
|------------------------------------------------------------|---|-----|---|----|------|-----|----|-----|------|---|----|---------|-----|---------------------------------------------|
| Toluene                                                    | Y | S/P | 3 | 2G | Cont | No  | T1 | IIA | No   | C | FT | AC      | No  | 15.12, 15.17, 15.19.6                       |
| Toluenediamine                                             | Y | S/P | 2 | 2G | Cont | No  |    |     | Yes  | C | T  | ABC     | Yes | 15.12, 15.17, 15.18, 15.19, 16.2.6, 16.2.9  |
| Toluene diisocyanate                                       | Y | S/P | 2 | 2G | Cont | Dry | -  | -   | Yes  | C | T  | ABC(b)D | Yes | 15.12, 15.16.2, 15.17, 15.18, 15.19, 16.2.9 |
| o-Toluidine                                                | Y | S/P | 2 | 2G | Cont | No  |    |     | Yes  | C | T  | ABC     | No  | 15.12, 15.17, 15.19                         |
| Tributyl phosphate                                         | Y | S/P | 3 | 2G | Cont | No  |    |     | Yes  | C | T  | ABC     | No  | 15.12.3, 15.12.4, 15.19.6                   |
| 1,2,3-Trichlorobenzene (molten)                            | X | S/P | 2 | 2G | Cont | No  |    |     | Yes  | R | T  | ABC     | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9   |
| 1,2,4-Trichlorobenzene                                     | X | S/P | 1 | 2G | Cont | No  |    |     | Yes  | C | T  | ABC     | No  | 15.12, 15.17, 15.19, 16.2.9                 |
| 1,1,1-Trichloroethane                                      | Y | P   | 2 | 2G | Open | No  |    |     | Yes  | O | No | ABC     | No  | 15.19.6                                     |
| 1,1,2-Trichloroethane                                      | Y | S/P | 3 | 2G | Open | No  |    |     | NF   | O | No | No      | No  | 15.19.6                                     |
| Trichloroethylene                                          | Y | S/P | 2 | 2G | Cont | No  | -  | -   | NF   | C | T  | No      | No  | 15.12, 15.17, 15.19.6                       |
| 1,2,3-Trichloropropane                                     | Y | S/P | 3 | 2G | Cont | No  |    |     | Yes  | C | T  | ABC     | 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  | 15.19.6                                     |
| Tricresyl phosphate (containing 1% or more ortho-isomer)   | Y | S/P | 2 | 2G | Cont | No  | -  | -   | Yes  | C | T  | ABC     | No  | 15.12, 15.17, 15.19, 16.2.6                 |
| Tricresyl phosphate (containing less than 1% ortho-isomer) | Y | S/P | 2 | 2G | Cont | No  |    |     | Yes  | C | T  | ABC     | No  | 15.12, 15.17, 15.19.6, 16.2.6               |
| Tridecane                                                  | Y | S/P | 2 | 2G | Open | No  |    |     | Yes  | O | No | ABC     | No  | 15.19.6                                     |
| Tridecanoic acid                                           | Y | S/P | 2 | 2G | Open | No  |    |     | Yes  | O | No | ABC     | No  | 15.19.6, 16.2.6, 16.2.9                     |
| Tridecyl acetate                                           | Y | S/P | 3 | 2G | Cont | No  | -  | -   | Yes  | R | T  | ABC     | No  | 15.12.3, 15.12.4, 15.19.6                   |
| Triethanolamine                                            | Z | S/P | 3 | 2G | Cont | No  |    |     | Yes  | R | T  | AC      | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.9           |
| Triethylamine                                              | Y | S/P | 3 | 2G | Cont | No  | T2 | IIA | No   | C | FT | ABC     | No  | 15.12.3, 15.12.4, 15.19                     |

| a                                             | c | d   | e | f  | g    | h  | i' | i'' | i''' | j | k  | l   | n   | o                                                |
|-----------------------------------------------|---|-----|---|----|------|----|----|-----|------|---|----|-----|-----|--------------------------------------------------|
| Triethylbenzene                               | X | S/P | 2 | 2G | Cont | No |    |     | Yes  | R | T  | ABC | No  | 15.12.3, 15.12.4, 15.19.6                        |
| Triethylenetetramine                          | Y | S/P | 2 | 2G | Cont | No | -  | -   | Yes  | C | T  | AC  | Yes | 15.12, 15.17, 15.19, 16.2.9                      |
| Triethyl phosphate                            | Z | S/P | 3 | 2G | Open | No |    |     | Yes  | O | No | AC  | No  | 15.19.6                                          |
| Triethyl phosphite                            | Z | S/P | 3 | 2G | Cont | No | T3 | IIA | No   | R | FT | ABC | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.9                |
| Triisopropanolamine                           | Z | S/P | 3 | 2G | Open | No |    |     | Yes  | O | No | AC  | No  | 15.19.6, 16.2.9                                  |
| Triisopropylated phenyl phosphates            | X | P   | 2 | 2G | Open | No |    |     | Yes  | O | No | AC  | No  | 15.19.6, 16.2.6                                  |
| Trimethylacetic acid                          | Y | S/P | 2 | 2G | Cont | No |    |     | Yes  | R | T  | AC  | No  | 15.11, 15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9 |
| Trimethylamine solution (30% or less)         | Z | S/P | 2 | 2G | Cont | No | T3 | IIB | No   | R | FT | AC  | No  | 15.12.3, 15.12.4, 15.14, 15.19.6                 |
| Trimethylbenzene (all isomers)                | X | S/P | 2 | 2G | Cont | No | T1 | IIA | No   | R | F  | ABC | No  | 15.19.6                                          |
| Trimethylol propane propoxylated              | Z | S/P | 3 | 2G | Open | No | -  | -   | Yes  | O | No | ABC | No  |                                                  |
| 2,2,4-Trimethyl-1,3-pentanediol diisobutyrate | Y | S/P | 3 | 2G | Open | No |    |     | Yes  | O | No | ABC | No  | 15.19.6                                          |
| 2,2,4-Trimethyl-1,3-pentanediol-1-isobutyrate | Y | S/P | 2 | 2G | Open | No |    |     | Yes  | O | No | ABC | No  | 15.19.6                                          |
| 1,3,5-Trioxane                                | Y | S/P | 3 | 2G | Cont | No | T2 | IIB | No   | C | FT | AC  | No  | 15.12, 15.17, 15.19.6, 16.2.9                    |
| Tripropylene glycol                           | Z | P   | 3 | 2G | Open | No |    |     | Yes  | O | No | AC  | No  |                                                  |
| Trixylyl phosphate                            | X | S/P | 1 | 2G | Cont | No |    |     | Yes  | C | T  | ABC | No  | 15.12, 15.17, 15.19.6, 16.2.6                    |

| a                                                                     | c | d   | e    | f  | g    | h     | i' | i'' | i''' | j | k  | l   | n  | o                                            |
|-----------------------------------------------------------------------|---|-----|------|----|------|-------|----|-----|------|---|----|-----|----|----------------------------------------------|
| Tung oil                                                              | Y | S/P | 2(k) | 2G | Open | No    | -  | -   | Yes  | O | No | ABC | No | 15.19.6, 16.2.6, 16.2.7, 16.2.9              |
| Turpentine                                                            | X | S/P | 2    | 2G | Cont | No    | T3 | IIA | No   | R | FT | AC  | No | 15.19.6                                      |
| Undecanoic acid                                                       | Y | S/P | 2    | 2G | Cont | No    |    |     | Yes  | R | T  | ABC | No | 15.12.3, 15.12.4, 15.19.6, 16.2.6, 16.2.9    |
| 1-Undecene                                                            | X | S/P | 2    | 2G | Open | No    |    |     | Yes  | O | No | ABC | No | 15.19.6                                      |
| Undecyl alcohol                                                       | X | S/P | 2    | 2G | Cont | No    |    |     | Yes  | R | T  | ABC | No | 15.12.3, 15.12.4, 15.19.6, 16.2.9            |
| Urea/Ammonium nitrate solution                                        | Y | S/P | 3    | 2G | Open | No    | -  | -   | NF   | O | No | No  | No | 15.19.6                                      |
| Urea/Ammonium phosphate solution                                      | Y | S/P | 2    | 2G | Cont | No    |    |     | Yes  | R | T  | AC  | No | 15.12.3, 15.12.4, 15.19.6                    |
| Urea solution                                                         | Z | S/P | 3    | 2G | Open | No    |    |     | Yes  | O | No | AC  | No | 16.2.9,                                      |
| Used cooking oil (m)                                                  | X | S/P | 2    | 2G | Open | No    |    |     | Yes  | O | No | ABC | No | 15.19.6, 16.2.6, 16.2.9                      |
| Used cooking oil (Triglycerides, C16-C18 and C18 unsaturated) (m) (n) | Y | S/P | 2    | 2G | Open | No    |    |     | Yes  | O | No | ABC | No | 15.19.6, 16.2.6, 16.2.7, 16.2.9              |
| Valeraldehyde (all isomers)                                           | Y | S/P | 3    | 2G | Cont | Inert | T3 | IIB | No   | R | F  | ABC | No | 15.4.6, 15.13, 15.19.6, 16.6.1, 16.6.2       |
| Vegetable acid oils (m)                                               | Y | S/P | 2    | 2G | Open | No    | -  | -   | Yes  | O | No | ABC | No | 15.19.6, 16.2.6, 16.2.7, 16.2.9              |
| Vegetable fatty acid distillates (m)                                  | Y | P   | 2    | 2G | Open | No    | -  | -   | Yes  | O | No | ABC | No | 15.19.6, 16.2.6, 16.2.7, 16.2.9              |
| Vegetable oil mixtures, containing less than 15% free fatty acid (m)  | Y | S/P | 2    | 2G | Open | No    |    |     | Yes  | O | No | ABC | No | 15.19.6, 16.2.6, 16.2.7, 16.2.9              |
| Vinyl acetate                                                         | Y | S/P | 3    | 2G | Cont | No    | T2 | IIA | No   | C | FT | ABC | No | 15.12, 15.13, 15.17, 15.19.6, 16.6.1, 16.6.2 |
| Vinyl ethyl ether                                                     | Z | S/P | 2    | 2G | Cont | Inert | T3 | IIB | No   | R | F  | ABC | No | 15.4, 15.13, 15.14, 15.19.6, 16.6.1, 16.6.2  |

| a                                          | c | d   | e | f  | g    | h     | i' | i'' | i''' | j | k  | l   | n   | o                                                 |
|--------------------------------------------|---|-----|---|----|------|-------|----|-----|------|---|----|-----|-----|---------------------------------------------------|
| Vinylidene chloride                        | Y | S/P | 2 | 2G | Cont | Inert | T2 | IIA | No   | C | FT | ABC | No  | 15.12, 15.13, 15.14, 15.17, 15.19, 16.6.1, 16.6.2 |
| Vinyl neodecanoate                         | Y | S/P | 2 | 2G | Cont | No    |    |     | Yes  | C | T  | ABC | Yes | 15.12, 15.13, 15.17, 15.19, 16.6.1, 16.6.2        |
| Vinyltoluene                               | Y | S/P | 2 | 2G | Cont | No    | T1 | IIA | No   | C | FT | ABC | No  | 15.12, 15.13, 15.17, 15.19.6, 16.6.1, 16.6.2      |
| White spirit, low (15-20%) aromatic        | Y | S/P | 2 | 2G | Cont | No    | T3 | IIA | No   | R | FT | ABC | No  | 15.12.3, 15.12.4, 15.19.6, 16.2.9                 |
| Wood lignin with sodium acetate/oxalate    | Z | S/P | 3 | 2G | Open | No    | -  | -   | NF   | O | No | No  | No  |                                                   |
| Xylenes                                    | Y | P   | 2 | 2G | Cont | No    | T1 | IIA | No   | R | F  | ABC | No  | 15.19.6, 16.2.9 (h)                               |
| Xylenes/ethylbenzene (10% or more) mixture | Y | S/P | 2 | 2G | Cont | No    | T2 | IIA | No   | R | FT | ABC | No  | 15.12.3, 15.12.4, 15.19.6                         |
| Xylenol                                    | Y | S/P | 2 | 2G | Cont | No    | -  | IIA | Yes  | C | T  | ABC | Yes | 15.12, 15.17, 15.19, 16.2.9                       |
| Zinc alkaryl dithiophosphate (C7-C16)      | Y | P   | 2 | 2G | Open | No    |    |     | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6, 16.2.9                           |
| Zinc alkenyl carboxamide                   | Y | S/P | 2 | 2G | Open | No    |    |     | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6                                   |
| Zinc alkyl dithiophosphate (C3-C14)        | Y | P   | 2 | 2G | Open | No    |    |     | Yes  | O | No | ABC | No  | 15.19.6, 16.2.6                                   |

## 第 17 章中货物脚注

第 17 章某些货品名称或最低要求中包含脚注，如表中 a 栏货物名称之后括号中的字母或符号，它们提供了关于货物运输规定的附加要求。这些脚注的注释如下：

a. 所载运货物含有闪点不超过 60°C 的易燃溶剂，应设特殊电气系统和易燃蒸气探测器。

b. 虽然水适用于扑灭涉及本脚注的化学品的露天火灾，但不得用水扑灭装有这些化学品沾污的封闭液货舱，因为会导致产生危险气体的危险。

c. 黄磷或白磷是在其自燃温度以上状态下载运的，因此闪点是不适用的。载运黄磷或白磷，对电气设备的要求，可与闪点超过 60°C 的物质对电气设备的要求相类似。

d. 这些要求是依据闪点 60°C 及以下的异构体；而有些异构体的闪点超过 60°C。因此，以易燃性依据的要求不适用于这些异构体。

e. 仅适用于 n-decyl alcohol。

f. 不得用化学干粉作灭火剂。

g. 对封闭处所，应同时测定甲酸蒸气 and 一氧化碳气体的含量。

h. 仅对二甲苯适用。

i. 适用于不含安全危险成分的混合物，且污染等级为 Y 或以下。

j. 只有抗乙醇泡沫有效。

k. e 栏确定船型的要求，可适用防污公约附则 II 第 4.1.3 条。

l. 熔点大于或等于 0°C 时可适用。

m. IBC 规则中规定的植物油、动物脂肪和鱼油。

n. 使用词条前，应确认货物由 Triglycerides、C16-C18 和 C18 unsaturated 组成。否则，必须使用更通用的货品名称 “Used cooking oil (m)”。

o 表明这些词条仅用于回收来自海底矿产资源勘探开发的海上设施的污染散装液体。

\* 表明参照 IBC 规则第 21 章 (21.1.3)，偏离了已用于某些运输规定的正常评定标准。

## 第 18 章 不适用规则的货物清单\*

\* 本变更通告第 18 章修订内容，将于 2021 年 1 月 1 日生效。

第 18 章的整个文本由下文替代：

18.1 下面货物系按其安全性和污染危害性进行审查，并确定其危害性尚不足以列入规则适用范围的液体物质。

18.2 虽然本章所列的液体物质不属于规则的范围，但主管机关仍应注意，为这些化学货物的安全运输可能需要采取某些安全措施，因而，主管机关还应规定相应的安全要求。

18.3 有些液体物质被确定为属于 Z 类污染物质，因此，对其载运时还须满足防污公约附则 II 的某些要求。

18.4 按防污公约附则 II 第 6.3 条经评估或临时评估为 Z 类或 OS 类污染、且不具有安全危害性的液体混合物，可按本章“无另行说明（n.o.s）的有毒或非有毒液体物质”的有关规定进行载运。

对表中栏目的注释如下：

货物名称： 任何散装运输货物的运输文件中应使用货物名称。任何附加的名称可放在货物名称后的括号内。在某些情况下，货物名称可能与本规则以前版本所提供的名称不一致。

污染类别： “Z”系指按防污公约附则 II 所确定的货物的污染类别。

“OS”系指货物被评定并查明其污染类别不属于 X，Y 或 Z 类。

| <b>Product Name</b>             | <b>Pollution Category</b> |
|---------------------------------|---------------------------|
| Acetone                         | Z                         |
| Alcoholic beverages, n.o.s.     | Z                         |
| Apple juice                     | OS                        |
| n-Butyl alcohol                 | Z                         |
| sec-Butyl alcohol               | Z                         |
| Calcium carbonate slurry        | OS                        |
| Clay slurry                     | OS                        |
| Coal slurry                     | OS                        |
| Ethyl alcohol                   | Z                         |
| Glucose solution                | OS                        |
| Glycerol ethoxylated            | OS                        |
| Hydrogenated starch hydrolysate | OS                        |
| Isopropyl alcohol               | Z                         |
| Kaolin slurry                   | OS                        |
| Lecithin                        | OS                        |
| Maltitol solution               | OS                        |

| <b>Product Name</b>                                                       | <b>Pollution Category</b> |
|---------------------------------------------------------------------------|---------------------------|
| Microsilica slurry                                                        | OS                        |
| 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                        |
| Orange juice (concentrated)                                               | OS                        |
| Orange juice (not concentrated)                                           | OS                        |
| Potassium chloride solution (less than 26%)                               | OS                        |
| Propylene glycol                                                          | OS                        |
| Sodium acetate solutions                                                  | Z                         |
| Sodium bicarbonate solution (less than 10%)                               | OS                        |
| Sorbitol solution                                                         | OS                        |
| Sulphonated polyacrylate solution                                         | Z                         |
| Tetraethyl silicate monomer/oligomer (20% in ethanol)                     | Z                         |
| Triethylene glycol                                                        | OS                        |
| Vegetable protein solution (hydrolysed)                                   | OS                        |
| Water                                                                     | OS                        |

## 第 19 章 散装运输货物索引\*

\* 本变更通告第 19 章修订内容，将于 2021 年 1 月 1 日生效。

第 19 章的整个文本由下文替代：

19.1 散装运输货物索引（下文简称“索引”）第一栏提供索引名称。当索引名称为黑体大写时，表示该名称与第17 或18 章中的货物名称一致，此时列出货物名称的第二栏中为空白。当索引名称为非黑体小写时，表示该名称为第二栏内所列出的第17 或18 章中货物名称的同义名称。第三栏表示IBC 规则的有关章节。

19.2 在对第19 章进行审核之后，原先列出的联合国编号一栏已经从索引中删除。其原因在于索引名称中仅小部分有联合国编号，并且第19 章使用的某些索引名称与联合国编号对应的名称不一致，为避免混淆，决定删除联合国编号。

19.3 索引的目的仅在于提供信息。第一栏中所列的非黑体小写索引名称，不得作为运输文件中的货物名称。

19.4 作为货物名称组成部分的前缀，以普通（罗马）字母形式表示，且在依字母顺序编排时考虑，包括以下前缀：

|             |           |            |              |              |            |            |            |              |              |
|-------------|-----------|------------|--------------|--------------|------------|------------|------------|--------------|--------------|
| <u>Mono</u> | <u>Di</u> | <u>Tri</u> | <u>Tetra</u> | <u>Penta</u> | <u>Iso</u> | <u>Bis</u> | <u>Neo</u> | <u>Ortho</u> | <u>Cyclo</u> |
| 单           | 二         | 三          | 四            | 五            | 异          | 双          | 新          | 原（正）         | 环            |

19.5 依字母顺序编排时忽略的前缀包括：

|                    |         |
|--------------------|---------|
| n- (normal-)       | 正-      |
| sec- (secondary-)  | 仲-      |
| tert- (tertiary-)  | 叔-      |
| o- (ortho-)        | 邻-      |
| m- (meta-)         | 间-      |
| p- (para-)         | 对-      |
| N-                 | 正-      |
| O-                 | 邻-      |
| S-                 | 对-      |
| sym- (symmetrical) | 对称-, 均- |

|                          |          |
|--------------------------|----------|
| uns- (unsymmetrical)     | 不对称-, 偏- |
| dl-                      | (外) 消旋   |
| D-                       | 右旋-      |
| L-                       | 左旋-      |
| cis-                     | 顺-       |
| trans-                   | 反-       |
| (E)-                     | 反-       |
| (Z)-                     | 顺-       |
| alpha- ( $\alpha$ -)     |          |
| beta- ( $\beta$ -)       |          |
| gamma- ( $\gamma$ -)     |          |
| epsilon- ( $\epsilon$ -) |          |
| omega- ( $\omega$ -)     |          |

19.6 索引中某些索引名称后面使用注释 (a) 或 (b)。(a) 或 (b) 在以下情况适用:

(a) 索引名称代表对应货物名称的一个子类别。

(b) 对应于该索引名称的货物名称包含了碳链长度限制。由于货物索引名称代表相应货物名称的一个子类别或其一种明确的同分异构物, 因此, 对于索引名称标识的任何货物, 应核查其碳链长度特征。

| Index Name                                                                                       | Product Name                        | Chapter |
|--------------------------------------------------------------------------------------------------|-------------------------------------|---------|
| Abietic anhydride                                                                                | ROSIN                               | 17      |
| acedimethylamide                                                                                 | N,N-DIMETHYLACETAMIDE               | 17      |
| Acetaldehyde cyanohydrin solution (80% or less)                                                  | LACTONITRILE SOLUTION (80% OR LESS) | 17      |
| Acetaldehyde trimer                                                                              | PARALDEHYDE                         | 17      |
| <b>ACETIC ACID</b>                                                                               |                                     | 17      |
| Acetic acid anhydride                                                                            | ACETIC ANHYDRIDE                    | 17      |
| Acetic acid, ethenyl ester                                                                       | VINYL ACETATE                       | 17      |
| Acetic acid, methyl ester                                                                        | METHYL ACETATE                      | 17      |
| Acetic acid, vinyl ester                                                                         | VINYL ACETATE                       | 17      |
| <b>ACETIC ANHYDRIDE</b>                                                                          |                                     | 17      |
| Acetic ester                                                                                     | ETHYL ACETATE                       | 17      |
| Acetic ether                                                                                     | ETHYL ACETATE                       | 17      |
| Acetic oxide                                                                                     | ACETIC ANHYDRIDE                    | 17      |
| Acetoacetic acid, methyl ester                                                                   | METHYL ACETOACETATE                 | 17      |
| Acetoacetic ester                                                                                | ETHYL ACETOACETATE                  | 17      |
| <b>ACETOCHLOR</b>                                                                                |                                     | 17      |
| <b>ACETONE</b>                                                                                   |                                     | 18      |
| <b>ACETONE CYANOHYDRIN</b>                                                                       |                                     | 17      |
| <b>ACETONITRILE</b>                                                                              |                                     | 17      |
| <b>ACETONITRILE (LOW PURITY GRADE)</b>                                                           |                                     | 17      |
| Acetyl anhydride                                                                                 | ACETIC ANHYDRIDE                    | 17      |
| Acetylene tetrachloride                                                                          | TETRACHLOROETHANE                   | 17      |
| Acetyl ether                                                                                     | ACETIC ANHYDRIDE                    | 17      |
| Acetyl oxide                                                                                     | ACETIC ANHYDRIDE                    | 17      |
| <b>ACID OIL MIXTURE FROM SOYABEAN, CORN (MAIZE) AND SUNFLOWER OIL REFINING</b>                   |                                     | 17      |
| Acroleic acid                                                                                    | ACRYLIC ACID                        | 17      |
| <b>ACRYLAMIDE SOLUTION (50% OR LESS)</b>                                                         |                                     | 17      |
| <b>ACRYLIC ACID</b>                                                                              |                                     | 17      |
| <b>ACRYLIC ACID/ETHENESULPHONIC ACID COPOLYMER WITH PHOSPHONATE GROUPS, SODIUM SALT SOLUTION</b> |                                     | 17      |
| Acrylic acid, 2-hydroxyethyl ester                                                               | 2-HYDROXYETHYL ACRYLATE             | 17      |
| Acrylic amide solution, 50% or less                                                              | ACRYLAMIDE SOLUTION (50% OR LESS)   | 17      |
| Acrylic resin monomer                                                                            | METHYL METHACRYLATE                 | 17      |
| <b>ACRYLONITRILE</b>                                                                             |                                     | 17      |
| <b>ACRYLONITRILE-STYRENE COPOLYMER DISPERSION IN POLYETHER POLYOL</b>                            |                                     | 17      |
| Adipic acid, bis(2-ethylhexyl) ester                                                             | DI-(2-ETHYLHEXYL) ADIPATE           | 17      |
| <b>ADIPONITRILE</b>                                                                              |                                     | 17      |
| <b>ALACHLOR TECHNICAL (90% OR MORE)</b>                                                          |                                     | 17      |
| Alcohol                                                                                          | ETHYL ALCOHOL                       | 18      |
| Alcohol, C10                                                                                     | DECYL ALCOHOL (ALL ISOMERS)         | 17      |
| Alcohol, C11                                                                                     | UNDECYL ALCOHOL                     | 17      |
| Alcohol, C12                                                                                     | DODECYL ALCOHOL                     | 17      |
| Alcohol, C7 (a)                                                                                  | HEPTANOL (ALL ISOMERS) (D)          | 17      |
| Alcohol, C8                                                                                      | OCTANOL (ALL ISOMERS)               | 17      |

| <b>Index Name</b>                                                                                    | <b>Product Name</b>                  | <b>Chapter</b> |
|------------------------------------------------------------------------------------------------------|--------------------------------------|----------------|
| Alcohol, C9                                                                                          | NONYL ALCOHOL (ALL ISOMERS)          | 17             |
| ALCOHOLIC BEVERAGES, N.O.S.                                                                          |                                      | 18             |
| ALCOHOL (C9-C11) POLY(2.5-9)ETHOXYLATE                                                               |                                      | 17             |
| ALCOHOL (C10-C18) POLY (7) ETHOXYLATE                                                                |                                      | 17             |
| ALCOHOL (C6-C17) (SECONDARY) POLY(3-6)ETHOXYLATES                                                    |                                      | 17             |
| ALCOHOL (C6-C17) (SECONDARY) POLY(7-12)ETHOXYLATES                                                   |                                      | 17             |
| ALCOHOL (C12-C16) POLY(1-6) ETHOXYLATES                                                              |                                      | 17             |
| ALCOHOL (C12-C16) POLY(20+)ETHOXYLATES                                                               |                                      | 17             |
| ALCOHOL (C12-C16) POLY(7-19)ETHOXYLATES                                                              |                                      | 17             |
| ALCOHOLS (C13+)                                                                                      |                                      | 17             |
| Alcohols, C13 - C15                                                                                  | ALCOHOLS (C13+)                      | 17             |
| ALCOHOLS (C12+), PRIMARY, LINEAR                                                                     |                                      | 17             |
| ALCOHOLS (C8-C11), PRIMARY, LINEAR AND ESSENTIALLY LINEAR                                            |                                      | 17             |
| ALCOHOLS (C12-C13), PRIMARY, LINEAR AND ESSENTIALLY LINEAR                                           |                                      | 17             |
| ALCOHOLS (C14-C18), PRIMARY, LINEAR AND ESSENTIALLY LINEAR                                           |                                      | 17             |
| Aldehyde collidine                                                                                   | 2-METHYL-5-ETHYL PYRIDINE            | 17             |
| Aldehydine                                                                                           | 2-METHYL-5-ETHYL PYRIDINE            | 17             |
| ALKANES (C6-C9)                                                                                      |                                      | 17             |
| ISO- AND CYCLO-ALKANES (C10-C11)                                                                     |                                      | 17             |
| ISO- AND CYCLO-ALKANES (C12+)                                                                        |                                      | 17             |
| N-ALKANES (C9-C11)                                                                                   |                                      | 17             |
| N-ALKANES (C10-C20)                                                                                  |                                      | 17             |
| Alkane(C10-C18)sulfonic acid, phenyl ester (a)                                                       | ALKYL SULPHONIC ACID ESTER OF PHENOL | 17             |
| ALKARYL POLYETHERS (C9-C20)                                                                          |                                      | 17             |
| ALKENOIC ACID, POLYHYDROXY ESTER BORATED                                                             |                                      | 17             |
| ALKENYL (C11+) AMIDE                                                                                 |                                      | 17             |
| ALKENYL (C16-C20) SUCCINIC ANHYDRIDE                                                                 |                                      | 17             |
| ALKYL ACRYLATE/VINYLPYRIDINE COPOLYMER IN TOLUENE                                                    |                                      | 17             |
| ALKYL/CYCLO (C4-C5) ALCOHOLS                                                                         |                                      | 17             |
| ALKYLARYL PHOSPHATE MIXTURES (MORE THAN 40% DIPHENYL TOLYL PHOSPHATE, LESS THAN 0.02% ORTHO-ISOMERS) |                                      | 17             |
| ALKYLATED (C4-C9) HINDERED PHENOLS                                                                   |                                      | 17             |
| ALKYLBENZENE, ALKYLINDANE, ALKYLINDENE MIXTURE (EACH C12-C17)                                        |                                      | 17             |
| ALKYLBENZENE DISTILLATION BOTTOMS                                                                    |                                      | 17             |
| ALKYLBENZENE MIXTURES (CONTAINING AT LEAST 50% OF TOLUENE)                                           |                                      | 17             |
| ALKYL (C3-C4) BENZENES                                                                               |                                      | 17             |
| ALKYL (C5-C8) BENZENES                                                                               |                                      | 17             |
| ALKYL(C9+)BENZENES                                                                                   |                                      | 17             |

| Index Name                                                                                | Product Name                                                        | Chapter |
|-------------------------------------------------------------------------------------------|---------------------------------------------------------------------|---------|
| ALKYLBENZENES MIXTURES (CONTAINING NAPHTHALENE)                                           |                                                                     | 17      |
| ALKYL (C11-C17) BENZENE SULPHONIC ACID                                                    |                                                                     | 17      |
| ALKYLBENZENE SULPHONIC ACID, SODIUM SALT SOLUTION                                         |                                                                     | 17      |
| ALKYL (C12+) DIMETHYLAMINE                                                                |                                                                     | 17      |
| ALKYL DITHIOCARBAMATE (C19-C35)                                                           |                                                                     | 17      |
| ALKYL DITHIOTHIADIAZOLE (C6-C24)                                                          |                                                                     | 17      |
| ALKYL ESTER COPOLYMER (C4-C20)                                                            |                                                                     | 17      |
| ALKYL (C8-C10)/(C12-C14):(40% OR LESS/60% OR MORE) POLYGLUCOSIDE SOLUTION (55% OR LESS)   |                                                                     | 17      |
| ALKYL (C8-C10)/(C12-C14):(60% OR MORE/40% OR LESS) POLYGLUCOSIDE SOLUTION(55% OR LESS)    |                                                                     | 17      |
| ALKYL (C7-C9) NITRATES                                                                    |                                                                     | 17      |
| 2,2'- [3-(Alkyl(C16-C18)oxy)propylimino]diethanol (a)                                     | ETHOXYLATED LONG CHAIN (C16+) ALKYL OXYALKYLAMINE                   | 17      |
| Alkylphenol, long-chain (C14-C18)                                                         | LONG-CHAIN ALKYLPHENOL (C14-C18)                                    | 17      |
| Alkylphenol, long-chain (C18-C30)                                                         | LONG-CHAIN ALKYLPHENOL (C18-C30)                                    | 17      |
| ALKYL(C7-C11)PHENOL POLY(4-12) ETHOXYLATE                                                 |                                                                     | 17      |
| ALKYL (C8-C40) PHENOL SULPHIDE                                                            |                                                                     | 17      |
| ALKYL (C8-C9) PHENYLAMINE IN AROMATIC SOLVENTS                                            |                                                                     | 17      |
| ALKYL (C9-C15) PHENYL PROPOXYLATE                                                         |                                                                     | 17      |
| ALKYL (C8-C10) POLYGLUCOSIDE SOLUTION (65% OR LESS)                                       |                                                                     | 17      |
| ALKYL (C8-C10)/(C12-C14):(50%/50%) POLYGLUCOSIDE SOLUTION (55% OR LESS)                   |                                                                     | 17      |
| ALKYL (C12-C14) POLYGLUCOSIDE SOLUTION (55% OR LESS)                                      |                                                                     | 17      |
| ALKYL(C12-C16) PROPOXYAMINE ETHOXYLATE                                                    |                                                                     | 17      |
| ALKYL (C10-C15, C12 RICH) PHENOL POLY(4-12)ETHOXYLATE                                     |                                                                     | 17      |
| ALKYL (C10-C20, SATURATED AND UNSATURATED) PHOSPHITE                                      |                                                                     | 17      |
| ALKYL SULPHONIC ACID ESTER OF PHENOL                                                      |                                                                     | 17      |
| ALKYL (C18+) TOLUENES                                                                     |                                                                     | 17      |
| Alkyltoluenesulfonic acid, calcium salts, high overbase (up to 70% in mineral oil)        | ALKYL (C18-C28) TOLUENESULPHONIC ACID, CALCIUM SALTS, HIGH OVERBASE | 17      |
| Alkyl(C18-C28)toluenesulfonic acid,calcium salts, low overbase (up to 60% in mineral oil) | ALKYL (C18-C28) TOLUENESULPHONIC ACID, CALCIUM SALTS, LOW OVERBASE  | 17      |
| ALKYL(C18-C28)TOLUENESULPHONIC ACID                                                       |                                                                     | 17      |
| ALKYL(C18-C28)TOLUENESULPHONIC ACID, CALCIUM SALTS, BORATED                               |                                                                     | 17      |
| ALKYL (C18-C28) TOLUENESULPHONIC ACID, CALCIUM SALTS, HIGH OVERBASE                       |                                                                     | 17      |
| ALKYL (C18-C28) TOLUENESULPHONIC ACID, CALCIUM SALTS, LOW OVERBASE                        |                                                                     | 17      |
| 3-Alky(C16-C18)oxy-N,N'-bis(2-hydroxyethyl)propan-1-amine (a)                             | ETHOXYLATED LONG CHAIN (C16+) ALKYL OXYALKYLAMINE                   | 17      |
| ALLYL ALCOHOL                                                                             |                                                                     | 17      |
| ALLYL CHLORIDE                                                                            |                                                                     | 17      |
| ALUMINIUM CHLORIDE/HYDROGEN CHLORIDE SOLUTION                                             |                                                                     | 17      |

| Index Name                                                                            | Product Name                          | Chapter |
|---------------------------------------------------------------------------------------|---------------------------------------|---------|
| <b>ALUMINIUM HYDROXIDE, SODIUM HYDROXIDE, SODIUM CARBONATE SOLUTION (40% OR LESS)</b> |                                       | 17      |
| Aluminium silicate hydroxide                                                          | KAOLIN SLURRY                         | 18      |
| <b>ALUMINIUM SULPHATE SOLUTION</b>                                                    |                                       | 17      |
| Aminoacetic acid, sodium salt solution                                                | GLYCINE, SODIUM SALT SOLUTION         | 17      |
| 1-Amino-3-aminomethyl-3,5,5-trimethylcyclohexane                                      | ISOPHORONEDIAMINE                     | 17      |
| Aminobenzene                                                                          | ANILINE                               | 17      |
| 1-Aminobutane (a)                                                                     | BUTYLAMINE (ALL ISOMERS)              | 17      |
| 2-Aminobutane                                                                         | BUTYLAMINE (ALL ISOMERS)              | 17      |
| Aminocyclohexane                                                                      | CYCLOHEXYLAMINE                       | 17      |
| Aminoethane                                                                           | ETHYLAMINE                            | 17      |
| Aminoethane solutions, 72% or less                                                    | ETHYLAMINE SOLUTIONS (72% OR LESS)    | 17      |
| 2-Aminoethanol                                                                        | ETHANOLAMINE                          | 17      |
| <b>2-(2-AMINOETHOXY) ETHANOL</b>                                                      |                                       | 17      |
| 2-(2-Aminoethylamino)ethanol                                                          | AMINOETHYL ETHANOLAMINE               | 17      |
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| 1-(2-Aminoethyl)piperazine                                                            | N-AMINOETHYLPIPERAZINE                | 17      |
| <b>N-AMINOETHYLPIPERAZINE</b>                                                         |                                       | 17      |
| 2-Aminoisobutane (a)                                                                  | BUTYLAMINE (ALL ISOMERS)              | 17      |
| Aminomethane solutions, 42% or less                                                   | METHYLAMINE SOLUTIONS (42% OR LESS)   | 17      |
| 1-Amino-2-methylbenzene                                                               | O-TOLUIDINE                           | 17      |
| 2-Amino-1-methylbenzene                                                               | O-TOLUIDINE                           | 17      |
| <b>2-AMINO-2-METHYL-1-PROPANOL</b>                                                    |                                       | 17      |
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| Aminophen                                                                             | ANILINE                               | 17      |
| 1-Aminopropane                                                                        | N-PROPYLAMINE                         | 17      |
| 2-Aminopropane                                                                        | ISOPROPYLAMINE                        | 17      |
| 2-Aminopropane (70% or less) solution                                                 | ISOPROPYLAMINE (70% OR LESS) SOLUTION | 17      |
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| 1-Aminopropan-2-ol                                                                    | ISOPROPANOLAMINE                      | 17      |
| 3-Aminopropan-1-ol                                                                    | N-PROPANOLAMINE                       | 17      |
| 2-Aminotoluene                                                                        | O-TOLUIDINE                           | 17      |
| o-Aminotoluene                                                                        | O-TOLUIDINE                           | 17      |
| 5-Amino-1,3,3-trimethylcyclohexylmethylamine                                          | ISOPHORONEDIAMINE                     | 17      |
| <b>AMMONIA AQUEOUS (28% OR LESS)</b>                                                  |                                       | 17      |
| Ammonia water, 28% or less                                                            | AMMONIA AQUEOUS (28% OR LESS)         | 17      |
| <b>AMMONIUM CHLORIDE SOLUTION (LESS THAN 25%) (*)</b>                                 |                                       | 17      |
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| Argilla                                                                   | <b>KAOLIN SLURRY</b>                              | 18      |
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| Benzothiazole-2-thiol, sodium salt solution                                                | MERCAPTOBENZOTHIAZOL, SODIUM SALT SOLUTION                    | 17      |
| (2-Benzothiazolylthio) sodium solution                                                     | MERCAPTOBENZOTHIAZOL, SODIUM SALT SOLUTION                    | 17      |
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| <b>BENZYL CHLORIDE</b>                                                                     |                                                               | 17      |
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| <b>BIO-FUEL BLENDS OF DIESEL/GAS OIL AND FAME (&gt;25% BUT &lt;99% BY VOLUME)</b>          |                                                               | 17      |
| <b>BIO-FUEL BLENDS OF DIESEL/GAS OIL AND VEGETABLE OIL (&gt;25% BUT &lt;99% BY VOLUME)</b> |                                                               | 17      |
| <b>BIO-FUEL BLENDS OF GASOLINE AND ETHYL ALCOHOL (&gt;25% BUT &lt;99% BY VOLUME)</b>       |                                                               | 17      |
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| Bis(methylcyclopentadiene)                                                                 | METHYLCYCLOPENTADIENE DIMER                                   | 17      |
| 2,5-Bis(alkyl(C7+)thio)-1,3,4-thiadiazole                                                  | ALKYL DITHIOTHIAZOLE (C6-C24)                                 | 17      |
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| N,N'-Bis(2-aminoethyl)ethane-1,2-diamine                                                   | TRIETHYLENETETRAMINE                                          | 17      |
| N,N'-Bis(2-aminoethyl)ethylenediamine                                                      | TRIETHYLENETETRAMINE                                          | 17      |
| N,N-Bis(2-(bis(carboxymethyl)amino)ethyl)glycine, pentasodium salt solution                | DIETHYLENETRIAMINEPENTAACETIC ACID, PENTASODIUM SALT SOLUTION | 17      |
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| N,N- Bis(carboxymethyl)glycine trisodium salt solution                                     | NITRILOTRIACETIC ACID, TRISODIUM SALT SOLUTION                | 17      |
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| Bis(2-chloroethyl) ether                                                                   | DICHLOROETHYL ETHER                                           | 17      |
| Bis (2-chloroisopropyl) ether                                                              | 2,2'-DICHLOROISOPROPYL ETHER                                  | 17      |
| Bis(2-chloro-1-methylethyl) ether                                                          | 2,2'-DICHLOROISOPROPYL ETHER                                  | 17      |
| Bis[2-(2,3-epoxypropoxy)phenyl]methane                                                     | DIGLYCIDYL ETHER OF BISPHENOL F                               | 17      |
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| Bis(2-ethoxyethyl) ether                                                                   | DIETHYLENE GLYCOL DIETHYL ETHER                               | 17      |
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| Bis (2-ethylhexyl)-1-4-benzenedicarboxylate                                                | BIS(2-ETHYLHEXYL) TEREPHTHALATE                               | 17      |

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| Bis(2-ethylhexyl) hydrogen phosphate                                                                                                          | DI-(2-ETHYLHEXYL) PHOSPHORIC ACID                                    | 17      |
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| Bis(2-hydroxyethyl)ammonium 2,4-dichlorophenoxyacetate solution                                                                               | 2,4-DICHLOROPHENOXYACETIC ACID, DIETHANOLAMINE SALT SOLUTION         | 17      |
| Bis(2-hydroxyethyl) ether                                                                                                                     | DIETHYLENE GLYCOL                                                    | 17      |
| Bis(2-hydroxypropyl)amine                                                                                                                     | DIISOPROPANOLAMINE                                                   | 17      |
| Bis(6-methylheptyl) phthalate                                                                                                                 | DIOCTYL PHTHALATE                                                    | 17      |
| Blackstrap molasses (a)                                                                                                                       | MOLASSES                                                             | 18      |
| Blend of propoxylated polyether polyols with >10% additives                                                                                   | GLUCITOL/GLYCEROL BLEND PROPOXYLATED (CONTAINING 10% OR MORE AMINES) | 17      |
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| <b>BRAKE FLUID BASE MIX: POLY(2-8)ALKYLENE (C2-C3) GLYCOLS/POLYALKYLENE (C2-C10) GLYCOLS MONOALKYL (C1-C4) ETHERS AND THEIR BORATE ESTERS</b> |                                                                      | 17      |
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| Butane-1,3-diol (a)                                                                                                                           | BUTYLENE GLYCOL                                                      | 17      |
| 1,4-Butanediol (a)                                                                                                                            | BUTYLENE GLYCOL                                                      | 17      |
| Butane -1,4-diol (a)                                                                                                                          | BUTYLENE GLYCOL                                                      | 17      |
| 2,3-Butanediol (a)                                                                                                                            | BUTYLENE GLYCOL                                                      | 17      |
| Butane-2,3-diol (a)                                                                                                                           | BUTYLENE GLYCOL                                                      | 17      |
| Butane, 2-ethoxy-2-methyl-ether                                                                                                               | TERT-AMYL ETHYL ETHER                                                | 17      |
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| Butanol                                                                                                                                       | N-BUTYL ALCOHOL                                                      | 18      |
| 1-Butanol                                                                                                                                     | N-BUTYL ALCOHOL                                                      | 18      |
| Butanol-1                                                                                                                                     | N-BUTYL ALCOHOL                                                      | 18      |
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| Butanol acetate (a)                                                                                                                           | BUTYL ACETATE (ALL ISOMERS)                                          | 17      |
| 2-Butanol acetate (a)                                                                                                                         | BUTYL ACETATE (ALL ISOMERS)                                          | 17      |
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| Butan-4-olide                                                                                                                                 | GAMMA-BUTYROLACTONE                                                  | 17      |
| n-Butanol                                                                                                                                     | N-BUTYL ALCOHOL                                                      | 18      |
| sec-Butanol                                                                                                                                   | SEC-BUTYL ALCOHOL                                                    | 18      |
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| Butan-2-one                                                                                                                                   | METHYL ETHYL KETONE                                                  | 17      |
| 2-Butenal                                                                                                                                     | CROTONALDEHYDE                                                       | 17      |
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| 2-tert-butoxyethanol (a)                                                  | ETHYLENE GLYCOL MONOALKYL ETHERS                         | 17      |
| <b>2-BUTOXYETHANOL (58%)/HYPERBRANCHED POLYESTERAMIDE (42%) (MIXTURE)</b> |                                                          | 17      |
| 2-(2-Butoxyethoxy)ethanol (a)                                             | POLY(2-8)ALKYLENE GLYCOL MONOALKYL(C1-C6) ETHER          | 17      |
| 2-(2-Butoxyethoxy)ethyl acetate (a)                                       | POLY(2-8)ALKYLENE GLYCOL MONOALKYL (C1-C6) ETHER ACETATE | 17      |
| 2-Butoxyethyl acetate                                                     | ETHYLENE GLYCOL BUTYL ETHER ACETATE                      | 17      |
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| <b>BUTYL ACETATE (ALL ISOMERS)</b>                                        |                                                          | 17      |
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| n-Butyl acrylate (a)                                                      | BUTYL ACRYLATE (ALL ISOMERS)                             | 17      |
| Butyl alcohol                                                             | N-BUTYL ALCOHOL                                          | 18      |
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| <b>BUTYL BUTYRATE (ALL ISOMERS)</b>                                       |                                                          | 17      |
| n-Butyl butyrate (a)                                                      | BUTYL BUTYRATE (ALL ISOMERS)                             | 17      |
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| Butyl carbitol (a)                                                        | POLY(2-8)ALKYLENE GLYCOL MONOALKYL(C1-C6) ETHER          | 17      |
| Butyl carbitol acetate (a)                                                | POLY(2-8)ALKYLENE GLYCOL MONOALKYL (C1-C6) ETHER ACETATE | 17      |
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| <b>BUTYL/DECYL/CETYL/EICOSYL METHACRYLATE MIXTURE</b>                     |                                                          | 17      |
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| Butyl diglycol acetate (a)                                                | POLY(2-8)ALKYLENE GLYCOL MONOALKYL (C1-C6) ETHER ACETATE | 17      |
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| <b>N-BUTYL ETHER</b>                                                     |                                            | 17      |
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| Butyl methyl ketone                                                      | METHYL BUTYL KETONE                        | 17      |
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| n-Butyric acid                                                           | BUTYRIC ACID                               | 17      |
| Butyric alcohol                                                          | N-BUTYL ALCOHOL                            | 18      |
| Butyric aldehyde (a)                                                     | BUTYRALDEHYDE (ALL ISOMERS)                | 17      |
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| <b>GLYOXAL SOLUTION (40% OR LESS)</b>                                 |                                                                | 17      |
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| Methylbenzene                                                     | TOLUENE                     | 17      |
| Methylbenzol                                                      | TOLUENE                     | 17      |
| <b>ALPHA-METHYLBENZYL ALCOHOL WITH ACETOPHENONE (15% OR LESS)</b> |                             | 17      |
| 2-Methyl-1,3-butadiene                                            | ISOPRENE                    | 17      |
| 3-Methyl-1,3-butadiene                                            | ISOPRENE                    | 17      |
| 2-Methylbutanal                                                   | VALERALDEHYDE (ALL ISOMERS) | 17      |
| 3-Methylbutanal                                                   | VALERALDEHYDE (ALL ISOMERS) | 17      |
| 2-Methylbutane (a)                                                | PENTANE (ALL ISOMERS)       | 17      |
| Methyl butanoate                                                  | METHYL BUTYRATE             | 17      |
| 2-Methyl-2-butanol                                                | TERT-AMYL ALCOHOL           | 17      |
| 2-Methylbutan-2-ol                                                | TERT-AMYL ALCOHOL           | 17      |
| 2-Methyl-4-butanol                                                | ISOAMYL ALCOHOL             | 17      |
| 3-Methyl-1-butanol                                                | AMYL ALCOHOL, PRIMARY       | 17      |
| 3-Methylbutan-1-ol                                                | AMYL ALCOHOL, PRIMARY       | 17      |
| 3-Methyl-1-butanol                                                | ISOAMYL ALCOHOL             | 17      |
| 3-Methylbutan-1-ol                                                | ISOAMYL ALCOHOL             | 17      |
| 3-Methylbutan-3-ol                                                | TERT-AMYL ALCOHOL           | 17      |
| 3-Methylbut-1-ene (a)                                             | PENTENE (ALL ISOMERS)       | 17      |
| Methylbutenes (a)                                                 | PENTENE (ALL ISOMERS)       | 17      |
| <b>METHYLBUTENOL</b>                                              |                             | 17      |
| 1-Methylbutyl acetate (a)                                         | AMYL ACETATE (ALL ISOMERS)  | 17      |
| 2-Methyl-2-butyl alcohol                                          | TERT-AMYL ALCOHOL           | 17      |

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| 3-Methyl-1-butyl alcohol                            | ISOAMYL ALCOHOL                                          | 17      |
| 3-Methyl-3-butyl alcohol                            | TERT-AMYL ALCOHOL                                        | 17      |
| <b>METHYL TERT-BUTYL ETHER</b>                      |                                                          | 17      |
| <b>METHYL BUTYL KETONE</b>                          |                                                          | 17      |
| <b>METHYLBUTYNOL</b>                                |                                                          | 17      |
| 2-Methyl-3-butyne-2-ol                              | 2-METHYL-2-HYDROXY-3-BUTYNE                              | 17      |
| 2-Methylbut-3-yn-2-ol                               | 2-METHYL-2-HYDROXY-3-BUTYNE                              | 17      |
| 2-Methylbut-3-yn-2-ol                               | METHYLBUTYNOL                                            | 17      |
| 2-Methyl-3-butyne-2-ol                              | METHYLBUTYNOL                                            | 17      |
| 2-Methylbutyraldehyde                               | VALERALDEHYDE (ALL ISOMERS)                              | 17      |
| 3-Methylbutyraldehyde                               | VALERALDEHYDE (ALL ISOMERS)                              | 17      |
| <b>METHYL BUTYRATE</b>                              |                                                          | 17      |
| Methyl 'carbitol' acetate (a)                       | POLY(2-8)ALKYLENE GLYCOL MONOALKYL (C1-C6) ETHER ACETATE | 17      |
| Methyl 'cellosolve' acetate                         | ETHYLENE GLYCOL METHYL ETHER ACETATE                     | 17      |
| Methylchloroform                                    | 1,1,1-TRICHLOROETHANE                                    | 17      |
| Methyl cyanide                                      | ACETONITRILE                                             | 17      |
| <b>METHYLCYCLOHEXANE</b>                            |                                                          | 17      |
| 1-Methyl-1,3-cyclopentadiene                        | METHYLCYCLOPENTADIENE DIMER                              | 17      |
| <b>METHYLCYCLOPENTADIENE DIMER</b>                  |                                                          | 17      |
| <b>METHYLCYCLOPENTADIENYL MANGANESE TRICARBONYL</b> |                                                          | 17      |
| <b>METHYL DIETHANOLAMINE</b>                        |                                                          | 17      |
| 4-Methyl-1,3-dioxolan-2-one                         | PROPYLENE CARBONATE                                      | 17      |
| Methyl disulphide                                   | DIMETHYL DISULPHIDE                                      | 17      |
| Methylenebis(4-isocyanatobenzene)                   | DIPHENYLMETHANE DIISOCYANATE                             | 17      |
| Methylenebis(4-phenyl isocyanate)                   | DIPHENYLMETHANE DIISOCYANATE                             | 17      |
| Methylenebis(4-phenylene isocyanate)                | DIPHENYLMETHANE DIISOCYANATE                             | 17      |
| Methylenebis(p-phenylene isocyanate)                | DIPHENYLMETHANE DIISOCYANATE                             | 17      |
| 4,4'-Methylenebis(4-phenyl isocyanate)              | DIPHENYLMETHANE DIISOCYANATE                             | 17      |
| Methylene bromide                                   | DIBROMOMETHANE                                           | 17      |
| Methylene chloride                                  | DICHLOROMETHANE                                          | 17      |
| 4,4'-Methylenedi(phenyl isocyanate)                 | DIPHENYLMETHANE DIISOCYANATE                             | 17      |
| Methylene dichloride                                | DICHLOROMETHANE                                          | 17      |
| 4,4'-Methylenediphenyl diisocyanate                 | DIPHENYLMETHANE DIISOCYANATE                             | 17      |
| Methylenedi-p-phenylene diisocyanate                | DIPHENYLMETHANE DIISOCYANATE                             | 17      |
| 2-Methylenepropionic acid                           | METHACRYLIC ACID                                         | 17      |
| Methyl ethanoate                                    | METHYL ACETATE                                           | 17      |
| 1-Methylethyl acetate                               | ISOPROPYL ACETATE                                        | 17      |
| 1-Methylethylamine                                  | ISOPROPYLAMINE                                           | 17      |
| <b>2-METHYL-6-ETHYL ANILINE</b>                     |                                                          | 17      |
| Methylethylcarbinol                                 | SEC-BUTYL ALCOHOL                                        | 18      |
| Methylethylene glycol                               | PROPYLENE GLYCOL                                         | 18      |
| Methylethylene oxide                                | PROPYLENE OXIDE                                          | 17      |
| <b>METHYL ETHYL KETONE</b>                          |                                                          | 17      |
| N-(1-Methylethyl)propan-2-amine                     | DIISOPROPYLAMINE                                         | 17      |

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| <b>N-METHYLGLUCAMINE SOLUTION (70% OR LESS)</b>                        |                                                 | 17      |
| N-methyl-D-glucamine solution (70% or less)                            | <b>N-METHYLGLUCAMINE SOLUTION (70% OR LESS)</b> | 17      |
| <b>2-METHYLGLUTARONITRILE WITH 2-ETHYLSUCCINONITRILE (12% OR LESS)</b> |                                                 | 17      |
| Methyl glycol                                                          | <b>PROPYLENE GLYCOL</b>                         | 18      |
| 5-Methylheptan-3-one                                                   | <b>ETHYL AMYL KETONE</b>                        | 17      |
| 5-Methyl-3-heptanone                                                   | <b>ETHYL AMYL KETONE</b>                        | 17      |
| Methylhexylcarbinol                                                    | <b>OCTANOL (ALL ISOMERS)</b>                    | 17      |
| Methyl 2-hydroxybenzoate                                               | <b>METHYL SALICYLATE</b>                        | 17      |
| Methyl o-hydroxybenzoate                                               | <b>METHYL SALICYLATE</b>                        | 17      |
| <b>2-METHYL-2-HYDROXY-3-BUTYNE</b>                                     |                                                 | 17      |
| 2-Methyl-2-hydroxy-3-butyne                                            | <b>METHYLBUTYNOL</b>                            | 17      |
| 2,2'-(Methylimino)diethanol                                            | <b>METHYL DIETHANOLAMINE</b>                    | 17      |
| N-Methyl-2,2'-iminodiethanol                                           | <b>METHYL DIETHANOLAMINE</b>                    | 17      |
| Methyl isoamyl ketone                                                  | <b>METHYL AMYL KETONE</b>                       | 17      |
| Methyl isobutenyl ketone                                               | <b>MESITYL OXIDE</b>                            | 17      |
| Methylisobutylcarbinol                                                 | <b>METHYLAMYL ALCOHOL</b>                       | 17      |
| Methylisobutylcarbinol acetate                                         | <b>METHYLAMYL ACETATE</b>                       | 17      |
| <b>METHYL ISOBUTYL KETONE</b>                                          |                                                 | 17      |
| p-Methylisopropyl benzene                                              | <b>P-CYMENE</b>                                 | 17      |
| 2-Methylactonitrile                                                    | <b>ACETONE CYANOHYDRIN</b>                      | 17      |
| methyl mercaptopropionaldehyde                                         | <b>3-(METHYLTHIO)PROPIONALDEHYDE</b>            | 17      |
| <b>METHYL METHACRYLATE</b>                                             |                                                 | 17      |
| Methyl methanoate                                                      | <b>METHYL FORMATE</b>                           | 17      |
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| Methyl alpha-methylacrylate                                            | <b>METHYL METHACRYLATE</b>                      | 17      |
| 7-Methyl-3-methylene-1,6-octadiene                                     | <b>MYRCENE</b>                                  | 17      |
| Methyl 2-methylprop-2-enoate                                           | <b>METHYL METHACRYLATE</b>                      | 17      |
| <b>METHYL NAPHTHALENE (MOLTEN)</b>                                     |                                                 | 17      |
| alpha-Methylnaphthalene (molten) (a)                                   | <b>METHYL NAPHTHALENE (MOLTEN)</b>              | 17      |
| beta-Methylnaphthalene (molten) (a)                                    | <b>METHYL NAPHTHALENE (MOLTEN)</b>              | 17      |
| (o- and p-) Methylnitrobenzene                                         | <b>O- OR P-NITROTOLUENES</b>                    | 17      |
| 8-Methylnonan-1-ol                                                     | <b>DECYL ALCOHOL (ALL ISOMERS)</b>              | 17      |
| Methylolpropane                                                        | <b>N-BUTYL ALCOHOL</b>                          | 18      |
| alpha-Methyl-omega-methoxypoly(ethylene oxide)                         | <b>POLYETHYLENE GLYCOL DIMETHYL ETHER</b>       | 17      |
| alpha-Methyl-omega-methoxypoly(oxy-1,2-ethanediyl)                     | <b>POLYETHYLENE GLYCOL DIMETHYL ETHER</b>       | 17      |
| alpha-Methyl-omega-methoxypoly(oxyethylene)                            | <b>POLYETHYLENE GLYCOL DIMETHYL ETHER</b>       | 17      |
| Methyloxirane                                                          | <b>PROPYLENE OXIDE</b>                          | 17      |
| 2-Methyl-2,4-pentanediol                                               | <b>HEXYLENE GLYCOL</b>                          | 17      |
| 2-Methylpentane-2,4-diol                                               | <b>HEXYLENE GLYCOL</b>                          | 17      |
| 4-Methylpentanol-2                                                     | <b>METHYLAMYL ALCOHOL</b>                       | 17      |
| 4-Methylpentan-2-ol                                                    | <b>METHYLAMYL ALCOHOL</b>                       | 17      |
| 4-Methyl-2-pentanol acetate                                            | <b>METHYLAMYL ACETATE</b>                       | 17      |
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| 4-Methylpentan-2-one                | METHYL ISOBUTYL KETONE              | 17      |
| 2-Methylpentene (a)                 | HEXENE (ALL ISOMERS)                | 17      |
| 2-Methylpent-1-ene (a)              | HEXENE (ALL ISOMERS)                | 17      |
| 2-Methyl-1-pentene (a)              | HEXENE (ALL ISOMERS)                | 17      |
| 4-Methyl-1-pentene (a)              | HEXENE (ALL ISOMERS)                | 17      |
| 4-Methyl-3-penten-2-one             | MESITYL OXIDE                       | 17      |
| 4-Methylpent-3-en-2-one             | MESITYL OXIDE                       | 17      |
| 4-Methyl-2-pentyl acetate           | METHYLAMYL ACETATE                  | 17      |
| Methylpentyl acetates               | METHYLAMYL ACETATE                  | 17      |
| Methyl tert-pentyl ether            | TERT-AMYL METHYL ETHER              | 17      |
| Methyl pentyl ketone                | METHYL AMYL KETONE                  | 17      |
| 2-Methyl-m-phenylenediamine (a)     | TOLUENEDIAMINE                      | 17      |
| 4-Methyl-m-phenylenediamine (a)     | TOLUENEDIAMINE                      | 17      |
| Methylphenylene diisocyanate        | TOLUENE DIISOCYANATE                | 17      |
| 4-methyl-1,3-phenylene diisocyanate | TOLUENE DIISOCYANATE                | 17      |
| 4-Methyl-m-phenylene diisocyanate   | TOLUENE DIISOCYANATE                | 17      |
| 2-Methyl-2-phenylpropane (a)        | BUTYLBENZENE (ALL ISOMERS)          | 17      |
| 2-Methylpropanal (a)                | BUTYRALDEHYDE (ALL ISOMERS)         | 17      |
| <b>2-METHYL-1,3-PROPANEDIOL</b>     |                                     | 17      |
| 2-Methylpropan-1-ol                 | ISOBUTYL ALCOHOL                    | 17      |
| 2-Methyl-1-propanol                 | ISOBUTYL ALCOHOL                    | 17      |
| 2-Methylpropan-2-ol                 | TERT-BUTYL ALCOHOL                  | 17      |
| 2-Methyl-2-propanol                 | TERT-BUTYL ALCOHOL                  | 17      |
| 2-Methylprop-2-enenitrile           | METHACRYLONITRILE                   | 17      |
| 2-Methylpropenoic acid              | METHACRYLIC ACID                    | 17      |
| alpha-Methylpropenoic acid          | METHACRYLIC ACID                    | 17      |
| 2-Methylprop-1-enyl methyl ketone   | MESITYL OXIDE                       | 17      |
| 2-Methylpropyl acrylate (a)         | BUTYL ACRYLATE (ALL ISOMERS)        | 17      |
| 2-Methyl-1-propyl alcohol           | ISOBUTYL ALCOHOL                    | 17      |
| 2-Methyl-2-propyl alcohol           | TERT-BUTYL ALCOHOL                  | 17      |
| Methylpropylcarbinol                | SEC-AMYL ALCOHOL                    | 17      |
| 2-Methylpropyl formate              | ISOBUTYL FORMATE                    | 17      |
| <b>METHYL PROPYL KETONE</b>         |                                     | 17      |
| <b>2-METHYLPYRIDINE</b>             |                                     | 17      |
| <b>3-METHYLPYRIDINE</b>             |                                     | 17      |
| <b>4-METHYLPYRIDINE</b>             |                                     | 17      |
| alpha-Methylpyridine                | 2-METHYLPYRIDINE                    | 17      |
| 1-Methylpyrrolidin-2-one            | N-METHYL-2-PYRROLIDONE              | 17      |
| 1-Methyl-2-pyrrolidinone            | N-METHYL-2-PYRROLIDONE              | 17      |
| N-Methylpyrrolidinone               | N-METHYL-2-PYRROLIDONE              | 17      |
| 1-Methyl-2-pyrrolidone              | N-METHYL-2-PYRROLIDONE              | 17      |
| <b>N-METHYL-2-PYRROLIDONE</b>       |                                     | 17      |
| <b>METHYL SALICYLATE</b>            |                                     | 17      |
| Methyl soyate                       | SOYBEAN OIL FATTY ACID METHYL ESTER | 17      |
| Methylstyrene (all isomers)         | VINYLTOLUENE                        | 17      |
| <b>ALPHA-METHYLSTYRENE</b>          |                                     | 17      |

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| 2-Methyltrimethylene glycol                                                                                | <b>2-METHYL-1,3-PROPANEDIOL</b>                                        | 17      |
| Metolachlor                                                                                                | <b>N-(2-METHOXY-1-METHYL ETHYL)-2-ETHYL-6-METHYL CHLOROACETANILIDE</b> | 17      |
| <b>MICROSILICA SLURRY</b>                                                                                  |                                                                        | 18      |
| Middle oil                                                                                                 | <b>CARBOLIC OIL</b>                                                    | 17      |
| Milk acid                                                                                                  | <b>LACTIC ACID</b>                                                     | 17      |
| Milk of magnesia                                                                                           | <b>MAGNESIUM HYDROXIDE SLURRY</b>                                      | 18      |
| Mineral wax                                                                                                | <b>HYDROCARBON WAX</b>                                                 | 17      |
| Mixed aliphatic oxygenated hydrocarbons, primary aliphatic alcohols and aliphatic ethers: mol wt: >200 (a) | <b>OXYGENATED ALIPHATIC HYDROCARBON MIXTURE</b>                        | 17      |
| <b>MOLASSES</b>                                                                                            |                                                                        | 18      |
| <b>MOLYBDENUM POLYSULPHIDE LONG CHAIN ALKYL DITHIOCARBAMIDE COMPLEX</b>                                    |                                                                        | 17      |
| Monochlorobenzene                                                                                          | <b>CHLOROBENZENE</b>                                                   | 17      |
| Monochlorobenzol                                                                                           | <b>CHLOROBENZENE</b>                                                   | 17      |
| Monoethanolamine                                                                                           | <b>ETHANOLAMINE</b>                                                    | 17      |
| Monoethylamine                                                                                             | <b>ETHYLAMINE (*)</b>                                                  | 17      |
| Monoethylamine solutions, 72% or less                                                                      | <b>ETHYLAMINE SOLUTIONS (72% OR LESS)</b>                              | 17      |
| Monoisopropanolamine                                                                                       | <b>ISOPROPANOLAMINE</b>                                                | 17      |
| Monoisopropylamine                                                                                         | <b>ISOPROPYLAMINE</b>                                                  | 17      |
| Monomethylamine solutions, 42% or less                                                                     | <b>METHYLAMINE SOLUTIONS (42% OR LESS)</b>                             | 17      |
| Monopropylamine                                                                                            | <b>N-PROPYLAMINE</b>                                                   | 17      |
| Monopropylene glycol                                                                                       | <b>PROPYLENE GLYCOL</b>                                                | 18      |
| <b>MORPHOLINE</b>                                                                                          |                                                                        | 17      |
| <b>MOTOR FUEL ANTI-KNOCK COMPOUND (CONTAINING LEAD ALKYLs)</b>                                             |                                                                        | 17      |
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| <b>MYRCENE</b>                                                                                             |                                                                        | 17      |
| Naphtha, coal tar                                                                                          | <b>COAL TAR NAPHTHA SOLVENT</b>                                        | 17      |
| <b>NAPHTHALENE (MOLTEN)</b>                                                                                |                                                                        | 17      |
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| <b>NAPHTHALENESULPHONIC ACID-FORMALDEHYDE COPOLYMER, SODIUM SALT SOLUTION</b>                              |                                                                        | 17      |
| Naphtha (petroleum), Light Steam-cracked Aromatics (a)                                                     | <b>ALKYLBENZENE MIXTURES (CONTAINING AT LEAST 50% OF TOLUENE)</b>      | 17      |
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| Neodecanoic acid, 2,3-epoxypropyl ester                                                                    | <b>GLYCIDYL ESTER OF C10 TRIALKYLACETIC ACID</b>                       | 17      |
| Neodecanoic acid, glycidyl ester                                                                           | <b>GLYCIDYL ESTER OF C10 TRIALKYLACETIC ACID</b>                       | 17      |
| Neodecanoic acid vinyl ester                                                                               | <b>VINYL NEODECANOATE</b>                                              | 17      |
| Neopentane (a)                                                                                             | <b>PENTANE (ALL ISOMERS)</b>                                           | 17      |
| Neopentanoic acid                                                                                          | <b>TRIMETHYLACETIC ACID</b>                                            | 17      |
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| Nitric acid, red fuming                                                              | <b>NITRIC ACID (70% AND OVER)</b>  | 17      |
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| Nitrilo-2,2',2''-triethanol                                                          | <b>TRIETHANOLAMINE</b>             | 17      |
| 1,1',1''-Nitrilotripropan-2-ol                                                       | <b>TRIISOPROPANOLAMINE</b>         | 17      |
| 1,1',1''-Nitrilotri-2-propanol                                                       | <b>TRIISOPROPANOLAMINE</b>         | 17      |
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| Nitrobenzol                                                                          | <b>NITROBENZENE</b>                | 17      |
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| <b>NITROPROPANE (60%)/NITROETHANE (40%) MIXTURE</b>                                  |                                    | 17      |
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| o-Nitrotoluene (a)                                                                   | <b>O- OR P-NITROTOLUENES</b>       | 17      |
| p-Nitrotoluene (a)                                                                   | <b>O- OR P-NITROTOLUENES</b>       | 17      |
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| Nonylcarbinol                                                                        | <b>DECYL ALCOHOL (ALL ISOMERS)</b> | 17      |
| Nonylene (a)                                                                         | <b>NONENE (ALL ISOMERS)</b>        | 17      |
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| <b>TETRAETHYLENE GLYCOL</b>                                  |                                                            | 17      |
| <b>TETRAETHYLENE PENTAMINE</b>                               |                                                            | 17      |
| Tetraethyllead                                               | MOTOR FUEL ANTI-KNOCK COMPOUND (CONTAINING LEAD ALKYLs)    | 17      |
| Tetraethylplumbane                                           | MOTOR FUEL ANTI-KNOCK COMPOUND (CONTAINING LEAD ALKYLs)    | 17      |
| <b>TETRAETHYL SILICATE MONOMER/OLIGOMER (20% IN ETHANOL)</b> |                                                            | 18      |
| 3a,4,7,7a-Tetrahydro-3,5-dimethyl-4,7-methano-1H-indene      | METHYLCYCLOPENTADIENE DIMER                                | 17      |
| <b>TETRAHYDROFURAN</b>                                       |                                                            | 17      |
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| Tetrahydro-1,4-oxazine                                       | MORPHOLINE                                                 | 17      |
| 2H-Tetrahydro-1,4-oxazine                                    | MORPHOLINE                                                 | 17      |
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| Tetrahydrothiophene-1-dioxide                                | SULPHOLANE                                                 | 17      |
| Tetrahydrothiophene 1,1-dioxide                              | SULPHOLANE                                                 | 17      |
| Tetralin                                                     | TETRAHYDRONAPHTHALENE                                      | 17      |
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| 1,2,3,5-Tetramethylbenzene (a)                               | TETRAMETHYLBENZENE (ALL ISOMERS)                           | 17      |
| 1,2,4,5-Tetramethylbenzene (a)                               | TETRAMETHYLBENZENE (ALL ISOMERS)                           | 17      |
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| Tetramethylene dicyanide                                     | ADIPONITRILE                                               | 17      |
| Tetramethylene glycol (a)                                    | BUTYLENE GLYCOL                                            | 17      |
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| Tetramethyllead                                              | MOTOR FUEL ANTI-KNOCK COMPOUND (CONTAINING LEAD ALKYLs)    | 17      |
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| Tetrapropylenebenzene                                        | DODECYLBENZENE                                             | 17      |
| Tetryl formate                                               | ISOBUTYL FORMATE                                           | 17      |
| 4-thiapentanal                                               | 3-(METHYLTHIO)PROPIONALDEHYDE                              | 17      |
| Thiophan sulphone                                            | SULPHOLANE                                                 | 17      |
| Thiosulphuric acid, dipotassium salt (50% or less)           | POTASSIUM THIOSULPHATE (50% OR LESS)                       | 17      |
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| <b>O-TOLUIDINE</b>                                                |                                                    | 17      |
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| 2,4-Tolylenediamine (a)                                           | TOLUENEDIAMINE                                     | 17      |
| 2,6-Tolylenediamine (a)                                           | TOLUENEDIAMINE                                     | 17      |
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| 2,4-Tolylene diisocyanate                                         | TOLUENE DIISOCYANATE                               | 17      |
| m-Tolylene diisocyanate                                           | TOLUENE DIISOCYANATE                               | 17      |
| Toxilic anhydride                                                 | MALEIC ANHYDRIDE                                   | 17      |
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| Triethylene glycol butyl ether (a)                                | POLY(2-8)ALKYLENE GLYCOL<br>MONOALKYL(C1-C6) ETHER | 17      |

| Index Name                                           | Product Name                                       | Chapter |
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| Triethylene glycol ethyl ether (a)                   | POLY(2-8)ALKYLENE GLYCOL<br>MONOALKYL(C1-C6) ETHER | 17      |
| Triethylene glycol methyl ether (a)                  | POLY(2-8)ALKYLENE GLYCOL<br>MONOALKYL(C1-C6) ETHER | 17      |
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| 1,3,5-Trimethylbenzene (a)                           | TRIMETHYLBENZENE (ALL ISOMERS)                     | 17      |
| 2,6,6-Trimethylbicyclo[3.1.1]hept-2-ene              | ALPHA-PINENE                                       | 17      |
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| 3,5,5-Trimethylcyclohex-2-enone                      | ISOPHORONE                                         | 17      |
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| Trioxymethylene                                      | 1,3,5-TRIOXANE                                     | 17      |
| Tripropylene                                         | PROPYLENE TRIMER                                   | 17      |
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| Index Name                                                                         | Product Name                                                           | Chapter |
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| Tris(2-hydroxy-1-propyl)amine                                                      | TRIISOPROPANOLAMINE                                                    | 17      |
| Tris(2-hydroxypropyl)ammonium 2,4-dichlorophenoxyacetate solution                  | 2,4-DICHLOROPHENOXYACETIC ACID,<br>TRIISOPROPANOLAMINE SALT SOLUTION   | 17      |
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| Trisodium N-(carboxymethyl)-N'-(2-hydroxyethyl)-N,N'-ethylenediglycine solution    | N-(HYDROXYETHYL)ETHYLENEDIAMINETRIACETIC ACID, TRISODIUM SALT SOLUTION | 17      |
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| Tritolyl phosphate, containing less than 1% ortho- isomer                          | TRICRESYL PHOSPHATE (CONTAINING LESS THAN 1% ORTHO-ISOMER)             | 17      |
| Tritolyl phosphate, containing 1% or more ortho- isomer                            | TRICRESYL PHOSPHATE (CONTAINING 1% OR MORE ORTHO-ISOMER)               | 17      |
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| Turps                                                                              | TURPENTINE                                                             | 17      |
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| Valeric aldehyde                                                            | VALERALDEHYDE (ALL ISOMERS)   | 17      |
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| Vinylcarbinol                                                               | ALLYL ALCOHOL                 | 17      |
| Vinyl cyanide                                                               | ACRYLONITRILE                 | 17      |
| vinyl ethanoate                                                             | VINYL ACETATE                 | 17      |
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| <b>VINYLTOLUENE</b>                                                         |                               | 17      |
| Vinytoluene (all isomers)                                                   | VINYLTOLUENE                  | 17      |
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| White tar                                                                   | NAPHTHALENE (MOLTEN)          | 17      |
| Wine (a)                                                                    | ALCOHOLIC BEVERAGES, N.O.S.   | 18      |
| Wintergreen oil                                                             | METHYL SALICYLATE             | 17      |
| Wood alcohol                                                                | METHYL ALCOHOL (*)            | 17      |
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| Wood spirit                                                                 | METHYL ALCOHOL (*)            | 17      |
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| 2,5-Xylenol (a)                              | XYLENOL                                           | 17             |
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| <b>ZINC ALKENYL CARBOXAMIDE</b>              |                                                   | 17             |
| <b>ZINC ALKYL DITHIOPHOSPHATE (C3-C14)</b>   |                                                   | 17             |
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| (Z)-Octadec-9-enoic acid                     | <b>OLEIC ACID</b>                                 | 17             |
| Z-Octadec-9-enoic acid                       | <b>OLEIC ACID</b>                                 | 17             |
| (Z)-Octadec-9-enylamine                      | <b>OLEYLAMINE</b>                                 | 17             |

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## 第 21 章 根据 IBC 规则确定运输规定的标准\*

\* 本变更通告第 21 章修订内容，将于 2021 年 1 月 1 日生效。

第 21 章的整个文本由下文替代：

### 21.1 简介

21.1.1 下列标准用于确定待评估列入IBC 规则或MEPC.2/Circular通函清单1、3或4中的散装液体货物的污染等级和相应的运输要求。

21.1.2 在制定本标准时，必须尽力遵守全球统一体系（GHS）下制定的标准和临界点。

21.1.3 尽管本标准旨在给出详细的规定，以确立一个统一的方法，但必须强调，当人们的经验或其他因素表明需要作出替代性安排时，则应予以考虑。当已认识到标准中的偏差时，这些偏差必须正确记录下来并说明理由。

### 21.2 内容

21.2.1 本章包含下列内容：

.1 IBC规则第17章规定的货物的最低安全和污染标准；

.2 用于对满足安全或污染标准而纳入IBC规则第17章的货物确定最低运输要求的标准；

.3 用于确定IBC规则第17章的o栏内纳入IBC规则第15章中的特殊要求的标准；

.4 用于确定IBC规则第17章的o栏内纳入IBC规则第16章中的特殊要求的标准；

.5 本章中使用的特性的定义；

.6 有关使用GESAMP危害评级的信息；和

.7 有关应用SVC/LC<sub>50</sub>比率方法的信息。

21.2.2 本章出现的分类标准后的圆括号中的内容系指MARPOL附则II附录1中所载的GESAMP危害评定程序缩略图例中的GESAMP危害特性表评级。针对所评估物质的GESAMP危害特性表评级的完整清单每年发布在GESAMP综合清单中，作为PPR通函。应注意，就确定运输要求而言，圆括号中的评级（基于GESAMP中采用的评估方法）视

为等效于无圆括号的评级。

### **21.3 IBC规则第17章规定的货物的最低安全和污染标准**

21.3.1 根据IBC规则第17章的规定，符合下列一项或多项标准的货物将视作有害物质：

- .1 吸入  $LC_{50}/ATE \leq 20 \text{ mg/L/4h}$ （见21.7.1.3）（C3=1、2、3或4）；
- .2 皮肤接触  $LD_{50}/ATE \leq 2000 \text{ mg/kg}$ （见21.7.1.2）（C2=1、2、3或4）；
- .3 口腔吸收  $LD_{50}/ATE \leq 2000 \text{ mg/kg}$ （见21.7.1.1）（C1=1、2、3或4）；
- .4 长期接触对哺乳动物的毒性（见21.7.2）（D3=C、M、R、N、T或I）；
- .5 造成皮肤过敏（见21.7.3）（D3=Ss）；
- .6 造成呼吸道过敏（见21.7.4）（D3=Sr）；
- .7 腐蚀皮肤（见21.7.5）（D1=3、3A、3B或3C）；
- .8 遇水反应指数（WRI） $\geq 1$ （见21.7.6）；
- .9 为避免危险反应必须进行惰化、抑制、稳定、温控或液货舱环境控制（见21.7.10的定义）；
- .10 闪点  $< 23^{\circ}\text{C}$ ，且爆炸 / 着火范围（空气中百分比含量） $\geq 20\%$ ；
- .11 自燃温度  $\leq 200^{\circ}\text{C}$ ；和
- .12 污染类别属于X 或Y 类，或者符合21.4.5.2表21.4.5.2中11至13规则的标准。

### **21.4 确定拟纳入IBC规则第17章的货品应满足的最低安全或污染运输要求的标准**

#### **21.4.1 a 栏 – 货物名字**

21.4.1.1 应尽可能使用化学文摘社(CAS)或国际理论和应用化学联合会(IUPAC) 中的规定的标准化学名称，但如果过于复杂时，也可采用其他明晰正确的化学名词。

#### **21.4.2 b 栏 – 已删除**

#### **21.4.3 c 栏 – 污染类别**

21.4.3.1 c 栏按防污公约附则II，基于表21.4.3.1（见MARPOL附则II附录I）确定了

各货物污染类别。

**表21.4.3.1 有毒液体物质分类指南**

| 规则        | A1生物<br>积聚                                                                       | A2生物<br>退化 | B1 急性<br>剧毒 | B2 慢性<br>剧毒 | D3 长期<br>影响健康             | E2 对海洋野生<br>物及海底生态<br>环境的影响 | 类别        |
|-----------|----------------------------------------------------------------------------------|------------|-------------|-------------|---------------------------|-----------------------------|-----------|
| <u>1</u>  |                                                                                  |            | <u>≥5</u>   |             |                           |                             | <u>X</u>  |
| <u>2</u>  | <u>≥4</u>                                                                        |            | <u>4</u>    |             |                           |                             |           |
| <u>3</u>  |                                                                                  | <u>NR</u>  | <u>4</u>    |             |                           |                             |           |
| <u>4</u>  | <u>≥4</u>                                                                        | <u>NR</u>  |             |             | <u>CMRTNI<sup>①</sup></u> |                             |           |
| <u>5</u>  |                                                                                  |            | <u>4</u>    |             |                           |                             | <u>Y</u>  |
| <u>6</u>  |                                                                                  |            | <u>3</u>    |             |                           |                             |           |
| <u>7</u>  |                                                                                  |            | <u>2</u>    |             |                           |                             |           |
| <u>8</u>  | <u>≥4</u>                                                                        | <u>NR</u>  |             | <u>非0</u>   |                           |                             |           |
| <u>9</u>  |                                                                                  |            |             | <u>≥1</u>   |                           |                             |           |
| <u>10</u> |                                                                                  |            |             |             |                           | <u>Fp、F或S<br/>如非无机物</u>     |           |
| <u>11</u> |                                                                                  |            |             |             | <u>CMRTNI<sup>①</sup></u> |                             |           |
| <u>12</u> | 任何不符合规则1至11及13的标准货品                                                              |            |             |             |                           |                             | <u>Z</u>  |
| <u>13</u> | 所有如下货品：A1栏中 ≤ 2；A2栏中为R；D3栏中为空白；E2栏中为非Fp、F或S（如非有机物）；以及在GESAMP危害特性表中所有其他栏中为0（零）的货品 |            |             |             |                           |                             | <u>OS</u> |

#### **21.4.4 d 栏 – 危险品**

21.4.4.1 在d栏中符合21.3.1.1至21.3.1.11中安全标准的货物后加“S”记号。

21.4.4.2 如货物满足表21.4.5.2中规则1至14定义的1型至3型船舶标准，则在d栏中加“P”。

#### **21.4.5 e 栏 – 船舶类型**

21.4.5.1 应从污染和安全的角度出发来划定船型。表21.4.5.2说明了基于GESAMP危害特性表从污染角度来确定船舶类型的基本标准。对各栏中的详细说明请参见MARPOL附则II附录1。

21.4.5.2 船舶类型根据以下标准确定：

船舶类型1：

吸入  $LC_{50}/ATE \leq 0.5 \text{ mg/L/4h}$  (C3=4) 和  $SVC/LC_{50} \geq 20$ ；和/或

<sup>①</sup>如果 D3 级中包括这些字母中的任一个或者其任何组合，则适用。

皮肤接触  $LD_{50}/ATE \leq 50 \text{ mg/kg}$  (C2=4) ; 和/或

WRI = 3; 和/或

自燃温度  $\leq 65^{\circ}\text{C}$ ; 和/或

爆炸范围  $\geq 50\%$  (空气中的体积比), 闪点  $< 23^{\circ}\text{C}$ ; 和/ 或

符合21.4.5.2中表21.4.5.2中规则1或2 (见表21.4.5.2) 。

#### 船舶类型2:

吸入  $LC_{50}/ATE \leq 0.5 \text{ mg/L/4h}$  (C3=4) 和  $SVC/LC_{50} < 20$ ; 或

吸入  $LC_{50}/ATE > 0.5 \text{ mg/L/4h}$  且  $\leq 2 \text{ mg/L/4h}$  (C3=4) 和  $SVC/LC_{50} \geq 2$  (见注); 和/或

皮肤接触  $LD_{50}/ATE > 50 \text{ mg/kg}$  且  $\leq 200 \text{ mg/kg}$  (C2=3); 和/或

WRI = 2; 和/或

自燃温度  $\leq 200^{\circ}\text{C}$ ; 和/或

爆炸范围  $\geq 40\%$  (空气中的体积比), 闪点  $< 23^{\circ}\text{C}$ ; 和/或

符合表21.4.5.2中规则3至10的标准的任一货品。

注: 基于吸入毒性标准被归类至船型2的密度  $> 1025 \text{ kg/m}^3$  (沉降物) 或水溶解度  $> 50\%$  (溶解物) 的货品可重新归类至船型3。

#### 船舶类型3:

IBC规则第17章中散装液体货物的最低安全或污染标准不符合船舶类型1或2且不符合21.4.5.2中表21.4.5.2中规则15。

**表21.4.5.2 基于GESAMP危害特性表的船舶类型分类**

| 规则        | A1                                     | A2        | B1        | B2        | D3                        | E2        | 船型        |
|-----------|----------------------------------------|-----------|-----------|-----------|---------------------------|-----------|-----------|
| <u>1</u>  |                                        |           | <u>≥5</u> |           |                           |           | <u>1</u>  |
| <u>2</u>  | <u>≥4</u>                              | <u>NR</u> | <u>4</u>  |           | <u>CMRTNI<sup>①</sup></u> |           |           |
| <u>3</u>  | <u>≥4</u>                              | <u>NR</u> |           |           | <u>CMRTNI<sup>②</sup></u> |           | <u>2</u>  |
| <u>4</u>  |                                        |           | <u>4</u>  |           |                           |           |           |
| <u>5</u>  | <u>≥4</u>                              |           | <u>3</u>  |           |                           |           |           |
| <u>6</u>  |                                        | <u>NR</u> | <u>3</u>  |           |                           |           |           |
| <u>7</u>  |                                        |           |           | <u>≥1</u> |                           |           |           |
| <u>8</u>  |                                        | <u>NR</u> |           |           |                           | <u>Fp</u> |           |
| <u>9</u>  |                                        |           |           |           | <u>CMRTNI<sup>②</sup></u> | <u>F</u>  |           |
| <u>10</u> |                                        |           | <u>≥2</u> |           |                           | <u>S</u>  |           |
| <u>11</u> | <u>≥4</u>                              |           |           |           |                           |           | <u>3</u>  |
| <u>12</u> |                                        | <u>NR</u> |           |           |                           |           |           |
| <u>13</u> |                                        |           | <u>≥1</u> |           |                           |           |           |
| <u>14</u> | <u>所有其他Y类物质</u>                        |           |           |           |                           |           | <u>NA</u> |
| <u>15</u> | <u>所有其他Z类物质</u><br><u>所有“其他物质”(OS)</u> |           |           |           |                           |           |           |

#### **21.4.6 f 栏 – 舱型**

##### **21.4.6.1 舱型根据以下标准确定：**

1G 舱型：吸入  $LC_{50}/ATE \leq 0.5\text{mg/L/4h}$  (C3=4) 和  $SVC/LC_{50} \geq 1000$ ；和/或

皮肤接触  $LD_{50}/ATE \leq 50\text{mg/kg}$  (C2=4)；和/或

WRI = 3；和/或

自燃温度  $\leq 65^\circ\text{C}$ ；和/或

爆炸范围  $\geq 40\%$  (空气中的体积比)，闪点  $< 23^\circ\text{C}$ 。

基于专家判断，对于特定货品可要求1G舱型（例如，对于熔硫、盐酸）。

2G 舱型：IBC 规则第17章中散装液体货物的最低安全或污染标准不符合1G 舱型的要求。

#### **21.4.7 g 栏 – 液舱透气**

##### **21.4.7.1 液舱透气装置根据以下标准确定：**

控制式透气：除非符合21.7.12，否则吸入  $LC_{50}/ATE \leq 10\text{ mg/L/4h}$  (C3=2、3或4)；  
和/或

<sup>①</sup>如果 D3 级中包括这些字母中的任一个或者其任何组合，则适用。

长期接触对哺乳类动物有害（D3 = C、M、R、T、N 或 I）；和/或

导致呼吸道过敏（D3 = Sr，还可见21.7.4）；和/或

必须加以特殊运输控制；和/或

闪点  $\leq 60^{\circ}\text{C}$ ；和

皮肤腐蚀（暴露  $\leq 4$ 小时）。（D1 = 3A、3B 或 3C）。

开式透气： IBC规则第17章中散装液体货物的最低安全或污染标准不符合控制式液  
舱透气设备。

#### **21.4.8 h 栏 – 液舱环境控制**

21.4.8.1 液舱环境控制条件根据以下标准确定：

惰化：自燃温度  $\leq 200^{\circ}\text{C}$ ；和/或

与空气反应造成危险；和/或

爆炸范围  $\geq 40\%$  且闪点  $< 23^{\circ}\text{C}$ 。

干燥：WRI  $> 1$

填垫：视情况而定，仅适用于特定货物。

通风：视情况而定，仅适用于特定货物。

No：如不适用以上标准（可根据SOLAS规定惰化要求）。

#### **21.4.9 i 栏 – 电气设备**

21.4.9.1 如果货物的闪点  $\leq 60^{\circ}\text{C}$ 或者受热至闪点范围内 $15^{\circ}\text{C}$ ，则要求的电气设备  
根据以下标准确定，否则，在i’ 和i” 栏中填入“-”。

##### **.1 i’ 栏 – 温度等级**

T1 自燃温度  $\geq 450^{\circ}\text{C}$

T2 自燃温度  $\geq 300^{\circ}\text{C}$  但  $< 450^{\circ}\text{C}$

T3 自燃温度  $\geq 200^{\circ}\text{C}$  但  $< 300^{\circ}\text{C}$

T4 自燃温度  $\geq 135^{\circ}\text{C}$  但  $< 200^{\circ}\text{C}$

T5 自燃温度  $\geq 100^{\circ}\text{C}$  但  $< 135^{\circ}\text{C}$

T6 自燃温度  $\geq 85^{\circ}\text{C}$  但  $< 100^{\circ}\text{C}$

## .2 i' 栏 – 设备分类

| <u>设备组</u> | <u>20°C的MESG<br/>(mm)</u>                              | <u>MIC比率<br/>货物/甲烷</u>                                 |
|------------|--------------------------------------------------------|--------------------------------------------------------|
| <u>IIA</u> | <u><math>&gt; 0.90</math></u>                          | <u><math>&gt; 0.80</math></u>                          |
| <u>IIB</u> | <u><math>&gt; 0.50</math> 至 <math>\leq 0.90</math></u> | <u><math>&gt; 0.45</math> 至 <math>\leq 0.80</math></u> |
| <u>IIC</u> | <u><math>\leq 0.50</math></u>                          | <u><math>\leq 0.45</math></u>                          |

.1 测试应根据IEC60079-1-1:2002和IEC 79-3规定的程序进行。

.2 对于气体和蒸气，只要符合以下情况，仅对最大试验安全间隙（MESG）或最低点火电流（MIC）其中之一作出确定即可：

IIA组：MESG  $> 0.90$  mm 或 MIC比率  $> 0.80$

IIB组：MESG  $> 0.50$  mm 且  $\leq 0.90$  mm；或者 MIC比率  $> 0.50$  且  $\leq 0.80$

IIC组：MESG  $\leq 0.50$  mm 或 MIC比率  $\leq 0.45$ 。

.3 以下情况时，需确定MESG和MIC比率两项数值：

.1 仅MIC比率已予确定，且在0.80至0.90之间，则需进行MESG确定；

.2 仅MIC比率已予确定，且在0.45 至0.50之间，则需进行MESG确定；或

.3 仅MESG已予确定，且在0.50mm 至0.55mm 之间，则需进行MIC比率确定。

## .3 i'' 栏 – 闪点：

$> 60^{\circ}\text{C}$ ：是

$\leq 60^{\circ}\text{C}$ ：否

非易燃货物：NF

## 21.4.10 i 栏 – 测量

21.4.10.1 测量设备必须根据以下标准进行确定：

封闭式：除非符合21.7.12，否则吸入  $\text{LC}_{50}/\text{ATE} \leq 2 \text{ mg/L/4h}$ （C3=3或4）；和/或

皮肤接触  $\text{LD}_{50}/\text{ATE} \leq 1000 \text{ mg/kg}$ （C2=2、3或4）；和/或

长期接触对哺乳类动物有害 (D3= C、M、R、T、N 或 I) ; 和/或  
导致呼吸道过敏 (D3= Sr, 还可见21.7.4) ; 和/或  
严重皮肤腐蚀 (暴露 ≤ 3分钟) (D1 = 3C) 。

限制式: 除非符合21.7.12, 否则吸入 LC<sub>50</sub>/ATE > 2 mg/L/4h 至 ≤ 10 mg/L/4h  
(C3=2) ; 和/或  
需要特殊运输控制进行惰化; 和/ 或  
高度皮肤腐蚀 (暴露 > 3分钟 且 ≤ 1小时) (D1=3B) ; 和/或  
闪点 ≤ 60℃。

开式: IBC 规则第17章中散装液体货物的最低安全或污染标准不符合封闭式或限制式的测量设备。

#### **21.4.11 k栏-蒸气探测**

21.4.11.1 蒸气探测设备必须根据下列标准进行确定:

毒性 (T) : 除非符合21.7.12, 否则吸入 LC<sub>50</sub>/ATE ≤ 10 mg/L/4h (C3=2、3或4) ;  
和/或  
导致呼吸道过敏 (D3= Sr, 还可见21.7.4) ; 和/或  
长期接触对哺乳类动物有害 (D3= C、M、R、T、N 或 I) 。

可燃性 (F) : 闪点 ≤ 60℃

No: 以上标准皆不适用

#### **21.4.12 l 栏 – 消防设备**

21.4.12.1 与货物特性有关的相关灭火介质根据下列标准进行确定:

可溶性 > 10% (> 100000mg/L) : A 抗乙醇性泡沫

可溶性 ≤ 10% (< 100000mg/L) : A 抗乙醇性泡沫; 和/或

B 普通泡沫。

WRI = 0: C 水雾(通常作为冷却剂, 并可在WRI = 0 时与  
A和/或B一起使用)

WRI ≥ 1: D 干粉

No 本规则中无要求。如果某一货品在i'''栏中被确定为NF，则本条适用。（见21.4.9.1.3）。

注：应列出所有相关介质。

#### 21.4.13 m 栏 – 已删除。

#### 21.4.14 n 栏 – 应急设备

21.4.14.1 船上应具有个人应急设备的要求根据下列标准在n 栏中由“Yes”确定：

除非符合21.7.12，否则吸入  $LC_{50}/ATE \leq 2\text{mg/L/4h}$ （C3=3或4）；和/ 或  
导致呼吸道过敏（D3=Sr，还可见21.7.4）；和/ 或  
严重腐蚀皮肤（暴露  $\leq 3$ 分钟）（D1=3C）；和/ 或  
WRI = 2。

No：表示以上标准不适用。

#### 21.5 o 栏–第15章特别要求的标准

21.5.1 o 栏中的特别要求应通常按报表中提供的数据制定的明确标准确定。如认为需变更此类标准时，应对此作明确的记录，并在有要求时可易于查阅。

21.5.2 第15和16章特别要求的参照标准及相关评价如下所示。

#### 21.5.3 15.2至15.10和15.20

21.5.3.1 15.2至15.10及15.20标出了特别货物的名称，以及无法简单适用其他方式的特殊运输要求。

#### 21.5.4 15.11 – 酸

21.5.4.1 15.11 适用于所有酸类，但下列除外：

- .1 有机酸 – 仅15.11.2 至15.11.4 以及15.11.6 至15.11.8 适用时, 或
- .2 不产生氢气 – 15.11.5 不必适用时。

#### 21.5.5 15.12 – 有毒货物

21.5.5.1 根据以下标准在o 栏中加入所有15.12 条款：

除非符合21.7.12，否则吸入  $LC_{50}/ATE \leq 2\text{mg/L/4h}$ （C3=3或4）；和/或  
货物导致呼吸道过敏（D3=Sr，还可见21.7.4）；和/或  
货物长期接触对哺乳类动物有害（D3=C、M、R、T、N 或 I）。

21.5.5.2 根据下列标准在o 栏中加入15.12.3和15.2.4：

除非符合21.7.12，否则吸入  $LC_{50}/ATE > 2\text{mg/L/4h}$  至  $\leq 10\text{mg/L/4h}$   
（C3=2）。

21.5.5.3 根据下列标准在o 栏中加入15.12.3.2：

皮肤接触  $LD_{50}/ATE \leq 1000\text{mg/kg}$ （C2=2、3或4）；和/或  
口腔吸收  $LD_{50}/ATE \leq 300\text{mg/Kg}$ （C1=2、3或4）。

## 21.5.6 15.13 – 由添加剂保护的货物

21.5.6.1 将15.13 加入o 栏的要求基于以下情况：货物容易聚合、分解、氧化或因其他化学变化在正常运输条件下产生危险，但可以通过加入合适的添加剂加以避免。

## 21.5.7 15.14 – 货物蒸气压力大于37.8℃时的大气压

21.5.7.1 根据以下标准将15.14 加入o 栏：

沸点  $\leq 37.8\text{ }^{\circ}\text{C}$

## 21.5.8 15.16 – 货物污染

21.5.8.1 15.16.1 已删除。

21.5.8.2 根据下列标准将15.16.2 加入o 栏：

$WRI > 1$

## 21.5.9 15.17 – 增加通风要求

21.5.9.1 根据以下标准，15.17 应加入o 栏：

除非符合21.7.12，否则吸入  $LC_{50}/ATE > 0.5\text{mg/L/4h}$  至  $\leq 2\text{mg/L/4h}$   
（C3=3）；和/或  
导致呼吸道过敏（D3=Sr，还可见21.7.4）；和/或

长期接触对哺乳类动物有害（D3=C、M、R、T、N 或 I）；和/或  
高度至严重腐蚀皮肤（暴露时间 ≤ 1小时）（D1=3B 或 3C）。

#### **21.5.10 15.18 – 对特种货物泵舱的要求**

21.5.10.1 根据以下标准15.18 应加入o 栏：

除非符合21.7.12，否则吸入  $LC_{50}/ATE \leq 0.5\text{mg/L/4h}$ （C3=4）。

#### **21.5.11 15.19 – 溢流控制**

21.5.11.1 根据以下标准，15.19 应加入o栏：

除非符合21.7.12，否则吸入  $LC_{50}/ATE \leq 2\text{mg/L/4h}$ （C3=3或4）；和/或  
皮肤接触  $LD_{50}/ATE \leq 1000 \text{ mg/Kg}$ （C2=2、3或4）；和/或  
口腔吸收  $LD_{50}/ATE \leq 300 \text{ mg/Kg}$ （C1=2、3或4）；和/或  
导致呼吸道过敏（D3 = Sr，还可见21.7.4）；和/或  
严重腐蚀皮肤（暴露 ≤ 3分钟）（D1=3C）；和/或  
自燃温度 ≤ 200℃；和/或  
爆炸范围 ≥ 40%（空气中体积比），闪点 < 23 °C；和/或  
污染级别为1 型船舶。

21.5.11.2 如货物有下列任一特性，仅15.19.6 应适用：

除非符合21.7.12，否则吸入  $LC_{50}/ATE > 2 \text{ mg/L/4h}$  至 ≤ 10 mg/L/4h  
（C3=2）；和/或  
皮肤接触  $LD_{50}/ATE > 1000 \text{ mg/kg}$  至 ≤ 2000 mg/kg（C2=1）；和/或  
口腔吸收  $LD_{50}/ATE > 300 \text{ mg/kg}$  至 ≤ 2000 mg/kg（C1=1）；和/或  
皮肤过敏（D3 = Ss）；和/或  
高度腐蚀皮肤（暴露 > 3分钟 且 ≤ 1小时）（D1=3B）；和/或  
闪点 ≤ 60℃；和/或  
污染级别为2 型船舶；和/或  
污染类别为X或Y。

### 21.5.12 15.21 —温度传感器

21.5.12.1 根据货物的热敏程度将15.21 加入o 栏。本要求仅适用货泵舱内的泵。

### 21.6 o 栏—第16章特别要求的标准

#### 21.6.1 16.1至16.2.5以及16.3至16.5

21.6.1.1 这些规定适用于全部货物，因此在o 栏中未作特别说明。

#### 21.6.2 16.2.6

21.6.2.1 对于符合下列标准的货物，将16.2.6加入o 栏：

X类或在20℃时粘度  $\geq 50\text{mPa}\cdot\text{s}$ 的Y类。

#### 21.6.3 16.2.9

21.6.3.1 对于符合下列标准的货物，将16.2.9加入o 栏：熔点  $\geq 0^\circ\text{C}$

#### 21.6.4 16.6 —不得暴露于过热状态下的货物

21.6.4.1 将16.6.2 至16.6.4 加入o 栏，这些货物要求在运输途中进行温度控制。

#### 21.6.5 16.2.7 —持久性漂浮物

对于符合下列标准的货品，o 栏中增加16.2.7：

污染类别为Y类的在20℃时粘度大于或等于50 mPa·s和/或熔点大于或等于0℃的持久性漂浮物（E2=Fp）。

### 21.7 定义

#### 21.7.1 哺乳动物急性中毒

LC<sub>50</sub>为导致50%试验物种死亡的试验物质在空气中的浓度，LD<sub>50</sub>为导致50%试验物种死亡的试验物质的量（剂量）。ATE系指导致哺乳动物死亡的剂量（浓度）范围或外插推算的剂量（浓度），等于LC<sub>50</sub>或LD<sub>50</sub>。

##### 21.7.1.1 误食急性中毒

| <u>口服毒性(LD<sub>50</sub>/ATE)</u> |                          | <u>GESAMP危害特性表评级</u> |
|----------------------------------|--------------------------|----------------------|
| <u>危险程度</u>                      | <u>mg/kg</u>             | <u>C1</u>            |
| <u>高</u>                         | <u>≤ 5</u>               | <u>4</u>             |
| <u>较高</u>                        | <u>&gt; 5 至 ≤ 50</u>     | <u>3</u>             |
| <u>中等</u>                        | <u>&gt; 50 至 ≤ 300</u>   | <u>2</u>             |
| <u>轻微</u>                        | <u>&gt; 300 至 ≤ 2000</u> | <u>1</u>             |
| <u>没有</u>                        | <u>&gt; 2000</u>         | <u>0</u>             |

#### 21.7.1.2 急性皮肤接触中毒

| <u>皮肤接触毒性(LD<sub>50</sub>/ATE)</u> |                           | <u>GESAMP危害特性表评级</u> |
|------------------------------------|---------------------------|----------------------|
| <u>危险程度</u>                        | <u>mg/kg</u>              | <u>C2</u>            |
| <u>高</u>                           | <u>≤ 50</u>               | <u>4</u>             |
| <u>较高</u>                          | <u>&gt; 50 至 ≤ 200</u>    | <u>3</u>             |
| <u>中等</u>                          | <u>&gt; 200 至 ≤ 1000</u>  | <u>2</u>             |
| <u>轻微</u>                          | <u>&gt; 1000 至 ≤ 2000</u> | <u>1</u>             |
| <u>没有</u>                          | <u>&gt; 2000</u>          | <u>0</u>             |

#### 21.7.1.3 急性吸入中毒

除非另有说明，假定所有吸入毒性数据基于蒸气，而非雾气或飞沫。

| <u>吸入毒性 (LC<sub>50</sub>/ATE)</u> |                       | <u>GESAMP危害特性表评级</u> |
|-----------------------------------|-----------------------|----------------------|
| <u>危险程度</u>                       | <u>mg/L/4h</u>        | <u>C3</u>            |
| <u>高</u>                          | <u>≤ 0.5</u>          | <u>4</u>             |
| <u>较高</u>                         | <u>&gt; 0.5 至 ≤ 2</u> | <u>3</u>             |
| <u>中等</u>                         | <u>&gt; 2 至 ≤ 10</u>  | <u>2</u>             |
| <u>轻微</u>                         | <u>&gt; 10 至 ≤ 20</u> | <u>1</u>             |
| <u>没有</u>                         | <u>≥ 20</u>           | <u>0</u>             |

### 21.7.2 长期接触对哺乳动物的毒性

21.7.2.1 如果某货物符合下列任一标准，则归为长期接触对哺乳动物有毒性类型：已知或怀疑将导致癌症、诱导突变、影响后代、神经中毒、损伤免疫系统或其他非致命剂量但造成特殊目标器官中毒。

21.7.2.2 这类影响可通过货物（D3=C、M、R、T、N 或 I）的GESAMP危害特性表或针对这类信息的其他已知途径获取。

### 21.7.3 皮肤过敏

21.7.3.1 符合以下情况的货物确定为皮肤过敏剂：

- .1 如果证明相当数量的人员在皮肤接触该货物后发生过敏；或
- .2 有相关动物检验的阳性结果。

21.7.3.2这类影响可通过货物（D3=Ss）的GESAMP危害特性表获取。

#### 21.7.4 呼吸道过敏

21.7.4.1 符合以下情况的货物确定为呼吸道过敏剂：

- .1 如果证实该物质可导致人体呼吸道过敏症状；和/或
- .2 如果相关动物测试结果呈阳性；和/或
- .3 如果货物无GESAMP危害特性表，且标为呼吸过敏剂且无证据证明非呼吸道过敏剂。

21.7.4.2 这类影响可通过货物（D3=Sr）的GESAMP危害特性表或针对这类信息的其他已知途径获取。

#### 21.7.5 腐蚀皮肤<sup>①</sup>

| <u>危险程度</u>   | <u>造成皮肤完全坏死的接触时间</u>     | <u>GESAMP危害特性评级</u><br><u>D1</u> |
|---------------|--------------------------|----------------------------------|
| <u>严重腐蚀皮肤</u> | <u>≤ 3 min</u>           | <u>3C</u>                        |
| <u>高度腐蚀皮肤</u> | <u>&gt; 3 min 至 ≤ 1h</u> | <u>3B</u>                        |
| <u>轻微腐蚀皮肤</u> | <u>&gt; 1h 至 ≤ 4h</u>    | <u>3A</u>                        |

注：在GESAMP危害特性表的D1栏里评级为3或(3)且未标注任何其他字母（A、B或C）时，系指腐蚀严重程度尚未确定。对于这类情况，就确定运输要求而言，可理解成评级为3或(3)等效于评级为3B。

#### 21.7.6 遇水反应物质

21.7.6.1 这些物质分为以下4类：

| <u>遇水反应指数(WRI)</u> | <u>定义</u>                            |
|--------------------|--------------------------------------|
| <u>3</u>           | <u>遇水反应强烈并产生大量易燃、有毒或腐蚀性气体或气雾的化学品</u> |
| <u>2</u>           | <u>接触水后，产生有毒、易燃或腐蚀性气体或气雾的化学品</u>     |
| <u>1</u>           | <u>接触水后，发热或产生无毒、不可燃或无腐蚀性气体的化学品</u>   |
| <u>0</u>           | <u>接触水后，不产生上述1、2、3类反应的化学品</u>        |

#### 21.7.7 空气反应物质

<sup>①</sup>对皮肤具有腐蚀性的货品也视作对呼吸道有腐蚀性。

21.7.7.1 空气反应物质是指与空气发生反应并造成潜在危险的货物，如形成的氧化物会导致爆炸反应。

### 21.7.8 电气装备 – 温度等级

( 针对闪点  $\leq 60^{\circ}\text{C}$ 或加热至闪点范围 $15^{\circ}\text{C}$ 以内的货物)

21.7.8.1 国际电气技术委员会(IEC) 定义的温度等级如下：

“在实际操作条件下，设备的额定功率（和有关的已知过载（如有时））造成的任何表面的任何部分暴露在爆炸性气体中存在危险的最高温度”。

21.7.8.2 电气装置温度等级的确定是通过选择最接近但低于货物自燃温度的最大表面温度（参见21.4.9.1.1）。

### 21.7.9 电气装置 – 设备分类（闪点 $\leq 60^{\circ}\text{C}$ 的货物）

21.7.9.1 IEC将易燃气体中本质安全和相关电气装置分为以下几组：

I组：容易产生甲烷的矿石（IMO 不使用）；

II组：其他行业中使用的装置 – 根据最大试验安全间隙（MESG）和/或气体/蒸气的最小点燃电流（MIC）进一步细分为IIA、IIB和IIC组。

21.7.9.2 该特性无法从货物的其他相关数据中获取；必须经过测量或经过同一系列相关货物的归类来确定。

### 21.7.10 特殊运输控制条件

21.7.10.1 特殊运输控制条件指为避免危险反应而采取的特殊措施，包括：

- .1 抑制：加入化合物（通常为有机化合物）来延缓或阻止某些不良化学反应如腐蚀、氧化或聚合；
- .2 稳定：加入某种物质（稳定剂）来避免化合物、混合物或溶剂改变形态或化学特性。这种稳定剂可延缓反应速率、保持化学成分平衡、防止氧化、保持颜色和其他成分的乳化状态或防止胶状悬浮体中的颗粒沉淀；
- .3 惰化：在液舱的膨胀余位内加入气体（通常是氮气），以防止可燃性货物/空气混合物的产生；

- .4 温度控制：保持货物温度在一定范围内，以避免危险反应或者保持低粘度以便于泵系工作；
- .5 衬垫和通风：仅适用于特殊情况下的特殊货品。

### 21.7.11 易燃货物

#### 21.7.11.1 符合以下标准的货物为易燃货物：

| <u>IBC规则中的描述</u> | <u>闪点(℃)</u>       |
|------------------|--------------------|
| <u>高度易燃</u>      | <u>≤ 23</u>        |
| <u>易燃</u>        | <u>≤ 60 但 ≥ 23</u> |

21.7.11.2 应注意混合物和水溶剂的闪点也需测量，除非其所有成分均为非易燃物质。

21.7.11.3 应注意闪点 ≤ 60℃的液体散货的运输应遵守 SOLAS 公约的其他规定。

### 21.7.12 SVC/LC<sub>50</sub> 比率方法的应用

21.7.12.1 如果已知某一物质的蒸气压力和分子量，则可以计算出在密闭舱室（如：液舱）内的最大蒸气浓度估测值。该值被称为饱和蒸汽浓度（SVC）。

21.7.12.2 危险商数SVC/LC<sub>50</sub><sup>①</sup>系指从液体源（例如泄露、溢出或液舱通风）形成的蒸气达到危险浓度时的速度下的物质特定值，可用于指定与吸入毒性相关的特定运输要求。

21.7.12.3 如果固体物质运输在水溶液中，计算SVC/LC<sub>50</sub> 比率时，应采用该固体的蒸气压力<sup>②</sup>，而非水的蒸气压力。

#### 21.7.12.4 采用 SVC/LC<sub>50</sub> 比率指定船型和舱型

21.7.12.4.1 对于如 21.4.5 和 21.4.6 中所述的船型和舱型的确定，可选择采用 SVC/LC<sub>50</sub> 比率法。如果使用这个方法，在计算 SVC/LC<sub>50</sub> 比率时，应采用 20℃时的蒸气压力。

21.7.12.4.2 物质的 SVC（mg/L）应按下式计算：

<sup>①</sup>ATE 值可视为等效于 LC<sub>50</sub> 值。见 21.7.1。

<sup>②</sup>如不能提供该数据，可采用估算值。

$$SVC(mg / L) = \left( \frac{\text{Vapour pressure}@20^{\circ}\text{C}(\text{Pa})}{101300(\text{Pa})} \times 10^6 \right) \times \frac{M_w(g/mol)}{24(L / mol) \times 1000}$$

式中： $M_w$ 为物质的分子量。

21.7.12.4.3 SVC/LC<sub>50</sub> 比率应按下式计算：

$$SVC/LC_{50} = \frac{SVC(mg/L)}{LC_{50} \text{ mg/L/4h}}$$

21.7.12.5 采用 SVC/LC<sub>50</sub> 比率指定运输要求

21.7.12.5.1 对于确定 21.7.12.5.5 中所列的载运要求，可选择采用 SVC/LC<sub>50</sub> 比率法。

如果使用 SVC/LC<sub>50</sub> 比率法来确定这些运输要求，在计算 SVC/LC<sub>50</sub> 比率时，应采用 40℃ 时的蒸气压力。如果运输温度高于 40℃，则应在该温度下计算 SVC/LC<sub>50</sub> 比率。

21.7.12.5.2 物质的 SVC (mg/L) 应按下式计算：

$$SVC(mg / L) = \left( \frac{\text{Vapour pressure}@40^{\circ}\text{C}(\text{Pa})}{101300(\text{Pa})} \times 10^6 \right) \times \frac{M_w(g/mol)}{26(L / mol) \times 1000}$$

式中： $M_w$ 为物质的分子量。

21.7.12.5.3 SVC/LC<sub>50</sub> 比率应按下式计算：

$$SVC/LC_{50} = \frac{SVC(mg/L)}{LC_{50} \text{ mg/L/4h}}$$

21.7.12.5.4 21.7.12.5.2 中所述的 SVC (mg/L) 公式是用于计算 40℃ 时的标准公式。

如果计算时使用更高温度时的蒸气压力，应对该公式进行相应修改。

21.7.12.5.5 对于下述运输要求，可采用按 40℃ 或更高温度计算的 SVC/LC<sub>50</sub> 比率法替代 21.4 和 21.5 中给出的急性吸入中毒标准：

### .1 g 栏 – 液舱透气

如果吸入 LC<sub>50</sub>/ATE ≤ 10 mg/L/4h (C3=2、3 或 4) 且 SVC/LC<sub>50</sub> < 0.2，  
仅针对吸入危险而言，不要求确定控制式透气。

### .2 j 栏 – 测量

如果吸入 LC<sub>50</sub>/ATE ≤ 2 mg/L/4h (C3=3 或 4) 且 SVC/LC<sub>50</sub> < 0.2，仅针

对吸入危险而言，不要求封闭式测量，但要求限制式测量。

如果  $LC_{50}/ATE > 2 \text{ mg/L/4h}$  至  $\leq 10 \text{ mg/L/4h}$  ( $C3=2$ ) 且  $SVC/LC_{50} < 0.2$ ,

仅针对吸入危险而言，不要求限制式测量。

### .3 k 栏-蒸气探测

如果吸入  $LC_{50}/ATE \leq 10 \text{ mg/L/4h}$  ( $C3=2、3$ 或 $4$ ) 且  $SVC/LC_{50} < 0.2$ , 仅

针对吸入危险而言，不要求确定毒性蒸气探测。

### .4 n 栏 - 应急设备

吸入  $LC_{50}/ATE \leq 2 \text{ mg/L/4h}$  ( $C3=3$  或  $4$ ) 且  $SVC/LC_{50} < 0.2$ 。

### .5 o 栏-第 15 章中的特别要求

如果吸入  $LC_{50}/ATE \leq 2 \text{ mg/L/4h}$  ( $C3=3$  或  $4$ ) 且  $SVC/LC_{50} < 0.2$ , 仅针对吸入危险而言，不要求满足 15.2.1 和 15.12.2。

如果吸入  $LC_{50}/ATE > 2 \text{ mg/L/4h}$  至  $\leq 10 \text{ mg/L/4h}$  ( $C3=2$ ) 且  $SVC/LC_{50} < 0.2$ , 仅针对吸入危险而言，不要求满足 15.12.3 和 15.12.4。

如果吸入  $LC_{50}/ATE \leq 0.5 \text{ mg/L/4h}$  ( $C3=4$ ) 且  $SVC/LC_{50} < 0.2$ , 仅针对吸入危险而言，不要求满足 15.17。

如果吸入  $LC_{50}/ATE \leq 0.5 \text{ mg/L/4h}$  ( $C3=4$ ) 且  $SVC/LC_{50} < 0.2$ , 仅针对吸入危险而言，不要求满足 15.18。

如果吸入  $LC_{50}/ATE \leq 2 \text{ mg/L/4h}$  ( $C3=3$  或  $4$ ) 且  $SVC/LC_{50} < 0.2$ , 仅针对吸入危险而言，不要求满足 15.19, 但 15.19.6 适用。

如果吸入  $LC_{50}/ATE > 2 \text{ mg/L/4h}$  至  $\leq 10 \text{ mg/L/4h}$  ( $C3=2$ ) 且  $SVC/LC_{50} < 0.2$ , 仅针对吸入危险而言，不要求满足 15.19.6。