INTERNATIONAL MARITIME ORGANIZATION

E

WORKING GROUP ON THE EVALUATION OF THE HAZARDS OF HARMFUL SUBSTANCES CARRIED BY SHIP
52nd session
Agenda item 10

EHS 52/10
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# REPORT OF THE FIFTY-SECOND SESSION



## LIST OF ANNEXES

## 1 INTRODUCTION

1.1 The fifty-second session of the GESAMP/EHS Working Group on the Evaluation of the Hazards of Harmful Substances Carried by Ships was held at IMO in London, from 13 to 17 April 2015, under the chairmanship of Dr. Thomas Höfer. The list of attendees is set out in annex 1.

1.2 Having reviewed the agenda and provisional timetable, the group adopted both, as amended.

## 2 OUTCOME OF OTHER BODIES

### Outcome of IMO bodies

2.1 The group noted that the following meetings of relevance had taken place since the fifty-first session of the GESAMP/EHS Working Group:

.1 the twentieth intersessional meeting of the Working Group on the Evaluation of Safety and Pollution Hazards of Chemicals (ESPH 20) (29 September to 3 October 2014);

.2 the Evaluation of Safety and Pollution Hazards (ESPH) Working Group, which met during the second session of the PPR Sub-Committee (19 to 23 January 2015); and

.3 the first meeting of the Sub-Committee on Carriage of Cargoes and Containers (CCC 1) (8 to 12 September 2014).

2.2 The group noted the information presented on the outcome of those meetings and agreed to take action under the relevant agenda items, as appropriate. A summary of the outcome on matters of relevance to the work of the GESAMP/EHS Working Group is set out in annex 2.

### Activities of GESAMP

2.3 The group noted the report by the Chairman on the outcome of the forty-first session of GESAMP, which took place from 9 to 13 September 2014 in Malmö, Sweden. A summary of the outcome of the meeting is set out in annex 3.

2.4 The group recalled that whilst GESAMP retains oversight and approval over its method of work, it does not provide input to nor approve the GESAMP Hazard Profiles assigned by the group.

## 3 EVALUATION OF NEW SUBSTANCES

3.1 The group recalled that when submitting new substances for evaluation by the GESAMP/EHS Working Group, a full set of data, addressing all the information requirements set out in the GESAMP/EHS Product Data Reporting Form, was required. The group further noted that insufficient data, or a lack of adequate supporting arguments, where estimates had been used, would result in no rating being assigned for the end-point concerned or, as a worst case, no full hazard profile being issued for the chemical under review.

3.2 The group considered the following new substances, which had been submitted for evaluation:

.1 2,6-Diaminohexanoic acid phosphonate mixed salts solution

.2 Triglycerides, C16-C18 and C18 unsaturated reclaimed (UCO)

.3 Cresol/Phenol/Xylenol mixture

.4 Cyclohexane-1,2-dicarboxylic acid, diisononyl ester

.5 1-Dodecene

3.3 The group, in assessing the submitted products, arrived at the following observations and conclusions, as set out in the ensuing paragraphs. The resultant hazard profiles assigned by the working group for inclusion in the GESAMP Composite List are set out in annex 4.

**EHS 2469 2,6-Diaminohexanoic acid phosphonate mixed salts solution**

3.4 The group noted that a comprehensive set of test data had been submitted for this substance and assigned a GESAMP Hazard Profile accordingly. Having considered a generic name proposed for the product, the group agreed that a more appropriate name for the Composite List entry was 2,6-Diaminohexanoic acid phosphonate mixed salts solution.

| | | | | | | |
|---|---|---|---|---|---|---|
| *Rating* | A1a=1 | A1b=NI | A1=1 | A2=NR | B1=1 | B2=(0) |
| | C1=(1) | C2=(1) | C3=(3) | D1=(3) | D2=(3) | D3=T |
| | E2=D | E3=3 | | | | |

**EHS 2470 Triglycerides, C16-C18 and C18 unsaturated reclaimed (UCO)**
Submitted as: Used Cooking Oil

3.5 In considering the submission, the group confirmed the name of the substance as Triglycerides, C16-C18 and C18 unsaturated reclaimed (UCO), to make a clear indication that this product is indeed Used cooking oil. Having considered the data submitted on triglyceride products, the group assigned a GESAMP hazard Profile accordingly.

| | | | | | | |
|---|---|---|---|---|---|---|
| *Rating* | A1a=(5) | A1b=NI | A1=(5) | A2=R | B1=(0) | B2=(0) |
| | C1=(0) | C2=(0) | C3=(1) | D1=(1) | D2=(1) | D3=blank* |
| | E2 =Fp | E3 =2 | | | | |

**EHS 2471 Cresol/Phenol/Xylenol mixture**
Submitted as: Reaction mass of m-Cresol and p-Cresol

3.6 In considering the submission, the group recommended the name of the substance as Cresol/Phenol/Xylenol mixture for entry in the Composite List. Noting that a full set of data had been provided for the product, the group assigned a GESAMP hazard profile accordingly. Having also reviewed the file on Cresols (all isomers) (EHS 527) as part of its assessment, and having noted that the data submitted for Cresol/Phenol/Xylenol mixture contained information that could be used to revise the B2 rating for Cresols (all isomers), concurred that a review was warranted and agreed to consider this matter under agenda item 4.

| | | | | | | |
|---|---|---|---|---|---|---|
| *Rating* | A1a=(2) | A1b=(2) | A1=(2) | A2=R | B1=(3) | B2=(1) |
| | C1=1 | C2=2 | C3=3 | D1=3B | D2=3 | D3= blank |
| | E2=SD | E3=3 | | | | |

* A rating identified as "blank" means that no rating was assigned for this column.

**EHS 2472 Cyclohexane-1,2-dicarboxylic acid, diisononyl ester**
Submitted as: Cyclohexane-1,2-dicarboxylic acid, diisononyl ester

3.7 Having considered the submission, the group confirmed the name of the substance as submitted and having noted that a full set of data had been provided, assigned a GESAMP hazard profile accordingly.

| | | | | | | |
|---|---|---|---|---|---|---|
| *Rating* | A1a=0 | A1b=3 | A1=3 | A2=R | B1=0 | B2=0 |
| | C1=0 | C2=0 | C3=(1) | D1=1 | D2=0 | D3= blank* |
| | E2=Fp | E3=2 | | | | |

**EHS 2473 1-Dodecene**
Submitted as: 1-Dodecene

3.8 Having considered the submission, the group confirmed the name of the substance as submitted and having noted that a full set of data had been provided, assigned a GESAMP hazard profile accordingly.

| | | | | | | |
|---|---|---|---|---|---|---|
| *Rating* | A1a=5 | A1b=NI | A1=5 | A2=R | B1=0 | B2=NI |
| | C1=0 | C2=0 | C3=1 | D1=2 | D2=1 | D3=A |
| | E2=F | E3=3 | | | | |

**Further consideration**

3.9 The group recalled that at GESAMP/EHS 50 it had agreed on a new notation for products that present a hazard as an aerosol or mist due to a high C3 rating, but that have a very low vapour pressure therefore reducing or eliminating the health risk from exposure to the vapour only.

3.10 The group had agreed, in particular, that where the GESAMP acute inhalation toxicity extrapolation method had been applied or an aerosol test result had been evaluated, and a high rating had been assigned, but test data using saturated vapour were also available indicating no toxicity or less toxicity, then the extrapolated or aerosol-based rating would be retained to indicate that a mist or aerosol is likely to be hazardous under certain circumstances (e.g. burst or leaking pipe joints under pressure, or due to wave action following a release into the marine environment). In such cases the group had agreed that a hash mark (#) notation would be added to the product name to indicate that for inhalation reward concerns from vapour, the product would be likely to have a lower inhalation hazard.

3.11 In reviewing the new product submissions, the group debated as to whether the hash (#) notation could be assigned based on estimation or extrapolation, or whether actual saturated vapour test results should be required, as stated in Reports and Studies No. 64 (paragraph 4.3.4.2).

3.12 The group concluded its discussions by reconfirming that it would indeed continue to require actual vapour test data in order to assign the (#) rating to a product presenting a reduced vapour inhalation hazard.

## 4 CORRESPONDENCE WITH THE INDUSTRY/GOVERNMENT AND CONSIDERATION OF ISSUES RELATED TO EVALUATIONS

4.1 The group recalled that as part of its work it routinely considered requests from industry and industry groups for the reassessment of Composite List products, based on the submission of new data or new scientific insights into the hazards of substances that may result in a change to a hazard profile.

4.2 The group also recalled its ongoing review and update of the existing GESAMP/EHS files for completeness and consistency and the communication of any amendments relating to such matters to the attention of the IMO (i.e. the ESPH Working Group of the PPR Sub-Committee).

4.3 The group considered requests for the reassessment of the following products:

.1 Isoprene **EHS 882**

.2 Ethylene glycol ethyl ether acetate (2-Ethoxyethyl acetate) **EHS 767**

.3 Triethylene glycol **EHS 1341**

.4 Dipropylene glycol **EHS 707**

.5 1,2 Propylene glycol **EHS 1202**

.6 Ethylene glycol phenyl ether **EHS 775**

.7 Ethylene glycol butyl ether (EGBE)*

.8 Ethylene glycol butyl ether acetate **EHS 764**

.9 Tripropylene glycol **EHS 1372**

.10 Propylene oxide **EHS 76**

.11 Ethylene glycol methyl ether*

.12 Dodecene (all isomers) **EHS 720**

.13 Polyoxyethylene sorbitan monooleate **EHS 1442**

.14 1,5 Pentanediol solution, (5-50%) (Glutaraldehyde solutions (50% or less)) **EHS 1107**

.15 Urea/Ammonium nitrate solution **EHS 1387**

4.4 The group also noted that a number of substances had been carried over from either past sessions of the ESPH Working Group, based on requests to the GESAMP/EHS Working Group, or from GESAMP/EHS 51, as follows:

.1 Creosote coal tar **EHS 524**: requested by ESPH 19 to update the Composite List based on a previously agreed change;

.2 Calcium long chain alkyl phenate sulphide (C8-C40) (LOA) **EHS 1756** [TRN: Calcium long chain phenate sulphide (C8-C40)]: carried over from GESAMP/EHS 51, based on a request by ESPH 19;

* This product is not included in the Composite List nor the IBC Code under this entry. It is, however, covered in the Composite List by the generic entry Ethylene glycol monoalkyl ethers (EHS 2268).

.3 Calcium alkyl salicylate **EHS 2015** [TRN: Calcium alkyl (C10-C28) salicylate] carried over from GESAMP/EHS 51, based on a request by ESPH 19; and

.4 Sodium hydroxide solution **EHS 1254**: carried over from GESAMP/EHS 51.

4.5 The group agreed to review a number of additional substances during the session, based on discussions emanating from the review of other products, as follows: Fatty acids, linear, C8-C18 saturated with C18 unsaturated (EHS 2260); Cresols (EHS 527) and Toluene diisocyanate (EHS 1315).

4.6 The results of the group's discussions on the respective substances are set out below. Any agreed modifications to the respective hazard profiles for these substances are highlighted in the revised GESAMP/EHS Composite List, set out in annex 5.

**EHS 882 Isoprene**

4.7 Following a review of the data submitted, the group agreed that the data supported the proposed change in the B1 rating from 2 to 3 and the B2 rating from NI to 1.

*Amended rating* B1=3 B2=1

**EHS 767 Ethylene glycol ethyl ether acetate (2-Ethoxyethyl acetate)**

4.8 Having reviewed the study reports submitted, the group agreed that based on the data, the D2 rating should be amended from 2 to 1.

*Amended rating* D2=1

**EHS 1341 Triethylene glycol**

4.9 The group considered a request for re-evaluation of a number of the ratings assigned to triethylene glycol. Having considered the data submitted, the group concurred that it substantiated the new proposed ratings for C3, D1, D2 and E3, as set out below.

*Amended rating* C3=0 D1=0 D2=0 E3=0

**EHS 707 Dipropylene glycol**

4.10 The group considered a request received from industry for a review and revision of a number of the ratings for this substance. Having considered the data submitted, the group amended the A2 rating from NR to R and the D1 rating from 1 to 0. The group agreed that the A1 rating would remain unchanged. Having also noted a discrepancy in the CAS No. currently assigned to the entry (i.e. 110-98-5), the group agreed that the more appropriate CAS No. was 21265-71-8 and that this CAS No. should be assigned to the entry.

*Amended rating* A2=R D1=0

**EHS 1202 1,2 Propylene glycol**

4.11 The group considered a request from industry for a re-evaluation of this material, with particular consideration given to the C3, D2 and E3 ratings. Having reviewed the data submitted, the group agreed with the proposed amendments to these ratings, as set out below.

*Amended rating* C3=0 D2=0 E3=0

**EHS 775 Ethylene glycol phenyl ether**

4.12 The group considered a request from industry for a review of the C3 and E3 ratings for this substance. In considering the data submitted, the group concurred with the proposed amendments to the C3 rating from (2) to 0 and having reconfirmed the D2 rating of 2, concurred that the E3 rating would remain unchanged.

*Amended rating* C3=0

**Ethylene glycol butyl ether (EGBE)**

4.13 The group, having reviewed a request from industry for a re-evaluation of ethylene glycol butyl ether, noted that this entry was already covered in the Composite List by the generic entry Ethylene glycol monoalkyl ethers (EHS 2268). As such, the group agreed that it was unable to re-evaluate the entire generic entry on the basis of this single isomer and proposed that instead a request for assessment of this product as a new entry may be submitted and invited the Secretariat to inform the submitter accordingly.

**EHS 764 Ethylene glycol butyl ether acetate**

4.14 The group considered a request from industry for a re-evaluation of this material. In considering the data submitted, the group agreed to amend the C1 rating from 0 to 1, but concurred that the C3 rating would remain unchanged. In addition, the group noted that the data submitted for this product indicated a lower inhalation hazard by vapour exposure and agreed that a hash (#) should therefore be added to the Composite List entry to reflect this.

*Amended rating* C1=1 (#) to the entry

**EHS 1372 Tripropylene glycol**

4.15 The group considered a request from industry for a re-evaluation of this material, with particular consideration given to the A2 and B2 ratings. Having reviewed the test data submitted, the group agreed that the A2 rating should be amended from NR to R and that the B2 rating be modified from NI to 0.

*Amended rating* A2=R B2=0

**EHS 76 Propylene oxide**

4.16 The group considered a request from industry for a re-evaluation of this material, with particular consideration given to the C2, D1 and D3 ratings. In considering the submission the group agreed to amend the C2 rating from 1 to 2 and to remove the R from the current D3 rating. The group, however, concluded that the D1 rating should remain unchanged.

*Amended rating* C2=2 D3=CM

**Ethylene glycol methyl ether**

4.17 The group, having reviewed a request from industry for a re-evaluation of ethylene glycol methyl ether, noted that this entry, similar to the one considered previously, was effectively covered in the Composite List by the generic entry for Ethylene glycol monoalkyl ethers (EHS 2268). As such, the group agreed that it was unable to re-evaluate the entire generic entry on the basis of this single isomer and proposed that instead a request for assessment of this product as a new entry may be submitted and invited the Secretariat to inform the submitter accordingly.

**EHS 720 Dodecene (all isomers)**

4.18 The group considered a request from industry regarding the assignment of the CAS No. for dodecene (all isomers). The CAS No. assigned to this entry is actually that which related to propylene tetramer (CAS No. 6842-15-5), a specific substance with characteristics that do not necessarily represent all dodecene isomers. As a result, the group agreed to remove the CAS No. assignment from dodecene (all isomers) and to add this CAS No. to the entry for the propylene tetramer to avoid any confusion.

**EHS 1442 Polyoxyethylene sorbitan monooleate**

4.19 The group considered a request from industry for a re-evaluation of this material, based on the availability of new data. Noting the data submitted, the group revised the profile as set out below.

*Amended rating* A1b=(2) A2=R B1=2 B2=0 C3=(0) D2=0 E3=0

**EHS 1107 1,5 Pentanedial solution, (5-50%)**

4.20 The group considered a request from industry for a re-evaluation of this material, based on the submission of new data. Having reviewed the technical information submitted, the group agreed that the C3 rating should be modified from 4 to 3. Having noted that the product submission included test data that indicated that the product would present a lower health hazard by vapour exposure, the group agreed to include a hash (#) notation to this entry in the Composite List to reflect the hazard.

*Amended rating* C3=3 (#) to the entry

**EHS 1387 Urea/Ammonium nitrate solution (containing < 1% aq. ammonia)**

4.21 The group considered a request from industry for a re-evaluation of this material. In reviewing the data submitted, the group amended a number of ratings, as set out below.

*Amended rating* B1=(2) B2=(0) C3=(1) D1=(1) D2=(1) E3=1

**EHS 524 Creosote coal tar**

4.22 The group recalled that, further to a request by the ESPH Working Group at BLG 10 to review the A1 and B1 ratings of the hazard profile for creosote coal tar, the GESAMP/EHS had undertaken the review intersessionally and had requested the Chairman of GESAMP/EHS to report the results of its assessment directly to BLG 11. Based on this intersessional assessment, the GESAMP/EHS Working Group had amended the A1b rating from (4) to 3, but the GHP for this product had not been updated in the Composite List to reflect this change. As a consequence, ESPH 19 had requested the GESAMP/EHS Working Group to review the product and to update the entry accordingly, with any amendment as appropriate. Having reviewed the file and having investigated further, the group reconfirmed the original A1b rating of (4), and concluded that A1 rating for the product, as included in the Composite List, was indeed correct and that no change was warranted.

**EHS 1756 Calcium long chain phenate sulphide (C8-C40) (LOA)**

4.23 The group, having noted the request by ESPH 19 to review the profile for Calcium long chain phenate sulphide (C8-C40) (LOA), in particular the D3 rating, given that one manufacturer had indicated that this substance had reprotoxic effects. Having considered the

information contained in the existing product file, the group determined that the test data on file did not justify the addition of an R to the D3 rating and therefore agreed that no change was required.

**EHS 2015 Calcium alkyl salicylate**

4.24 The group, having noted the request by ESPH 19 to review the profile for Calcium alkyl salicylate, in particular the D3 rating, given that one manufacturer had indicated that this substance had reprotoxic effects. Having considered the information contained in the existing product file, the group determined that the test data on file did not indicate a reprotoxic effect and therefore no change was required in the D3 rating for this material.

**EHS 1254 Sodium hydroxide solution**

4.25 The group recalled that it had considered a request from industry for a review of the C3 rating for sodium hydroxide at GESAMP/EHS 51. Having reached a decision on the C3 rating at that session, the group noted that it had not fully concluded its consideration of the product during the session and therefore agreed to revisit the matter at GESAMP/EHS 52.

4.26 Having reviewed the product, notably the potential inhalation toxicity aspects, the group agreed that the current hazard profile adequately represented the product and its associated hazards and concluded its discussion on the substance, noting that no further action was required.

**EHS 2260 Fatty acids, linear, C8-C18 saturated with C18 unsaturated**

4.27 Having noted an error in the E3 rating for Fatty acids, linear, C8-C18 saturated with C18 unsaturated in the Composite List during its review of the new submission for Triglycerides, C16-C18 and C18 unsaturated reclaimed (UCO) (EHS 2470), the group amended the E3 rating from 3 to 2 accordingly.

*Amended rating* E3=2

**EHS 527 Cresols (mixed isomers)**

4.28 During its review of the data submitted in connection with the new product submission for Cresol/Phenol/Xylenol mixture (EHS 2471) and having cross-referenced this information with that on file for Cresols (mixed isomers) (EHS 527), the group agreed that a review of the B2 rating for that entry was warranted. Having considered the new data on cresols, the group agreed that the B2 rating should be modified from 0 to (1).

*Amended rating* B2=(1)

**EHS 1315 Toluene diisocyanate**

4.29 In its review of sensitizers, the group noted an L in the D3 column for toluene diisocyanate. Having recalled that this particular parameter had been removed from the D3 ratings some time ago and was now obsolete, but that this entry had not been updated, the group agreed to the removal of the L from the D3 column.

## 5 CLASSIFICATION ISSUES

### Alkanes/Alkenes

5.1 The group recalled that it had noted a number of inconsistencies across the family of alkanes and alkenes over a number of sessions. In particular, having reviewed a number of study reports related to skin irritation specific to the C9-C11 alkanes at GESAMP/EHS 51, the group noted that a number of new test results for other analogs were now available for read across. Taking the above into account, the group agreed that a review of the properties of the family of alkanes as a whole was needed, to ensure consistency in ratings across the various analogs of this family of chemicals. In this context, the group also decided to undertake a review of the alkenes in order to cross-check for additional read across information.

5.2 Having also provisionally considered hydrocarbon waxes and paraffin wax, the group recalled that it had concurred that further consideration of these substances was also needed. Having also recalled its decision to review the family of alkanes and alkenes and noting the connection to these substances, the group agreed to add these items to its agenda for consideration at GESAMP/EHS 52.

5.3 The group, in its consideration of the summary note on alkanes prepared by the Secretariat and circulated intersessionally, noted that in addition to what was contained in the product files, a substantial volume of additional data had been compiled by the Chairman from various sources including the OECD, US EPA and the EU. Noting the volume of work before it, the group agreed to defer consideration of the alkenes for the time being and to start by addressing only the alkanes.

5.4 The group confirmed the objective of its review was twofold; firstly to review the individual substances within the family of alkanes (and eventually the alkenes) to ensure the accuracy of the ratings in the individual GESAMP Hazard Profiles and secondly, to review any significant discrepancies in ratings between similar analogs against the data submitted, with a view to ensuring consistency across the family of alkanes.

5.5 Due to time constraints, the group was unable to complete its work and agreed that its work on alkanes would continue at GESAMP/EHS 53.

### Review of sensitizers

5.6 The group recalled that, in line with the recent revision of the GESAMP Reports and Studies No. 64, which incorporated a new sub-division of the Sensitizer category (S) into skin sensitizers (Ss) and respiratory sensitizers (Sr), it had agreed to review those Composite List entries with a D3 rating of S, in order to further sub-divide these into the new Ss and Sr categories, based on available data.

5.7 Having reviewed the information prepared by the experts intersessionally, the group were able to agree on revised D3 ratings for all sensitizers. In a number of cases, after consulting new data, the S rating previously assigned to some entries was withdrawn. A summary of these products containing the revised S ratings is set out in annex 6.

**E2 ratings for mixtures**

5.8 The group discussed the rationale for assigning an appropriate E2 rating for mixtures containing components with substantially different physical and chemical properties, and therefore different physical behaviours when released in the marine environment. It was noted that, in most cases, mixtures exhibit one predominant behaviour and can be rated under one of the existing groups in the present system (e.g. Fp, F, FE, DE and S). However, some mixtures contain components that possess distinctly different behaviours and, overall, do not fit within one of the established ratings within the system. For these mixtures, the group agreed that an E2 rating would be assigned that reflects the most severe impact from an environmental standpoint. The group considered that, in priority order, the most severe impacts are Fp, F and S.

5.9 An example of such a mixture is Naphthalenes, crude (molten), which was assessed at GESAMP/EHS 51. This product contains 35% to 60% naphthalene, which is a sinker (S), with the remaining major components being related substances that are insoluble, less dense than water and viscous, leading to a rating, as a group, of Fp. Of the two behaviours S and Fp, the more severe is Fp and therefore this rating was assigned for E2.

5.10 To distinguish mixtures of this nature from those that exhibit more predictable behaviour when spilled, the group agreed to add an exclamation mark (!) notation to these substances in the Composite List with the following text:

> "This mixture contains components with substantially different physical properties and therefore different physical behaviours when released in the marine environment. The E2 rating assigned reflects the most severe impact from an environmental standpoint. For example, a mixture assigned a rating of Fp may also have a major component(s) with sinker characteristics (S) or dissolver characteristics (D)."

5.11 This additional information may prove useful to spill responders and others to alert them that multiple behaviours are to be expected in the event of a marine spill. It should be emphasized, however, that the exact behaviour of these mixtures in spill situations cannot be accurately predicted due to possible physical interactions among the components, as well as sea conditions and other factors.

**Nomenclature issues pure substances and mixtures**

5.12 The group noted that, based on questions arising from the ESPH Working Group, some clarification with regard to pure substances and mixtures was needed to address the perception that GESAMP/EHS was assessing only "pure" substances, as opposed to mixtures or formulated products.

5.13 The group reconfirmed that the GESAMP Composite List contained various types of chemical substances, including pure substances, commercially pure (or technically pure) substances, as well as mixtures/formulations.

5.14 The group also noted that commercially pure substances may contain impurities or by-products from processing, but the name of the product would reflect the chemical name of the substance and would not extend to any impurities or by-products that may be present.

5.15 In particular, it was noted that most lube oil additives (LOA) contain varying quantities of highly refined mineral oil as an intrinsic component that was not reflected in the naming of the product. The group further noted that this should be borne in mind, when making submissions to the ESPH Working Group, for the purpose of the mixture calculations for products containing mineral oil under the IBC Code.

5.16 The group invited the ESPH Working Group to note this information.

**Review D1=3 ratings**

5.17 The group, having noted the information provided on the outcome of other bodies under agenda item 2, in particular with regard to the revised IBC Code criteria for addressing products with a D1 rating of 3, agreed to determine whether sufficient data existed in the product files to assign a sub-categorization of A, B or C to those ratings.

5.18 The group noted that there were currently approximately 100 products with a D1=3 rating. Recognizing that ratings of 3 would have been assigned in the absence of data to provide an assignment of 3A, 3B or 3C, or had been arrived at through read-across or extrapolation, the group determined that no further action was required. However, the group noted that it would consider any new data submitted to it that would allow for a 3A, 3B or 3C determination for any products that currently had a D3 rating of 3.

**Partial profiles for components of mixtures**

5.19 The group, having noted the discussions that had taken place at ESPH 20 and PPR 2 and the decision taken with regard to the abolishment of partial profiles for components of mixtures with the next IBC Code amendments, considered how it would address the issue of partial profiles going forward.

5.20 The group, in discussing possible options, agreed that in the interim period before the new requirement was fully implemented, for product submissions where there was sufficient data to assign a full GESAMP Hazard Profile, the full profile would be assigned, subject to concurrence by the submitter.

**Toxicity by aspiration**

5.21 In classifying the two new submissions for Cresol/Phenol/Xylenol mixture (EHS 2471) and Cyclohexane-1,2-dicarboxylic acid, diisononyl ester (EHS 2472), the group noted that based on their kinematic viscosities, the products would meet the criteria for aspiration hazard, consistent with GHS* classification Category 1 (GHS paragraph 3.10.2). However, since this classification would be based on physico-chemical data and not on human evidence, it would only be applicable to hydrocarbons. The group concluded therefore that since these products are not hydrocarbons in the strict sense (i.e. containing only C and H atoms in the molecular structure), classification of the aspiration toxicity (the assignment of an A rating in column D3) does not apply.

5.22 In assessing these products, the group experienced difficulties in interpreting the GHS criteria for aspiration toxicity Category 1 where the criteria based on kinematic viscosity seemed to apply only to hydrocarbons (table 3.10.1 in GHS), whereas the examples given in the footnote and the specific considerations set out in paragraph 3.10.1.6.1 refer also to modified hydrocarbon chemicals (e.g. chlorinated hydrocarbons) that are known to pose an aspiration hazard. In order to clarify this apparent ambiguity, the group agreed to refer the

* All references to the GHS refer to GHS Rev.5 (2013).

matter to the Sub-Committee of Experts on the GHS requesting clarification on the applicability of the GHS criteria to aspiration toxicity Category 1, based on kinematic viscosity data to chemical groups other than pure hydrocarbon chemicals. The group consequently requested the Secretariat to prepare the necessary documentation and to submit this to the Sub-Committee of Experts on the GHS, for action as appropriate.

**RTECS Numbers on the GESAMP Composite List**

5.23 The group agreed that the Registry of Toxic Effects of Chemical Substances (RTECS) Numbers in the GESAMP Composite List were no longer required, given that this system has been superseded by more recent chemical information systems. The group further confirmed that the CAS Numbers would remain in the Composite List, as these provided useful information.

## 6 CONFIDENTIALITY AND CONFLICT OF INTEREST AGREEMENTS

6.1 The group recalled that it had given initial consideration to establishing confidentiality and conflict of interest agreements for GESAMP/EHS experts at GESAMP/EHS 51, in line with similar provisions for the GESAMP Ballast Water Working Group and that the Secretariat had agreed to investigate this matter further and to submit documentation to GESAMP/EHS 52.

6.2 The group noted that two forms had been prepared intersessionally, as follows: 1) Conflict of Interest Disclosure Form and 2) Statement of Acceptance of Access to Confidential Information. Having discussed the forms and having also noted that these had been reviewed by IMO's Legal Team, the group agreed to the forms, with minor amendments. Signed agreements were submitted by all the experts during the session for retention by the Secretariat.

## 7 CONSOLIDATION OF EXISTING DATA FILES

7.1 The group recalled the ongoing review of the GESAMP/EHS files undertaken by the GESAMP/EHS Secretariat was a regular agenda item and that any issues encountered were brought to the group's attention.

7.2 Not having had sufficient time to review these files during the session, in light of other higher priority work on its agenda, the group agreed to defer consideration of this item to its next session.

## 8 COMMUNICATION AND PUBLICATION

**Revision of the GESAMP Reports and Studies No.64**

8.1 The group noted that, further to the completion of its work on the revised Reports and Studies No. 64 at GESAMP/EHS 51, the revised manual had now been published. The group further noted that the electronic copy of the R&S 64 had been uploaded on both the IMO and GESAMP websites.

**INTERSPILL 2015**

8.2 The group noted the information provided by the Chairman with regard to his participation and the delivery of a presentation on "Cargo information needed during the initial stages of a chemical spill" at the Interspill 2015 Conference, which had taken place from 24 to 26 March 2015 in Amsterdam, the Netherlands.

8.3 The Chairman indicated that, further to this presentation, the feedback provided by attendees had suggested that the addition of information on flammability and explosivity limits would be a useful addition to the GESAMP Hazard Profile for the purposes of hazard assessment for spill response.

8.4 Having recognized that such information was generally included with new product submissions, it was agreed that future consideration could be given to including this as an additional E rating. However, given that the revised Reports and Series No. 64, had only recently been published, it was agreed that a decision on this proposal would be deferred for the time being.

**GHS classification of floating substances**

8.5 The group recalled its past discussions with regard to the classification of floating substances, which it had agreed to defer until after the revised Reports and Studies No. 64 (R&S 64) had been published.

8.6 The group further recalled that it had incorporated a system in the R&S 64 that built upon the Bonn Agreement behaviour classification system, in particular for floating substances. It was also recalled that these particular definitions for floating substances had been developed to address the specific behaviour of such substances when released into the marine environment and were used in a number of IMO documents and manuals.

8.7 As these terms were finding increasing usage, the group suggested that it may be useful to ensure any future criteria that may be developed by the GHS to define floating substances should take note of the current system developed by GESAMP/EHS, as set out in the R&S 64. This would ensure a harmonized approach and, in this context, the group agreed that a document would be submitted to the Sub-Committee of Experts on the GHS so that they are made aware of what has been developed by GESAMP/EHS and may then take any action as appropriate. The group therefore requested the Secretariat to prepare a submission, accordingly, for submission to the Sub-Committee of Experts during 2015.

## 9 ANY OTHER BUSINESS

**Membership issues**

9.1 The group recalled that at GESAMP/EHS 51, it had agreed that it was essential to maintain the expertise of the group, noting that some changes to the membership would be expected due to anticipated retirements in the coming years.

9.2 The Secretariat reported its ongoing efforts to secure an additional toxicologist to join the group, but that so far, it had not been successful in this regard. The Secretariat confirmed that it would continue its efforts, together with the Chairman, to pursue an additional expert for the group.

9.3 The group underscored the need to ensure appropriate geographical representation and gender balance within the group of experts and encouraged the Secretariat and Chairman to take this into account in their efforts to recruit new experts.

**Report on funding**

9.4 The group recalled that charges had been introduced for the evaluation of new substances in line with the decision taken by MEPC 56. The group further recalled that the financing mechanism was based on a fixed fee/user pays principle for the evaluation of:

.1 products to be carried in bulk;

.2 products used as a component in a bulk mixture; and

.3 components used in cleaning additives.

9.5 As part of these arrangements, it had been agreed that a fixed fee would be charged for each evaluation carried out, since this provides a clear incentive to those submitting to provide the complete range of data necessary for the working group to carry out an evaluation and assign a GESAMP Hazard Profile in one session. It was noted, however, that no additional fees were applied for cases where some follow-up action was needed on a specific issue, for example, to clarify study methodology details, or where the GESAMP/EHS experts had questioned particular test results.

9.6 During the session, the group noted that five product submissions had been processed at the usual rate. The group recalled that, as agreed by MEPC and the PPR Sub-Committee, the income generated would be used to maintain the required expertise levels within the GESAMP/EHS Working Group to support its objectives and activities, in line with the Terms of Reference set by GESAMP.

9.7 The group, having noted the increase in the number of requests for re-evaluation of products (ranging from a review of a single rating, to a number of ratings for a given product), discussed whether or not a fee for re-evaluations should be introduced, taking into account the increasing work load this represented.

9.8 In reviewing the history of the introduction of the fee-based mechanism and the group's increasing workload in connection with the re-evaluation of substances, a number of points were raised during the discussion, as set out below.

9.9 The group noted that it was important that the group remain on a solid and self-sustaining financial footing to ensure that sufficient funds were in place to meet the financial obligations of the group, notably the costs associated with the preparations and hosting of an annual GESAMP/EHS meeting, i.e. travel/DSA costs, consultancy fees and meeting hosting requirements, in order to ensure no interruptions in the regulatory flow of which GESAMP/EHS is a pivotal part. The group also reaffirmed its operation as a non-profit body, but underscored the need to ensure that its finances allow it to, as a minimum, break even and to retain some surplus. Sustainable financing for the group depends on a critical mass of submissions of an average of five to six submissions/year, noting that there will be fluctuations in the number of submissions year on year, thus the need for retaining a level of surplus in its accounts.

9.10 The group also noted the change in its manner and method of work with regard to the assessment of submissions, with a concerted shift in the past several years from reviewing original test data that accompanied submissions, towards accessing referenced test data that was available through established regulatory systems such as OECD, GHS and through EU databases (REACH and CLP). This was recognized to be a much less onerous requirement for the submitters, but much more work intensive for the experts and Secretariat in terms of the time commitment needed to access, compile and assess these data prior to and during meetings of GESAMP/EHS.

9.11 It was also noted that the number of re-evaluations being requested was steadily increasing, most of which were geared towards consideration of new data to justify a lowering of the respective GHP ratings that would, in many cases, lower the carriage requirements, ultimately resulting in a commercial benefit for the submitter.

9.12 Having considered the time requirement per assessment and noting the shift in trend with regard to referencing data from other sources, rather than submitting original test reports for the experts to consider directly, it was determined that a re-evaluation now represented between 25 to 30% of the time that would normally be required to evaluate a new submission.

9.13 Some concern was expressed with regard to the possibility that the introduction of a fee for re-evaluations would discourage companies from submitting new data, as it became available, but recognizing that this did not occur very frequently, the group was of the view that the resulting impact would be minimal.

9.14 The group reconfirmed that, as stated in paragraph 9.5, any new proposed fee would not apply to cases where an assignment of GHPs for new submissions has been made, but where some follow-up may be required in subsequent sessions of the GESAMP/EHS Working Group to, for example, review certain ratings based on newly submitted data or where further clarification has been provided for certain test results.

9.15 Having considered the various points, the group proposed the introduction of a fee for re-evaluations at a rate of USD 1800 per request, and to refer the matter to the ESPH Working Group for its consideration, with a view to subsequent agreement at PPR 2 and approval at MEPC 69.

**Future work programme and date of the next session**

9.16 The group agreed to the draft agenda for its next session, set out in annex 7, and that its next regular meeting was tentatively scheduled to be held from 23 to 27 May 2016.

## 10 CONSIDERATION AND ADOPTION OF THE REPORT

10.1 The group adopted its report, noting that it would be circulated as PPR.1/Circ.2.

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**ANNEX 1**

**LIST OF MEMBERS ATTENDING THE FIFTY-SECOND SESSION OF THE GESAMP/EHS WORKING GROUP**

Dr. Thomas Höfer (Chairman)
Federal Institute for Risk Assessment
Max-Dohrn-Str. 8-10
D-10589 Berlin
Germany
Email: thomas.hoefer@bfr.bund.de
Tel: +49 30 18 412 3267
Fax: +49 30 18 412 2714

Dr. Derek James
Ty Llwyd
Llanwrda
Carmarthenshire
Wales SA19 8AW
Email: derek777.james@gmail.com
Tel: +44 1550 779034

Mr. Michael Morrissette
Dangerous Goods Advisory Council
Suite 760
7501 Greenway Center Drive
Greenbelt, MD 20770
United States
Email: mmorrissette@dgac.org
Tel: +1 202 289 4550
Fax: +1 202 289 4074

Dr. Hotaka Saito
LSI Medience Corporation
subsidiary of Mitsubishi Chemical Holdings
The Kaiteki Bldg., 13-4, Uchikand1-chome
Chiyoda-ku, Tokyo 101-8517
Japan
Email: Saitou.Hotaka@mh.medience.co.jp
Tel: +81 3 5577 0409
Fax: +81 3 5577 0459

Dr. Stéphane Le Floch
Cedre
715 rue Alain Colas
CS 41836
29218 Brest Cedex 2
France
Email: Stephane.Le.Floch@cedre.fr
Tel: +33 2 98 33 67 02
Fax: +33 2 98 44 91 38

Dr. Wenxin Jiang
Tianjin Research Institute of
Water Transport Engineering (TRIWTE)
2618#, Xingang Road No.2
Tanggu, Tianjin
China
Email: wenxin-jiang@126.com
Tel: +86 22 59812345 8428
Fax: +86 22 59812 118

Mr. Richard Luit
Senior Policy Advisor at RIVM, Centre for Safety of Substances and Products, Member of NL Bureau REACH
PO Box 1, 3720 BA Bilthoven
The Netherlands
Email: richard.luit@rivm.nl
Tel: +31 302743073
Fax: +31 302744401

Dr. Patricio H. Rodriguez
Director
Center for Ecotoxicology and Chemistry of Metals
Adolfo Ibañez University
Diagonal Las Torres 2640
Peñalolen 794 1169
Santiago, Chile

Email: patricio.rodriguez@uai.cl
Tel: +56-2-22258936

**IMO SECRETARIAT**

Ms. Patricia Charlebois
Head, Carriage of Chemicals in Bulk &
Technical Secretary of the GESAMP/EHS
Working Group
International Maritime Organization
Marine Environment Division
4 Albert Embankment
London SE1 7SR
United Kingdom

Email: pcharlebois@imo.org
Tel: +44 20 7587 3163
Fax: +44 20 7587 3210

Dr. Ken McDonald
GESAMP Technical Advisor
International Maritime Organization
Marine Environment Division
4 Albert Embankment
London SE1 7SR
United Kingdom

Email: kmcdonald@imo.org
Tel: +44 20 7587 3249
Fax: +44 20 7587 3210

Ms. Alicia Giron
Secretary
International Maritime Organization
Marine Environment Division
4 Albert Embankment
London SE1 7SR
United Kingdom

Email: agiron@imo.org
Tel: +44 20 7463 3177
Fax: +44 20 7587 3210

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**ANNEX 2**

**MATTERS ARISING FROM IMO BODIES**

## Outcome of ESPH 20 and PPR 2

1 The ESPH Working Group, at ESPH 20 and PPR 2:

.1 evaluated a number of new products, cleaning additives and trade-named products for their consequential inclusion in the MEPC.2/Circular;

.2 undertook a review of the draft of MEPC.2/Circ.20 and the amendments and deletion of products from the lists that had reached their expiry dates, which was subsequently disseminated in December 2014. In this connection, PPR 2 also agreed to a revised issue date (from 17 December to 1 December) and revised expiry dates (from 17 December to 31 December) for tripartite agreements, for implementation in 2015;

.3 agreed on a new format for the submission of mixtures (list 3 products) to submission to the ESPH Working Group and an automated Excel tool for carrying out mixture calculations, which is to be posted to the IMO web site;

.4 progressed its work on amendments to chapters 17, 18 and 21 of the IBC Code; and

.5 progressed on its revision of the Guidelines for the provisional assessment of liquid substances transported in bulk (MEPC.1/Circ.512).

### *Partial profiles*

2 Of particular note, in connection with paragraph 1.5 above, the group, in reviewing the current use of partial profiles for components of mixtures not carried in pure form, debated whether or not these were sufficient or whether the guidelines should be modified to require full profiles for components of mixtures henceforth. Having agreed in principle to this way forward, the group agreed that the guidelines should be updated accordingly to reflect this change, which would be implemented once the guidelines were duly finalized and approved by the PPR Sub-Committee and MEPC. As a consequence, the group invited GESAMP/EHS to take action accordingly. This decision was confined only to components of mixtures, but did not extend to the short profiles currently required for cleaning additives.

3 The group also agreed that this change in procedure should not affect existing entries with partial profiles or have an impact on mixtures that have previously had their carriage requirements assessed, having used components with partial profiles in the mixture calculation.

### *Review of IBC Code*

4 The group continued with its revision of the IBC Code, notably chapter 21 relating to the criteria for assigning carriage requirements for MARPOL Annex II products, and examined the related impacts on the carriage requirements for the products currently contained in chapters 17 and 18 of the IBC Code. Of particular note were the criteria for column g related to venting, with a controlled venting requirement only triggered for a D1 rating of 3A, 3B or 3C. However, a D1=3 rating did not trigger this requirement. Having

reviewed this matter at PPR 2, the group agreed that a D1=3 rating should be considered equivalent to 3B, for the purposes of assigning the criteria set out in chapter 21. The Chairman of GESAMP/EHS, being present at the meeting, agreed to raise this with GESAMP/EHS with a view to reviewing the files for all products with a D1 rating of 3, in order to determine if there was sufficient information available to further sub-categorize them as 3A, 3B or 3C.

5 In addition, the group had considered a submission highlighting a number of inconsistencies between the revised chapter 21 of the IBC Code, the principles of the UN Globally Harmonized System and the new edition of the GESAMP Reports and Series No. 64. This covered, in particular, the D1=3 issue, highlighted above, as well as the move towards the use of ATEs rather than LD50 values, given that the latter test for oral toxicity testing has been deleted from the list of internationally accepted test guidelines due to animal welfare considerations, amongst a number of other ambiguities. Having agreed in principle to address these, the group agreed to consider a revised chapter 21, addressing these issues, at ESPH 21.

***Guidance/procedures for assessing products classified under Annexes I and II of MARPOL***

6 Noting that an increasing number of petrochemical mixtures that were technically MARPOL Annex I substances were being submitted to the ESPH Working Group for assessment as MARPOL Annex II trade-named chemical mixtures, the group considered the possibility of developing guidelines to provide better clarity and/or a procedure for addressing this issue. The group, having agreed in principle that such guidance was required, but that they were unable to take any action as this would constitute a new work programme item, noted the intention of the UK to submit a proposal to MEPC 68, which has been duly received and will be considered at MEPC 68 in May 2015.

***Revision of the PPR Product Data Reporting Form and related guidance notes***

7 The group finalized a revised PPR Product Data Reporting Form and related guidance notes, which is fully in line with the provisions of the GESAMP/EHS Data Reporting Form, to ensure a consistent approach and new data requirements between GESAMP/EHS and the new ESPH Working Group.

**Outcome of CCC 1**

8 In the context of developing an indicative list of substances that are hazardous to the marine environment (HME substances) under the IMSBC Code, CCC 1 considered a number of options and methodologies for assessing such substances and establishing the indicative list, which had been discussed over a number of sessions by a correspondence group. However, having noted the practical difficulties in assessing bulk solid substances, in particular mineral/metal ores and concentrates that are not uniform in nature and may vary considerably between batches and cargoes, CCC 1 ultimately decided that no indicative lists would be established under the IMSBC Code, subject to concurrence by MEPC 68.

9 CCC 1 also proposed that, in addition to the draft amendments to the IMSBC Code that would be of a mandatory nature, a separate set of non-mandatory draft amendments to the IMSBC Code related to HME substances (i.e. a new section 14) would also be submitted to MEPC 68 for advice and to MSC 95 with a view to adoption, taking into account the advice of MEPC 68 (related to the non-mandatory amendment proposal). As MEPC 68 has yet to meet, this has yet to be agreed.

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**ANNEX 3**

**OUTCOME OF GESAMP 41**

1 The Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection met in September 2014 in Malmö, Sweden, hosted by the World Maritime University (WMU). A summary of the outcomes of that meeting is set out below.

2 As this was Dr. Höfer's first time attending GESAMP as Chairman of the EHS Working Group, he duly became a formal member of GESAMP at that session.

3 The Chairman of GESAMP, Mr. Peter Kershaw, reported that GESAMP had been very active during the period since its last session and reported on the following activities:

.1 Some intersessional correspondence groups evaluated whether GESAMP may wish to further develop some projects, such as:

(a) the effects of hypoxia, including possible endocrine effects;

(b) biomagnification of contaminants and potential effects on ecosystem and human health;

(c) the potential impact of disinfection by-products; and

(d) the impact of mine tailings in the marine environment.

GESAMP noted the progress and discussed the topics.

4 The Chairman noted that he had represented GESAMP in a number of international conferences and meetings, in particular a number of activities related to marine litter.

5 He further highlighted that there was still a lack of funding for: the GESAMP Office and for the recruitment of an officer to assist the GESAMP Office; secure communications with the agencies involved, and the Pool of Experts and third parties including the public and the website.

6 The chairmen of the GESAMP working groups reported on the outcome of their respective meetings, as follows:

.1 Dr. Thomas Höfer reported on Working Group 1, in particular, the GESAMP EHS 51 meeting held in Brest, including the final work on the second edition of Reports and Studies No. 64. It was decided to enhance the visibility of the group *inter alia* via adding the reports and the Composite List to the GESAMP website.

.2 Mr. Jan Linders reported on the status of the Ballast Water Management Convention and the four meetings of Working Group 34 on the evaluation of ballast water management systems. This included a stock-taking workshop (STW) to discuss matters related to the evaluation methodology. GESAMP decided to publish an updated version of the methodology.

.3 A short report on Working Group 37 on mercury in the aquatic environment including sources, releases, transport and monitoring showed that a report had been finalized in 201, but had not been peer reviewed and published. GESAMP decided to finalize this work.

.4 Mr. Robert Duce reported on the activities of Working Group 38 on the atmospheric input of chemicals to the ocean. This Working Group has co-published high level and peer reviewed scientific publications and had several meetings. In the coming period this Working Group will complete the scientific papers and will develop possible new activities, some of them already approved by GESAMP.

.5 Ms. Ana Carolina Ruiz Fernandez, the chair of Working Group 39 related to trends in global pollution in coastal environments provided a report on the status of work. The central work is the establishment of a bibliographic database. GESAMP stressed that it is necessary to complete the digitalization of data from the papers in the database.

.6 A report on the activities of Working Group 40 on the sources, fate and effects of microplastics in the environment was given by Peter Kershaw. Over the course of three workshops, texts were agreed and a report was ready to be reviewed by GESAMP. The working group has now fulfilled its terms of reference. GESAMP discussed the future of the work and developed a future work programme and time schedule on microplastics in the marine environment. There is a very good short summary on the challenges on the GESAMP website (Microplastics in the Ocean).

.7 GESAMP also discussed new and emerging issues, i.e. (a) seabed mining, (b) effects of changing the nitrogen/phosphorous ratio in the atmospheric deposition to the ocean, (c) marine litter, and (d) ecosystem services valuation (e.g. quantifying environmental damage).

.8 As a side event to the GESAMP meeting, there was a set of lectures and panel discussion, including a discussion with the students of the WMO on maritime activities and noise.

.9 Concerning the decisions on Working Group 1, the text of the website has been amended and the 2nd edition of Reports and Studies No. 64 has been included. However, the reports and the Composite List have not yet been posted to the website. This will done in due course.

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**ANNEX 4**

**GESAMP HAZARD PROFILES FOR NEW SUBSTANCES SUBMITTED FOR EVALUATION TO GESAMP/EHS 52**

This annex sets out the GESAMP Hazard Profiles (GHP) assigned for the products submitted to the current session. The respective substances and their GHPs are summarized in the subsequent table.

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## ANNEX 4 - Evaluation of new products proposed for bulk transport



| EHS Name<br>TRN Name | EHS<br>TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cresol/Phenol/Xylenol mixture | 2471 | (2) | (2) | (2) | R | (3) | (1) | 1 | 2 | 3 | 3B | 3 | | | SD | 3 |
| | 3673 | | | | | | | | **CAS No** | | | | | | | |
| Cyclohexane-1,2-dicarboxylic acid, diisononyl ester | 2472 | 0 | 3 | 3 | R | 0 | 0 | 0 | 0 | (1) | 1 | 0 | | | Fp | 2 |
| Cyclohexane-1,2-dicarboxylic acid, diisononyl ester | 3915 | | | | | | | | **CAS No** | | 166412-78-8 | | | | | |
| 2,6-Diaminohexanoic acid phosphonate mixed salts solution | 2469 | 1 | NI | 1 | NR | 1 | (0) | (1) | (1) | (3) | (3) | (3) | T | | D | 3 |
| | 3989 | | | | | | | | **CAS No** | | | | | | | |
| 1-Dodecene | 2473 | 5 | NI | 5 | R | 0 | NI | 0 | 0 | 1 | 2 | 1 | A | | F | 3 |
| | 3990 | | | | | | | | **CAS No** | | 112-41-4 | | | | | |
| Triglycerides, C16-C18 and C18 unsaturated, reclaimed (UCO) | 2470 | (5) | NI | (5) | R | (0) | (0) | (0) | (0) | (1) | (1) | (1) | | | Fp | 2 |
| Used cooking oil (m) | 3974 | | | | | | | | **CAS No** | | 68990-65-8 | | | | | |

**ANNEX 5**

**UPDATED GESAMP COMPOSITE LIST**

**Notes:**

1 In the Composite List, both EHS and TRN (shipping) names are shown for each product. The alphabetical listing of the products is based on the EHS names.

2 Any changes introduced in the table since the last issue of the Composite List are highlighted.

3 Entries with an EHS name marked with a single asterisk (*) represent cleaning additive components that have only a partial hazard profile assigned. These profiles **cannot be used** for mixture calculations in relation to bulk shipments.

4 Entries with an EHS name marked with a double asterisk (**) represent mixture components for which only a partial hazard profile has been assigned. These profiles **may be used** for mixture calculations in relation to bulk shipments.

5 Entries with an EHS name marked with a hash mark (#) reflect that for the **C3 rating**, the product, as a vapour rather than an aerosol or mist, could be considered to have a lower inhalation hazard for the purposes of risk management.

6 Entries with an EHS name marked with an exclamation mark (!) refer to a mixture that contains components with substantially different physical properties and therefore different physical behaviours when released in the marine environment. The **E2 rating** assigned reflects the most severe impact from an environmental standpoint. For example, a mixture assigned a rating of Fp may also have a major component(s) with sinker characteristics (S) or dissolver characteristics (D).

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| EHS Name<br>TRN Name | EHS<br>TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Acetic acid | 13 | 0 | 0 | 0 | R | 1 | NI | 1 | 1 | 1 | 3C | 3 | | | D | 3 |
| Acetic acid | 64 | | | | | | | | **CAS No** | | 64-19-7 | | | | | |
| Acetic anhydride | 12 | 0 | 0 | 0 | R | 1 | NI | 1 | 0 | 2 | 3 | 3 | A | | D | 3 |
| Acetic anhydride | 65 | | | | | | | | **CAS No** | | 108-24-7 | | | | | |
| Acetochlor (ISO) | 2047 | 3 | 2 | 2 | NR | 4 | NI | 1 | 0 | (1) | 0 | 0 | | | S | 2 |
| Acetochlor | 66 | | | | | | | | **CAS No** | | 34256-82-1 | | | | | |
| Acetone | 15 | 0 | 0 | 0 | R | 0 | 0 | 0 | 0 | 0 | 1 | 2 | | NT | DE | 2 |
| Acetone | 67 | | | | | | | | **CAS No** | | 67-64-1 | | | | | |
| Acetone cyanohydrin | 14 | 0 | 0 | 0 | R | 4 | NI | 3 | 4 | 3 | (3) | (3) | | | D | 3 |
| Acetone cyanohydrin | 68 | | | | | | | | **CAS No** | | 75-86-5 | | | | | |
| Acetonitrile | 16 | 0 | 0 | 0 | R | 1 | NI | 1 | 1 | 2 | 1 | 2 | | | D | 2 |
| Acetonitrile | 69 | | | | | | | | **CAS No** | | 75-05-8 | | | | | |
| Acetonitrile (Low purity grade) | 2333 | 0 | NI | 0 | R | 3 | NI | 1 | 1 | 2 | 1 | 2 | | | D | 2 |
| Acetonitrile (Low purity grade) | 2876 | | | | | | | | **CAS No** | | | | | | | |
| Acid mixtures (nitrating acid) | 289 | Inorg | NI | 0 | Inorg | (2) | NI | 3 | 3 | 4 | 3C | 3 | | | D | 3 |
| Nitrating acid (mixture of sulphuric and nitric acids) | 497 | | | | | | | | **CAS No** | | | | | | | |
| Acrylamide | 23 | 0 | 0 | 0 | R | 2 | 0 | 2 | 2 | (2) | 1 | 2 | CMNSs | | D | 3 |
| Acrylamide solution (50% or less) | 70 | | | | | | | | **CAS No** | | 79-06-1 | | | | | |
| Acrylic acid | 24 | 0 | 0 | 0 | R | 4 | NI | 2 | 2 | 2 | 3C | 3 | | | D | 3 |
| Acrylic acid | 71 | | | | | | | | **CAS No** | | 79-10-7 | | | | | |
| Acrylic acid / dimethyldiallylammonium chloride copolymer, partial sodium salt (MWt 1500-4000, aqueous solution) | 2406 | 0 | NI | 0 | R | 0 | 0 | 0 | 0 | (0) | 0 | 0 | | | D | 0 |
| Acrylic acid / dimethyldiallylammonium chloride copolymer, partial sodium salt (MWt 1500-4000, aqueous solution) | 3682 | | | | | | | | **CAS No** | | | | | | | |
| Acrylic acid/ethenesulphonic acid copolymer with phosphonate groups, sodium salt (aqueous solution) | 2417 | 0 | NI | 0 | NR | 0 | NI | 0 | (0) | (0) | 0 | 0 | | | D | 0 |
| Acrylic acid/ethenesulphonic acid copolymer with phosphonate groups, sodium salt solution | 3693 | | | | | | | | **CAS No** | | | | | | | |
| Acrylonitrile | 25 | 0 | 2 | 2 | NR | 3 | 0 | 2 | 3 | 3 | 2 | 2 | CMSs | NT | DE | 3 |
| Acrylonitrile | 72 | | | | | | | | **CAS No** | | 107-13-1 | | | | | |
| Acrylonitrile-styrene copolymer dispersion in polyether polyol (LOA) | 1432 | NI | 0 | 0 | NI | 1 | NI | 0 | (0) | (0) | 0 | (0) | | | S | 0 |
| Acrylonitrile-Styrene copolymer dispersion in polyether polyol | 73 | | | | | | | | **CAS No** | | | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Adiponitrile | 26 | 0 | 0 | 0 | R | 1 | NI | 3 | (3) | 3 | 3 | (3) | | | FD | 3 |
| Adiponitrile | 74 | | | | | | | | **CAS No** | | 111-69-3 | | | | | |
| Alachlor (ISO) | 1488 | 3 | 3 | 3 | NI | 4 | 1 | 1 | 0 | (2) | 1 | 0 | CSs | | S | 3 |
| Alachlor technical (90% or more) | 75 | | | | | | | | **CAS No** | | 15972-60-8 | | | | | |
| Alcoholic beverages | 293 | 0 | 0 | 0 | R | 0 | 0 | 0 | 0 | 0 | 0 | 1 | | | D | 1 |
| Alcoholic beverages, n.o.s. | 85 | | | | | | | | **CAS No** | | | | | | | |
| Alcoholic silicasol | 2198 | 0 | 0 | 0 | R | 0 | 0 | 0 | 0 | 0 | 1 | 2 | | | DE | 2 |
| Tetraethyl silicate monomer/oligomer (20% in ethanol) | 2475 | | | | | | | | **CAS No** | | | | | | | |
| Alcohol(C12-C16) poly(20 and above)ethoxylates | 1482 | 4 | (3) | (3) | R | 2 | 0 | (0) | (0) | (2) | 2 | 1 | | | D | 2 |
| Alcohol (C12-C16) poly(20+)ethoxylates | 78 | | | | | | | | **CAS No** | | | | | | | |
| Alcohol(C6-C17)(secondary) poly(3-6)ethoxylate | 722 | 4 | 3 | 3 | R | 4 | 2 | 0 | (0) | (3) | 3 | 2 | | | D | 3 |
| Alcohol (C6-C17) (secondary) poly(3-6)ethoxylates | 81 | | | | | | | | **CAS No** | | | | | | | |
| Alcohol(C6-C17)(secondary) poly(7-12)ethoxylate | 295 | 3 | 3 | 3 | R | 4 | 1 | 1 | 0 | (3) | 3 | 3 | | | D | 3 |
| Alcohol (C6-C17) (secondary) poly(7-12)ethoxylates | 80 | | | | | | | | **CAS No** | | | | | | | |
| Alcohol(C8-C11) poly(2.5-9)ethoxylates | 2094 | 3 | 3 | 3 | R | 3 | NI | 1 | 0 | (2) | (2) | (2) | | | D | 2 |
| Alcohol (C9-C11) poly (2.5-9) ethoxylate | 2209 | | | | | | | | **CAS No** | | | | | | | |
| Alcohol(C12-C16) poly(1-6)ethoxylates | 294 | 5 | 3 | 3 | R | 4 | 1 | 0 | 0 | (2) | 2 | 2 | | | FD | 2 |
| Alcohol (C12-C16) poly(1-6)ethoxylates | 77 | | | | | | | | **CAS No** | | | | | | | |
| Alcohol(C12-C16) poly(7-19)ethoxylates | 1481 | 4 | 3 | 3 | R | 4 | 1 | 1 | 0 | (3) | 3 | 3 | | | D | 3 |
| Alcohol (C12-C16) poly(7-19)ethoxylates | 79 | | | | | | | | **CAS No** | | | | | | | |
| Alcohol(C12-C14)poly(2)ethoxylate sulphate, sodium salt (*) | 2419 | 2 | NI | 2 | R | 3 | NI | NI | NI | NI | NI | NI | | | NI | NI |
| | 3695 | | | | | | | | **CAS No** | | | | | | | |
| Alcohols (C8-C11) | 2279 | 5 | 2 | 2 | (R) | (3) | (1) | (0) | (0) | (2) | (2) | (2) | | | Fp | 2 |
| Alcohols (C8-C11), primary, linear and essentially linear | 2887 | | | | | | | | **CAS No** | | | | | | | |
| Alcohols, C13 and above as individuals and mixtures | 2039 | 5 | 2 | 2 | R | 4 | 1 | 0 | 0 | 0 | (1) | (1) | | | Fp | 2 |
| Alcohols (C13+) | 86 | | | | | | | | **CAS No** | | | | | | | |
| Alcohols, C10-C16 ethoxylated propoxylated (*) | 2450 | 0 | NI | 0 | R | 3 | NI | NI | NI | NI | NI | NI | | | NI | NI |
| | 3868 | | | | | | | | **CAS No** | | | | | | | |
| Alcohols (C12-C13), linear | 2294 | 5 | 2 | 2 | R | 4 | (1) | 0 | 0 | (1) | 1 | 1 | | | Fp | 2 |
| Alcohols (C12-C13), primary, linear and essentially linear | 2950 | | | | | | | | **CAS No** | | | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alcohols (C14-C18), linear | 2293 | 5 | 2 | 2 | R | 0 | 1 | 0 | 0 | (1) | 1 | 1 | | | Fp | 2 |
| Alcohols (C14-C18), primary, linear and essentially linear | 2951 | | | | | | | | **CAS No** | | | | | | | |
| Alcohols, linear (C10-C14) | 2365 | (5) | (2) | (2) | (R) | (4) | (1) | 0 | 0 | (2) | (2) | (2) | | | Fp | 2 |
| Decyl/Dodecyl/Tetradecyl alcohol mixture | 3128 | | | | | | | | **CAS No** | | | | | | | |
| Alkanes (C6-C9) | 2202 | (5) | NI | (5) | (R) | (4) | NI | (0) | (0) | (1) | (2) | (2) | N | | FE | 2 |
| Alkanes (C6-C9) | 88 | | | | | | | | **CAS No** | | | | | | | |
| Iso- and cyclo-alkanes (C10-C11) | 2203 | (5) | NI | (5) | NI | (0) | (0) | (0) | (0) | (1) | (1) | (0) | | | F | 1 |
| Iso- and cyclo-alkanes (C10-C11) | 393 | | | | | | | | **CAS No** | | | | | | | |
| Iso-and cyclo-alkanes (C12+) | 2204 | (5) | NI | (5) | NI | (0) | NI | 0 | 0 | (1) | (0) | (0) | A | | NI | 2 |
| Iso- and cyclo-alkanes (C12+) | 394 | | | | | | | | **CAS No** | | | | | | | |
| Alkanes (C10-C17), linear and branched | 2463 | (5) | NI | (5) | R | 0 | 1 | 0 | 0 | (0) | 0 | 0 | A | | F | 3 |
| Alkanes (C10-C17), linear and branched | 3815 | | | | | | | | **CAS No** | | | | | | | |
| Alkanes(C10 -C26), linear and branched | 2392 | 0 | NI | 0 | R | 0 | NI | 0 | 0 | (1) | 1 | 1 | A | | F | 3 |
| Alkanes(C10-C26), linear and branched, (flashpoint >60°C) | 3562 | | | | | | | | **CAS No** | | 90622-53-0 | | | | | |
| Alkanes (C5 - C7), linear and branched | 2464 | (5) | NI | (5) | (R) | (3) | (0) | 0 | 0 | 0 | 2 | 0 | NA | | E | 2 |
| Alkanes (C5-C7), linear and branched | 3799 | | | | | | | | **CAS No** | | | | | | | |
| n-Alkanes (C9-C11) | 2449 | (5) | NI | (5) | R | 0 | (0) | 0 | 0 | (2) | 1 | 0 | A | | F | 3 |
| | 3867 | | | | | | | | **CAS No** | | | | | | | |
| n-Alkanes (C10-C20) | 296 | (5) | NI | (5) | (R) | (0) | (0) | (0) | (0) | (1) | (1) | (0) | A | | F | 3 |
| n-Alkanes (C10+) | 471 | | | | | | | | **CAS No** | | | | | | | |
| Alkane (C14-C17) sulphonic acid, sodium salt | 334 | 2 | 2 | 2 | R | 3 | 1 | 0 | 0 | (2) | 2 | 2 | | | D | 2 |
| Sodium alkyl (C14-C17) sulphonates (60-65% solution) | 1153 | | | | | | | | **CAS No** | | | | | | | |
| Alkaryl polyether (C9-C20) (LOA) | 1974 | 4 | NI | 4 | NR | 3 | NI | 0 | 0 | (3) | 2 | 3 | | | S | 2 |
| Alkaryl polyethers (C9-C20) | 90 | | | | | | | | **CAS No** | | | | | | | |
| Alkenoic acid ester, borated | 2376 | 5 | (3) | (3) | R | 2 | NI | 0 | 0 | (2) | 2 | 0 | | | Fp | 2 |
| | 3153 | | | | | | | | **CAS No** | | | | | | | |
| Alkenylamide, long chain, more than C10 | 1858 | 3 | NI | 3 | (NR) | 4 | NI | 0 | (0) | (1) | 0 | 1 | | | Fp | 2 |
| Alkenyl (C11+) amide | 838 | | | | | | | | **CAS No** | | | | | | | |
| Alkenyl succinic anhydride | 298 | 0 | 0 | 0 | NR | 1 | NI | 0 | 0 | (2) | 2 | (2) | SsSr | | FD | 2 |
| Alkenyl (C16-C20) succinic anhydride | 2336 | | | | | | | | **CAS No** | | | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alkyl acrylate/Vinyl pyridine copolymer in toluene | 299 | 2 | 2 | 2 | R | 2 | 0 | 0 | 0 | (2) | 2 | 2 | RNA | | F/Fp | 3 |
| Alkyl acrylate/vinylpyridine copolymer in toluene | 94 | | | | | | | | **CAS No** | | | | | | | |
| Alkyl/cyclo(C4-C5)alcohols | 2447 | (1) | (1) | (1) | (R) | (2) | (0) | (1) | (1) | (2) | (2) | (3) | | | FED | 3 |
| | 3825 | | | | | | | | **CAS No** | | | | | | | |
| Alkyl/cyclo(C4-C5)alcohols | 2447 | (1) | (1) | (1) | (R) | (2) | (0) | (1) | (1) | (2) | (2) | (3) | | | FED | 3 |
| Alkyl/cyclo (C4-C5) alcohols | 3962 | | | | | | | | **CAS No** | | | | | | | |
| Alkyl amine, alkenyl acid ester, mixture | 1433 | NI | NI | NI | NI | 1 | NI | (0) | (0) | NI | NI | NI | | | Fp | 2 |
| Alkyl(C8+)amine, Alkenyl (C12+) acid ester mixture | 98 | | | | | | | | **CAS No** | | | | | | | |
| Alkylaryl phosphate mixtures (more than 40% Diphenyl tolyl phosphate, less than 0.02% ortho-isomers) | 2267 | 4 | 4 | 4 | R | 4 | 4 | 0 | 0 | (1) | 1 | 0 | | | S | 1 |
| Alkylaryl phosphate mixtures (more than 40% Diphenyl tolyl phosphate, less than 0.02% ortho-isomers) | 280 | | | | | | | | **CAS No** | | | | | | | |
| Alkylated phenols (C4-C9) | 2273 | 0 | 2 | 0 | NR | 1 | 0 | 1 | 0 | (2) | 1 | 1 | | | Fp | 2 |
| Alkylated (C4-C9) hindered phenols | 2575 | | | | | | | | **CAS No** | | | | | | | |
| Alkyl benzene distillation bottoms | 300 | 0 | 2 | 2 | NR | 0 | (3) | 0 | 0 | 1 | 1 | 1 | | | Fp | 2 |
| Alkyl benzene distillation bottoms | 3106 | | | | | | | | **CAS No** | | | | | | | |
| Alkyl (C12-C15) benzene/indane/indene mixture | 1872 | 0 | 4 | 4 | NR | 0 | NI | 0 | 0 | 0 | 0 | 2 | | | FE | 2 |
| Alkylbenzene, alkylindane, alkylindene mixture (each C12-C17) | 103 | | | | | | | | **CAS No** | | | | | | | |
| Alkylbenzene mixtures (containing at least 50% of toluene) | 2303 | (2) | (2) | (2) | (R) | (3) | (0) | 0 | 0 | (2) | 2 | 2 | ACMNR | | FE | 3 |
| Alkylbenzene mixtures (containing at least 50% of toluene) | 2909 | | | | | | | | **CAS No** | | | | | | | |
| Alkyl (C3-C4) benzenes | 2206 | (3) | NI | (3) | R | 4 | NI | 0 | 0 | (2) | (2) | (1) | | | FE | 2 |
| Alkyl (C3-C4) benzenes | 91 | | | | | | | | **CAS No** | | | | | | | |
| Alkyl (C5-C8) benzenes | 2207 | 5 | 4 | 4 | (NR) | 4 | NI | 0 | 0 | (2) | (2) | (1) | | | F | 2 |
| Alkyl (C5-C8) benzenes | 92 | | | | | | | | **CAS No** | | | | | | | |
| Alkyl benzenes, C9-C17 (straight or branched) | 1783 | 0 | 4 | 4 | NR | 1 | NI | 0 | (0) | (1) | (1) | (1) | | | F | 1 |
| Alkyl(C9+)benzenes | 100 | | | | | | | | **CAS No** | | | | | | | |
| Alkylbenzenes mixture (containing less than 1% naphthalene) | 2423 | 3 | 3 | 3 | NR | 4 | NI | 0 | 0 | (2) | 2 | 1 | AC | | F | 3 |
| Alkylbenzenes mixture (containing less than 1% naphthalene) | 3600 | | | | | | | | **CAS No** | | | | | | | |
| Alkylbenzenes mixtures (containing naphthalene) | 2424 | (3) | (3) | (3) | (NR) | (4) | NI | 0 | 0 | (1) | 1 | 1 | AC | | F | 3 |
| Alkylbenzenes mixtures (containing naphthalene) | 3966 | | | | | | | | **CAS No** | | | | | | | |
| Alkylbenzenes mixtures (containing naphthalene) | 2424 | (3) | (3) | (3) | (NR) | (4) | NI | 0 | 0 | (1) | 1 | 1 | AC | | F | 3 |
| Alkylbenzenes mixture (containing naphthalene) | 3698 | | | | | | | | **CAS No** | | | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alkyl(C11-C13)benzenesulphonates, straight chain | 301 | 3 | 3 | 3 | R | 3 | 1 | 1 | (1) | (3) | 2 | 3 | | | FD | 3 |
| Alkylbenzene sulphonic acid, sodium salt solution | 102 | | | | | | | | **CAS No** | | 42615-29-2 | | | | | |
| Alkyl dithiocarbamate (C19-C35) | 2236 | 0 | NI | 0 | NI | 1 | NI | 0 | 0 | (0) | 0 | 0 | | | S | 0 |
| Alkyl dithiocarbamate (C19-C35) | 2538 | | | | | | | | **CAS No** | | | | | | | |
| Alkyl dithio thiadiazole (C6-C24) (LOA) | 1981 | 5 | NI | 5 | NR | 1 | NI | 0 | 0 | (0) | 0 | 0 | | | S | 2 |
| Alkyldithiothiadiazole (C6-C24) | 104 | | | | | | | | **CAS No** | | | | | | | |
| Alkyl(C4-C20) ester copolymer (LOA) | 1986 | NI | 0 | 0 | NR | 0 | NI | 0 | 0 | (0) | 0 | 0 | | | Fp | 2 |
| Alkyl ester copolymer (C4-C20) | 2202 | | | | | | | | **CAS No** | | | | | | | |
| Alkylnaphthalenes, crude (containing less than 1% naphthalene) | 2425 | 4 | 4 | 4 | R | 4 | NI | 0 | 0 | (1) | 1 | 1 | AC | | F | 3 |
| Alkylnaphthalenes (containing less than 1% naphthalene), crude | 3601 | | | | | | | | **CAS No** | | | | | | | |
| Alkylnaphthalenes, crude (containing naphthalene) | 2426 | (4) | (4) | (4) | (R) | (4) | NI | 0 | 0 | (1) | 1 | 1 | AC | | F | 3 |
| Alkylnaphthalenes (containing naphthalenes), crude | 3699 | | | | | | | | **CAS No** | | | | | | | |
| Alkyl (C7-C9) nitrates | 8 | 4 | NI | 4 | NR | 3 | NI | 0 | 0 | (3) | 2 | (3) | | | F | 3 |
| Alkyl (C7-C9) nitrates | 93 | | | | | | | | **CAS No** | | | | | | | |
| Alkyl(C8-C40)phenol sulphide (LOA) | 1985 | 0 | NI | 0 | NR | 0 | NI | 0 | 0 | (1) | 1 | 1 | | | FD | 1 |
| Alkyl (C8-C40) phenol sulphide | 2253 | | | | | | | | **CAS No** | | | | | | | |
| Alkyl(C8-C9)phenylamine, in aromatic solvent (LOA) | 2096 | 2 | NI | 2 | NR | 3 | NI | (0) | (0) | (2) | 2 | 2 | | | S | 2 |
| Alkyl (C8-C9) phenylamine in aromatic solvents | 2200 | | | | | | | | **CAS No** | | | | | | | |
| Alkyl (C9-C15) phenyl propoxylate | 2188 | 0 | NI | 0 | NR | 0 | NI | 0 | 0 | (2) | 2 | 2 | | | FD | 2 |
| Alkyl (C9-C15) phenyl propoxylate | 2430 | | | | | | | | **CAS No** | | | | | | | |
| Alkyl[(C8-C10)/(C12-C14)]:(<40%/>60%)polyglucoside mixture solution (max 55% active material) | 2134 | 3 | NI | 3 | R | 3 | 0 | 0 | 0 | (3) | 2 | 3 | | | D | 3 |
| Alkyl (C8-C10)/(C12-C14):(40% or less/60% or more) polyglucoside solution (55% or less) | 2248 | | | | | | | | **CAS No** | | 141464-42-8 | | | | | |
| Alkyl[(C8-C10)/(C12-C14)]:(>60%/<40%)polyglucoside mixture solution (max 55% active material) | 2135 | 3 | NI | 3 | R | 2 | 0 | 0 | 0 | (2) | 2 | 2 | | | D | 2 |
| Alkyl (C8-C10)/(C12-C14):(60% or more/40% or less) polyglucoside solution(55% or less) | 2246 | | | | | | | | **CAS No** | | 141464-42-8 | | | | | |
| Alkyl(C8-C10)polyglucoside solution (max 65% active material) | 2136 | 1 | NI | 1 | R | 2 | 0 | 0 | 0 | (2) | 2 | 2 | | | D | 2 |
| Alkyl (C8-C10) polyglucoside solution (65% or less) | 2245 | | | | | | | | **CAS No** | | 68515-73-1 | | | | | |
| Alkyl (C8-C10)/(C12-C14):(50%/50%) polyglucoside solution (55% or less) | 2133 | 3 | NI | 3 | R | 2 | 0 | 0 | 0 | (3) | 2 | (3) | | | D | 3 |
| Alkyl (C8-C10)/(C12-C14):(50%/50%) polyglucoside solution (55% or less) | 2247 | | | | | | | | **CAS No** | | | | | | | |
| Alkyl(C12-C14)polyglucoside solution (max 55% active material) | 2137 | 3 | NI | 3 | R | 3 | 0 | 0 | 0 | (3) | 2 | 3 | | | D | 3 |
| Alkyl (C12-C14) polyglucoside solution (55% or less) | 2249 | | | | | | | | **CAS No** | | 110615-47-9 | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alkyl(C12-C14)polyglucoside solution (max 55% active material) | 2137 | 3 | NI | 3 | R | 3 | 0 | 0 | 0 | (3) | 2 | 3 | | | D | 3 |
| Lauryl polyglucose (50% or less) | 416 | | | | | | | | **CAS No** | | 110615-47-9 | | | | | |
| Alkylsulphonic acid ester of phenol (MESAMOLL) | 1878 | 5 | NI | 5 | NR | 0 | NI | 0 | (0) | (0) | 0 | 0 | | | S | 0 |
| Alkyl sulphonic acid ester of phenol | 1701 | | | | | | | | **CAS No** | | 91082-17-6 | | | | | |
| Alkyltoluenes | 2374 | 0 | 2 | 2 | NR | 0 | NI | 0 | (0) | (1) | 0 | 1 | | | Fp | 2 |
| Alkyl (C18+) toluenes | 3148 | | | | | | | | **CAS No** | | | | | | | |
| Alkyl(C18-C28)toluenesulphonic acid (>90% in mineral oil) | 2429 | 0 | 4 | 4 | NR | 3 | NI | 0 | 0 | (3) | 2 | 3 | Ss | | Fp | 3 |
| Alkyl(C18-C28)toluenesulphonic acid | 3658 | | | | | | | | **CAS No** | | | | | | | |
| Alkyl(C18-C28)toluenesulphonic acid, calcium salts, borated (up to 70% in mineral oil) | 2404 | 0 | 4 | 4 | NR | 0 | NI | (0) | (0) | (1) | (1) | (1) | Ss | | S | 2 |
| Alkyl(C18-C28)toluenesulphonic acid, calcium salts, borated | 3661 | | | | | | | | **CAS No** | | | | | | | |
| Alkyl(C18-C28)toluenesulphonic acid, calcium salts, high overbase (up to 70% in mineral oil) | 2373 | (0) | (4) | (4) | (NR) | (0) | NI | 0 | 0 | (0) | 0 | 0 | Ss | | S | 2 |
| Alkyl (C18-C28) toluenesulphonic acid, calcium salts, high overbase | 3149 | | | | | | | | **CAS No** | | | | | | | |
| Alkyl(C18-C28)toluenesulphonic acid, calcium salts, low overbase (up to 60% in mineral oil) | 2409 | 0 | 4 | 4 | NR | 0 | NI | 0 | 0 | (2) | 2 | 0 | Ss | | Fp | 3 |
| Alkyl (C18-C28) toluenesulphonic acid, calcium salts, low overbase | 3685 | | | | | | | | **CAS No** | | | | | | | |
| Allyl alcohol | 28 | 0 | 0 | 0 | R | 4 | NI | 2 | 3 | 3 | 2 | 3 | A | | D | 3 |
| Allyl alcohol | 105 | | | | | | | | **CAS No** | | 107-18-6 | | | | | |
| Aluminium chloride/hydrogen chloride solution | 336 | Inorg | NI | 2 | Inorg | 3 | 1 | 1 | (0) | 3 | (3C) | 3 | | | D | 3 |
| Aluminium chloride (30% or less)/Hydrochloric acid (20% or less) solution | 110 | | | | | | | | **CAS No** | | | | | | | |
| Aluminium hydroxide, sodium hydroxide, sodium carbonate solution (40% or less) | 2438 | Inorg | 0 | 0 | Inorg | 3 | NI | 0 | 0 | (3) | 3B | (3) | | | D | 3 |
| Aluminium hydroxide, sodium hydroxide, sodium carbonate solution (40% or less) | 3807 | | | | | | | | **CAS No** | | | | | | | |
| Aluminium sulphate solution | 2205 | Inorg | Inorg | 2 | Inorg | 3 | 1 | 1 | (0) | (3) | (2) | (3) | | | D | 3 |
| Aluminium sulphate solution | 111 | | | | | | | | **CAS No** | | | | | | | |
| 2-(2-Aminoethoxy) ethanol | 75 | 0 | 0 | 0 | NR | 1 | 0 | 0 | 1 | (3) | 3 | 3 | | | D | 3 |
| 2-(2-Aminoethoxy) ethanol | 37 | | | | | | | | **CAS No** | | 929-06-6 | | | | | |
| Aminoethylethanolamine | 68 | 0 | 0 | 0 | NR | 1 | 0 | 0 | 0 | (3) | 3B | 2 | SsSr | | D | 3 |
| Aminoethyl ethanolamine | 112 | | | | | | | | **CAS No** | | 111-41-1 | | | | | |
| Aminoethylethanolamine/Aminoethyldiethanolamine solution | 74 | Inorg | 0 | 0 | NR | 1 | 0 | (0) | (0) | (3) | (3B) | (2) | SsSr | | D | 3 |
| Aminoethyldiethanolamine/Aminoethylethanolamine solution | 113 | | | | | | | | **CAS No** | | | | | | | |
| N-Aminoethylpiperazine | 88 | 0 | 0 | 0 | NR | 1 | NI | 0 | 2 | (3) | 3 | 3 | Ss | | D | 3 |
| N-Aminoethylpiperazine | 472 | | | | | | | | **CAS No** | | 140-31-8 | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2-Amino-2-(hydroxymethyl)-1,3-propanediol solution(40% or less) | 89 | 0 | NI | 0 | NI | 1 | NI | 0 | 0 | NI | NI | NI | | | D | NI |
| 2-Amino-2-hydroxymethyl-1,3-propanediol solution (40% or less) | 38 | | | | | | | | **CAS No** | | 77-86-1 | | | | | |
| 2-Amino-2-methyl-1-propanol | 90 | 0 | 0 | 0 | NR | 1 | NI | 0 | 0 | (3) | 3 | 3 | | | DE | 3 |
| 2-Amino-2-methyl-1-propanol | 39 | | | | | | | | **CAS No** | | 124-68-5 | | | | | |
| Ammonia (anhydrous and aqueous, 28% or less) | 91 | 0 | 0 | 0 | R | 3 | 2 | 1 | (2) | 3 | 3 | 3 | | | DE | 3 |
| Ammonia aqueous (28% or less) | 114 | | | | | | | | **CAS No** | | 7664-41-7 | | | | | |
| Ammonium bisulphite solution, greater than 15% | 1730 | NI | NI | NI | NI | 1 | NI | NI | NI | NI | 2 | 2 | | | D | 2 |
| Ammonium bisulphite solution (70% or less) | 115 | | | | | | | | **CAS No** | | 10192-30-0 | | | | | |
| Ammonium chloride solution (less than 25%) | 2388 | 0 | NI | 0 | Inorg | 1 | 0 | 0 | (0) | (2) | 2 | 2 | | | D | 2 |
| Ammonium chloride solution (less than 25%) (*) | 3411 | | | | | | | | **CAS No** | | 12125-02-9 | | | | | |
| Ammonium lignosulphonate (46% solution in water) | 2086 | 0 | NI | 0 | NR | 0 | NI | 0 | (0) | (0) | 0 | 0 | | | D | 0 |
| Ammonium lignosulphonate solutions | 118 | | | | | | | | **CAS No** | | 8061-53-0 | | | | | |
| Ammonium nitrate solutions | 1912 | Inorg | 0 | 0 | Inorg | 1 | NI | 0 | 0 | (2) | 1 | 2 | | | D | 2 |
| Ammonium nitrate solution (93% or less) | 119 | | | | | | | | **CAS No** | | | | | | | |
| Ammonium polyphosphate solution | 1764 | Inorg | 0 | 0 | Inorg | 1 | NI | 0 | 0 | 0 | 1 | 0 | | | D | 1 |
| Ammonium polyphosphate solution | 120 | | | | | | | | **CAS No** | | 10-34-0 | | | | | |
| Ammonium sulphate | 99 | 0 | 0 | 0 | Inorg | 1 | (0) | 0 | (0) | (0) | 0 | 0 | | | D | 0 |
| Ammonium sulphate solution | 121 | | | | | | | | **CAS No** | | 7783-20-2 | | | | | |
| Ammonium sulphide soln.(45% or less) | 310 | Inorg | 0 | 0 | Inorg | 3 | NI | 1 | 0 | (2) | 2 | 2 | N | | D | 2 |
| Ammonium sulphide solution (45% or less) | 122 | | | | | | | | **CAS No** | | 12124-99-1 | | | | | |
| Ammonium thiocyanate/ Ammonium thiosulphate solution | 1732 | Inorg | 0 | 0 | Inorg | 1 | NI | 1 | NI | NI | NI | NI | | | D | NI |
| Ammonium thiocyanate (25% or less)/Ammonium thiosulphate (20% or less) solution | 123 | | | | | | | | **CAS No** | | | | | | | |
| Ammonium thiosulphate solution (60% or less) | 312 | Inorg | 0 | 0 | Inorg | 1 | NI | 0 | (0) | (1) | (1) | (1) | | | D | 1 |
| Ammonium thiosulphate solution (60% or less) | 124 | | | | | | | | **CAS No** | | 7783-18-8 | | | | | |
| Amyl acetate | 255 | 2 | 2 | 2 | NR | 2 | NI | 0 | (0) | 0 | 1 | 1 | | NT | FED | 2 |
| Amyl acetate (all isomers) | 125 | | | | | | | | **CAS No** | | 628-63-7 | | | | | |
| tert-Amyl ethyl ether | 2428 | 3 | NI | 3 | NR | 1 | NI | 0 | (0) | 0 | 2 | 2 | | | E | 2 |
| tert-Amyl ethyl ether | 3623 | | | | | | | | **CAS No** | | | | | | | |
| tert-Amyl methyl ether | 2141 | 1 | NI | 1 | NI | 4 | NI | 1 | 0 | (2) | 0 | 1 | | | ED | 2 |
| tert-Amyl methyl ether | 2210 | | | | | | | | **CAS No** | | | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Amyl propionate | 1484 | 2 | NI | 2 | R | 2 | NI | 0 | 0 | (2) | 2 | 1 | | | F | 2 |
| n-Pentyl propionate | 484 | | | | | | | | **CAS No** | | 624-54-4 | | | | | |
| Aniline | 261 | 0 | 0 | 0 | R | 3 | 2 | 2 | 2 | 3 | 1 | 3 | CTSs | NT | FD | 3 |
| Aniline | 127 | | | | | | | | **CAS No** | | 62-53-3 | | | | | |
| Apple juice | 275 | 0 | NI | 0 | R | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | D | 0 |
| Apple juice | 130 | | | | | | | | **CAS No** | | | | | | | |
| Aryl polyolefin (C11-C50) (LOA) | 1979 | NI | NI | 0 | NR | 0 | NI | 0 | 0 | 0 | 0 | 0 | | | Fp | 2 |
| Aryl polyolefins (C11-C50) | 131 | | | | | | | | **CAS No** | | | | | | | |
| L-Aspartic acid, homopolymer, sodium salt (aqueous solution) | 2421 | 0 | 0 | 0 | NR | 0 | NI | 0 | (0) | 0 | 0 | 0 | | | D | 0 |
| L-Aspartic acid, homopolymer, sodium salt (aqueous solution) | 3697 | | | | | | | | **CAS No** | | | | | | | |
| Aviation alkylates (C8 paraffins and iso-paraffins BPt 95-120 Celcius) | 286 | (5) | NI | (5) | (R) | (4) | NI | 0 | 0 | (0) | (0) | (0) | | | FE | 2 |
| Aviation alkylates (C8 paraffins and iso-paraffins BPT 95 - 120°C) | 132 | | | | | | | | **CAS No** | | | | | | | |
| Aziridine polymer with methyloxirane (78% in diethylene glycol monoethyl ether) | 2436 | 0 | NI | 0 | NR | 2 | 0 | 0 | 0 | 0 | 1 | 0 | | | Fp | 2 |
| Aziridine polymer with methyloxirane (78% in diethylene glycol monoethyl ether) | 3751 | | | | | | | | **CAS No** | | | | | | | |
| Barium long chain alkaryl sulphonate (C11-C50) (LOA) | 1978 | 4 | NI | 4 | NR | 3 | NI | 2 | 0 | (2) | 0 | 0 | | | S | 2 |
| Barium long chain (C11-C50) alkaryl sulphonate | 2370 | | | | | | | | **CAS No** | | | | | | | |
| Benzene | 324 | 2 | 1 | 1 | R | 2 | NI | 1 | 0 | 0 | 2 | 2 | CTM | NT | E | 3 |
| Benzene and mixtures having 10% benzene or more (i) | 133 | | | | | | | | **CAS No** | | 71-43-2 | | | | | |
| Benzenepropanoic acid, 3,5-bis(1,1-dimethylethyl), 4-hydroxy-C7-C9 alcohols branched and linear | 2378 | 0 | 3 | 3 | NR | 3 | 0 | 0 | 0 | (0) | 0 | 0 | | | Fp | 2 |
| 3,5-bis(1,1-dimethylethyl)-4-hydroxybenzenepropanoic acid, (C7-C9)-branched alkyl esters | 3405 | | | | | | | | **CAS No** | | | | | | | |
| Benzene sulphonyl chloride | 320 | 1 | 1 | 1 | R | 3 | NI | 1 | (2) | (3) | 3 | 3 | Ss | | SD | 3 |
| Benzene sulphonyl chloride | 134 | | | | | | | | **CAS No** | | 98-09-9 | | | | | |
| 1,2,4-Benzene tricarboxylic acid, trioctyl ester | 1733 | 0 | 0 | 0 | NR | 0 | NI | 0 | (0) | 2 | 1 | 1 | | | Fp | 2 |
| Benzenetricarboxylic acid, trioctyl ester | 136 | | | | | | | | **CAS No** | | | | | | | |
| Benzyl acetate | 348 | 1 | NI | 1 | R | 3 | 1 | 1 | 0 | 2 | 1 | 1 | | | SD | 2 |
| Benzyl acetate | 138 | | | | | | | | **CAS No** | | 140-11-4 | | | | | |
| Benzyl alcohol | 349 | 1 | NI | 1 | R | 2 | NI | 1 | 1 | 2 | 2 | 2 | | | SD | 2 |
| Benzyl alcohol | 139 | | | | | | | | **CAS No** | | 100-51-6 | | | | | |
| Benzyl chloride | 352 | NI | 1 | 1 | R | 3 | 1 | 1 | (2) | 3 | 3 | 3 | CSsA | | S | 3 |
| Benzyl chloride | 140 | | | | | | | | **CAS No** | | 100-44-7 | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Bis(2-ethylhexyl) terephthalate | 2437 | 0 | 3 | 3 | R | 0 | 0 | 0 | 0 | (1) | 1 | 1 | | | Fp | 2 |
| Bis(2-ethylhexyl) terephthalate | 3752 | | | | | | | | **CAS No** | | | | | | | |
| N,N-Bis(2-hydroxyethyl)oleamide (LOA) | 2110 | 5 | NI | 5 | NR | NI | NI | 0 | 0 | (2) | 2 | 2 | | | Fp | 2 |
| N,N-bis(2-hydroxyethyl) oleamide | 2201 | | | | | | | | **CAS No** | | | | | | | |
| Bis[3-(triethoxysilyl)propyl]amine | 2444 | 1 | NI | 1 | R | 1 | NI | 0 | 0 | (2) | 2 | 2 | | | D | 2 |
| | 3823 | | | | | | | | **CAS No** | | 13497-18-2 | | | | | |
| Borax, anhydrous or hydrated, crude or refined | 359 | Inorg | 0 | 0 | Inorg | 1 | 0 | 0 | 0 | (1) | 1 | 1 | R | | S | 3 |
| Borax | 143 | | | | | | | | **CAS No** | | 1303-96-4 | | | | | |
| Boric acid | 360 | Inorg | 0 | 0 | Inorg | 1 | 0 | 0 | (0) | (1) | 1 | 1 | R | | S | 3 |
| Boric acid | 2254 | | | | | | | | **CAS No** | | 10043-35-3 | | | | | |
| Bromochloromethane | 2084 | 1 | 1 | 1 | NR | 1 | NI | 0 | 0 | 0 | 1 | 0 | | | SD | 1 |
| Bromochloromethane | 145 | | | | | | | | **CAS No** | | 74-97-5 | | | | | |
| 1-Bromopropane | 2229 | 2 | NI | 2 | NI | NI | NI | 0 | (0) | 0 | (2) | (2) | | | SD | 2 |
| 1-Bromopropane | 2696 | | | | | | | | **CAS No** | | | | | | | |
| Butanol | 381 | 0 | (0) | 0 | R | 0 | NI | 0 | 0 | 0 | 2 | 3 | | NT | D | 3 |
| n-Butyl alcohol | 474 | | | | | | | | **CAS No** | | 71-36-3 | | | | | |
| Butanol | 381 | 0 | (0) | 0 | R | 0 | NI | 0 | 0 | 0 | 2 | 3 | | NT | D | 3 |
| Butyl alcohol (all isomers) | 2216 | | | | | | | | **CAS No** | | 71-36-3 | | | | | |
| sec-Butanol | 383 | 0 | (0) | 0 | R | 0 | NI | 0 | 0 | 0 | 0 | 2 | | NT | D | 2 |
| sec-Butyl alcohol | 638 | | | | | | | | **CAS No** | | 78-92-2 | | | | | |
| tert-Butanol | 384 | 0 | 0 | 0 | NR | 1 | NI | 0 | 0 | 0 | 1 | 3 | | NT | D | 3 |
| tert-Butyl alcohol | 686 | | | | | | | | **CAS No** | | 75-65-0 | | | | | |
| 2-Butanone | 385 | 0 | NI | 0 | R | 1 | 0 | 0 | 0 | 1 | 2 | 2 | | | DE | 2 |
| Methyl ethyl ketone | 446 | | | | | | | | **CAS No** | | 78-93-3 | | | | | |
| Butene oligomer | 386 | 0 | NI | 0 | NR | (4) | 0 | 0 | 0 | 0 | 0 | 1 | | | FE | 2 |
| Butene oligomer | 146 | | | | | | | | **CAS No** | | | | | | | |
| Butyl acetate | 387 | 1 | NI | 1 | R | 2 | NI | 0 | 0 | 0 | 0 | 1 | | | FED | 2 |
| Butyl acetate (all isomers) | 147 | | | | | | | | **CAS No** | | 123-86-4 | | | | | |
| Butyl acrylate | 390 | 2 | NI | 2 | R | 3 | NI | 1 | 1 | 1 | 2 | 2 | SsA | | FED | 2 |
| Butyl acrylate (all isomers) | 148 | | | | | | | | **CAS No** | | 141-32-2 | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Butylamine | 392 | 0 | NI | 0 | R | 2 | NI | 2 | 2 | 3 | 3C | 3 | | | DE | 3 |
| Butylamine (all isomers) | 154 | | | | | | | | **CAS No** | | 109-73-9 | | | | | |
| Butyl benzene | 1774 | 4 | NI | 4 | NI | 4 | 1 | 0 | 0 | (2) | 2 | 1 | | | Fp | 2 |
| Butylbenzene (all isomers) | 155 | | | | | | | | **CAS No** | | 104-51-8 | | | | | |
| Butyl benzyl phthalate | 398 | 4 | 4 | 4 | R | 4 | 2 | 0 | 0 | (0) | (0) | (0) | R | | S | 3 |
| Butyl benzyl phthalate | 149 | | | | | | | | **CAS No** | | 85-68-7 | | | | | |
| Butyl butyrate | 399 | 2 | NI | 2 | (R) | 2 | NI | 0 | 0 | (1) | 1 | NI | | | FE | 2 |
| Butyl butyrate (all isomers) | 150 | | | | | | | | **CAS No** | | 109-21-7 | | | | | |
| Butyl/Decyl/Cetyl/Eicosyl methacrylate mixture | 2295 | (5) | NI | (5) | (R) | (3) | NI | 0 | 0 | 0 | 2 | 2 | Ss | | FE | 2 |
| Butyl/Decyl/Cetyl/Eicosyl methacrylate mixture | 153 | | | | | | | | **CAS No** | | | | | | | |
| Butylene glycol(s) | 402 | 0 | NI | 0 | R | 1 | NI | 1 | 0 | 0 | 0 | 0 | | | D | 1 |
| Butylene glycol | 156 | | | | | | | | **CAS No** | | 110-63-4 | | | | | |
| Butylene glycol methyl ether acetate | 953 | 1 | 1 | 1 | R | 3 | NI | 0 | (0) | (1) | 1 | 1 | | | FED | 1 |
| 3-Methoxybutyl acetate | 58 | | | | | | | | **CAS No** | | 4435-53-4 | | | | | |
| Butylene glycol monomethyl ether | 952 | 0 | NI | 0 | R | 1 | NI | 0 | 0 | (1) | 0 | 1 | | | D | 1 |
| 3-Methoxy-1-butanol | 57 | | | | | | | | **CAS No** | | 2517-43-3 | | | | | |
| 1,2-Butylene oxide | 403 | 0 | NI | 0 | NR | 2 | NI | 1 | 1 | 2 | 1 | 1 | C | | DE | 3 |
| 1,2-Butylene oxide | 8 | | | | | | | | **CAS No** | | 106-88-7 | | | | | |
| Butyl methacrylate | 409 | 2 | NI | 2 | NR | 1 | NI | 0 | 0 | 0 | 2 | 2 | Ss | | FE | 2 |
| Butyl methacrylate | 151 | | | | | | | | **CAS No** | | 97-88-1 | | | | | |
| Butyl octyl phthalate | 410 | 5 | NI | 5 | (R) | 0 | 2 | 0 | (0) | (1) | (1) | (1) | | | Fp | 2 |
| Butyl octyl phthalate | 2749 | | | | | | | | **CAS No** | | 84-78-6 | | | | | |
| Butyl phosphate/dibutyl phosphate mixture | 2434 | 2 | NI | 2 | R | 1 | 0 | 0 | (0) | (3) | 2 | 3 | | | D | 3 |
| Butyl phosphate/dibutyl phosphate mixture | 3749 | | | | | | | | **CAS No** | | | | | | | |
| Butyl propionate | 1483 | 2 | NI | 2 | R | 2 | NI | 0 | 0 | 0 | 1 | 1 | | | FED | 2 |
| n-Butyl propionate | 476 | | | | | | | | **CAS No** | | 590-01-2 | | | | | |
| Butyl stearate | 413 | 0 | NI | 0 | (R) | 0 | NI | 0 | NI | NI | 2 | NI | | | Fp | 2 |
| Butyl stearate | 152 | | | | | | | | **CAS No** | | 123-95-5 | | | | | |
| Butyraldehyde | 416 | 1 | NI | 1 | R | 2 | 0 | 0 | 1 | 0 | 3 | 3 | | | DE | 3 |
| Butyraldehyde (all isomers) | 157 | | | | | | | | **CAS No** | | 123-72-8 | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Butyric acid | 418 | 0 | NI | 0 | R | 2 | 0 | 0 | 0 | 0 | 3A | 3 | | | D | 3 |
| Butyric acid | 158 | | | | | | | | **CAS No** | | 107-92-6 | | | | | |
| Butyrolactone | 420 | 0 | NI | 0 | R | (3) | NI | 1 | (0) | 0 | 0 | 1 | C | | D | 3 |
| gamma-Butyrolactone | 360 | | | | | | | | **CAS No** | | 96-48-0 | | | | | |
| Calcium alkyl (long chain) salicylate (overbased) in mineral oil (LOA) | 70 | 0 | NI | 0 | NR | 2 | NI | 0 | 0 | (1) | (1) | (1) | Ss | | Fp | 3 |
| Calcium long-chain alkyl salicylate (C13+) | 166 | | | | | | | | **CAS No** | | | | | | | |
| Calcium alkyl phenol sulphide,polyolefin phosphorosulphide mixture (LOA) | 1435 | NI | NI | NI | NR | 4 | NI | 0 | 0 | (0) | NI | NI | | | NI | NI |
| Calcium alkyl (C9) phenol sulphide/Polyolefin phosphorosulphide mixture | 160 | | | | | | | | **CAS No** | | | | | | | |
| Calcium alkyl salicylate | 2015 | 3 | NI | 3 | NR | 2 | NI | 0 | 0 | (2) | 2 | 2 | | | Fp | 2 |
| Calcium alkyl (C10-C28) salicylate | 3152 | | | | | | | | **CAS No** | | | | | | | |
| Calcium bromide (solutions) | 427 | Inorg | NI | 0 | Inorg | 0 | 0 | (0) | (0) | (2) | (1) | (2) | | | D | 2 |
| Drilling brines, including:calcium bromide solution, calcium chloride solution and sodium chloride solution | 308 | | | | | | | | **CAS No** | | 7789-41-5 | | | | | |
| Calcium carbonate slurry | 2016 | Inorg | 0 | 0 | Inorg | 0 | NI | 0 | (0) | (0) | 0 | 0 | | | S | 0 |
| Calcium carbonate slurry | 161 | | | | | | | | **CAS No** | | 471-34-1 | | | | | |
| Calcium hydroxide | 431 | Inorg | 0 | 0 | Inorg | 2 | NI | 0 | (0) | (2) | 1 | 2 | | | S | 2 |
| Calcium hydroxide slurry | 162 | | | | | | | | **CAS No** | | 1305-62-0 | | | | | |
| Calcium hypochlorite solutions containing 15% Ca(OCl)2 or more | 432 | Inorg | 0 | 0 | Inorg | 5 | NI | 1 | 0 | 2 | 3A | 3 | | | D | 3 |
| Calcium hypochlorite solution (more than 15%) | 164 | | | | | | | | **CAS No** | | 7778-54-3 | | | | | |
| Calcium hypochlorite solutions containing less than 15% but more than 1.5% Ca(OCl)2 | 2073 | Inorg | 0 | 0 | Inorg | (4) | NI | 1 | 0 | 2 | 3A | 3 | | | D | 3 |
| Calcium hypochlorite solution (15% or less) | 163 | | | | | | | | **CAS No** | | 7778-54-3 | | | | | |
| Calcium lignosulphonate (52% solution in water) | 2087 | 0 | NI | 0 | NR | 0 | NI | 0 | (0) | (0) | 0 | 0 | | | D | 0 |
| Calcium lignosulphonate solutions | 165 | | | | | | | | **CAS No** | | 8061-52-7 | | | | | |
| Calcium long chain alkaryl sulphonate (C11-C50) (LOA) | 1973 | NI | 0 | 0 | NR | 0 | NI | 0 | 0 | (1) | 1 | 1 | | | FD | 1 |
| Calcium alkaryl sulphonate (C11-C50) | 169 | | | | | | | | **CAS No** | | | | | | | |
| Calcium long chain alkyl (C5-C10) phenate (LOA) | 2106 | 0 | NI | 0 | NR | 2 | NI | 0 | 0 | (0) | 0 | 0 | | | FD | 1 |
| Calcium long-chain alkyl(C5-C10) phenate | 168 | | | | | | | | **CAS No** | | | | | | | |
| Calcium long chain alkyl (C11-C40) phenate (LOA) | 2097 | 0 | NI | 0 | NR | 0 | NI | 0 | 0 | (1) | 1 | 1 | | | Fp | 2 |
| Calcium long-chain alkyl(C11-C40) phenate | 167 | | | | | | | | **CAS No** | | | | | | | |
| Calcium long chain alkyl phenate sulphide (C8-C40) (LOA) | 1756 | 0 | NI | 0 | NR | 1 | NI | 0 | 0 | (1) | 1 | 1 | | | Fp | 2 |
| Calcium long-chain alkyl phenate sulphide (C8-C40) | 170 | | | | | | | | **CAS No** | | | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Calcium long-chain alkyl phenolic amine (C8-C40) | 1728 | NI | NI | NI | NR | 0 | NI | 0 | 0 | (1) | 1 | (1) | | | Fp | 2 |
| | 171 | | | | | | | | **CAS No** | | | | | | | |
| Calcium long-chain alkyl (C18-C28) salicylate | 2383 | 0 | NI | 0 | NR | 0 | NI | 0 | 0 | (1) | 1 | 0 | Ss | | Fp | 3 |
| Calcium long-chain alkyl (C18-C28) salicylate | 3426 | | | | | | | | **CAS No** | | | | | | | |
| Calcium nitrate | 1803 | Inorg | 0 | 0 | Inorg | 0 | NI | 0 | (0) | (1) | 1 | 1 | | | D | 1 |
| Calcium nitrate solutions (50% or less) | 172 | | | | | | | | **CAS No** | | 10124-37-5 | | | | | |
| Calcium nitrate/ Magnesium nitrate/Potassium chloride solution | 1734 | Inorg | 0 | 0 | Inorg | 1 | 0 | 0 | (0) | (1) | (1) | 1 | | | D | 1 |
| Calcium nitrate/Magnesium nitrate/Potassium chloride solution | 173 | | | | | | | | **CAS No** | | | | | | | |
| Camelina oil | 2440 | (0) | NI | (0) | (R) | (0) | (0) | (0) | (0) | (1) | (0) | (1) | | | Fp | 2 |
| Camelina oil | 3767 | | | | | | | | **CAS No** | | 68956-68-3 | | | | | |
| Camphor oil, white | 1897 | NI | NI | NI | NI | NI | NI | 2 | NI | (2) | 1 | NI | | (T) | FE | 2 |
| Camphor oil | 174 | | | | | | | | **CAS No** | | 8008-51-3 | | | | | |
| Caprolactam | 436 | 0 | NI | 0 | R | 1 | 0 | 1 | 1 | 2 | 1 | 2 | | | D | 3 |
| epsilon-Caprolactam (molten or aqueous solutions) | 310 | | | | | | | | **CAS No** | | 105-60-2 | | | | | |
| Carbolic oil | 437 | (3) | 3 | (3) | (NR) | (3) | (1) | 2 | 2 | 3 | 3 | 3 | ATNCM | | FED | 3 |
| Carbolic oil | 176 | | | | | | | | **CAS No** | | | | | | | |
| Carbon disulphide | 439 | 2 | 1 | 1 | NR | 3 | NI | 2 | (3) | 4 | 3A | 3 | RN | | SD | 3 |
| Carbon disulphide | 177 | | | | | | | | **CAS No** | | 75-15-0 | | | | | |
| Cashew nut shell oil (untreated) | 443 | 0 | NI | 0 | R | 0 | NI | (0) | (0) | (2) | 2 | (2) | Ss | | Fp | 3 |
| Cashew nut shell oil (untreated) | 179 | | | | | | | | **CAS No** | | | | | | | |
| Castor oil (containing less than 10% free fatty acids) | 2314 | 0 | NI | 0 | R | (2) | NI | 0 | 0 | (1) | 1 | 1 | | | Fp | 2 |
| Castor oil | 3044 | | | | | | | | **CAS No** | | | | | | | |
| Cesium Formate, drilling brines | 2384 | 0 | 3 | 3 | Inorg | 2 | NI | 1 | 0 | (2) | 2 | 2 | | | D | 2 |
| Cesium formate solution (*) | 3421 | | | | | | | | **CAS No** | | 3495-36-1 | | | | | |
| Cetyl/Eicosyl methacrylate (mixture) | 445 | 0 | NI | 0 | (NR) | (0) | NI | 0 | (0) | (1) | (1) | (1) | | | Fp | 2 |
| Cetyl/Eicosyl methacrylate mixture | 180 | | | | | | | | **CAS No** | | | | | | | |
| Chlorinated paraffins (C18 and above) with any level of chlorine | 2024 | 0 | 4 | 4 | NR | 0 | 2 | 0 | 0 | (1) | (1) | (1) | C | | S | 3 |
| Chlorinated paraffins (C18+) with any level of chlorine | 183 | | | | | | | | **CAS No** | | | | | | | |
| Chlorinated paraffins (C10-C13) with 60% chlorine or more | 2021 | 5 | 5 | 5 | NR | 5 | 2 | 0 | 0 | (1) | 1 | 1 | C | | S | 3 |
| Chlorinated paraffins (C10-C13) | 181 | | | | | | | | **CAS No** | | | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chlorinated paraffins (C10- C13) with less than 60% chlorine | 2020 | 5 | 5 | 5 | NR | 5 | 3 | (0) | (0) | (1) | (1) | (1) | C | | S | 3 |
| Chlorinated paraffins (C10-C13) (60% chlorine or less) | 2832 | | | | | | | | **CAS No** | | | | | | | |
| Chlorinated paraffins (C14-C17) with less than 1% shorter chain length | 2112 | 5 | 4 | 4 | NR | 6 | 3 | 0 | 0 | (2) | 2 | 2 | C | | S | 3 |
| Chlorinated paraffins (C14-C17) (with 50% chlorine or more, and less than 1% C13 or shorter chains) | 182 | | | | | | | | **CAS No** | | | | | | | |
| Chloroacetic acid | 450 | 0 | NI | 0 | R | 2 | 0 | 2 | 3 | (4) | 3C | 3 | A | | D | 3 |
| Chloroacetic acid (80% or less) | 184 | | | | | | | | **CAS No** | | 79-11-8 | | | | | |
| Chlorobenzene | 456 | 2 | 2 | 2 | NR | 3 | 0 | 1 | 0 | 2 | 2 | 0 | | | S | 2 |
| Chlorobenzene | 185 | | | | | | | | **CAS No** | | 108-90-7 | | | | | |
| Chlorohydrins | 463 | 0 | NI | 0 | R | 0 | NI | (2) | (2) | (3) | (3A) | 3 | C | | D | 3 |
| Chlorohydrins (crude) | 187 | | | | | | | | **CAS No** | | 96-24-2 | | | | | |
| N-(3-Chloro-2-hydroxypropyl) trimethylammonium chloride solution (75% or less) | 2286 | 0 | 0 | 0 | NR | 1 | NI | 0 | 0 | (2) | 0 | (2) | C | | D | 3 |
| N-(3-Chloro-2-hydroxypropyl)trimethyl ammonium chloride solution (75% or less) | 2579 | | | | | | | | **CAS No** | | | | | | | |
| 4-Chloro-2-methylphenoxyacetic acid, dimethylamine salt solution | 1536 | 2 | NI | 2 | NI | 2 | NI | 1 | 0 | 2 | 1 | 1 | | | S | 2 |
| 4-Chloro-2-methylphenoxyacetic acid, dimethylamine salt solution | 62 | | | | | | | | **CAS No** | | | | | | | |
| Chloronitrobenzenes | 467 | 2 | 2 | 2 | NR | 3 | NI | 2 | 2 | 2 | 1 | 1 | | | S | 2 |
| o-Chloronitrobenzene | 533 | | | | | | | | **CAS No** | | 25167-93-5 | | | | | |
| 1-(4-Chlorophenyl)-4,4-dimethyl-3-pentanone | 1772 | 3 | 3 | 3 | NR | 3 | NI | 0 | 0 | (1) | 1 | 0 | | | S | 1 |
| 1-(4-Chlorophenyl)-4,4- dimethyl-pentan-3-one | 21 | | | | | | | | **CAS No** | | | | | | | |
| 2-Chloropropionic acid | 474 | 0 | NI | 0 | R | 1 | NI | 1 | (3) | 2 | 3A | 3 | | | D | 3 |
| 2- or 3-Chloropropionic acid | 36 | | | | | | | | **CAS No** | | 598-78-7 | | | | | |
| 3-Chloropropylene | 478 | 1 | 1 | 1 | R | 3 | NI | 1 | 0 | 2 | 1 | 3 | T | | E | 3 |
| Allyl chloride | 106 | | | | | | | | **CAS No** | | 107-05-1 | | | | | |
| Chlorosulphonic acid | 479 | Inorg | 0 | 0 | Inorg | 2 | NI | (2) | (3) | 4 | 3C | 3 | | | D | 3 |
| Chlorosulphonic acid | 188 | | | | | | | | **CAS No** | | 7790-94-5 | | | | | |
| m-Chlorotoluene | 481 | 3 | NI | 3 | NR | 2 | NI | 2 | 0 | (2) | 1 | 1 | | | S | 2 |
| m-Chlorotoluene | 426 | | | | | | | | **CAS No** | | 108-41-8 | | | | | |
| o-Chlorotoluene | 480 | 3 | 3 | 3 | NR | 3 | 1 | 0 | 0 | 0 | 1 | 1 | | | S | 1 |
| o-Chlorotoluene | 534 | | | | | | | | **CAS No** | | 95-49-8 | | | | | |
| o-Chlorotoluene | 480 | 3 | 3 | 3 | NR | 3 | 1 | 0 | 0 | 0 | 1 | 1 | | | S | 1 |
| Chlorotoluenes (mixed isomers) | 189 | | | | | | | | **CAS No** | | 95-49-8 | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| p-Chlorotoluene | 482 | 3 | 3 | 3 | NR | 3 | 0 | 0 | 0 | 0 | 1 | 1 | | | S | 2 |
| p-Chlorotoluene | 551 | | | | | | | | **CAS No** | | 106-43-4 | | | | | |
| Choline chloride, solutions | 485 | 0 | NI | 0 | R | 1 | NI | 0 | (0) | (0) | 0 | 0 | | | D | 0 |
| Choline chloride solutions | 190 | | | | | | | | **CAS No** | | 67-48-1 | | | | | |
| Citric acid | 493 | 0 | NI | 0 | R | 1 | 0 | 0 | (0) | (3) | 1 | 3 | | | D | 3 |
| Citric acid (70% or less) | 748 | | | | | | | | **CAS No** | | 77-92-9 | | | | | |
| Citric juices | 494 | 0 | 0 | 0 | Inorg | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | D | 0 |
| Water | 740 | | | | | | | | **CAS No** | | | | | | | |
| Clay | 495 | Inorg | 0 | 0 | Inorg | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | S | 0 |
| Clay slurry | 191 | | | | | | | | **CAS No** | | | | | | | |
| Coal slurry | 498 | Inorg | 0 | 0 | Inorg | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | S | 0 |
| Coal slurry | 192 | | | | | | | | **CAS No** | | | | | | | |
| Coal tar | 499 | (4) | 4 | 4 | NR | 3 | 1 | 0 | 0 | 0 | 2 | 2 | CMR | (T) | S | 3 |
| Coal tar | 193 | | | | | | | | **CAS No** | | 8007-45-2 | | | | | |
| Coal tar naphtha | 500 | 3 | NI | 3 | NR | 3 | NI | 0 | 0 | (1) | 1 | 1 | C | (T) | FE | 3 |
| Coal tar naphtha solvent | 194 | | | | | | | | **CAS No** | | 8030-30-6 | | | | | |
| Coal tar pitch (molten) | 491 | 3 | (3) | (3) | NR | (4) | (2) | 0 | 0 | (1) | 1 | 0 | CM | | S | 3 |
| Coal tar pitch (molten) | 195 | | | | | | | | **CAS No** | | 65996-93-2 | | | | | |
| Cobalt naphthenate in solvent naphtha | 501 | NI | NI | NI | NR | 3 | NI | 0 | (0) | (1) | NI | 1 | C | | FE | 3 |
| Cobalt naphthenate in solvent naphtha | 196 | | | | | | | | **CAS No** | | | | | | | |
| Cocoa butter | 2342 | 0 | NI | 0 | R | 0 | NI | (0) | (0) | (1) | (0) | (1) | | | Fp | 2 |
| Cocoa butter | 3096 | | | | | | | | **CAS No** | | | | | | | |
| Coconut acid oil | 2370 | 0 | 0 | 0 | R | 3 | NI | (0) | (0) | (1) | (1) | (1) | | | Fp | 2 |
| Coconut acid oil | 3139 | | | | | | | | **CAS No** | | | | | | | |
| Coconut fatty acid distillate | 2366 | 0 | NI | 0 | R | (3) | NI | 0 | (0) | (1) | (1) | (1) | | | Fp | 2 |
| Coconut fatty acid distillate | 3130 | | | | | | | | **CAS No** | | | | | | | |
| Coconut oil | 503 | 0 | NI | 0 | R | 1 | NI | 0 | (0) | (1) | 0 | (1) | | | Fp | 2 |
| Coconut oil | 2772 | | | | | | | | **CAS No** | | 8001-31-8 | | | | | |
| Coconut oil fatty acid | 505 | 0 | 0 | 0 | (R) | (3) | NI | 0 | (0) | (1) | (1) | (1) | | | Fp | 2 |
| Coconut oil fatty acid | 197 | | | | | | | | **CAS No** | | 61788-47-4 | | | | | |

| EHS Name<br>TRN Name | EHS<br>TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Coconut oil fatty acid methyl ester | 506 | 5 | 0 | 0 | R | 0 | NI | (0) | (0) | (0) | (0) | (1) | | | Fp | 2 |
| Coconut oil fatty acid methyl ester | 198 | | | | | | | | **CAS No** | | 61788-59-8 | | | | | |
| Copper salt of long chain(>C17) alkanoic acid (LOA) | 2111 | 0 | NI | 0 | (R) | 2 | NI | 0 | 0 | (0) | 0 | 0 | | | Fp | 2 |
| Copper salt of long chain (C17+) alkanoic acid | 2214 | | | | | | | | **CAS No** | | | | | | | |
| Corn oil | 521 | 0 | NI | 0 | R | (2) | NI | 0 | (0) | (1) | 1 | 1 | | | Fp | 2 |
| Corn Oil | 2781 | | | | | | | | **CAS No** | | 8001-30-7 | | | | | |
| Cotton seed oil | 523 | 0 | NI | 0 | R | (2) | NI | (0) | (0) | (1) | 0 | 1 | | | Fp | 2 |
| Cotton seed oil | 2783 | | | | | | | | **CAS No** | | 8001-29-4 | | | | | |
| Creosote (coal tar) | 524 | (4) | (4) | (4) | NR | 4 | (2) | 1 | 0 | 2 | 2 | 1 | CM | (T) | S | 3 |
| Creosote (coal tar) | 199 | | | | | | | | **CAS No** | | 8001-58-9 | | | | | |
| Creosote (wood tar) | 525 | NI | NI | NI | NR | 5 | NI | 1 | 0 | 2 | 2 | 1 | CM | (T) | SD | 3 |
| Creosote (wood) | 200 | | | | | | | | **CAS No** | | 8021-39-4 | | | | | |
| Cresol/Phenol/Xylenol mixture | 2471 | (2) | (2) | (2) | R | (3) | (1) | 1 | 2 | 3 | 3B | 3 | | | SD | 3 |
| | 3673 | | | | | | | | **CAS No** | | | | | | | |
| Cresols (mixed isomers) | 527 | 2 | 2 | 2 | R | 3 | (1) | 2 | 2 | 4 | 3A | 3 | | T | SD | 3 |
| Cresols (all isomers) | 201 | | | | | | | | **CAS No** | | 1319-77-3 | | | | | |
| Cresylic acids, dephenolized | 1875 | 2 | 2 | 2 | R | 3 | 0 | (2) | (2) | (3) | (3A) | (3) | | (T) | S | 3 |
| Cresylic acid, dephenolized | 202 | | | | | | | | **CAS No** | | | | | | | |
| Cresylic acid, sodium salt solution | 1914 | (2) | (2) | (2) | (R) | (3) | (0) | 1 | (1) | (3) | 3 | 3 | TCM | (T) | D | 3 |
| Cresylic acid, sodium salt solution | 203 | | | | | | | | **CAS No** | | | | | | | |
| Crotonaldehyde | 528 | 0 | NI | 0 | NR | 4 | 1 | 2 | 4 | 4 | 2 | 3 | | | D | 3 |
| Crotonaldehyde | 204 | | | | | | | | **CAS No** | | 4170-30-3 | | | | | |
| Crude Piperazine | 2331 | 0 | NI | 0 | R | 2 | NI | (1) | (2) | (3) | 3 | 3 | SsSr | | D | 3 |
| Crude Piperazine | 2810 | | | | | | | | **CAS No** | | | | | | | |
| Crude Tall Oil | 2357 | 4 | NI | 4 | R | 2 | 0 | 0 | 0 | (0) | 0 | 0 | Ss | | Fp | 3 |
| Tall oil, crude | 3118 | | | | | | | | **CAS No** | | | | | | | |
| 1,5,9-Cyclododecatriene | 534 | 5 | 5 | 5 | NR | 4 | NI | 0 | 0 | 1 | 2 | 1 | A | | F | 3 |
| 1,5,9-Cyclododecatriene | 17 | | | | | | | | **CAS No** | | 4904-61-4 | | | | | |
| Cycloheptane | 535 | 4 | NI | 4 | (NR) | 4 | NI | (0) | 0 | (1) | (0) | (1) | | | FE | 2 |
| Cycloheptane | 205 | | | | | | | | **CAS No** | | 291-64-5 | | | | | |

| EHS Name<br>TRN Name | EHS<br>TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cyclohexane | 536 | 3 | 3 | 3 | NR | 3 | NI | 0 | 0 | 1 | 0 | 1 | | | E | 2 |
| Cyclohexane | 206 | | | | | | | | **CAS No** | | 110-82-7 | | | | | |
| Cyclohexane-1,2-dicarboxylic acid, diisononyl ester | 2472 | 0 | 3 | 3 | R | 0 | 0 | 0 | 0 | (1) | 1 | 0 | | | Fp | 2 |
| Cyclohexane-1,2-dicarboxylic acid, diisononyl ester | 3915 | | | | | | | | **CAS No** | | 166412-78-8 | | | | | |
| Cyclohexane oxidation products, sodium salts solution | 2458 | 0 | NI | 0 | Inorg | 1 | 0 | 0 | (0) | (0) | 0 | 0 | | | D | 0 |
| Cyclohexane oxidation products, sodium salts solution | 3739 | | | | | | | | **CAS No** | | | | | | | |
| Cyclohexanol | 537 | 1 | NI | 1 | R | 2 | NI | 0 | 0 | 0 | 2 | 2 | | | Fp | 2 |
| Cyclohexanol | 207 | | | | | | | | **CAS No** | | 108-93-0 | | | | | |
| Cyclohexanone | 539 | 0 | 1 | 1 | R | 1 | 0 | 1 | 1 | 1 | 2 | 2 | | | FE | 2 |
| Cyclohexanone | 208 | | | | | | | | **CAS No** | | 108-94-1 | | | | | |
| Cyclohexanone/Cyclohexanol mixture | 1436 | 1 | 1 | 1 | R | 2 | NI | 1 | 1 | 1 | 2 | 2 | | | FED | 2 |
| Cyclohexanone, Cyclohexanol mixture | 209 | | | | | | | | **CAS No** | | | | | | | |
| Cyclohexyl acetate | 541 | 2 | NI | 2 | (R) | (2) | NI | 0 | 0 | (2) | 2 | 1 | | | FED | 2 |
| Cyclohexyl acetate | 210 | | | | | | | | **CAS No** | | 622-45-7 | | | | | |
| Cyclohexylamine | 542 | 1 | NI | 1 | R | 2 | NI | 2 | 2 | 3 | 3 | 3 | | | D | 3 |
| Cyclohexylamine | 211 | | | | | | | | **CAS No** | | 108-91-8 | | | | | |
| 1,3-Cyclopentadiene dimer (molten) | 545 | 3 | 3 | 3 | NR | 3 | NI | 2 | 0 | 2 | 2 | 2 | | | Fp | 2 |
| 1,3-Cyclopentadiene dimer (molten) | 11 | | | | | | | | **CAS No** | | 77-73-6 | | | | | |
| Cyclopentane | 546 | 3 | NI | 3 | NR | 3 | NI | (0) | (0) | 0 | 1 | (1) | | | E | 2 |
| Cyclopentane | 212 | | | | | | | | **CAS No** | | 287-92-3 | | | | | |
| Cyclopentene | 547 | 2 | NI | 2 | (R) | 3 | NI | 1 | 1 | 0 | 2 | (0) | A | | E | 2 |
| Cyclopentene | 213 | | | | | | | | **CAS No** | | 142-29-0 | | | | | |
| Decahydronaphthalene | 551 | 4 | 4 | 4 | NR | 3 | NI | 0 | 0 | 2 | 2 | 1 | | | F | 1 |
| Decahydronaphthalene | 214 | | | | | | | | **CAS No** | | 91-17-8 | | | | | |
| Decane | 554 | 5 | NI | 5 | R | 0 | 0 | 0 | 0 | 0 | 1 | 0 | | | F | 1 |
| Decane | 2620 | | | | | | | | **CAS No** | | 124-18-5 | | | | | |
| Decanoic acid | 555 | 4 | NI | 4 | R | 4 | 1 | 0 | 0 | (2) | 2 | 2 | | | Fp | 2 |
| Decanoic acid | 215 | | | | | | | | **CAS No** | | 334-48-5 | | | | | |
| 1-Decene | 558 | 5 | NI | 5 | R | 4 | 2 | 0 | 0 | 0 | 2 | 0 | A | | F | 3 |
| Decene | 216 | | | | | | | | **CAS No** | | 872-05-9 | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Decyl acetate | 1767 | 4 | NI | 4 | NI | NI | NI | 0 | 0 | (1) | (1) | (1) | | | F | 1 |
| Decyl acetate | 217 | | | | | | | | **CAS No** | | 112-17-4 | | | | | |
| Decyl acrylate | 559 | 5 | NI | 5 | (R) | 5 | NI | 0 | 0 | (2) | 2 | 1 | | | Fp | 2 |
| Decyl acrylate | 218 | | | | | | | | **CAS No** | | 2156-96-9 | | | | | |
| Decyloxytetrahydrothiophene dioxide | 1859 | 3 | NI | 3 | NR | 4 | NI | 0 | 0 | (1) | 1 | 0 | | | Fp | 2 |
| Decyloxytetrahydrothiophene dioxide | 220 | | | | | | | | **CAS No** | | | | | | | |
| Dextrose solution | 562 | 0 | 0 | 0 | R | 0 | NI | 0 | 0 | 0 | 0 | (0) | | | D | 0 |
| Dextrose solution | 221 | | | | | | | | **CAS No** | | 50-99-7 | | | | | |
| Dextrose solution | 562 | 0 | 0 | 0 | R | 0 | NI | 0 | 0 | 0 | 0 | (0) | | | D | 0 |
| Glucose solution | 361 | | | | | | | | **CAS No** | | 50-99-7 | | | | | |
| Diacetone alcohol | 563 | 0 | NI | 0 | R | 1 | 0 | 0 | 0 | (2) | 2 | 2 | | | D | 2 |
| Diacetone alcohol | 226 | | | | | | | | **CAS No** | | 123-42-2 | | | | | |
| Dialkyldiphenylamines (LOA) | 1852 | 5 | NI | 5 | NR | 1 | 0 | 0 | 0 | (0) | 0 | 0 | | | FD | 0 |
| Dialkyl (C8-C9) diphenylamines | 2255 | | | | | | | | **CAS No** | | | | | | | |
| Dialkyl (C9 - C10) phthalates | 2359 | (0) | (0) | (0) | (R) | (0) | (0) | (0) | (0) | (1) | (1) | (1) | | | Fp | 2 |
| Dialkyl (C9 - C10) phthalates | 3121 | | | | | | | | **CAS No** | | | | | | | |
| Dialkyl phthalates C9-C13 | 566 | (0) | (4) | (4) | (NR) | (0) | (2) | (0) | (0) | (1) | (1) | (1) | R | | Fp | 3 |
| Dialkyl (C7-C13) phthalates | 227 | | | | | | | | **CAS No** | | | | | | | |
| 2,6-Diaminohexanoic acid phosphonate mixed salts solution | 2469 | 1 | NI | 1 | NR | 1 | (0) | (1) | (1) | (3) | (3) | (3) | T | | D | 3 |
| | 3989 | | | | | | | | **CAS No** | | | | | | | |
| Diammonium hydrogen phosphate | 98 | 0 | 0 | 0 | Inorg | 1 | NI | 0 | 0 | (0) | (1) | (1) | | | D | 1 |
| Ammonium hydrogen phosphate solution | 117 | | | | | | | | **CAS No** | | 7783-28-0 | | | | | |
| Dibromomethane | 574 | 1 | NI | 1 | NR | (2) | NI | 1 | 0 | 0 | (2) | (2) | | | SD | 2 |
| Dibromomethane | 228 | | | | | | | | **CAS No** | | 74-95-3 | | | | | |
| Di-n-butylamine | 577 | 2 | NI | 2 | R | 3 | NI | 2 | 2 | 3 | 3 | 3 | | | FD | 3 |
| Dibutylamine | 231 | | | | | | | | **CAS No** | | 111-92-2 | | | | | |
| Di-butyl ether | 578 | 3 | 3 | 3 | NR | 2 | NI | 0 | 0 | 0 | 1 | 1 | | | FE | 2 |
| n-Butyl ether | 475 | | | | | | | | **CAS No** | | 142-96-1 | | | | | |
| Dibutyl hydrogen phosphonate | 1857 | 1 | NI | 1 | NI | 2 | NI | 0 | 0 | (3) | 3 | 3 | | | F | 3 |
| Dibutyl hydrogen phosphonate | 229 | | | | | | | | **CAS No** | | 1809-19-4 | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2,4-Di-tert-butyl phenol | 2083 | 5 | 4 | 4 | NR | 4 | NI | NI | NI | NI | NI | NI | | | NI | NI |
| 2,4-Di-tert-butylphenol | 2339 | | | | | | | | **CAS No** | | 96-76-4 | | | | | |
| 2,6-Di-tert-butyl phenol | 2082 | 4 | NI | 4 | NR | 4 | NI | 0 | 0 | (1) | 1 | 1 | | | Fp | 2 |
| 2,6-Di-tert-butylphenol | 2250 | | | | | | | | **CAS No** | | 128-39-2 | | | | | |
| Di-n-butyl phthalate | 582 | 4 | 4 | 4 | R | 4 | 1 | 0 | 0 | 1 | 0 | 1 | R | | S | 3 |
| Dibutyl phthalate | 230 | | | | | | | | **CAS No** | | 84-74-2 | | | | | |
| Dibutyl terephthalate | 2430 | 5 | (3) | (3) | R | 4 | 2 | 0 | 0 | (0) | 0 | 0 | | | S | 0 |
| Dibutyl terephthalate | 3596 | | | | | | | | **CAS No** | | | | | | | |
| Dichlorobenzene (all isomers) | 333 | 3 | 4 | 4 | NR | 3 | 1 | 1 | 0 | 1 | (2) | 2 | CMR | T | S | 3 |
| Dichlorobenzene (all isomers) | 232 | | | | | | | | **CAS No** | | | | | | | |
| 3,4-Dichlorobut-1-ene | 2079 | 2 | 2 | 2 | NR | 3 | NI | 1 | 0 | 2 | 2 | 3 | | | S | 3 |
| 3,4-Dichloro-1-butene | 56 | | | | | | | | **CAS No** | | 760-23-6 | | | | | |
| 1,1-Dichloroethane | 590 | 1 | NI | 1 | NR | 1 | NI | 1 | (1) | 0 | 2 | 2 | | | SD | 2 |
| 1,1-Dichloroethane | 4 | | | | | | | | **CAS No** | | 75-34-3 | | | | | |
| 1,2-Dichloroethane | 591 | 1 | 1 | 1 | NR | 2 | 0 | 1 | 0 | 2 | 1 | 2 | C | | SD | 3 |
| Ethylene dichloride | 330 | | | | | | | | **CAS No** | | 107-06-2 | | | | | |
| 1,6-Dichlorohexane | 593 | 3 | NI | 3 | NR | 3 | NI | 0 | (0) | (0) | 0 | 0 | | | S | 0 |
| 1,6-Dichlorohexane | 19 | | | | | | | | **CAS No** | | 2163-00-0 | | | | | |
| Dichloromethane | 594 | 1 | 2 | 2 | NR | 1 | 0 | 1 | 0 | 0 | 2 | 2 | C | | SD | 3 |
| Dichloromethane | 234 | | | | | | | | **CAS No** | | 75-09-2 | | | | | |
| 2,4-Dichlorophenol | 596 | 3 | 2 | 2 | NR | 3 | 2 | 3 | 2 | 3 | 3 | 3 | | T | S | 3 |
| 2,4-Dichlorophenol | 30 | | | | | | | | **CAS No** | | 120-83-2 | | | | | |
| 2,4-Dichlorophenoxyacetic acid, diethanolamine salt, solution | 599 | 0 | 1 | 1 | R | 2 | NI | 1 | 0 | (3) | 1 | 3 | | (T) | D | 3 |
| 2,4-Dichlorophenoxyacetic acid, diethanolamine salt solution | 32 | | | | | | | | **CAS No** | | | | | | | |
| 2,4-Dichlorophenoxyacetic acid, dimethylamine salt, 70 % or less solution | 600 | 0 | 1 | 1 | R | 3 | NI | 1 | 0 | (3) | 1 | 3 | | (T) | D | 3 |
| 2,4-Dichlorophenoxyacetic acid, dimethylamine salt solution (70% or less) | 33 | | | | | | | | **CAS No** | | | | | | | |
| 2,4-Dichlorophenoxyacetic acid, triisopropanolamine salt soln. | 602 | 0 | NI | 0 | R | 2 | NI | 1 | 0 | (3) | (1) | 3 | | (T) | D | 3 |
| 2,4-Dichlorophenoxyacetic acid, triisopropanolamine salt solution | 34 | | | | | | | | **CAS No** | | | | | | | |
| 1,1-Dichloropropane | 605 | 2 | 1 | 1 | NR | 2 | 1 | 0 | 0 | 1 | 1 | 1 | | | SD | 1 |
| 1,1-Dichloropropane | 5 | | | | | | | | **CAS No** | | 78-99-9 | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,2-Dichloropropane | 606 | 2 | 1 | 1 | NR | 2 | 0 | 1 | 0 | 2 | 2 | 2 | | | SD | 2 |
| 1,2-Dichloropropane | 9 | | | | | | | | **CAS No** | | 78-87-5 | | | | | |
| 1,3-Dichloropropane | 607 | 2 | 1 | 1 | NR | 2 | 1 | 0 | NI | NI | NI | NI | | | SD | NI |
| 1,3-Dichloropropane | 12 | | | | | | | | **CAS No** | | 142-28-9 | | | | | |
| Dichloropropane and dichloropropene, mixture | 608 | (2) | (1) | (1) | (NR) | (4) | (1) | 2 | 1 | 2 | 3 | 3 | CSs | | SD | 3 |
| Dichloropropene/Dichloropropane mixtures | 235 | | | | | | | | **CAS No** | | 8003-19-8 | | | | | |
| 1,3-Dichloropropene | 612 | 1 | NI | 1 | NR | 4 | 1 | 2 | 1 | 2 | 3 | 3 | CSs | | SD | 3 |
| 1,3-Dichloropropene | 13 | | | | | | | | **CAS No** | | 542-75-6 | | | | | |
| 2,2-Dichloropropionic acid | 609 | 2 | 2 | 2 | NR | 2 | NI | 1 | 0 | (3) | 3 | 3 | | | D | 3 |
| 2,2-Dichloropropionic acid | 28 | | | | | | | | **CAS No** | | 75-99-0 | | | | | |
| Di-(2-chloro-iso-propyl) ether | 615 | 2 | 2 | 2 | NR | 2 | NI | 2 | 0 | 2 | 0 | 2 | | | SD | 2 |
| 2,2'-Dichloroisopropyl ether | 25 | | | | | | | | **CAS No** | | 108-60-1 | | | | | |
| Dicyclopentadiene(80-90%)/Co-dimers(10-20%), mixtures | 2389 | 2 | 3 | 3 | NR | 3 | 0 | 2 | 0 | 3 | 2 | 2 | AR | | FED | 3 |
| Dicyclopentadiene, Resin Grade, 81-89% | 3559 | | | | | | | | **CAS No** | | | | | | | |
| Diethanolamine | 620 | 0 | NI | 0 | R | 1 | 0 | 1 | 0 | 0 | 2 | 3 | T | | D | 3 |
| Diethanolamine | 236 | | | | | | | | **CAS No** | | 111-42-2 | | | | | |
| Diethylamine | 621 | 0 | NI | 0 | R | 2 | NI | 1 | 2 | 3 | 3C | 3 | | | DE | 3 |
| Diethylamine | 240 | | | | | | | | **CAS No** | | 109-89-7 | | | | | |
| 2,6-Diethylaniline | 1437 | 3 | 3 | 3 | NR | 2 | NI | 1 | 1 | (2) | 1 | 2 | | | FD | 2 |
| 2,6-Diethylaniline | 35 | | | | | | | | **CAS No** | | 579-66-8 | | | | | |
| Diethyl benzene (mixed isomers) | 624 | 4 | 4 | 4 | NR | 3 | NI | 0 | (0) | (2) | 2 | 1 | | | F | 2 |
| Diethylbenzene | 242 | | | | | | | | **CAS No** | | 25340-17-4 | | | | | |
| Di-(2-ethylbutyl) phthalate | 625 | 5 | NI | 5 | R | 0 | 2 | 0 | 0 | (1) | 1 | (1) | R | | Fp | 3 |
| Di-(2-ethylbutyl) phthalate | 2750 | | | | | | | | **CAS No** | | 84-75-3 | | | | | |
| Diethylene glycol | 628 | 0 | NI | 0 | R | 0 | 0 | 1 | 0 | 2 | 1 | 1 | | | D | 2 |
| Diethylene glycol | 243 | | | | | | | | **CAS No** | | 111-46-6 | | | | | |
| Diethylene glycol di-n-butyl ether | 629 | 2 | NI | 2 | NI | 1 | NI | 0 | 0 | (1) | 1 | 1 | | | FD | 1 |
| Diethylene glycol dibutyl ether | 244 | | | | | | | | **CAS No** | | 112-73-2 | | | | | |
| Diethylene glycol diethyl ether | 630 | 0 | NI | 0 | NR | 0 | NI | 1 | 0 | (2) | (2) | 2 | | | D | 2 |
| Diethylene glycol diethyl ether | 245 | | | | | | | | **CAS No** | | 112-36-7 | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Diethylene glycol initiated polyoxypropylene diamine | 2353 | 0 | NI | 0 | NR | 2 | NI | 0 | 0 | (3) | 3B | (3) | | | D | 3 |
| Polyetheramine | 2946 | | | | | | | | **CAS No** | | | | | | | |
| Diethylene glycol initiated polyoxypropylene diamine | 2353 | 0 | NI | 0 | NR | 2 | NI | 0 | 0 | (3) | 3B | (3) | | | D | 3 |
| Diethylene glycol initiated polyoxypropylene diamine | 3113 | | | | | | | | **CAS No** | | | | | | | |
| Diethylene glycol phthalate | 1438 | 2 | NI | 2 | NR | 1 | NI | 0 | 0 | (2) | (1) | 2 | | | S | 2 |
| Diethylene glycol phthalate | 247 | | | | | | | | **CAS No** | | | | | | | |
| Diethylene triamine | 638 | 0 | 1 | 1 | (R) | 2 | NI | 1 | 3 | 3 | 3A | 3 | Ss | | FD | 3 |
| Diethylenetriamine | 248 | | | | | | | | **CAS No** | | 111-40-0 | | | | | |
| Diethylenetriamine pentaacetic acid, pentapotassium salt solution (40%) (**) | 2466 | 1 | NI | 1 | NR | 2 | NI | NI | NI | NI | NI | NI | | | D | NI |
| | 3929 | | | | | | | | **CAS No** | | | | | | | |
| Diethylenetriamine pentaacetic acid, pentasodium salt (40% solution in water) | 2076 | 0 | NI | 0 | NR | 0 | NI | 0 | (0) | (0) | 0 | 0 | | | D | 0 |
| Diethylenetriaminepentaacetic acid, pentasodium salt solution | 249 | | | | | | | | **CAS No** | | | | | | | |
| Diethylenetriamine pentamethylene phosphonic acid, pentasodium salt solution (47 %) (**) | 2467 | 0 | NI | 0 | R | 2 | NI | NI | NI | NI | NI | NI | | | D | NI |
| | 3930 | | | | | | | | **CAS No** | | | | | | | |
| Diethyl ethanolamine | 622 | 0 | NI | 0 | NR | 3 | NI | 1 | 1 | 2 | 3 | 3 | | | D | 3 |
| Diethylaminoethanol | 241 | | | | | | | | **CAS No** | | 100-37-8 | | | | | |
| Diethyl ether | 640 | 0 | 1 | 1 | NR | 0 | NI | 1 | 0 | 0 | 1 | 1 | | | DE | 2 |
| Diethyl ether | 237 | | | | | | | | **CAS No** | | 60-29-7 | | | | | |
| Di-(2-ethylhexyl) adipate | 641 | 0 | 2 | 2 | R | 4 | 2 | 0 | 0 | 0 | 1 | 1 | R | | Fp | 3 |
| Di-(2-ethylhexyl) adipate | 222 | | | | | | | | **CAS No** | | 103-23-1 | | | | | |
| Di-(2-ethylhexyl) phosphoric acid | 643 | (2) | 1 | 1 | NR | 2 | NI | 0 | 1 | (2) | 2 | 2 | | | Fp | 2 |
| Di-(2-ethylhexyl) phosphoric acid | 223 | | | | | | | | **CAS No** | | 298-07-7 | | | | | |
| Di-(2-ethylhexyl) phthalate | 642 | 0 | 4 | 4 | R | 0 | 0 | 0 | 0 | 1 | 1 | 1 | R | | Fp | 3 |
| Di-(2-ethylhexyl) phthalate | 2751 | | | | | | | | **CAS No** | | 117-81-7 | | | | | |
| Diethyl phthalate | 648 | 3 | 3 | 3 | R | 2 | 0 | 0 | 0 | (1) | 1 | 1 | | | S | 1 |
| Diethyl phthalate | 238 | | | | | | | | **CAS No** | | 84-66-2 | | | | | |
| Diethyl sulphate | 649 | 1 | NI | 1 | R | (2) | NI | 1 | 2 | 3 | 2 | 3 | CM | | SD | 3 |
| Diethyl sulphate | 239 | | | | | | | | **CAS No** | | 64-67-5 | | | | | |
| Diglycidyl ether of Bisphenol A | 653 | 3 | NI | 3 | NR | 4 | NI | 0 | 0 | (2) | 1 | 2 | Ss | | S | 2 |
| Diglycidyl ether of bisphenol A | 250 | | | | | | | | **CAS No** | | 1675-54-3 | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Diglycidyl ether of Bisphenol F | 728 | 0 | NI | 0 | NR | 3 | NI | 0 | (0) | (2) | 1 | (2) | SsR | | S | 3 |
| Diglycidyl ether of bisphenol F | 251 | | | | | | | | **CAS No** | | 55492-52-9 | | | | | |
| Diheptyl phthalate | 655 | 0 | (4) | (4) | R | 0 | NI | 0 | 0 | (1) | 1 | 1 | | | Fp | 3 |
| Diheptyl phthalate | 252 | | | | | | | | **CAS No** | | 3648-21-3 | | | | | |
| Di-n-hexyl adipate | 656 | 5 | NI | 5 | (NR) | 5 | 0 | 0 | 0 | (1) | 0 | 1 | | | FE | 1 |
| Di-n-hexyl adipate | 224 | | | | | | | | **CAS No** | | 110-33-8 | | | | | |
| Di-hexyl phthalate | 2125 | 5 | NI | 5 | R | 0 | 2 | 0 | 0 | (1) | 1 | 1 | R | | Fp | 3 |
| Dihexyl phthalate | 253 | | | | | | | | **CAS No** | | 84-75-3 | | | | | |
| 1,4-Dihydro-9,10-dihydroxy anthracene disodium salt (soln.) | 657 | 1 | NI | 1 | NI | 1 | NI | 0 | NI | NI | NI | NI | | | D | NI |
| 1,4-Dihydro-9,10-dihydroxyanthracene, disodium salt solution | 15 | | | | | | | | **CAS No** | | | | | | | |
| Diisobutene | 575 | 4 | 4 | 4 | NR | 3 | NI | 0 | 0 | 0 | 1 | 0 | | | FE | 2 |
| Diisobutylene | 257 | | | | | | | | **CAS No** | | 11071-47-9 | | | | | |
| Diisobutylamine | 576 | (2) | NI | (2) | (R) | (3) | NI | 2 | (2) | 2 | (3) | (3) | | | FED | 3 |
| Diisobutylamine | 256 | | | | | | | | **CAS No** | | 110-96-3 | | | | | |
| Diisobutyl ketone | 579 | 3 | NI | 3 | R | 2 | NI | 0 | 0 | 2 | 2 | 2 | | | F | 2 |
| Diisobutyl ketone | 254 | | | | | | | | **CAS No** | | 108-83-8 | | | | | |
| Diisobutyl phthalate | 581 | 4 | (4) | 4 | R | (4) | 1 | 0 | 0 | 1 | 0 | 0 | R | | S | 3 |
| Diisobutyl phthalate | 255 | | | | | | | | **CAS No** | | 84-69-5 | | | | | |
| Diisodecyl phthalate | 619 | 0 | 0 | 0 | (R) | 0 | (0) | 0 | 0 | (1) | 0 | 1 | | | Fp | 2 |
| Diisodecyl phthalate | 3119 | | | | | | | | **CAS No** | | 26761-40-0 | | | | | |
| Diisoheptyl phthalate | 2391 | 0 | (4) | (4) | R | 0 | 0 | 0 | 0 | (1) | 1 | 1 | R | | Fp | 3 |
| Diisoheptyl phthalate | 3561 | | | | | | | | **CAS No** | | | | | | | |
| Diisononyl adipate | 690 | 0 | NI | 0 | R | 0 | 0 | 0 | 0 | (1) | 1 | 1 | | | Fp | 2 |
| Diisononyl adipate | 258 | | | | | | | | **CAS No** | | 33703-08-1 | | | | | |
| Diisononyl phthalate | 691 | 0 | 0 | 0 | R | 0 | 0 | 0 | 0 | (0) | 0 | 0 | | | Fp | 2 |
| Diisononyl phthalate | 3120 | | | | | | | | **CAS No** | | | | | | | |
| Diisooctyl phthalate | 693 | 0 | 4 | 4 | (R) | 0 | 0 | 0 | 0 | (1) | 1 | 0 | | | Fp | 2 |
| Diisooctyl phthalate | 259 | | | | | | | | **CAS No** | | 27554-26-3 | | | | | |
| Diisopropanolamine | 703 | 0 | NI | 0 | NR | 1 | NI | 0 | 0 | 0 | 2 | 3 | | | FD | 3 |
| Diisopropanolamine | 260 | | | | | | | | **CAS No** | | 110-97-4 | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Diisopropylamine | 705 | 1 | NI | 1 | NR | 2 | 0 | 1 | 1 | 2 | 3 | 3 | | | ED | 3 |
| Diisopropylamine | 261 | | | | | | | | **CAS No** | | 108-18-9 | | | | | |
| Diisopropyl benzene (mixed isomers) | 2220 | 5 | 4 | 4 | NR | 4 | NI | 0 | 0 | 2 | 2 | 1 | | (T) | F | 2 |
| Diisopropylbenzene (all isomers) | 262 | | | | | | | | **CAS No** | | | | | | | |
| 1,3-Diisopropylbenzene | 706 | 5 | 4 | 4 | NR | 4 | NI | 0 | 0 | 2 | 2 | 1 | | | F | 2 |
| 1,3-Diisopropyl benzene | 2626 | | | | | | | | **CAS No** | | 25321-09-9 | | | | | |
| Diisopropyl ether | 711 | 1 | NI | 1 | NR | 2 | NI | 0 | 0 | 0 | 1 | 2 | | | E | 2 |
| Isopropyl ether | 406 | | | | | | | | **CAS No** | | 108-20-3 | | | | | |
| Diisopropylnaphthalene, mixed isomers | 712 | 5 | 4 | 4 | NR | 3 | NI | 0 | 0 | (1) | 1 | 1 | | | Fp | 2 |
| Diisopropylnaphthalene | 263 | | | | | | | | **CAS No** | | 38640-62-9 | | | | | |
| Dimethoxymethane | 2405 | | | | | | | | | | | | | | | |
| Methylal (>=85%) | 3662 | | | | | | | | **CAS No** | | | | | | | |
| Dimethyl acetamide | 658 | 0 | NI | 0 | R | 1 | NI | 0 | 0 | 2 | 1 | 2 | | | D | 2 |
| N,N-Dimethylacetamide solution (40% or less) | 466 | | | | | | | | **CAS No** | | 127-19-5 | | | | | |
| Dimethyl acetamide | 658 | 0 | NI | 0 | R | 1 | NI | 0 | 0 | 2 | 1 | 2 | | | D | 2 |
| N,N-Dimethylacetamide | 2730 | | | | | | | | **CAS No** | | 127-19-5 | | | | | |
| Dimethyl adipate | 659 | 1 | NI | 1 | (R) | 4 | NI | 0 | 0 | (0) | 1 | 1 | | | SD | 2 |
| Dimethyl adipate | 264 | | | | | | | | **CAS No** | | 627-93-0 | | | | | |
| Dimethylamine (40-50% aq.sol.) | 661 | 0 | NI | 0 | R | 3 | 0 | 2 | 0 | 2 | 3B | 3 | Ss | NT | DE | 3 |
| Dimethylamine solution (greater than 45% but not greater than 55%) | 271 | | | | | | | | **CAS No** | | 124-40-3 | | | | | |
| Dimethylamine (40-50% aq.sol.) | 661 | 0 | NI | 0 | R | 3 | 0 | 2 | 0 | 2 | 3B | 3 | Ss | NT | DE | 3 |
| Dimethylamine solution (greater than 55% but not greater than 65%) | 272 | | | | | | | | **CAS No** | | 124-40-3 | | | | | |
| Dimethylamine (40-50% aq.sol.) | 661 | 0 | NI | 0 | R | 3 | 0 | 2 | 0 | 2 | 3B | 3 | Ss | NT | DE | 3 |
| Dimethylamine solution (45% or less) | 270 | | | | | | | | **CAS No** | | 124-40-3 | | | | | |
| N,N-Dimethyl cyclohexylamine | 665 | 2 | NI | 2 | NR | 2 | NI | 1 | 2 | 3 | 3C | 3 | | | FD | 3 |
| N,N-Dimethylcyclohexylamine | 467 | | | | | | | | **CAS No** | | 98-94-2 | | | | | |
| Dimethyl disulphide | 1616 | 1 | NI | 1 | NR | 3 | 2 | 2 | 0 | 2 | 1 | 1 | | | SD | 2 |
| Dimethyl disulphide | 2504 | | | | | | | | **CAS No** | | 624-92-0 | | | | | |
| N,N-Dimethyldodecylamine | 2126 | 3 | NI | 3 | R | 4 | NI | 1 | (1) | (3) | 3 | 3 | | | F | 3 |
| N,N-Dimethyldodecylamine | 468 | | | | | | | | **CAS No** | | 112-18-5 | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dimethylethanolamine | 667 | 0 | NI | 0 | R | 2 | NI | 1 | 1 | 2 | 3 | 3 | | | D | 3 |
| Dimethylethanolamine | 273 | | | | | | | | **CAS No** | | 108-01-0 | | | | | |
| Dimethyl formamide | 676 | 0 | 0 | 0 | R | 1 | 0 | 0 | 1 | 2 | 1 | 2 | R | | D | 3 |
| Dimethylformamide | 274 | | | | | | | | **CAS No** | | 68-12-2 | | | | | |
| Dimethyl glutarate | 670 | 0 | NI | 0 | R | 3 | NI | 0 | 0 | 2 | 3 | 2 | A | | SD | 3 |
| Dimethyl glutarate | 265 | | | | | | | | **CAS No** | | 26717-67-9 | | | | | |
| Dimethyl hydrogen phosphite | 673 | 0 | NI | 0 | NR | 2 | NI | 1 | 0 | 0 | 1 | 1 | | | D | 1 |
| Dimethyl hydrogen phosphite | 266 | | | | | | | | **CAS No** | | 868-89-9 | | | | | |
| 2,2-Dimethyloctanoic acid | 675 | 3 | NI | 3 | R | 4 | 1 | 0 | 0 | (2) | 2 | 2 | | | Fp | 2 |
| Dimethyl octanoic acid | 267 | | | | | | | | **CAS No** | | 29662-90-6 | | | | | |
| Dimethyl phthalate | 678 | 2 | 2 | 2 | R | 2 | 0 | 0 | 0 | (1) | 0 | 1 | | | SD | 1 |
| Dimethyl phthalate | 268 | | | | | | | | **CAS No** | | 131-11-3 | | | | | |
| 2,2-Dimethylpropane-1,3-diol | 679 | 0 | 0 | 0 | NR | 0 | 0 | 0 | 0 | 0 | 2 | 2 | | | FD | 2 |
| 2,2-Dimethylpropane-1,3-diol (molten or solution) | 29 | | | | | | | | **CAS No** | | 126-30-7 | | | | | |
| Dimethyl succinate | 681 | 0 | NI | 0 | NI | 2 | NI | 0 | 0 | 0 | 0 | 2 | | | SD | 2 |
| Dimethyl succinate | 269 | | | | | | | | **CAS No** | | 106-65-0 | | | | | |
| Dinitrotoluene | 688 | 2 | 2 | 2 | NR | 4 | 2 | 2 | (2) | (2) | 1 | 0 | CMR | | S | 3 |
| Dinitrotoluene (molten) | 276 | | | | | | | | **CAS No** | | 25321-14-6 | | | | | |
| Dinonyl phthalate | 689 | 0 | NI | 0 | R | 0 | 0 | 0 | 0 | (1) | 1 | 1 | | | Fp | 2 |
| Dinonyl phthalate | 2993 | | | | | | | | **CAS No** | | 84-76-4 | | | | | |
| Di-n-octyl phthalate | 692 | 0 | (4) | (4) | (R) | 0 | 0 | 0 | 0 | (1) | 1 | (1) | | | Fp | 2 |
| Dioctyl phthalate | 277 | | | | | | | | **CAS No** | | 117-84-0 | | | | | |
| 1,4-Dioxane | 682 | 0 | 0 | 0 | NR | 0 | 0 | 0 | 0 | 0 | 0 | 2 | C | | D | 3 |
| 1,4-Dioxane | 16 | | | | | | | | **CAS No** | | 123-91-1 | | | | | |
| Dipentene | 686 | 4 | NI | 4 | NR | 2 | NI | 0 | 0 | (2) | 2 | 2 | Ss | | F | 3 |
| Dipentene | 278 | | | | | | | | **CAS No** | | 138-86-3 | | | | | |
| Diphenyl | 694 | 3 | 4 | 4 | R | 4 | 1 | 0 | 0 | (1) | 0 | 1 | | | S | 1 |
| Diphenyl | 279 | | | | | | | | **CAS No** | | 92-52-4 | | | | | |
| Diphenylamine (molten) | 2186 | 3 | 3 | 3 | NR | 3 | 1 | 0 | 0 | (1) | 1 | 1 | | | S | 1 |
| Diphenylamine (molten) | 285 | | | | | | | | **CAS No** | | | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Diphenylamine, reaction product with 2,4,4-trimethylpentene | 1500 | NI | 1 | 1 | NR | 3 | NI | 0 | 0 | (1) | 1 | 1 | | | Fp | 2 |
| Diphenylamine, reaction product with 2,2,4-Trimethylpentene | 286 | | | | | | | | **CAS No** | | | | | | | |
| Diphenylamines, alkylated | 1770 | 5 | NI | 5 | NR | (3) | NI | 0 | 0 | (1) | (1) | (1) | | | F | 2 |
| Diphenylamines, alkylated | 287 | | | | | | | | **CAS No** | | | | | | | |
| Diphenyl/Diphenyl ether (mixtures) | 698 | NI | NI | 4 | NR | 4 | 1 | 0 | 0 | (1) | 1 | 1 | | (T) | S | 1 |
| Diphenyl/Diphenyl ether mixtures | 283 | | | | | | | | **CAS No** | | 8004-13-5 | | | | | |
| Diphenyl ether | 699 | 4 | 4 | 4 | NR | 4 | NI | 0 | 0 | 0 | 1 | 1 | | T | S | 1 |
| Diphenyl ether | 281 | | | | | | | | **CAS No** | | 101-84-8 | | | | | |
| Diphenyl ether/ Biphenyl phenyl ether mixtures | 702 | 5 | NI | 5 | NR | 4 | NI | 0 | 0 | 0 | 1 | 1 | | (T) | S | 1 |
| Diphenyl ether/Diphenyl phenyl ether mixture | 282 | | | | | | | | **CAS No** | | | | | | | |
| Diphenylmethane-4,4'-diisocyanate (#) | 700 | 5 | 2 | 2 | NR | 0 | 0 | 0 | 0 | 3 | 2 | 2 | SsSr | | S | 3 |
| Diphenylmethane diisocyanate | 288 | | | | | | | | **CAS No** | | 101-68-8 | | | | | |
| Diphenylol propane-epichlorohydrin resins | 2237 | 3 | NI | 3 | NR | 4 | NI | 0 | 0 | (2) | 1 | 2 | | | S | 2 |
| Diphenylol propane-epichlorohydrin resins | 290 | | | | | | | | **CAS No** | | | | | | | |
| Di-n-propylamine | 704 | 1 | NI | 1 | NR | 3 | NI | 2 | 2 | 2 | 3C | 3 | | | FED | 3 |
| Di-n-propylamine | 225 | | | | | | | | **CAS No** | | 142-84-7 | | | | | |
| Dipropylene glycol | 707 | 0 | 1 | 1 | R | 0 | NI | 0 | 0 | 0 | 0 | 1 | | | D | 1 |
| Dipropylene glycol | 291 | | | | | | | | **CAS No** | | 25265-71-8 | | | | | |
| Dipropylene glycol dibenzoate | 708 | 3 | NI | 3 | R | 3 | NI | 0 | 0 | 0 | 0 | 0 | | | S | 0 |
| Dipropylene glycol dibenzoate | 2431 | | | | | | | | **CAS No** | | 94-51-9 | | | | | |
| Di-n-propyl phthalate | 713 | 3 | NI | 3 | (R) | 3 | NI | (0) | (0) | (1) | (1) | (1) | R | | S | 3 |
| Di-n-propyl phthalate | 2752 | | | | | | | | **CAS No** | | 131-16-8 | | | | | |
| Distilled Resin Oil, DRO | 2299 | (3) | NI | (3) | (NR) | (3) | NI | 0 | 0 | (2) | 2 | 1 | MN | | FE | 3 |
| Resin oil, distilled | 2958 | | | | | | | | **CAS No** | | | | | | | |
| Dithocarbamate ester (C7-C35) | 2185 | NI | 2 | 2 | NR | 4 | NI | 0 | 0 | (1) | 1 | 1 | | | S | 1 |
| Dithiocarbamate ester (C7-C35) | 2371 | | | | | | | | **CAS No** | | | | | | | |
| Ditridecyl adipate | 2351 | 0 | NI | 0 | NR | 0 | NI | 0 | 0 | (2) | 2 | 1 | | | Fp | 2 |
| Ditridecyl adipate | 293 | | | | | | | | **CAS No** | | | | | | | |
| Ditridecyl phthalate | 714 | 0 | (0) | 0 | NR | 0 | (0) | 0 | 0 | (1) | 1 | (1) | | | Fp | 2 |
| Ditridecyl phthalate | 2994 | | | | | | | | **CAS No** | | 119-06-2 | | | | | |

| EHS Name<br>TRN Name | EHS<br>TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Diundecyl phthalate | 715 | 0 | (0) | 0 | NR | 0 | 0 | 0 | 0 | (1) | 1 | 1 | | | Fp | 2 |
| Diundecyl phthalate | 294 | | | | | | | | **CAS No** | | 3648-20-2 | | | | | |
| Dodecane | 718 | 5 | NI | 5 | (R) | 0 | NI | 0 | 0 | (1) | (1) | (0) | | | Fp | 2 |
| Dodecane (all isomers) | 295 | | | | | | | | **CAS No** | | 112-40-3 | | | | | |
| tert-Dodecanethiol | 2233 | 5 | 4 | 4 | NR | 0 | 0 | 0 | 0 | (2) | 2 | 1 | Ss | | F | 3 |
| tert-Dodecanethiol | 2418 | | | | | | | | **CAS No** | | | | | | | |
| 1-Dodecanol | 719 | 5 | 2 | 2 | R | 4 | 1 | 0 | 0 | (1) | 1 | (1) | | | Fp | 2 |
| Dodecyl alcohol | 298 | | | | | | | | **CAS No** | | 112-53-8 | | | | | |
| Dodecene (all isomers) | 720 | 5 | NI | 5 | NR | 4 | NI | 0 | 0 | (2) | 2 | 1 | A | | F | 3 |
| Dodecene (all isomers) | 296 | | | | | | | | **CAS No** | | | | | | | |
| 1-Dodecene | 2473 | 5 | NI | 5 | R | 0 | NI | 0 | 0 | 1 | 2 | 1 | A | | F | 3 |
| | 3990 | | | | | | | | **CAS No** | | 112-41-4 | | | | | |
| 2-Dodecenyl succinic acid, dipotassium salt, solution | 727 | 4 | NI | 4 | NR | 1 | NI | (0) | (0) | NI | NI | NI | | | D | NI |
| Dodecenylsuccinic acid, dipotassium salt solution | 297 | | | | | | | | **CAS No** | | 57195-28-5 | | | | | |
| Dodecylamine/Tetradecylamine mixture | 721 | 3 | NI | 3 | R | 4 | NI | 1 | 0 | (3) | 3 | 3 | | | F | 3 |
| Dodecylamine/Tetradecylamine mixture | 303 | | | | | | | | **CAS No** | | | | | | | |
| Dodecyl benzene | 126 | 0 | NI | 0 | NR | 0 | 3 | 0 | 0 | (2) | (2) | (1) | | | F | 2 |
| Dodecylbenzene | 304 | | | | | | | | **CAS No** | | 123-01-3 | | | | | |
| Dodecyl benzene sulphonic acid (contains 1.5% Sulphuric acid) | 1739 | NI | NI | 3 | R | 3 | 1 | 1 | (1) | (2) | (1) | (1) | | | D | 2 |
| Alkyl (C11-C17) benzene sulphonic acid | 101 | | | | | | | | **CAS No** | | | | | | | |
| Dodecyl diphenyl oxide disulphonate (solns.) | 723 | (5) | NI | 5 | NR | 4 | 1 | 1 | 0 | (3) | 1 | 3 | | | D | 3 |
| Dodecyl diphenyl ether disulphonate solution | 299 | | | | | | | | **CAS No** | | | | | | | |
| Dodecyl hydroxypropyl sulphide (LOA) | 1861 | 5 | NI | 5 | NI | 4 | NI | 0 | 0 | (0) | 0 | 0 | | | FD | 0 |
| Dodecyl hydroxypropyl sulphide | 2252 | | | | | | | | **CAS No** | | | | | | | |
| n-Dodecyl mercaptan | 2462 | 5 | 3 | 3 | NR | 5 | NI | 0 | 0 | (3) | 3 | (3) | Ss | | F | 3 |
| n-Dodecyl mercaptan | 3743 | | | | | | | | **CAS No** | | | | | | | |
| Dodecyl/octadecyl methacrylate (mixtures) | 2116 | (5) | NI | (5) | (NR) | (0) | NI | 0 | 0 | (1) | 1 | (1) | | | Fp | 2 |
| Dodecyl/Octadecyl methacrylate mixture | 1717 | | | | | | | | **CAS No** | | | | | | | |
| Dodecyl/pentadecyl methacrylate (mixture) | 724 | (5) | NI | (5) | (NR) | (0) | NI | 0 | (0) | (1) | (1) | (1) | | | Fp | 2 |
| Dodecyl/Pentadecyl methacrylate mixture | 302 | | | | | | | | **CAS No** | | | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dodecyl phenol | 725 | 0 | 4 | 4 | NI | 4 | NI | 0 | 0 | (3) | 3 | 2 | | | Fp | 3 |
| Dodecyl phenol | 301 | | | | | | | | **CAS No** | | 27193-86-8 | | | | | |
| Dodecyl-, Tetradecyl-, Hexadecyl-dimethylamine mixture | 2248 | 3 | NI | 3 | R | 5 | 2 | 1 | (1) | (3) | 3C | 3 | | | F | 3 |
| Alkyl (C12+) dimethylamine | 2485 | | | | | | | | **CAS No** | | | | | | | |
| Dodecylxylene | 1763 | 0 | NI | 0 | NI | 0 | NI | 0 | 0 | (1) | 1 | 1 | | | Fp | 2 |
| Dodecyl Xylene | 306 | | | | | | | | **CAS No** | | | | | | | |
| Epichlorohydrin | 731 | 0 | 0 | 0 | R | 2 | NI | 2 | 2 | 3 | 3A | 3 | CSs | | D | 3 |
| Epichlorohydrin | 309 | | | | | | | | **CAS No** | | 106-89-8 | | | | | |
| Ethanol | 732 | 0 | NI | 0 | R | 0 | NI | 0 | 0 | 0 | 1 | 2 | | | D | 2 |
| Ethyl alcohol | 315 | | | | | | | | **CAS No** | | 64-17-5 | | | | | |
| Ethanolamine | 733 | 0 | NI | 0 | R | 2 | 0 | 1 | 1 | 3 | 3A | 3 | | | D | 3 |
| Ethanolamine | 311 | | | | | | | | **CAS No** | | 141-43-5 | | | | | |
| Ethanoltriazine (aqueous solution) | 2411 | (0) | NI | (0) | R | 3 | NI | 1 | 0 | 4 | 0 | 2 | Ss | | D | 3 |
| 1,3,5-Hexahydrotriethanol-1,3,5-triazine | 3687 | | | | | | | | **CAS No** | | 4719-04-4 | | | | | |
| Ethoxylated long chain (>C16)alkyloxyalkanamine (LOA) | 2103 | 5 | NI | 5 | NR | 1 | NI | 0 | 0 | (3) | 3 | (3) | | | Fp | 3 |
| Ethoxylated long chain (C16+) alkyloxyalkylamine | 2203 | | | | | | | | **CAS No** | | | | | | | |
| Ethoxylated tallow amine (>95%) | 2313 | 0 | NI | 0 | NR | 4 | NI | 1 | (1) | 3 | 2 | 3 | | | Fp | 3 |
| Ethoxylated tallow amine (> 95%) | 2959 | | | | | | | | **CAS No** | | | | | | | |
| Ethoxylated tallow amine, glycol mixture | 2252 | 2 | NI | 2 | NR | 6 | NI | 1 | 0 | 3 | 2 | 3 | | | D | 3 |
| Ethoxylated tallow amine, glycol mixture | 2476 | | | | | | | | **CAS No** | | | | | | | |
| Ethyl acetate | 735 | 0 | 2 | 2 | R | 1 | 0 | 0 | 0 | 1 | 0 | 1 | | | DE | 2 |
| Ethyl acetate | 312 | | | | | | | | **CAS No** | | 141-78-6 | | | | | |
| Ethyl acetoacetate | 736 | 0 | 0 | 0 | R | 1 | NI | 0 | 0 | (1) | 1 | 1 | | | D | 1 |
| Ethyl acetoacetate | 313 | | | | | | | | **CAS No** | | 141-97-9 | | | | | |
| Ethyl acrylate | 734 | 1 | NI | 1 | R | 3 | 1 | 1 | 2 | 2 | 2 | 2 | CSs | T | ED | 3 |
| Ethyl acrylate | 314 | | | | | | | | **CAS No** | | 140-88-5 | | | | | |
| Ethylamine | 1016 | 0 | NI | 0 | R | 2 | NI | 2 | 2 | 1 | 3 | 3 | | | GD | 3 |
| Ethylamine | 322 | | | | | | | | **CAS No** | | 75-04-7 | | | | | |
| Ethylamine solutions (72% or less) | 2219 | NI | NI | 0 | R | 2 | NI | 2 | 2 | 1 | 3 | 3 | | | DE | 3 |
| Ethylamine solutions (72% or less) | 323 | | | | | | | | **CAS No** | | | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethyl amyl ketone | 1784 | 2 | NI | 2 | NI | 2 | NI | 0 | 0 | (2) | 2 | NI | | | FD | 2 |
| Ethyl amyl ketone | 316 | | | | | | | | **CAS No** | | 106-68-3 | | | | | |
| Ethylbenzene | 740 | 3 | 2 | 2 | R | 3 | (1) | 0 | 0 | 0 | 2 | 2 | C | | FE | 3 |
| Ethylbenzene | 324 | | | | | | | | **CAS No** | | 100-41-4 | | | | | |
| N-Ethyl butylamine | 745 | 1 | NI | 1 | NI | NI | NI | 1 | 1 | 2 | 3 | 3 | | | FED | 3 |
| N-Ethylbutylamine | 477 | | | | | | | | **CAS No** | | 13360-63-9 | | | | | |
| Ethyl tert-butyl ether | 2085 | 1 | NI | 1 | NI | 2 | NI | 0 | 0 | 2 | 2 | 2 | | | E | 2 |
| Ethyl tert-butyl ether | 320 | | | | | | | | **CAS No** | | 637-92-3 | | | | | |
| Ethyl butyrate | 748 | 1 | NI | 1 | NI | 2 | NI | 0 | 0 | (2) | 2 | NI | | | FED | 2 |
| Ethyl butyrate | 317 | | | | | | | | **CAS No** | | 105-54-4 | | | | | |
| Ethyl cyclohexane | 751 | 4 | 4 | 4 | NR | 3 | NI | (0) | (0) | (1) | (1) | (1) | | | FE | 2 |
| Ethylcyclohexane | 325 | | | | | | | | **CAS No** | | 1678-91-7 | | | | | |
| N-Ethyl cyclohexylamine | 752 | 2 | NI | 2 | NI | (3) | NI | 1 | 2 | 2 | 3 | 3 | | | FED | 3 |
| N-Ethylcyclohexylamine | 478 | | | | | | | | **CAS No** | | 5459-93-8 | | | | | |
| S-Ethyl dipropylthiocarbamate | 2081 | 3 | 2 | 2 | NI | 3 | NI | 1 | 1 | 2 | 2 | (2) | N | | F | 3 |
| S-Ethyl dipropylthiocarbamate | 2302 | | | | | | | | **CAS No** | | 759-94-4 | | | | | |
| Ethylene carbonate | 755 | 0 | NI | 0 | R | 0 | NI | 0 | 0 | (2) | 1 | 2 | | | SD | 2 |
| Ethylene carbonate | 326 | | | | | | | | **CAS No** | | 96-49-1 | | | | | |
| Ethylene chlorohydrin | 756 | 0 | 0 | 0 | R | 3 | NI | 2 | 3 | 4 | 2 | 3 | | | D | 3 |
| Ethylene chlorohydrin | 327 | | | | | | | | **CAS No** | | 107-07-3 | | | | | |
| Ethylene cyanohydrin | 757 | 0 | 0 | 0 | NI | 2 | NI | 1 | 0 | (2) | 1 | 2 | | | D | 2 |
| Ethylene cyanohydrin | 328 | | | | | | | | **CAS No** | | 109-78-4 | | | | | |
| Ethylene diamine | 758 | 0 | 1 | 1 | R | 3 | 1 | 1 | 2 | 1 | 3 | 3 | SsSr | | D | 3 |
| Ethylenediamine | 343 | | | | | | | | **CAS No** | | 107-15-3 | | | | | |
| Ethylene diamine, tetra acetic acid, di- and tetra-sodium salt | 759 | 0 | NI | 0 | NR | 2 | 0 | 1 | (1) | (2) | 1 | 2 | | | D | 2 |
| Ethylenediaminetetraacetic acid, tetrasodium salt solution | 344 | | | | | | | | **CAS No** | | 64-02-8 | | | | | |
| Ethylene dibromide | 760 | 1 | 2 | 2 | NR | 3 | NI | 2 | 2 | 2 | 3 | 3 | CRT | | SD | 3 |
| Ethylene dibromide | 329 | | | | | | | | **CAS No** | | 106-93-4 | | | | | |
| Ethylene glycol | 761 | 0 | NI | 0 | R | 0 | NI | 1 | (1) | (1) | 0 | 0 | | | D | 1 |
| Ethylene glycol | 331 | | | | | | | | **CAS No** | | 107-21-1 | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ethylene glycol acrylate | 869 | 0 | NI | 0 | R | 4 | NI | 1 | 3 | 3 | 3 | 3 | MSs | | D | 3 |
| 2-Hydroxyethyl acrylate | 51 | | | | | | | | **CAS No** | | 818-61-1 | | | | | |
| Ethylene glycol butyl ether acetate (#) | 764 | 1 | NI | 1 | R | 2 | NI | 1 | 1 | (1) | 1 | 1 | | | FD | 1 |
| Ethylene glycol butyl ether acetate | 334 | | | | | | | | **CAS No** | | 112-07-2 | | | | | |
| Ethylene glycol diacetate | 765 | 0 | NI | 0 | NI | 2 | NI | 0 | 0 | (1) | 1 | NI | | | D | 1 |
| Ethylene glycol diacetate | 335 | | | | | | | | **CAS No** | | 111-55-7 | | | | | |
| Ethylene glycol ethyl ether acetate | 767 | 0 | NI | 0 | R | 2 | 0 | 1 | 0 | 1 | 1 | 1 | R | | D | 3 |
| 2-Ethoxyethyl acetate | 41 | | | | | | | | **CAS No** | | 111-15-9 | | | | | |
| Ethylene glycol methyl butyl ether | 772 | 1 | NI | 1 | NI | 1 | NI | NI | NI | NI | NI | NI | | | D | NI |
| Ethylene glycol methyl butyl ether | 336 | | | | | | | | **CAS No** | | 13343-98-1 | | | | | |
| Ethylene glycol methyl ether acetate | 773 | 0 | NI | 0 | R | 2 | NI | 0 | 0 | (0) | (1) | 1 | R | | D | 3 |
| Ethylene glycol methyl ether acetate | 337 | | | | | | | | **CAS No** | | 110-49-6 | | | | | |
| Ethylene glycol monoacetate | 762 | 0 | NI | 0 | R | 2 | NI | 0 | 0 | (3) | NI | (3) | | | D | 3 |
| Ethylene glycol acetate | 333 | | | | | | | | **CAS No** | | 542-59-6 | | | | | |
| Ethylene glycol monoalkyl ethers | 2268 | 0 | NI | 0 | R | 2 | NI | 1 | 2 | 2 | 1 | 2 | | | D | 2 |
| Ethylene glycol monoalkyl ethers | 338 | | | | | | | | **CAS No** | | | | | | | |
| Ethylene glycol monoethyl ether | 766 | 0 | NI | 0 | R | 0 | 0 | 0 | 0 | 1 | 2 | 2 | | | D | 3 |
| 2-Ethoxyethanol | 40 | | | | | | | | **CAS No** | | 110-80-5 | | | | | |
| Ethylene glycol phenyl ether | 775 | 1 | NI | 1 | R | 1 | 0 | 1 | 0 | 0 | 1 | 2 | | | SD | 2 |
| Ethylene glycol phenyl ether | 339 | | | | | | | | **CAS No** | | 122-99-6 | | | | | |
| Ethylene glycol phenyl ether/Diethylene glycol phenyl ether, mixture | 1740 | NI | NI | 1 | R | 1 | NI | 1 | 0 | (2) | (2) | (2) | | | SD | 2 |
| Ethylene glycol phenyl ether/Diethylene glycol phenyl ether mixture | 340 | | | | | | | | **CAS No** | | | | | | | |
| Ethylene oxide | 77 | NI | NI | NI | NI | NI | NI | 1 | (1) | 3 | 3 | 3 | CMR | | GD | 3 |
| Ethylene oxide | 2744 | | | | | | | | **CAS No** | | 75-21-8 | | | | | |
| Ethylene-propylene copolymer | 1508 | NI | NI | NI | NI | NI | NI | (0) | (0) | (0) | (0) | (0) | | | NI | 0 |
| Propylene-Butylene copolymer | 633 | | | | | | | | **CAS No** | | | | | | | |
| Ethylene vinyl acetate copolymer (emulsion) | 779 | 0 | 1 | 1 | NR | 0 | 0 | 0 | (0) | (2) | 2 | 0 | | | S | 2 |
| Ethylene-vinyl acetate copolymer (emulsion) | 342 | | | | | | | | **CAS No** | | | | | | | |
| Ethyl 3-ethoxypropionate | 1439 | 1 | NI | 1 | NR | 2 | NI | 0 | 0 | 0 | 1 | 1 | | | FD | 1 |
| Ethyl-3-ethoxypropionate | 321 | | | | | | | | **CAS No** | | 763-69-9 | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2-Ethylhexanoic acid | 776 | 2 | NI | 2 | R | 2 | NI | 0 | 0 | (2) | 2 | 2 | | | FD | 3 |
| 2-Ethylhexanoic acid | 45 | | | | | | | | **CAS No** | | 149-57-5 | | | | | |
| 2-Ethylhexyl acrylate | 782 | 3 | NI | 3 | R | 2 | NI | 0 | 0 | (2) | 2 | 2 | Ss | | F | 3 |
| 2-Ethylhexyl acrylate | 46 | | | | | | | | **CAS No** | | 103-11-7 | | | | | |
| 2-Ethylhexyl esters of fatty acids | 2221 | 0 | NI | 0 | R | 1 | NI | 0 | (0) | (0) | 1 | 0 | | | F | 1 |
| | 2578 | | | | | | | | **CAS No** | | | | | | | |
| 2-Ethyl-2-(hydroxymethyl)propane-1,3-diol C8-C10 ester (LOA) | 2054 | 0 | NI | 0 | R | 0 | NI | 0 | (0) | (0) | 0 | (0) | | | Fp | 2 |
| 2-Ethyl-2-(hydroxymethyl) propane-1,3-diol (C8-C10) ester | 42 | | | | | | | | **CAS No** | | | | | | | |
| 5-Ethylidene-2-norbornene | 783 | 3 | 3 | 3 | NR | 3 | 0 | 0 | 0 | 2 | 1 | 2 | | | FE | 2 |
| Ethylidene norbornene | 345 | | | | | | | | **CAS No** | | 16219-75-3 | | | | | |
| Ethyl isoamyl ketone | 737 | NI | NI | NI | NI | NI | NI | 0 | 0 | (1) | 1 | (2) | | | FD | 2 |
| Ethyl isoamyl ketone | 2618 | | | | | | | | **CAS No** | | 541-85-5 | | | | | |
| Ethyl methacrylate | 785 | 1 | NI | 1 | R | 2 | 0 | 0 | 0 | 0 | (2) | (2) | Ss | | FE | 2 |
| Ethyl methacrylate | 318 | | | | | | | | **CAS No** | | 97-63-2 | | | | | |
| N-Ethyl-2-methallylamine | 2228 | 0 | NI | 0 | NR | 2 | NI | 3 | 2 | 2 | 3A | 3 | | | D | 3 |
| N-Ethylmethylallylamine | 2417 | | | | | | | | **CAS No** | | | | | | | |
| o-Ethyl phenol | 788 | 2 | NI | 2 | NI | (2) | NI | 1 | NI | NI | NI | NI | | | S | NI |
| o-Ethylphenol | 535 | | | | | | | | **CAS No** | | 90-00-6 | | | | | |
| Ethyl propionate | 790 | 1 | NI | 1 | NI | 2 | 0 | 0 | (1) | (2) | 2 | 2 | | | ED | 2 |
| Ethyl propionate | 319 | | | | | | | | **CAS No** | | 105-37-3 | | | | | |
| 2-Ethyl-3-propylacrolein | 791 | 2 | NI | 2 | R | 3 | NI | 0 | 0 | 1 | 3 | 3 | | | F | 3 |
| 2-Ethyl-3-propylacrolein | 43 | | | | | | | | **CAS No** | | 645-62-5 | | | | | |
| Ethyl toluene (all isomers) | 2297 | 3 | NI | 3 | NI | (3) | NI | 0 | 0 | 0 | 2 | 2 | | | F | 2 |
| Ethyl toluene | 346 | | | | | | | | **CAS No** | | | | | | | |
| Fatty acid methyl esters | 2362 | 0 | NI | 0 | R | 2 | NI | 0 | (0) | (2) | 2 | 2 | | | Fp | 2 |
| Fatty acid methyl esters (m) | 3125 | | | | | | | | **CAS No** | | | | | | | |
| Fatty acids, essentially linear, C6-C18, 2-ethylhexyl ester | 2253 | 0 | NI | 0 | R | 1 | NI | 0 | 0 | (1) | 1 | 0 | | | Fp | 2 |
| Fatty acid (C8-C16) ethyl hexyl esters | 2759 | | | | | | | | **CAS No** | | | | | | | |
| Fatty acids, essentially linear, C6-C18, 2-ethylhexyl ester | 2253 | 0 | NI | 0 | R | 1 | NI | 0 | 0 | (1) | 1 | 0 | | | Fp | 2 |
| Fatty acids, essentially linear (C6-C18) 2-ethylhexyl ester | 1914 | | | | | | | | **CAS No** | | | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Fatty acids, linear, C8-C18 saturated with C18 unsaturated | 2260 | (4) | NI | (4) | R | (4) | (1) | (0) | (0) | (1) | (1) | (1) | | | Fp | 2 |
| Fatty acids, (C8-C18) | 2779 | | | | | | | | **CAS No** | | | | | | | |
| Fatty acids, linear C12+ saturated with C12+ unsaturated | 2261 | 5 | 0 | 0 | (R) | 0 | NI | (0) | (0) | (1) | (1) | (1) | | | Fp | 2 |
| Fatty acids, (C12+) | 2780 | | | | | | | | **CAS No** | | | | | | | |
| Fatty acids saturated, C8-C10 | 2324 | 0 | NI | 0 | R | 4 | NI | 0 | 0 | (3) | 3C | 3 | | | Fp | 3 |
| Fatty acids, (C8-C10) | 3079 | | | | | | | | **CAS No** | | | | | | | |
| Fatty acids, unsaturated, linear, C16+ | 2259 | 0 | 0 | 0 | R | (0) | NI | 0 | 0 | (0) | 0 | 0 | | | Fp | 2 |
| Fatty acids, (C16+) | 2778 | | | | | | | | **CAS No** | | | | | | | |
| Fatty alcohols, linear, (C12+) | 2326 | (5) | (2) | (2) | (R) | (4) | (1) | 0 | 0 | (1) | 1 | 1 | | | Fp | 2 |
| Alcohols (C12+), primary, linear | 3081 | | | | | | | | **CAS No** | | | | | | | |
| Fatty alcohols, linear, (C16+) | 2327 | (5) | (2) | (2) | (R) | (0) | (1) | 0 | 0 | (1) | 1 | 1 | | | Fp | 2 |
| Alcohols, linear (C16+) | 3082 | | | | | | | | **CAS No** | | | | | | | |
| Ferric chloride | 339 | Inorg | 5 | 5 | Inorg | 2 | 0 | 1 | (0) | (3) | 2 | 3 | | | D | 3 |
| Ferric chloride solutions | 348 | | | | | | | | **CAS No** | | 7705-08-0 | | | | | |
| Ferric hydroxyethyl ethylene diamine triacetic acid, tri- sodium salt, solution | 796 | NI | NI | NI | NI | NI | NI | 0 | 0 | (1) | (0) | 1 | | | D | 1 |
| Ferric hydroxyethylethylenediaminetriacetic acid, trisodium salt solution | 349 | | | | | | | | **CAS No** | | | | | | | |
| Ferric nitrate/nitric acid solution | 337 | Inorg | (5) | (5) | Inorg | (2) | (0) | 0 | (0) | (3) | 3 | 3 | | | D | 3 |
| Ferric nitrate/Nitric acid solution | 350 | | | | | | | | **CAS No** | | | | | | | |
| Fish oil (containing less than 10% free fatty acids) | 2316 | 0 | NI | 0 | R | 2 | NI | (0) | (0) | (1) | (0) | (1) | | | Fp | 2 |
| Fish oil | 3046 | | | | | | | | **CAS No** | | | | | | | |
| Fish solubles | 1509 | NI | NI | NI | NI | NI | NI | (0) | (0) | (0) | (0) | (0) | | | NI | NI |
| Fish solubles (water-based fish meal extract) | 351 | | | | | | | | **CAS No** | | | | | | | |
| Fluorosilicic acid | 806 | Inorg | 0 | 0 | Inorg | 2 | NI | 2 | (2) | 4 | 3 | 3 | | | D | 3 |
| Fluorosilicic acid | 2716 | | | | | | | | **CAS No** | | 16961-83-4 | | | | | |
| Fluorosilicic acid solution (20-30%) | 2240 | Inorg | 2 | 2 | Inorg | 2 | 0 | (1) | (1) | (3) | 3B | 3 | T | | D | 3 |
| Fluorosilicic acid solution (20-30%) | 353 | | | | | | | | **CAS No** | | | | | | | |
| Formaldehyde (37%-50% solution) | 807 | 0 | NI | 0 | R | 2 | NI | 2 | 2 | 3 | 3 | 3 | CMSs | NT | D | 3 |
| Formaldehyde solutions (45% or less) | 354 | | | | | | | | **CAS No** | | 50-00-0 | | | | | |
| Formaldehyde, polymer with isobutylenated phenol | 2377 | NI | NI | NI | NR | NI | NI | NI | NI | NI | NI | NI | | | Fp | NI |
| Formaldehyde, polymer with isobutylenated phenol | 1203 | | | | | | | | **CAS No** | | | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Formamide | 808 | 0 | NI | 0 | NR | 1 | NI | 0 | 0 | 1 | 1 | 2 | R | | D | 3 |
| Formamide | 355 | | | | | | | | **CAS No** | | 75-12-7 | | | | | |
| Formic acid | 809 | 0 | NI | 0 | R | 2 | NI | 1 | (1) | 2 | 3C | 3 | | | D | 3 |
| Formic acid (85% or less acid) | 356 | | | | | | | | **CAS No** | | 64-18-6 | | | | | |
| Formic acid mixture (containing up to 18% propionic acid and up to 25% sodium formate) | 2408 | 0 | NI | 0 | R | 1 | NI | (0) | (0) | (2) | (2) | (3) | | | D | 3 |
| Formic acid mixture (containing up to 18% propionic acid and up to 25% sodium formate) | 3684 | | | | | | | | **CAS No** | | | | | | | |
| Fumaric adduct of rosin (water dispersion) | 810 | 3 | NI | 3 | NR | 3 | NI | 0 | (0) | (3) | 0 | 3 | Ss | | D | 3 |
| Fumaric adduct of rosin, water dispersion | 357 | | | | | | | | **CAS No** | | 65997-04-8 | | | | | |
| Furfural | 812 | 0 | NI | 0 | R | 2 | 1 | 2 | (2) | 3 | 2 | 2 | C | | D | 3 |
| Furfural | 358 | | | | | | | | **CAS No** | | 98-01-1 | | | | | |
| Furfuryl alcohol | 813 | 0 | NI | 0 | R | 1 | NI | 2 | 2 | 3 | 2 | 2 | | | D | 2 |
| Furfuryl alcohol | 359 | | | | | | | | **CAS No** | | 98-00-0 | | | | | |
| Glucitol/glycerol blend propoxylated (containing 10% or more amines) | 2441 | 2 | NI | 2 | NR | 1 | 1 | 1 | 0 | (2) | (1) | (1) | | | D | 2 |
| Glucitol/glycerol blend propoxylated (containing 10% or more amines) | 3919 | | | | | | | | **CAS No** | | | | | | | |
| Glucitol/glycerol blend, propoxylated (containing less than 10% amines) | 2368 | 0 | NI | 0 | NR | 1 | NI | 1 | 0 | (2) | (1) | (1) | | | SD | 2 |
| Glucitol/glycerol blend propoxylated (containing less than 10% amines) | 3074 | | | | | | | | **CAS No** | | | | | | | |
| Glycerine | 814 | 0 | NI | 0 | R | 0 | 0 | 0 | 0 | (1) | 0 | 1 | | | D | 1 |
| Glycerine | 363 | | | | | | | | **CAS No** | | 56-81-5 | | | | | |
| Glycerine (83%)/ Dioxane-dimethanol (17%) mixture | 1743 | NI | NI | NI | R | 1 | NI | 0 | (0) | (1) | (0) | 1 | | | D | 1 |
| Glycerine (83%), Dioxanedimethanol (17%) mixture | 364 | | | | | | | | **CAS No** | | | | | | | |
| Glycerol ethoxylated | 2360 | 0 | NI | 0 | R | 0 | NI | 0 | 0 | (0) | 0 | 0 | | | D | 0 |
| Glycerol ethoxylated | 3123 | | | | | | | | **CAS No** | | | | | | | |
| Glycerol monooleate | 1898 | 0 | 0 | 0 | R | 0 | NI | 0 | (0) | (1) | 1 | 1 | | | Fp | 2 |
| Glycerol monooleate | 365 | | | | | | | | **CAS No** | | 25496-72-4 | | | | | |
| Glycerol propoxylated | 2346 | 0 | NI | 0 | NR | 1 | NI | 1 | 0 | (2) | 1 | 0 | | | D | 2 |
| Glycerol propoxylated | 3110 | | | | | | | | **CAS No** | | | | | | | |
| Glycerol, propoxylated and ethoxylated | 2276 | 0 | NI | 0 | NR | 1 | 0 | 0 | 0 | 0 | 0 | 0 | | | SD | 2 |
| Glycerol, propoxylated and ethoxylated | 2872 | | | | | | | | **CAS No** | | | | | | | |
| Glycerol/sorbitol blend, propoxylated and ethoxylated | 2372 | 0 | NI | 0 | NR | 2 | NI | NI | NI | NI | NI | NI | | | NI | NI |
| Glycerol/sorbitol blend, propoxylated and ethoxylated | 3136 | | | | | | | | **CAS No** | | | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Glycerol/sucrose blend, propoxylated and ethoxylated | 2361 | 0 | NI | 0 | NR | 1 | NI | 0 | 0 | 0 | 0 | 0 | | | SD | 0 |
| Glycerol/sucrose blend propoxylated and ethoxylated | 3124 | | | | | | | | **CAS No** | | | | | | | |
| Glyceryl triacetate | 816 | 0 | NI | 0 | R | 1 | 0 | 1 | 0 | 0 | 0 | 1 | | | D | 1 |
| Glyceryl triacetate | 367 | | | | | | | | **CAS No** | | 102-76-1 | | | | | |
| Glycidyl ester of C10 trialkyl acetic acid | 441 | 3 | NI | 3 | NR | 3 | NI | 0 | 0 | (2) | 2 | 1 | | | F | 2 |
| Glycidyl ester of C10 trialkylacetic acid | 368 | | | | | | | | **CAS No** | | | | | | | |
| Glycine, Sodium salt, solution | 817 | 0 | NI | 0 | NI | 0 | NI | 0 | (0) | (1) | (0) | (1) | | | D | 1 |
| Glycine, sodium salt solution | 369 | | | | | | | | **CAS No** | | 56-40-6 | | | | | |
| Glycolic acid | 2218 | 0 | 0 | 0 | R | 1 | NI | 1 | (1) | 2 | 3C | 3 | | | D | 3 |
| Glycolic acid solution (70% or less) | 2539 | | | | | | | | **CAS No** | | | | | | | |
| Glyoxal solutions (40% or less) | 84 | 0 | NI | 0 | R | 1 | NI | 0 | 0 | 2 | 2 | 3 | MSsSr | | D | 3 |
| Glyoxal solution (40% or less) | 370 | | | | | | | | **CAS No** | | 107-22-2 | | | | | |
| Glyoxylic acid | 1535 | 0 | NI | 0 | R | 2 | 0 | 0 | 0 | (3) | 0 | 3 | Ss | | D | 3 |
| Glyoxylic acid solution (50 % or less) | 371 | | | | | | | | **CAS No** | | 298-12-4 | | | | | |
| Glyphosate solution, without surfactant | 1765 | 0 | 0 | 0 | NR | 3 | 0 | 0 | 0 | (3) | 0 | 3 | | | D | 3 |
| Glyphosate solution (not containing surfactant) | 2204 | | | | | | | | **CAS No** | | 1071-83-6 | | | | | |
| Grape Seed Oil | 2442 | (0) | NI | (0) | (R) | (0) | (0) | (0) | (0) | (1) | (0) | (1) | | | Fp | 2 |
| Grape Seed Oil | 3643 | | | | | | | | **CAS No** | | 8024-22-4 | | | | | |
| Groundnut oil | 820 | 0 | NI | 0 | R | (2) | NI | (0) | (0) | (0) | (0) | 0 | | | Fp | 2 |
| Groundnut oil | 2769 | | | | | | | | **CAS No** | | 8002-03-7 | | | | | |
| Heptane | 827 | 4 | NI | 4 | R | 4 | NI | 0 | 0 | 0 | (1) | 1 | A | | E | 2 |
| Heptane (all isomers) | 372 | | | | | | | | **CAS No** | | 142-82-5 | | | | | |
| Heptanoic acid | 831 | 2 | NI | 2 | R | 1 | NI | 0 | 0 | 1 | 3B | (3) | | | FD | 3 |
| n-Heptanoic acid | 479 | | | | | | | | **CAS No** | | 111-14-8 | | | | | |
| Heptanol (all isomers) | 2223 | 2 | NI | 2 | R | (2) | NI | 0 | 0 | (2) | (1) | (2) | | | FD | 2 |
| Heptanol (all isomers) (d) | 373 | | | | | | | | **CAS No** | | | | | | | |
| 1-Heptanol | 828 | 2 | NI | 2 | R | 2 | 0 | 1 | 0 | 2 | (2) | (2) | | | FD | 2 |
| 1-Heptanol | 2688 | | | | | | | | **CAS No** | | 111-70-6 | | | | | |
| Heptene (all isomers) | 2225 | 3 | NI | 3 | NI | 2 | NI | (0) | (0) | (0) | (2) | (1) | | | E | 2 |
| Heptene (all isomers) | 374 | | | | | | | | **CAS No** | | | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-Heptene | 832 | 3 | NI | 3 | NI | 2 | NI | (0) | (0) | (0) | (2) | (1) | | | E | 2 |
| 1-Heptene | 2685 | | | | | | | | **CAS No** | | | | | | | |
| Heptyl acetate | 833 | 3 | NI | 3 | (R) | (3) | NI | 0 | 0 | (2) | 1 | 2 | | | F | 2 |
| Heptyl acetate | 375 | | | | | | | | **CAS No** | | 112-06-1 | | | | | |
| Hexadecyl naphthalene/dihexadecyl naphthalene mixture | 2159 | 0 | NI | 0 | NR | 0 | NI | 0 | 0 | (1) | 1 | 1 | | | Fp | 2 |
| 1-Hexadecylnaphthalene / 1,4-bis(hexadecyl)naphthalene mixture | 2373 | | | | | | | | **CAS No** | | | | | | | |
| Hexamethylene diamine | 845 | 0 | NI | 0 | R | 2 | NI | 1 | 1 | (3) | 3A | 3 | R | | D | 3 |
| Hexamethylenediamine solution | 380 | | | | | | | | **CAS No** | | 124-09-4 | | | | | |
| Hexamethylene diamine | 845 | 0 | NI | 0 | R | 2 | NI | 1 | 1 | (3) | 3A | 3 | R | | D | 3 |
| Hexamethylenediamine (molten) | 378 | | | | | | | | **CAS No** | | 124-09-4 | | | | | |
| Hexamethylene diamine | 845 | 0 | NI | 0 | R | 2 | NI | 1 | 1 | (3) | 3A | 3 | R | | D | 3 |
| Hexamethylenediamine | 377 | | | | | | | | **CAS No** | | 124-09-4 | | | | | |
| Hexamethylene diamine adipate, 50% in water | 846 | 0 | NI | 0 | R | 1 | NI | 0 | (0) | (0) | 0 | 0 | | | D | 0 |
| Hexamethylenediamine adipate (50% in water) | 379 | | | | | | | | **CAS No** | | 3323-53-3 | | | | | |
| Hexamethylene diisocyanate | 2142 | 3 | 0 | 0 | NR | 2 | NI | 1 | 2 | 4 | 3 | 3 | SsSr | | S | 3 |
| Hexamethylene diisocyanate | 18 | | | | | | | | **CAS No** | | 822-06-0 | | | | | |
| Hexamethylene glycol | 847 | 0 | NI | 0 | R | 1 | NI | 0 | 0 | (1) | 0 | 1 | | | D | 1 |
| Hexamethylene glycol | 376 | | | | | | | | **CAS No** | | 629-11-8 | | | | | |
| Hexamethyleneimine | 848 | 1 | NI | 1 | NI | 2 | NI | 3 | 1 | 2 | 2 | 2 | | | FED | 2 |
| Hexamethyleneimine | 381 | | | | | | | | **CAS No** | | 111-49-9 | | | | | |
| Hexamethylene tetramine (40% solution) | 849 | 0 | NI | 0 | R | 0 | NI | 0 | 0 | (1) | 0 | 1 | Ss | | D | 2 |
| Hexamethylenetetramine solutions | 382 | | | | | | | | **CAS No** | | 100-97-0 | | | | | |
| Hexane | 850 | 3 | NI | 3 | R | 4 | NI | 0 | 0 | 0 | 2 | 2 | NA | | E | 2 |
| Hexane | 2683 | | | | | | | | **CAS No** | | 100-54-3 | | | | | |
| Hexane | 850 | 3 | NI | 3 | R | 4 | NI | 0 | 0 | 0 | 2 | 2 | NA | | E | 2 |
| Hexane (all isomers) | 383 | | | | | | | | **CAS No** | | 100-54-3 | | | | | |
| 1,6-Hexanediol, distillation overheads | 2143 | 4 | NI | 4 | NR | 2 | NI | 0 | 0 | 2 | 1 | 2 | | | FED | 2 |
| 1,6-Hexanediol, distillation overheads | 2641 | | | | | | | | **CAS No** | | | | | | | |
| Hexanoic acid | 853 | 2 | NI | 2 | R | 2 | NI | 0 | 0 | (3) | (3) | 3 | | | FD | 3 |
| Hexanoic acid | 384 | | | | | | | | **CAS No** | | 142-62-1 | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-Hexanol | 854 | 1 | 0 | 0 | (R) | 2 | NI | 1 | 0 | (3) | 1 | 3 | | | FD | 3 |
| Hexanol | 385 | | | | | | | | **CAS No** | | 111-27-3 | | | | | |
| Hexene (all isomers) | 2224 | 3 | NI | 3 | R | 3 | NI | (0) | (0) | (1) | (1) | (1) | | | E | 2 |
| Hexene (all isomers) | 386 | | | | | | | | **CAS No** | | | | | | | |
| 1-Hexene | 855 | 3 | NI | 3 | R | 3 | NI | 0 | 0 | 0 | 1 | 1 | | | E | 2 |
| 1-Hexene | 2681 | | | | | | | | **CAS No** | | 592-41-6 | | | | | |
| 2-Hexene (mixed isomers) | 856 | 3 | NI | 3 | R | 3 | NI | (0) | (0) | 0 | (1) | (1) | | | E | 2 |
| 2-Hexene (mixed isomers) | 2682 | | | | | | | | **CAS No** | | | | | | | |
| Hexyl acetate | 857 | 2 | NI | 2 | NI | 3 | NI | 0 | 0 | (1) | 1 | 1 | | | FE | 2 |
| Hexyl acetate | 387 | | | | | | | | **CAS No** | | 142-92-7 | | | | | |
| sec-Hexyl acetate | 858 | 2 | NI | 2 | NI | 3 | NI | 0 | 0 | 0 | 1 | (2) | | | FED | 2 |
| Methylamyl acetate | 456 | | | | | | | | **CAS No** | | 108-84-9 | | | | | |
| Hexylene glycol | 859 | 0 | NI | 0 | R | 0 | 0 | 0 | 0 | (3) | 2 | 3 | | | D | 2 |
| Hexylene glycol | 388 | | | | | | | | **CAS No** | | 107-41-5 | | | | | |
| Hydrocarbon waxes | 2278 | 0 | NI | 0 | NR | 0 | 0 | 0 | 0 | (0) | 1 | 1 | | | Fp | 2 |
| Hydrocarbon waxes | 2886 | | | | | | | | **CAS No** | | | | | | | |
| Hydrochloric acid | 864 | Inorg | 0 | 0 | Inorg | 1 | NI | 1 | 1 | 3 | 3C | 3 | | | DE | 3 |
| Hydrochloric acid | 389 | | | | | | | | **CAS No** | | 7647-01-0 | | | | | |
| Hydrogenated Starch Hydrolysate | 2347 | 0 | NI | 0 | R | 0 | NI | 0 | 0 | (0) | 0 | 0 | | | D | 0 |
| Hydrogenated starch hydrolysate | 3077 | | | | | | | | **CAS No** | | | | | | | |
| Hydrogen peroxide, more than 60% | 867 | Inorg | 0 | 0 | Inorg | 3 | NI | 1 | 0 | 2 | 3 | 3 | | | D | 3 |
| Hydrogen peroxide, more than 60% | 2689 | | | | | | | | **CAS No** | | 7722-84-1 | | | | | |
| Hydrogen peroxide, more than 60% | 867 | Inorg | 0 | 0 | Inorg | 3 | NI | 1 | 0 | 2 | 3 | 3 | | | D | 3 |
| Hydrogen peroxide solutions (over 60% but not over 70% by mass) | 390 | | | | | | | | **CAS No** | | 7722-84-1 | | | | | |
| Hydrogen peroxide, more than 8% but not more than 60% | 2231 | Inorg | 0 | 0 | Inorg | 3 | NI | 1 | 0 | (2) | 3 | 3 | | | D | 3 |
| Hydrogen peroxide, more than 8% but not more than 60% | 2690 | | | | | | | | **CAS No** | | | | | | | |
| Hydrogen peroxide, more than 8% but not more than 60% | 2231 | Inorg | 0 | 0 | Inorg | 3 | NI | 1 | 0 | (2) | 3 | 3 | | | D | 3 |
| Hydrogen peroxide solutions (over 8% but not over 60% by mass) | 391 | | | | | | | | **CAS No** | | | | | | | |
| N-(2-Hydroxyethyl) ethylene diamine triacetic acid, trisodium salt (solution) | 870 | 0 | NI | 0 | NI | 1 | NI | 0 | 0 | (1) | 1 | 1 | R | | D | 3 |
| N-(Hydroxyethyl)ethylenediaminetriacetic acid, trisodium salt solution | 470 | | | | | | | | **CAS No** | | 150-30-0 | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2-Hydroxy-4-(methylthio) butanoic acid | 871 | 1 | NI | 1 | R | 1 | NI | 0 | 0 | (3) | 1 | 3 | | | D | 3 |
| 2-Hydroxy-4-(methylthio)butanoic acid | 49 | | | | | | | | **CAS No** | | 583-91-5 | | | | | |
| Icosa(oxypropane-2,3-diyl)s | 2092 | NI | NI | NI | NI | NI | NI | 0 | (0) | (2) | 2 | (2) | | | Fp | 2 |
| Icosa(oxypropane-2,3-diyl)s | 392 | | | | | | | | **CAS No** | | | | | | | |
| Icosa(oxypropane-2,3-diyl)s | 2092 | NI | NI | NI | NI | NI | NI | 0 | (0) | (2) | 2 | (2) | | | Fp | 2 |
| Icosa(oxypropane-2,3-diyl)s | 2691 | | | | | | | | **CAS No** | | | | | | | |
| Illipe oil (containing less than 10% free fatty acids) | 2304 | (0) | NI | (0) | (R) | (0) | NI | (0) | (0) | (0) | (0) | (0) | | | Fp | 2 |
| Illipe oil | 3034 | | | | | | | | **CAS No** | | | | | | | |
| Interesterified Mixed Vegetable Oils | 2355 | 0 | NI | 0 | R | (0) | NI | (0) | (0) | (1) | (1) | (1) | | | Fp | 2 |
| Interesterified vegetable oils | 3115 | | | | | | | | **CAS No** | | | | | | | |
| Isobutanol | 382 | 0 | NI | 0 | R | 1 | 0 | 0 | 0 | 1 | 2 | 3 | | | D | 3 |
| Isobutyl alcohol | 397 | | | | | | | | **CAS No** | | 78-83-1 | | | | | |
| Isobutyl formate | 405 | 1 | NI | 1 | NI | 1 | NI | 0 | (0) | 0 | (1) | (2) | | | E | 2 |
| Isobutyl formate | 398 | | | | | | | | **CAS No** | | 542-55-2 | | | | | |
| Isobutyl methacrylate | 408 | 2 | NI | 2 | NR | 1 | NI | 0 | 0 | 0 | 2 | 2 | Ss | | FED | 2 |
| Isobutyl methacrylate | 2673 | | | | | | | | **CAS No** | | 97-86-9 | | | | | |
| Isobutyric acid | 419 | 0 | NI | 0 | R | 2 | NI | 2 | 2 | (3) | 3 | 3 | | | E | NI |
| Isobutyric acid | 2459 | | | | | | | | **CAS No** | | 79-31-2 | | | | | |
| Isodecanol | 557 | 3 | 2 | 2 | R | 3 | NI | 0 | 0 | 0 | 2 | 1 | | | Fp | 2 |
| Decyl alcohol (all isomers) | 219 | | | | | | | | **CAS No** | | 25339-17-7 | | | | | |
| Isononanol | 1059 | 3 | NI | 3 | NR | 3 | 1 | 0 | 0 | (2) | 2 | 2 | | | Fp | 2 |
| Nonyl alcohol (all isomers) | 510 | | | | | | | | **CAS No** | | 2430-22-0 | | | | | |
| Isononylaldehyde | 2300 | 3 | NI | 3 | NR | (3) | NI | 0 | 0 | (2) | 2 | 1 | | | F | 2 |
| Isononylaldehyde | 2754 | | | | | | | | **CAS No** | | | | | | | |
| Isooctaldehyde | 1071 | 2 | NI | 2 | NI | 3 | NI | 0 | 0 | (1) | 1 | 1 | | | F | 1 |
| Octyl aldehydes | 542 | | | | | | | | **CAS No** | | 63885-09-6 | | | | | |
| Isooctanol | 1076 | 3 | NI | 3 | R | 2 | 0 | 1 | 0 | (2) | 2 | (2) | | | F | 2 |
| iso-Octanol | 2675 | | | | | | | | **CAS No** | | 26952-21-6 | | | | | |
| Isooctylamine | 1081 | 2 | NI | 2 | NI | 3 | NI | 1 | 1 | 3 | 3 | 3 | | | FD | 3 |
| 2-Ethylhexylamine | 48 | | | | | | | | **CAS No** | | 104-75-6 | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Isopentene | 1113 | 2 | NI | 2 | NI | 2 | NI | (0) | (0) | (0) | (0) | (1) | | | E | 2 |
| iso-Pentene | 2677 | | | | | | | | **CAS No** | | 563-45-1 | | | | | |
| Isophorone | 879 | 1 | 1 | 1 | R | 2 | 0 | 1 | 1 | (2) | 1 | 2 | | | FD | 2 |
| Isophorone | 399 | | | | | | | | **CAS No** | | 78-59-1 | | | | | |
| Isophorone diamine | 880 | 0 | 0 | 0 | NR | 2 | 0 | 1 | (1) | (3) | 3 | 3 | Ss | | D | 3 |
| Isophoronediamine | 401 | | | | | | | | **CAS No** | | 2855-13-2 | | | | | |
| Isophorone diisocyanate | 881 | 1 | NI | 1 | NR | 3 | NI | 0 | 0 | 3 | 3 | 3 | SsSrA | | S | 3 |
| Isophorone diisocyanate | 400 | | | | | | | | **CAS No** | | 4098-71-9 | | | | | |
| Isoprene | 882 | 2 | 2 | 2 | NR | 3 | 1 | 0 | 0 | 0 | 1 | 2 | CM | | E | 3 |
| Isoprene | 402 | | | | | | | | **CAS No** | | 78-79-5 | | | | | |
| Isopropanol | 1181 | 0 | NI | 0 | R | 0 | 0 | 0 | 0 | 0 | 1 | 2 | | | D | 2 |
| Isopropyl alcohol | 405 | | | | | | | | **CAS No** | | 67-63-0 | | | | | |
| Isopropanolamine | 1182 | 0 | NI | 0 | R | 2 | NI | 0 | 1 | 0 | 3 | 3 | | | D | 3 |
| Isopropanolamine | 403 | | | | | | | | **CAS No** | | 78-96-6 | | | | | |
| Isopropyl acetate | 1192 | 1 | NI | 1 | R | 1 | NI | 0 | 0 | 0 | 1 | 2 | | | ED | 2 |
| Isopropyl acetate | 404 | | | | | | | | **CAS No** | | 108-21-4 | | | | | |
| Isopropylamine | 1195 | 0 | NI | 0 | R | 2 | NI | 2 | 2 | 1 | 3 | 3 | | | DE | 3 |
| Isopropylamine | 407 | | | | | | | | **CAS No** | | 75-31-0 | | | | | |
| Isopropylamine (70%) | 2350 | 0 | NI | 0 | R | 2 | NI | 2 | 2 | 1 | 3 | 3 | | | DE | 3 |
| Isopropylamine (70% or less) solution | 395 | | | | | | | | **CAS No** | | | | | | | |
| Isopropyl benzene | 1197 | 3 | 2 | 2 | R | 3 | NI | 0 | 0 | 0 | 2 | 1 | | | FE | 2 |
| Isopropylbenzene | 2687 | | | | | | | | **CAS No** | | 98-82-8 | | | | | |
| Isopropyl benzene | 1197 | 3 | 2 | 2 | R | 3 | NI | 0 | 0 | 0 | 2 | 1 | | | FE | 2 |
| Propylbenzene (all isomers) | 623 | | | | | | | | **CAS No** | | 98-82-8 | | | | | |
| Isopropyl cyclohexane | 1199 | 4 | NI | 4 | (NR) | (3) | NI | (0) | (0) | (1) | (0) | (1) | | | FE | 2 |
| Isopropylcyclohexane | 408 | | | | | | | | **CAS No** | | 696-29-7 | | | | | |
| Isopropyltoluenes | 549 | 4 | 4 | 4 | (NR) | 3 | NI | 0 | (0) | 1 | 2 | (1) | | | FE | 2 |
| p-Cymene | 552 | | | | | | | | **CAS No** | | 99-87-6 | | | | | |
| Isovaleraldehyde | 1390 | 1 | NI | 1 | R | 3 | NI | 0 | 0 | 0 | 2 | 2 | | | D | 2 |
| Valeraldehyde (all isomers) | 731 | | | | | | | | **CAS No** | | 590-86-3 | | | | | |

| EHS Name<br>TRN Name | EHS<br>TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Jatropha oil | 2402 | 0 | NI | (0) | (R) | (2) | NI | (0) | (0) | (0) | (0) | (0) | | | Fp | 2 |
| Jatropha oil | 3637 | | | | | | | | **CAS No** | | | | | | | |
| Kaolin slurry | 883 | Inorg | NI | 0 | Inorg | 0 | NI | 0 | 0 | 0 | 0 | 0 | | | S | 0 |
| Kaolin slurry | 409 | | | | | | | | **CAS No** | | 1332-58-7 | | | | | |
| Lactic acid | 886 | 0 | NI | 0 | R | 1 | NI | 0 | 0 | (3) | 2 | 3 | | | D | 3 |
| Lactic acid | 410 | | | | | | | | **CAS No** | | 50-21-5 | | | | | |
| Lactonitrile solution (80% or less) | 887 | 0 | NI | 0 | R | 4 | NI | 3 | 4 | (4) | NI | NI | | | D | 3 |
| Lactonitrile solution (80% or less) | 411 | | | | | | | | **CAS No** | | 78-97-7 | | | | | |
| Lard (containing less than 10% free fatty acids) | 2317 | 0 | NI | 0 | R | 0 | NI | 0 | (0) | (1) | 0 | 1 | | | Fp | 2 |
| Lard | 3047 | | | | | | | | **CAS No** | | | | | | | |
| Latex, ammonia inhibited | 889 | 0 | NI | 0 | NI | (2) | NI | 0 | 0 | (1) | 0 | 1 | | | D | 1 |
| Latex, ammonia (1% or less)- inhibited | 413 | | | | | | | | **CAS No** | | | | | | | |
| Lauric acid | 891 | 4 | NI | 4 | R | 4 | 1 | 0 | (0) | (2) | 1 | 2 | | | Fp | 2 |
| Lauric acid | 415 | | | | | | | | **CAS No** | | 143-07-7 | | | | | |
| Lauryl methacrylate | 893 | 0 | 2 | 2 | R | 0 | 0 | 0 | (0) | (1) | 1 | 1 | | | F | 1 |
| Dodecyl methacrylate | 300 | | | | | | | | **CAS No** | | 142-90-5 | | | | | |
| Lecithin (soybeans) | 2146 | 0 | NI | 0 | R | 0 | NI | 0 | 0 | (0) | 0 | (0) | | | SD | 0 |
| Lecithin | 417 | | | | | | | | **CAS No** | | | | | | | |
| Lignin sulphonic acid, salt solution | 34 | 0 | NI | 0 | (NR) | (0) | NI | 0 | (0) | (0) | (0) | (0) | | | D | 0 |
| Ligninsulphonic acid, sodium salt solution | 419 | | | | | | | | **CAS No** | | | | | | | |
| Linear alkyl (C12-16) propoxyamine ethoxylate | 2380 | 3 | 0 | 3 | NR | 4 | NI | 1 | (1) | (3) | 3 | (3) | | | D | 3 |
| Alkyl(C12-C16) propoxyamine ethoxylate | 3423 | | | | | | | | **CAS No** | | | | | | | |
| Linseed oil (containing less than 4% free fatty acids) | 2318 | 0 | NI | 0 | R | (2) | NI | 0 | (0) | (1) | 0 | (1) | | | Fp | 2 |
| Linseed oil | 3048 | | | | | | | | **CAS No** | | | | | | | |
| Long chain alkaryl polyether (C11-C20) (LOA) | 1982 | (4) | NI | (4) | NR | 3 | (1) | 0 | 0 | (2) | 0 | 2 | | | Fp | 2 |
| Long-chain alkaryl polyether (C11-C20) | 421 | | | | | | | | **CAS No** | | | | | | | |
| Long chain alkaryl sulphonic acid (C16-C60) (LOA) | 1966 | 0 | NI | 0 | (NR) | 0 | NI | 0 | 0 | (2) | (1) | 2 | | | Fp | 2 |
| Long-chain alkaryl sulphonic acid (C16-C60) | 424 | | | | | | | | **CAS No** | | | | | | | |
| Long-chain alkylphenate/Phenol sulphide mixture | 1754 | (0) | NI | (0) | (NR) | 0 | NI | 0 | 0 | (2) | 2 | 2 | | | Fp | 2 |
| Long-chain alkylphenate/Phenol sulphide mixture | 425 | | | | | | | | **CAS No** | | | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Long-chain polyetheramine in alkyl(C2-C4)benzenes | 1457 | NI | NI | NI | NR | 2 | NI | 0 | 0 | (2) | 2 | 2 | | | Fp | 2 |
| | 422 | | | | | | | | **CAS No** | | | | | | | |
| Lubrizol polyolefin anhydride | 1865 | 0 | NI | 0 | NR | 1 | NI | 0 | 0 | (2) | 1 | (2) | | | Fp | 2 |
| Polyolefin anhydride | 605 | | | | | | | | **CAS No** | | | | | | | |
| L-Lysine solution (50% or less) | 2199 | 0 | 0 | 0 | R | 1 | 0 | 0 | 0 | 0 | 1 | NI | | | D | 1 |
| L-Lysine solution (60% or less) | 2306 | | | | | | | | **CAS No** | | | | | | | |
| Magnesium alkyl (long chain) salicylate (overbased) in mineral oil (LOA) | 71 | (0) | NI | (0) | NR | (2) | NI | 0 | 0 | (1) | (1) | (1) | Ss | | S | 2 |
| Magnesium long-chain alkyl salicylate (C11+) | 429 | | | | | | | | **CAS No** | | | | | | | |
| Magnesium chloride | 915 | Inorg | 0 | 0 | Inorg | 1 | 0 | 0 | 0 | (0) | 0 | 0 | | | D | 0 |
| Magnesium chloride solution | 427 | | | | | | | | **CAS No** | | 7786-30-3 | | | | | |
| Magnesium hydroxide slurry | 916 | Inorg | 0 | 0 | Inorg | 0 | NI | 0 | 0 | (1) | (0) | 1 | | | S | 1 |
| Magnesium hydroxide slurry | 428 | | | | | | | | **CAS No** | | 1309-42-8 | | | | | |
| Magnesium lignosulphonate solutions | 2356 | (0) | NI | (0) | (NR) | (0) | NI | 0 | 0 | (0) | (0) | (0) | | | D | 0 |
| Ligninsulphonic acid, magnesium salt solution | 3116 | | | | | | | | **CAS No** | | | | | | | |
| Magnesium long chain alkaryl sulphonate (C11-C50) (LOA) | 1967 | 0 | NI | 0 | NR | 0 | NI | 0 | 0 | (2) | 1 | 2 | | | Fp | 2 |
| Magnesium long-chain alkaryl sulphonate (C11-C50) | 430 | | | | | | | | **CAS No** | | | | | | | |
| Maleic acid/allyl sulphonic acid copolymer with phosphonate groups, partial sodium salt (aqueous solution) | 2412 | 0 | NI | 0 | NR | 0 | NI | (0) | (0) | (0) | (0) | (0) | | | D | 0 |
| Maleic acid/allyl sulphonic acid copolymer with phosphonate groups, partial sodium salt (aqueous solution) | 3688 | | | | | | | | **CAS No** | | | | | | | |
| Maleic anhydride | 921 | 1 | NI | 1 | R | 2 | 0 | 1 | 2 | (3) | 3 | 3 | SsSr | | D | 3 |
| Maleic anhydride | 431 | | | | | | | | **CAS No** | | 108-31-6 | | | | | |
| Maleic anhydride - sodium allylsulphonate copolymer (aqueous solution) | 2410 | 0 | NI | 0 | NR | 1 | NI | 0 | 0 | (0) | (0) | 0 | | | D | 0 |
| Maleic anhydride-sodium allylsulphonate copolymer solution | 3686 | | | | | | | | **CAS No** | | | | | | | |
| Maltitol Syrup | 2348 | 0 | NI | 0 | R | 0 | NI | 0 | 0 | (0) | 0 | 0 | | | D | 0 |
| Maltitol solution | 3078 | | | | | | | | **CAS No** | | | | | | | |
| Mango kernel oil (containing less than 10% free fatty acids) | 2305 | (0) | NI | (0) | (R) | (0) | NI | (0) | (0) | (0) | (0) | (0) | | | Fp | 2 |
| Mango kernel oil | 3035 | | | | | | | | **CAS No** | | | | | | | |
| 2-Mercaptobenzothiazol | 925 | 2 | 1 | 1 | NR | 4 | 2 | 0 | 0 | (0) | 0 | 0 | Ss | | S | 2 |
| Mercaptobenzothiazol, sodium salt solution | 432 | | | | | | | | **CAS No** | | 149-30-4 | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mesityl oxide | 946 | 1 | NI | 1 | R | (1) | NI | 1 | 0 | 2 | 2 | 2 | | | D | 2 |
| Mesityl oxide | 433 | | | | | | | | **CAS No** | | 141-79-7 | | | | | |
| Metam-sodium (ISO) | 202 | 0 | NI | 0 | NR | 4 | NI | 1 | 2 | (2) | 2 | 1 | Ss | | D | 2 |
| Metam sodium solution | 434 | | | | | | | | **CAS No** | | 137-42-8 | | | | | |
| Methacrylic acid-alkoxypoly (alkylene oxide) methacrylate co-polymer sodium salt (45% or less solution) | 2288 | NI | 0 | 0 | NR | 1 | NI | 0 | (0) | (1) | 1 | 0 | | | D | 1 |
| Methacrylic acid - alkoxypoly (alkylene oxide) methacrylate copolymer, sodium salt aqueous solution (45% or less) | 2819 | | | | | | | | **CAS No** | | | | | | | |
| Methacrylic acid, inhibited | 948 | 0 | NI | 0 | R | 2 | 0 | 1 | 2 | 2 | 3 | 3 | | | D | 3 |
| Methacrylic acid | 435 | | | | | | | | **CAS No** | | 79-41-4 | | | | | |
| Methacrylic resin in 1,2 Dichloroethane soln. | 2046 | 1 | 1 | 1 | NR | 2 | 0 | (1) | (0) | (2) | (1) | (2) | C | | SD | 3 |
| Methacrylic resin in ethylene dichloride | 436 | | | | | | | | **CAS No** | | | | | | | |
| Methacrylonitrile | 949 | 0 | NI | 0 | R | 2 | 0 | 2 | 2 | 3 | 1 | 1 | Ss | NT | ED | 3 |
| Methacrylonitrile | 437 | | | | | | | | **CAS No** | | 126-98-7 | | | | | |
| Methanol | 951 | 0 | NI | 0 | R | 0 | 0 | (2) | (2) | (2) | 2 | 2 | T | | DE | 3 |
| Methyl alcohol | 441 | | | | | | | | **CAS No** | | 67-56-1 | | | | | |
| (2-Methoxymethylethoxy)propanols | 2452 | 0 | NI | 0 | R | 0 | (0) | 0 | 0 | (0) | 0 | 0 | | | D | 0 |
| | 3870 | | | | | | | | **CAS No** | | | | | | | |
| Methyl acetate | 954 | 0 | NI | 0 | R | 1 | NI | 0 | 0 | 0 | 1 | 2 | | | DE | 2 |
| Methyl acetate | 438 | | | | | | | | **CAS No** | | 79-20-9 | | | | | |
| Methyl acetoacetate | 335 | 0 | NI | 0 | R | 1 | NI | 0 | 0 | (2) | 1 | 2 | | | D | 2 |
| Methyl acetoacetate | 439 | | | | | | | | **CAS No** | | 105-45-3 | | | | | |
| Methyl acrylate | 955 | 0 | NI | 0 | R | 3 | NI | 1 | 1 | 2 | 2 | 3 | MSs | | D | 3 |
| Methyl acrylate | 440 | | | | | | | | **CAS No** | | 96-33-3 | | | | | |
| Methylamine solution 42% or less | 957 | 0 | NI | 0 | R | 2 | NI | 2 | (2) | 3 | 3 | 3 | M | NT | DE | 3 |
| Methylamine solutions (42% or less) | 455 | | | | | | | | **CAS No** | | 74-89-5 | | | | | |
| Methyl amyl alcohol | 958 | 1 | NI | 1 | R | 1 | NI | 1 | 0 | 2 | 1 | 3 | | | FED | 3 |
| Methylamyl alcohol | 457 | | | | | | | | **CAS No** | | 108-11-2 | | | | | |
| Methyl amyl ketone | 959 | 1 | NI | 1 | NI | 1 | NI | 1 | 0 | 0 | 1 | 1 | | | FED | 2 |
| Methyl amyl ketone | 442 | | | | | | | | **CAS No** | | 110-43-0 | | | | | |
| N-Methyl aniline | 961 | 1 | NI | 1 | (NR) | 3 | 1 | 1 | 1 | (2) | (1) | 1 | | | FD | 2 |
| N-Methylaniline | 3107 | | | | | | | | **CAS No** | | 100-61-8 | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| alpha-Methylbenzyl alcohol with acetophenone (15% or less) | 2399 | 1 | NI | 1 | (R) | (1) | NI | (1) | (0) | (3) | (2) | (3) | R | | Fp | 3 |
| alpha-Methylbenzyl alcohol with acetophenone (15% or less) | 3634 | | | | | | | | **CAS No** | | 98-85-1 | | | | | |
| 2-Methyl-2-butanol | 964 | 1 | 1 | 1 | (R) | (1) | 0 | 1 | 1 | 1 | 3 | 2 | | | D | 3 |
| tert-Amyl alcohol | 685 | | | | | | | | **CAS No** | | 75-85-4 | | | | | |
| 3-Methyl-1-butanol | 965 | 1 | 1 | 1 | (R) | 1 | 0 | 1 | 0 | (2) | 2 | 2 | | | FED | 2 |
| Isoamyl alcohol | 396 | | | | | | | | **CAS No** | | 123-51-3 | | | | | |
| 3-Methyl-1-butanol | 965 | 1 | 1 | 1 | (R) | 1 | 0 | 1 | 0 | (2) | 2 | 2 | | | FED | 2 |
| Amyl alcohol, primary | 126 | | | | | | | | **CAS No** | | 123-51-3 | | | | | |
| Methyl butenol | 967 | 0 | NI | 0 | R | 2 | NI | 1 | 0 | (2) | 2 | 2 | | | D | 2 |
| Methylbutenol | 458 | | | | | | | | **CAS No** | | 556-82-1 | | | | | |
| Methyl tert-butyl ether | 969 | 1 | NI | 1 | NR | 1 | 0 | 0 | 0 | 0 | 2 | 1 | | T | ED | 2 |
| Methyl tert-butyl ether | 454 | | | | | | | | **CAS No** | | 1634-04-4 | | | | | |
| Methyl butyl ketone | 970 | 1 | NI | 1 | (R) | 1 | (0) | 0 | 0 | 0 | 1 | 1 | RN | | FED | 3 |
| Methyl butyl ketone | 443 | | | | | | | | **CAS No** | | 591-78-6 | | | | | |
| Methylbutynol | 968 | 0 | NI | 0 | NR | 1 | NI | 1 | 1 | 0 | 0 | 2 | | | D | 2 |
| Methylbutynol | 459 | | | | | | | | **CAS No** | | 115-19-5 | | | | | |
| Methylbutynol | 968 | 0 | NI | 0 | NR | 1 | NI | 1 | 1 | 0 | 0 | 2 | | | D | 2 |
| 2-Methyl-2-hydroxy-3-butyne | 52 | | | | | | | | **CAS No** | | 115-19-5 | | | | | |
| Methyl butyrate | 973 | 1 | NI | 1 | NI | (2) | NI | 0 | 0 | 2 | 2 | (2) | | | ED | 2 |
| Methyl butyrate | 444 | | | | | | | | **CAS No** | | 623-42-7 | | | | | |
| Methyl cyclohexane | 976 | 3 | 3 | 3 | NR | 3 | 1 | 0 | 0 | 1 | 1 | 1 | A | | E | 2 |
| Methylcyclohexane | 460 | | | | | | | | **CAS No** | | 108-87-2 | | | | | |
| Methyl cyclopentadiene, dimer | 977 | 4 | NI | 4 | (NR) | (3) | NI | 0 | (0) | (2) | (2) | (2) | | | F | 2 |
| Methylcyclopentadiene dimer | 461 | | | | | | | | **CAS No** | | 26472-00-4 | | | | | |
| Methyl cyclopentadienyl manganese tricarbonyl (60-70%) in mineral oil | 2213 | 3 | NI | 3 | NR | 4 | NI | 2 | 3 | 4 | 1 | 1 | | | S | 3 |
| Methylcyclopentadienyl manganese tricarbonyl | 2692 | | | | | | | | **CAS No** | | | | | | | |
| N-Methyldiethanolamine | 1491 | 0 | NI | 0 | R | 2 | NI | 1 | 0 | (2) | 1 | 2 | | | D | 2 |
| Methyl diethanolamine | 445 | | | | | | | | **CAS No** | | 105-59-9 | | | | | |
| Methylene dithiocyanate | 2235 | 2 | NI | 2 | NR | 5 | NI | 2 | 0 | 4 | 3 | 3 | Ss | | NI | 3 |
| Methylene bisthiocyanate | 2693 | | | | | | | | **CAS No** | | 6317-18-6 | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2-Methyl-6-ethylaniline | 984 | 2 | NI | 2 | NR | 2 | NI | 1 | 1 | (2) | 0 | 2 | | | FD | 2 |
| 2-Methyl-6-ethyl aniline | 54 | | | | | | | | **CAS No** | | 24549-06-2 | | | | | |
| 2-Methyl-5-ethylpyridine | 986 | 2 | NI | 2 | R | 2 | 0 | 1 | 2 | (3) | 3 | 3 | | | FD | 3 |
| 2-Methyl-5-ethyl pyridine | 53 | | | | | | | | **CAS No** | | 104-90-5 | | | | | |
| Methyl formate | 987 | 0 | NI | 0 | R | 1 | NI | 1 | 0 | 2 | 0 | 2 | | | DE | 2 |
| Methyl formate | 447 | | | | | | | | **CAS No** | | 107-31-3 | | | | | |
| N-Methylglucamine, 60% aqueous solution | 2048 | 0 | NI | 0 | R | 0 | NI | 1 | 0 | (3) | 0 | 3 | | | D | 3 |
| N-Methylglucamine solution (70% or less) | 482 | | | | | | | | **CAS No** | | 6284-40-8 | | | | | |
| 2-Methylglutaronitrile with 2-Ethylsuccinonitrile (12% or less) | 2397 | 0 | NI | 0 | R | 0 | NI | 2 | 2 | 3 | 0 | 1 | | | FD | 2 |
| 2-Methylglutaronitrile with 2-Ethylsuccinonitrile (12% or less) | 3632 | | | | | | | | **CAS No** | | 4553-62-2 | | | | | |
| Methyl heptyl ketone | 988 | 3 | NI | 3 | R | 3 | NI | 0 | 0 | NI | NI | NI | | | FED | NI |
| Methyl heptyl ketone | 448 | | | | | | | | **CAS No** | | 821-55-6 | | | | | |
| Methyl isobutyl ketone | 971 | 1 | NI | 1 | R | 1 | 0 | 1 | 0 | 2 | 2 | 3 | | | FED | 3 |
| Methyl isobutyl ketone | 449 | | | | | | | | **CAS No** | | 108-10-1 | | | | | |
| Methyl methacrylate | 995 | 1 | NI | 1 | R | 2 | NI | 0 | 0 | 0 | 2 | 2 | Ss | | ED | 2 |
| Methyl methacrylate | 450 | | | | | | | | **CAS No** | | 80-62-6 | | | | | |
| 3-Methyl-3-methoxy butanol | 996 | 1 | NI | 1 | NR | 0 | NI | 0 | (0) | (2) | 1 | (2) | | | FD | 2 |
| 3-Methyl-3-methoxybutanol | 59 | | | | | | | | **CAS No** | | | | | | | |
| 3-Methyl-3-methoxybutyl acetate | 997 | 1 | NI | 1 | NR | 0 | NI | 0 | (0) | NI | NI | NI | | | F | NI |
| 3-Methyl-3-methoxybutyl acetate | 60 | | | | | | | | **CAS No** | | | | | | | |
| Methyl naphthalenes | 1999 | 4 | NI | 4 | (NR) | (4) | NI | 1 | 0 | (2) | 1 | 1 | | T | F | 2 |
| Methyl naphthalene (molten) | 451 | | | | | | | | **CAS No** | | | | | | | |
| 2-Methyl pentane | 1000 | 3 | NI | 3 | NI | 4 | NI | (0) | (0) | (2) | (2) | (2) | | | E | 2 |
| 2-Methylpentane | 2684 | | | | | | | | **CAS No** | | 107-83-5 | | | | | |
| 2-Methyl-1,3-propanediol | 2200 | 0 | 0 | 0 | NR | 0 | 0 | 0 | 0 | (0) | 0 | 0 | | | D | 0 |
| 2-Methyl-1,3-propanediol | 2213 | | | | | | | | **CAS No** | | | | | | | |
| Methyl propyl ketone | 1003 | 0 | NI | 0 | (R) | 0 | NI | 1 | 0 | (2) | 1 | 2 | | | FED | 2 |
| Methyl propyl ketone | 452 | | | | | | | | **CAS No** | | 107-87-9 | | | | | |
| 2-Methyl pyridine | 1005 | 1 | NI | 1 | R | 1 | NI | 1 | 2 | 1 | 3A | 3 | | | D | 3 |
| 2-Methylpyridine | 55 | | | | | | | | **CAS No** | | 109-06-8 | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3-Methylpyridine | 1006 | 1 | NI | 1 | R | 1 | NI | 1 | 2 | 2 | 3 | 3 | | | D | 3 |
| 3-Methylpyridine | 61 | | | | | | | | **CAS No** | | 108-99-6 | | | | | |
| 4-Methylpyridine | 1007 | 1 | NI | 1 | (R) | 1 | NI | 1 | 2 | 2 | 3 | 3 | | | D | 3 |
| 4-Methylpyridine | 63 | | | | | | | | **CAS No** | | 108-89-4 | | | | | |
| N-Methylpyrrolidone | 1008 | 0 | NI | 0 | R | 1 | NI | 0 | 0 | 2 | 1 | 2 | R | | D | 3 |
| N-Methyl-2-pyrrolidone | 481 | | | | | | | | **CAS No** | | 872-50-4 | | | | | |
| Methyl salicylate | 86 | 2 | NI | 2 | R | 2 | NI | 1 | 1 | (2) | 2 | 1 | R | | SD | 3 |
| Methyl salicylate | 453 | | | | | | | | **CAS No** | | 119-36-8 | | | | | |
| alpha-Methylstyrene | 1010 | 3 | 3 | 3 | NR | 3 | NI | 0 | 0 | 1 | 2 | 1 | M | (T) | FE | 3 |
| alpha-Methylstyrene | 107 | | | | | | | | **CAS No** | | 98-83-9 | | | | | |
| 3-(Methylthio) propionaldehyde | 993 | 0 | NI | 0 | R | 3 | 1 | 1 | 1 | 2 | 2 | 3 | NSs | T | D | 3 |
| 3-(methylthio)propionaldehyde | 2368 | | | | | | | | **CAS No** | | 3268-49-3 | | | | | |
| Metolachlor (ISO) | 113 | 2 | 2 | 2 | NR | 5 | 1 | 1 | 0 | (2) | 1 | 0 | Ss | | S | 2 |
| N-(2-Methoxy-1-methyl ethyl)-2-ethyl-6-methyl chloroacetanilide | 469 | | | | | | | | **CAS No** | | 51218-45-2 | | | | | |
| Mixed acid oil | 2306 | (0) | NI | (0) | (R) | (0) | NI | 0 | (0) | (1) | (1) | 1 | | | Fp | 2 |
| Acid oil mixture from soyabean, corn (maize) and sunflower oil refining | 3036 | | | | | | | | **CAS No** | | | | | | | |
| Mixture of dithiophosphate salts in water | 2381 | 1 | 0 | 1 | NR | 2 | NI | 0 | 0 | (2) | 2 | 2 | | | D | 2 |
| Dialkyl thiophosphates sodium salts solution | 3424 | | | | | | | | **CAS No** | | | | | | | |
| Molasses | 1013 | 0 | NI | 0 | R | 0 | NI | 0 | 0 | 0 | 0 | 0 | | | D | 0 |
| Molasses | 462 | | | | | | | | **CAS No** | | | | | | | |
| Molybdenum polysulphide long chain alkyl dithiocarbamide complex | 2344 | 4 | 2 | 2 | NR | 2 | 0 | 0 | 0 | (2) | 2 | 2 | | | Fp | 2 |
| Molybdenum polysulphide long chain alkyl dithiocarbamide complex | 3108 | | | | | | | | **CAS No** | | | | | | | |
| Mononitrobenzene | 1017 | 1 | 1 | 1 | R | 3 | (4) | (2) | 2 | 2 | 1 | 1 | CRT | | SD | 3 |
| Nitrobenzene | 501 | | | | | | | | **CAS No** | | 98-95-3 | | | | | |
| Morpholine | 1018 | 0 | 0 | 0 | R | 2 | NI | 1 | 2 | 2 | 3 | 3 | | | D | 3 |
| Morpholine | 463 | | | | | | | | **CAS No** | | 110-91-8 | | | | | |
| Myrcene | 1019 | 4 | NI | 4 | R | 4 | 1 | 0 | 0 | (2) | 2 | NI | | | F | 2 |
| Myrcene | 465 | | | | | | | | **CAS No** | | 123-35-3 | | | | | |
| Naphthalene (molten) | 1 | 3 | 3 | 3 | NR | 4 | 1 | 1 | (0) | (1) | 0 | 0 | T | T | S | 2 |
| Naphthalene (molten) | 493 | | | | | | | | **CAS No** | | 91-20-3 | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Naphthalene, crude (molten) (#)(!) | 2459 | NI | (3) | (3) | NR | 3 | 0 | 0 | (0) | (2) | 2 | 2 | CMT | | Fp | 3 |
| Naphthalene crude (molten) | 3858 | | | | | | | | **CAS No** | | 85117-10-8 | | | | | |
| Naphthalene sulphonic acid condensed with formaldehyde, sodium salt, solution | 1020 | 0 | 1 | 1 | (NR) | 1 | NI | 0 | (0) | (1) | 0 | 1 | | | D | 1 |
| Naphthalenesulphonic acid-Formaldehyde copolymer, sodium salt solution | 494 | | | | | | | | **CAS No** | | 9084-06-4 | | | | | |
| Neodecanoic acid | 1025 | 4 | NI | 4 | NR | 2 | NI | 0 | 0 | (2) | 0 | 2 | | | Fp | 2 |
| Neodecanoic acid | 496 | | | | | | | | **CAS No** | | 26896-20-8 | | | | | |
| Nitric acid (90% or less) | 1029 | Inorg | NI | 0 | Inorg | 2 | NI | (3) | (1) | 3 | 3C | 3 | | | D | 3 |
| Nitric acid (70% and over) | 498 | | | | | | | | **CAS No** | | 7697-37-2 | | | | | |
| Nitric acid (90% or less) | 1029 | Inorg | NI | 0 | Inorg | 2 | NI | (3) | (1) | 3 | 3C | 3 | | | D | 3 |
| Nitric acid (less than 70%) | 499 | | | | | | | | **CAS No** | | 7697-37-2 | | | | | |
| Nitrilotriacetic acid,trisodium salt | 1030 | 0 | NI | 0 | R | 1 | 0 | 1 | (0) | 0 | 1 | 1 | CMR | | D | 3 |
| Nitrilotriacetic acid, trisodium salt solution | 500 | | | | | | | | **CAS No** | | 5094-31-3 | | | | | |
| Nitroethane | 1037 | 0 | NI | 0 | NR | 2 | NI | 1 | 0 | (2) | (0) | (1) | | | SD | 2 |
| Nitroethane | 502 | | | | | | | | **CAS No** | | 79-24-3 | | | | | |
| Nitroethane (80%)/Nitropropane (20%) | 2245 | 0 | 1 | 1 | NR | 2 | NI | 1 | 1 | 2 | 0 | 1 | | | E | 2 |
| Nitroethane(80%)/ Nitropropane(20%) | 503 | | | | | | | | **CAS No** | | | | | | | |
| Nitroethane, 1-Nitropropane (each 15% or more) mixture | 2270 | (0) | (1) | (1) | (NR) | (2) | NI | 1 | 1 | 2 | 0 | 1 | | | FED | 2 |
| Nitroethane, 1-Nitropropane (each 15% or more) mixture | 2212 | | | | | | | | **CAS No** | | | | | | | |
| 2-Nitrophenol | 1041 | 1 | 2 | 2 | R | 3 | (2) | 0 | 0 | (1) | 1 | 1 | | | S | 1 |
| o-Nitrophenol (molten) | 536 | | | | | | | | **CAS No** | | 88-75-5 | | | | | |
| 1-Nitropropane | 1044 | 0 | 1 | 1 | NR | 1 | NI | 1 | 0 | 2 | 0 | 1 | | | FED | 2 |
| 1-Nitropropane | 2747 | | | | | | | | **CAS No** | | 108-03-2 | | | | | |
| 1- or 2- Nitropropane | 2242 | 0 | 1 | 1 | NR | 1 | NI | 2 | 0 | 2 | 0 | 1 | C | | FED | 3 |
| 1- or 2-Nitropropane | 20 | | | | | | | | **CAS No** | | | | | | | |
| 2-Nitropropane | 1045 | 0 | 1 | 1 | NR | 2 | NI | 2 | 0 | 2 | 0 | 0 | C | | FED | 3 |
| 2-Nitropropane | 2748 | | | | | | | | **CAS No** | | 79-46-9 | | | | | |
| Nitropropane (60%) Nitroethane (40%) (mixture) | 1046 | 0 | 1 | 1 | NR | 2 | NI | 1 | 0 | 2 | 0 | 1 | C | | FED | 3 |
| Nitropropane (60%)/Nitroethane (40%) mixture | 504 | | | | | | | | **CAS No** | | | | | | | |
| o-Nitrotoluene | 1049 | 2 | 2 | 2 | NR | 2 | (1) | 1 | 0 | (2) | 0 | 1 | CMR | | S | 3 |
| o-Nitrotoluene | 2745 | | | | | | | | **CAS No** | | 88-72-2 | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| p-Nitrotoluene | 1051 | 2 | 1 | 1 | NR | 3 | 0 | 1 | 0 | (2) | 0 | 1 | R | | S | 3 |
| p-Nitrotoluene | 2746 | | | | | | | | **CAS No** | | 99-99-0 | | | | | |
| o- or p-Nitrotoluenes | 2241 | 2 | 2 | 2 | NR | 3 | (1) | 1 | 0 | (2) | 0 | 1 | CMR | | S | 3 |
| o- or p-Nitrotoluenes | 532 | | | | | | | | **CAS No** | | | | | | | |
| Nonane | 1054 | 4 | NI | 4 | R | 4 | NI | 0 | 0 | 1 | 1 | 1 | A | | FE | 2 |
| Nonane (all isomers) | 506 | | | | | | | | **CAS No** | | 111-84-2 | | | | | |
| Nonanoic acid | 1055 | 3 | NI | 3 | R | 2 | NI | 0 | 0 | (3) | 2 | 3 | | | F | 3 |
| Nonanoic acid (all isomers) | 507 | | | | | | | | **CAS No** | | 112-05-0 | | | | | |
| Nonene (all isomers) | 2222 | 4 | NI | 4 | NI | 3 | NI | 0 | 0 | 0 | 1 | 1 | A | | FE | 2 |
| Nonene (all isomers) | 508 | | | | | | | | **CAS No** | | | | | | | |
| 1-Nonene | 1060 | 4 | NI | 4 | NI | 3 | NI | 0 | 0 | 0 | 1 | 1 | A | | FE | 2 |
| 1-Nonene | 2680 | | | | | | | | **CAS No** | | 27215-95-8 | | | | | |
| Nonyl acetate | 1766 | 4 | NI | 4 | NI | NI | NI | 0 | 0 | NI | NI | NI | | | F | NI |
| Nonyl acetate | 509 | | | | | | | | **CAS No** | | 143-13-5 | | | | | |
| Nonyl methacrylate monomer | 1061 | 5 | NI | 5 | R | 3 | NI | (0) | (0) | (1) | (1) | (1) | | | F | 1 |
| Nonyl methacrylate monomer | 511 | | | | | | | | **CAS No** | | 2696-43-7 | | | | | |
| Nonyl phenol | 1062 | 5 | 4 | 4 | NR | 5 | 3 | 1 | 0 | (3) | 3 | 3 | | | Fp | 3 |
| Nonylphenol | 512 | | | | | | | | **CAS No** | | 25154-52-3 | | | | | |
| Nonyl(C6-C12)phenol poly(4-12)ethoxylate | 1063 | 4 | NI | 4 | NR | 3 | 1 | 0 | 0 | (2) | 2 | 1 | | | D | 2 |
| Alkyl(C7-C11)phenol poly(4-12) ethoxylate | 97 | | | | | | | | **CAS No** | | | | | | | |
| Nonyl(C6-C12)phenol poly(4-12)ethoxylate | 1063 | 4 | NI | 4 | NR | 3 | 1 | 0 | 0 | (2) | 2 | 1 | | | D | 2 |
| Nonylphenol poly(4+)ethoxylate | 513 | | | | | | | | **CAS No** | | | | | | | |
| Octamethylcyclotetrasiloxane | 2398 | 5 | 5 | 5 | NR | 0 | 3 | 0 | 0 | 0 | 0 | 0 | | | F | 1 |
| Octamethylcyclotetrasiloxane | 3633 | | | | | | | | **CAS No** | | | | | | | |
| Octane | 1072 | 5 | NI | 5 | (R) | 4 | NI | (0) | (0) | 0 | 0 | 0 | A | | FE | 2 |
| Octane (all isomers) | 538 | | | | | | | | **CAS No** | | 111-65-9 | | | | | |
| Octanoic acid (Caprylic acid) | 1074 | 3 | NI | 3 | R | 1 | NI | 0 | 0 | (3) | 3 | 3 | | | F | 3 |
| Octanoic acid (all isomers) | 539 | | | | | | | | **CAS No** | | 134-07-2 | | | | | |
| 1-Octanol | 1075 | 3 | NI | 3 | R | 2 | 0 | 1 | 0 | (2) | 2 | 2 | | | Fp | 2 |
| Octanol (all isomers) | 540 | | | | | | | | **CAS No** | | 111-87-5 | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-Octanol | 1075 | 3 | NI | 3 | R | 2 | 0 | 1 | 0 | (2) | 2 | 2 | | | Fp | 2 |
| 1-Octanol | 2676 | | | | | | | | **CAS No** | | 111-87-5 | | | | | |
| Octene (all isomers) | 1079 | 4 | NI | 4 | NR | 3 | NI | 0 | 0 | 0 | 2 | 1 | A | | FE | 2 |
| Octene (all isomers) | 541 | | | | | | | | **CAS No** | | | | | | | |
| Octyl acetate | 1080 | 3 | NI | 3 | R | 2 | NI | 0 | 0 | (1) | 1 | NI | | | FD | 1 |
| n-Octyl acetate | 483 | | | | | | | | **CAS No** | | 112-14-1 | | | | | |
| Octyl decyl adipate | 1082 | 0 | NI | 0 | (R) | (0) | (0) | (0) | (0) | (1) | (1) | (1) | | | Fp | 2 |
| Octyl decyl adipate | 543 | | | | | | | | **CAS No** | | 110-29-2 | | | | | |
| n-Octyl mercaptan | 2461 | 4 | 3 | 3 | NR | 5 | NI | 1 | 0 | (1) | 1 | 0 | Ss | | F | 3 |
| n-Octyl mercaptan | 3742 | | | | | | | | **CAS No** | | | | | | | |
| Olefin/Alkyl ester copolymer (molecular weight 2000+) (LOA) | 1965 | NI | NI | 0 | NR | 0 | NI | 0 | 0 | (0) | 0 | 0 | | | Fp | 2 |
| Olefin-Alkyl ester copolymer (molecular weight 2000+) | 546 | | | | | | | | **CAS No** | | | | | | | |
| Olefin mixture (C7-C9) | 2385 | 5 | 4 | 4 | NR | 4 | NI | (0) | 0 | 0 | 2 | 1 | A | | E | 2 |
| Olefin mixture (C7-C9) C8 rich, stabilized | 3548 | | | | | | | | **CAS No** | | 97593-00-5 | | | | | |
| Olefin mixtures (C5-C7) | 2243 | 3 | NI | 3 | R | 3 | NI | (0) | (0) | (1) | (2) | (1) | | | E | 2 |
| Olefin mixtures (C5-C7) | 545 | | | | | | | | **CAS No** | | | | | | | |
| Olefin mixtures (C5-C15) | 2321 | (5) | NI | (5) | NR | (4) | NI | (0) | (0) | (2) | (2) | (1) | A | | FE | 2 |
| Olefin mixtures (C5-C15) | 544 | | | | | | | | **CAS No** | | | | | | | |
| Olefins C13 and above, all isomers | 2028 | 5 | NI | 5 | NR | 0 | NI | 0 | 0 | (0) | 0 | 0 | | | Fp | 2 |
| Olefins (C13+, all isomers) | 547 | | | | | | | | **CAS No** | | | | | | | |
| alpha-Olefins (C6-C18),mixture | 2030 | (5) | NI | (5) | NR | (4) | NI | (0) | (0) | (2) | (2) | (1) | A | | FE | 2 |
| alpha-Olefins (C6-C18) mixtures | 108 | | | | | | | | **CAS No** | | | | | | | |
| Oleic acid | 1089 | 0 | NI | 0 | R | 0 | NI | 0 | 1 | (2) | 1 | 1 | | | Fp | 2 |
| Oleic acid | 548 | | | | | | | | **CAS No** | | 112-80-1 | | | | | |
| Oleylamine | 1862 | 0 | NI | 0 | NR | 4 | NI | 1 | (1) | (3) | 3B | 3 | | | Fp | 3 |
| Oleylamine | 550 | | | | | | | | **CAS No** | | | | | | | |
| Olive oil | 1090 | 0 | NI | 0 | R | (2) | NI | (0) | (0) | (1) | 1 | 1 | | | Fp | 2 |
| Olive oil | 2771 | | | | | | | | **CAS No** | | 8001-25-0 | | | | | |
| Orange juice | 2375 | 0 | 0 | 0 | R | 0 | 0 | 0 | 0 | (0) | 0 | 0 | | | D | 0 |
| Orange juice | 3151 | | | | | | | | **CAS No** | | | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Orange juice (not concentrated) | 2382 | 0 | 0 | 0 | R | 0 | 0 | 0 | 0 | (0) | 0 | 0 | | | D | 0 |
| Orange juice (not concentrated) | 3425 | | | | | | | | **CAS No** | | | | | | | |
| Oxatetra-azahydroxyalkanoic acid, substituted with acetic acid / acetoxyethanolamine | 2413 | 1 | NI | 1 | R | 1 | NI | 0 | 0 | 0 | 0 | 0 | | | D | 0 |
| Oxatetra-azahydroxyalkanoic acid, substituted with acetic acid / acetoxyethanolamine | 3689 | | | | | | | | **CAS No** | | | | | | | |
| Oxygenated aliphatic hydrocarbon mixture | 2266 | 5 | 2 | (2) | NR | 1 | NI | 0 | 0 | (1) | 1 | 1 | | | FE | 2 |
| Oxygenated aliphatic hydrocarbon mixture | 2825 | | | | | | | | **CAS No** | | | | | | | |
| Palm acid oil | 2307 | (0) | NI | (0) | (R) | (0) | NI | 0 | (0) | (1) | 0 | 1 | | | Fp | 2 |
| Palm acid oil | 3037 | | | | | | | | **CAS No** | | | | | | | |
| Palm fatty acid distillate | 2310 | NI | NI | (0) | (R) | (0) | NI | 0 | (0) | (1) | 0 | 1 | | | Fp | 2 |
| Palm fatty acid distillate | 3040 | | | | | | | | **CAS No** | | | | | | | |
| Palm kernel fatty acid distillate | 2335 | (0) | 0 | 0 | R | (3) | NI | 0 | (0) | (2) | 1 | 2 | | | Fp | 2 |
| Palm kernel fatty acid distillate | 3111 | | | | | | | | **CAS No** | | | | | | | |
| Palm kernel olein (containing less than 5 % free fatty acids) | 2308 | (0) | NI | (0) | (R) | 1 | NI | (0) | (0) | (0) | (0) | (0) | | | Fp | 2 |
| Palm kernel olein | 3038 | | | | | | | | **CAS No** | | | | | | | |
| Palm kernel stearin (containing less than 5% free fatty acids) | 2309 | 0 | (0) | (0) | (R) | 0 | NI | (0) | (0) | (0) | (0) | (0) | | | Fp | 2 |
| Palm kernel stearin | 3039 | | | | | | | | **CAS No** | | | | | | | |
| Palm Mid Fraction | 2363 | (0) | NI | (0) | (R) | (0) | NI | 0 | 0 | (0) | (0) | (0) | | | Fp | 2 |
| Palm mid-fraction | 3126 | | | | | | | | **CAS No** | | | | | | | |
| Palm nut oil | 1094 | 0 | NI | 0 | R | 1 | NI | (0) | (0) | (1) | (0) | (1) | | | Fp | 2 |
| Palm kernel oil | 2766 | | | | | | | | **CAS No** | | | | | | | |
| Palm nut oil fatty acid | 1095 | 0 | NI | 0 | R | (3) | NI | 0 | 0 | (2) | 1 | 2 | | | Fp | 2 |
| Palm kernel acid oil | 553 | | | | | | | | **CAS No** | | | | | | | |
| Palm oil (containing less than 15% free fatty acids) | 2249 | 0 | NI | 0 | R | 0 | NI | 0 | (0) | (0) | 0 | 0 | | | Fp | 2 |
| Palm oil | 2764 | | | | | | | | **CAS No** | | | | | | | |
| Palm oil (containing more than 15% and less than 30% free fatty acids) | 2364 | 0 | NI | 0 | R | 0 | NI | 0 | 0 | (2) | (2) | (2) | | | Fp | 2 |
| Non-edible industrial grade palm oil | 3127 | | | | | | | | **CAS No** | | | | | | | |
| Palm oil fatty acid methyl ester | 1097 | 0 | NI | 0 | R | 0 | NI | 0 | 0 | 0 | 0 | 1 | | | Fp | 2 |
| Palm oil fatty acid methyl ester | 554 | | | | | | | | **CAS No** | | | | | | | |
| Palm olein | 2250 | 0 | NI | 0 | R | 0 | NI | 0 | (0) | (0) | 0 | 0 | | | Fp | 2 |
| Palm olein | 2765 | | | | | | | | **CAS No** | | | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Palm stearin | 2251 | 0 | NI | 0 | R | 0 | NI | 0 | (0) | (0) | 0 | 0 | | | Fp | 2 |
| Palm stearin | 555 | | | | | | | | **CAS No** | | | | | | | |
| Paraffin wax | 1086 | 0 | NI | 0 | R | 0 | NI | (0) | (0) | (1) | 1 | 1 | | | Fp | 2 |
| Paraffin wax | 556 | | | | | | | | **CAS No** | | 8002-74-2 | | | | | |
| Paraldehyde | 1098 | 0 | 0 | 0 | NR | 0 | NI | 1 | 0 | 0 | 1 | 3 | | | D | 3 |
| Paraldehyde | 557 | | | | | | | | **CAS No** | | 123-63-7 | | | | | |
| Pentachloroethane | 1099 | 3 | 2 | 2 | NI | 3 | 1 | 1 | (1) | 1 | (1) | (1) | CT | | S | 3 |
| Pentachloroethane | 558 | | | | | | | | **CAS No** | | 76-01-7 | | | | | |
| 1,3-Pentadiene | 1102 | 2 | NI | 2 | NR | 2 | NI | 0 | 0 | 0 | 1 | (2) | | | E | 2 |
| 1,3-Pentadiene | 14 | | | | | | | | **CAS No** | | 504-60-9 | | | | | |
| 1,3-Pentadiene (greater than 50%), cyclopentene and isomers, mixtures. | 2390 | NI | NI | (3) | (NR) | (3) | NI | (2) | (1) | (3) | (2) | (2) | CMR | | E | 3 |
| 1,3-Pentadiene (greater than 50%), cyclopentene and isomers, mixtures | 3560 | | | | | | | | **CAS No** | | | | | | | |
| Pentaethylene hexamine | 1103 | 0 | NI | 0 | NI | 4 | NI | 1 | (2) | (3) | 3 | (3) | Ss | | D | 3 |
| Pentaethylenehexamine | 560 | | | | | | | | **CAS No** | | 4067-16-7 | | | | | |
| Pentane | 1105 | 3 | NI | 3 | R | 3 | NI | 0 | 0 | 0 | 1 | 1 | | | E | 2 |
| Pentane (all isomers) | 561 | | | | | | | | **CAS No** | | 109-66-0 | | | | | |
| 1,5-Pentanedial solution, (5-50%) (#) | 1107 | 0 | NI | 0 | R | 3 | 0 | 1 | 0 | 3 | 3 | 3 | SsSr | | D | 3 |
| Glutaraldehyde solutions (50% or less) | 362 | | | | | | | | **CAS No** | | 111-30-8 | | | | | |
| Pentanoic acid | 1109 | 1 | NI | 1 | NI | 2 | NI | 1 | 2 | (3) | 3 | 3 | | | FD | 3 |
| Pentanoic acid | 562 | | | | | | | | **CAS No** | | 109-52-4 | | | | | |
| Pentanoic acid (64%)/2-methyl butyric acid (36%) mixture | 2144 | (1) | NI | (1) | NI | (2) | NI | (1) | (2) | (3) | 3 | (3) | | | FD | 3 |
| n-Pentanoic acid (64%)/2-Methyl butyric acid (36%) mixture | 2211 | | | | | | | | **CAS No** | | | | | | | |
| 1-Pentanol | 1110 | 1 | 1 | 1 | (R) | 1 | 0 | 1 | 0 | (3) | 2 | 3 | | | FED | 3 |
| n-Amyl alcohol | 473 | | | | | | | | **CAS No** | | 71-41-0 | | | | | |
| 2-Pentanol | 1111 | 1 | 1 | 1 | R | 1 | 0 | 0 | (0) | (2) | 2 | 2 | | | D | 2 |
| sec-Amyl alcohol | 637 | | | | | | | | **CAS No** | | 6032-29-7 | | | | | |
| Pentasodium triphosphate (*) | 2418 | Inorg | 0 | 0 | Inorg | 1 | NI | NI | NI | NI | NI | NI | | | NI | NI |
| | 3694 | | | | | | | | **CAS No** | | | | | | | |
| Pentene (all isomers) | 1992 | 2 | NI | 2 | NI | (2) | NI | (0) | (0) | (0) | (0) | (1) | | | E | 2 |
| Pentene (all isomers) | 563 | | | | | | | | **CAS No** | | | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1-Pentene | 1114 | 2 | NI | 2 | NI | (2) | NI | (0) | (0) | 0 | (0) | (1) | | | E | 2 |
| 1-Pentene | 2679 | | | | | | | | **CAS No** | | 109-67-1 | | | | | |
| 2-Pentene | 1115 | 2 | NI | 2 | NI | 2 | NI | (0) | (0) | (0) | (0) | (1) | | | E | 2 |
| 2-Pentene | 2678 | | | | | | | | **CAS No** | | 109-68-2 | | | | | |
| Petrolatum | 2244 | 0 | NI | 0 | NR | 0 | NI | 0 | 0 | 2 | 1 | 1 | | | Fp | 2 |
| Petrolatum | 565 | | | | | | | | **CAS No** | | | | | | | |
| Petroleum wax | 1122 | 0 | NI | 0 | NR | 0 | NI | 0 | 0 | (0) | 0 | 0 | | | Fp | 2 |
| Waxes | 741 | | | | | | | | **CAS No** | | 8002-74-2 | | | | | |
| Phenol | 1124 | 1 | 2 | 2 | R | 3 | 0 | 2 | 2 | (3) | 3 | 3 | | NT | S | 3 |
| Phenol | 566 | | | | | | | | **CAS No** | | 108-95-2 | | | | | |
| Phenylxylylethane | 1135 | 5 | 4 | 4 | NR | (2) | NI | 1 | 0 | (1) | (0) | 0 | | | F | 1 |
| 1-Phenyl-1-xylyl ethane | 23 | | | | | | | | **CAS No** | | 40766-31-2 | | | | | |
| Phosphate esters, alkyl(C12-C14)amine (LOA) | 1854 | 2 | NI | 2 | NR | 3 | NI | 0 | (0) | (2) | 1 | 2 | | | FD | 2 |
| Phosphate esters, alkyl (C12-C14) amine | 1345 | | | | | | | | **CAS No** | | | | | | | |
| Phosphoric acid | 1138 | 0 | NI | 0 | Inorg | 1 | NI | (3) | (3) | 3 | 3 | 3 | | | D | 3 |
| Phosphoric acid | 567 | | | | | | | | **CAS No** | | 7664-38-2 | | | | | |
| Phosphorus (elemental yellow) | 1139 | Inorg | (3) | (3) | Inorg | 6 | 4 | 0 | 0 | 0 | 2 | 1 | | | S | 2 |
| Phosphorus, yellow or white | 568 | | | | | | | | **CAS No** | | 7732-14-0 | | | | | |
| Phthalic anhydride (molten) | 1146 | 1 | NI | 1 | R | 2 | 0 | 1 | 0 | (3) | 1 | 3 | SsSr | | S | 3 |
| Phthalic anhydride (molten) | 569 | | | | | | | | **CAS No** | | 85-44-9 | | | | | |
| alpha-Pinene | 40 | 4 | NI | 4 | R | 4 | NI | 0 | 0 | 0 | 1 | (1) | Ss | T | F | 3 |
| alpha-Pinene | 109 | | | | | | | | **CAS No** | | 80-56-8 | | | | | |
| beta-Pinene | 41 | 4 | NI | 4 | (R) | 4 | NI | 0 | 0 | 0 | 1 | (1) | Ss | NT | F | 3 |
| beta-Pinene | 141 | | | | | | | | **CAS No** | | 1330-16-1 | | | | | |
| Pine oil | 1148 | 4 | NI | 4 | NR | 4 | NI | 0 | 0 | (1) | (1) | (1) | Ss | (T) | Fp | 3 |
| Pine oil | 570 | | | | | | | | **CAS No** | | 8002-09-3 | | | | | |
| Piperazine, 68% Aqueous | 2433 | 0 | NI | 0 | NR | 2 | NI | 0 | 0 | 2 | 3A | 3 | SsSrN | | SD | 3 |
| Piperazine, 68% solution | 3748 | | | | | | | | **CAS No** | | 110-85-0 | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Pol (2-8) alkylene (C2-C3) glycols/ Polyalkylene (C2-C10) glycols monoalkyl ethers and their borate esters | 2358 | (1) | NI | (1) | (R) | (1) | (0) | 0 | 0 | 0 | 2 | 2 | | | D | 2 |
| Brake fluid base mix: Poly(2-8)alkylene (C2-C3) glycols/Polyalkylene (C2-C10) glycols monoalkyl (C1-C4) ethers and their borate esters | 144 | | | | | | | | **CAS No** | | | | | | | |
| Polyacrylic acid (40% solution) | 2302 | (2) | NI | (2) | NR | 1 | NI | 0 | 0 | (1) | 1 | 1 | | | D | 1 |
| Polyacrylic acid solution (40% or less) | 2709 | | | | | | | | **CAS No** | | | | | | | |
| Poly(C18-C22)alkyl acrylate in xylene | 1151 | (3) | NI | (3) | NR | 2 | NI | 0 | 0 | (2) | 2 | 1 | | | Fp | 2 |
| Polyalkyl (C18-C22) acrylate in xylene | 580 | | | | | | | | **CAS No** | | | | | | | |
| Polyalkylalkenaminesuccinimide, molybdenum oxysulphide | 2379 | NI | 0 | 0 | NR | 0 | NI | 0 | 0 | (0) | 0 | 0 | | | Fp | 2 |
| Polyalkylalkenaminesuccinimide, molybdenum oxysulphide | 3422 | | | | | | | | **CAS No** | | | | | | | |
| Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether | 1152 | 1 | NI | 1 | R | 1 | 0 | 0 | 0 | 0 | 2 | 2 | | | D | 2 |
| Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether | 576 | | | | | | | | **CAS No** | | | | | | | |
| Poly(2-8)alkylene glycol monoalkyl (C1-C6) ether acetate | 2254 | 1 | NI | 1 | NR | 2 | 1 | 0 | 0 | 0 | 2 | 2 | | | D | 2 |
| Poly(2-8)alkylene glycol monoalkyl (C1-C6) ether acetate | 575 | | | | | | | | **CAS No** | | | | | | | |
| Poly N-alkylmethacrylamide ammonium acrylate copolymer (20 % in DEGME) (**) | 2468 | 0 | NI | 0 | NR | 2 | NI | NI | NI | NI | NI | NI | | | D | NI |
| | 3931 | | | | | | | | **CAS No** | | | | | | | |
| Poly alkyl methacrylate (C1-C20) (LOA) | 1984 | (5) | NI | (5) | NR | 0 | NI | 0 | 0 | 0 | 0 | 0 | | | Fp | 2 |
| Polyalkyl (C10-C20) methacrylate | 2189 | | | | | | | | **CAS No** | | | | | | | |
| Poly alkyl(C10-C18) methacrylate/ethylene-propylene copolymeer mixture | 2201 | 0 | 0 | 0 | NR | 0 | 0 | 0 | 0 | (1) | 1 | 1 | A | | Fp | 3 |
| Polyalkyl (C10-C18) methacrylate/ethylene-propylene copolymer mixture | 2188 | | | | | | | | **CAS No** | | | | | | | |
| Polyaluminium chloride (sol.) | 1136 | Inorg | 0 | 0 | Inorg | 0 | NI | (0) | (0) | (1) | (0) | (1) | | | D | 1 |
| Polyaluminium chloride solution | 584 | | | | | | | | **CAS No** | | 1327-41-9 | | | | | |
| Polybutene | 1154 | 0 | NI | 0 | (NR) | (0) | (0) | (0) | (0) | (0) | (0) | (0) | | | Fp | 2 |
| Polybutene | 585 | | | | | | | | **CAS No** | | 9003-29-6 | | | | | |
| Polybutenylsuccinimide in oil | 2055 | 5 | NI | 5 | NR | 0 | NI | (0) | (0) | (0) | 0 | (0) | | | Fp | 2 |
| Polybutenyl succinimide | 586 | | | | | | | | **CAS No** | | | | | | | |
| Poly(2+)cyclic aromatics | 2246 | 4 | 4 | 4 | NR | (4) | NI | (1) | (1) | (2) | (1) | (1) | CM | | S | 3 |
| Poly(2+)cyclic aromatics | 574 | | | | | | | | **CAS No** | | | | | | | |
| Polyether, borated | 1863 | 0 | NI | 0 | NR | 3 | 1 | 0 | (0) | (1) | 1 | 0 | | | D | 1 |
| Polyether, borated | 572 | | | | | | | | **CAS No** | | | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Polyether (molecular weight 2000+) (LOA) | 1975 | 0 | NI | 0 | NR | 1 | NI | 0 | (0) | (0) | 0 | 0 | | | Fp | 2 |
| Polyether (molecular weight 1350+) | 587 | | | | | | | | **CAS No** | | | | | | | |
| Polyethylene amines / paraffin mixtures | 1991 | (5) | NI | (5) | NR | 3 | 0 | 0 | (1) | (3) | (2) | (3) | Ss | | Fp | 3 |
| Polyethylene polyamines (more than 50% C5 -C20 paraffin oil) | 591 | | | | | | | | **CAS No** | | | | | | | |
| Polyethylene glycol | 1157 | 0 | NI | 0 | NR | 0 | NI | 0 | 0 | 0 | 1 | 1 | | | D | 1 |
| Polyethylene glycol | 589 | | | | | | | | **CAS No** | | 25322-68-3 | | | | | |
| Polyethylene glycol dimethyl ether | 1158 | 0 | NI | 0 | NR | 0 | NI | 0 | 0 | (1) | 1 | (1) | | | D | 1 |
| Polyethylene glycol dimethyl ether | 590 | | | | | | | | **CAS No** | | 24991-55-7 | | | | | |
| Poly(ethylene glycol) methylbutenyl ether (MW >1000) | 2395 | NI | 0 | 0 | R | 1 | NI | 0 | 0 | (0) | 0 | 0 | | | D | 0 |
| Poly(ethylene glycol) methylbutenyl ether (MW>1000) | 3501 | | | | | | | | **CAS No** | | | | | | | |
| Polyethylene polyamines | 2367 | 0 | NI | 0 | NR | 3 | 0 | 1 | 0 | (3) | 2 | (3) | Ss | | D | 0 |
| Polyethylene polyamines | 3131 | | | | | | | | **CAS No** | | | | | | | |
| Polyferric sulphate solution | 338 | Inorg | 0 | 0 | Inorg | (2) | NI | 1 | (1) | (3) | 3 | (3) | | | D | 3 |
| Polyferric sulphate solution | 592 | | | | | | | | **CAS No** | | | | | | | |
| Polyglycerine, sodium salt, solution | 1874 | 0 | NI | 0 | R | 0 | NI | 0 | 0 | (3) | (2) | 3 | | | D | 3 |
| Polyglycerin, sodium salt solution (containing less than 3% sodium hydroxide) | 593 | | | | | | | | **CAS No** | | | | | | | |
| Polyglycerol | 1511 | NI | NI | NI | NI | NI | NI | 0 | (0) | (0) | (0) | (0) | | | D | 0 |
| Polyglycerol | 594 | | | | | | | | **CAS No** | | | | | | | |
| Poly (iminoethylene)-graft-N-poly (ethyleneoxy) solution (90% or less) | 2287 | 0 | 0 | 0 | NR | 0 | NI | 0 | 0 | (1) | 0 | 1 | | | D | 1 |
| Poly(iminoethylene)-graft-N-poly(ethyleneoxy) solution (90% or less) | 2537 | | | | | | | | **CAS No** | | | | | | | |
| Polyisobutenamine in aliphatic (C10-C14) solvent | 2192 | 0 | 0 | 0 | NR | 2 | NI | 0 | (0) | (2) | 2 | 1 | | | FED | 2 |
| Polyisobutenamine in aliphatic (C10-C14) solvent | 2374 | | | | | | | | **CAS No** | | | | | | | |
| (Polyisobutene)amino products in aliphatic hydrocarbons | 2455 | 0 | NI | (5) | NR | 2 | NI | 0 | 0 | (1) | 1 | 0 | A | | Fp | 3 |
| (Polyisobutene) amino products in aliphatic hydrocarbons | 3811 | | | | | | | | **CAS No** | | | | | | | |
| Polyisobutenyl anhydride adduct | 2127 | 0 | NI | 0 | NR | 0 | NI | 0 | 0 | (1) | 0 | 1 | | | FD | 1 |
| Polyisobutenyl anhydride adduct | 2256 | | | | | | | | **CAS No** | | | | | | | |
| Poly(4+)isobutylene | 2264 | 0 | NI | 0 | NR | 0 | NI | (0) | (0) | (0) | (0) | (0) | | | Fp | 2 |
| Polyisobutylene (MW≤224) | 578 | | | | | | | | **CAS No** | | | | | | | |
| Polymethylene polyphenyl isocyanate | 1153 | NI | (2) | (2) | NR | 0 | 0 | 0 | 0 | (2) | 2 | 2 | SsSr | | S | 2 |
| Polymethylene polyphenyl isocyanate | 595 | | | | | | | | **CAS No** | | 9016-87-9 | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Polyolefin acid, potassium salt | 1895 | NI | NI | NI | NR | 0 | NI | 0 | 0 | (0) | 0 | 0 | | | NI | 0 |
| Potassium salt of polyolefin acid | 2199 | | | | | | | | **CAS No** | | | | | | | |
| Polyolefinamide alkene(C16+)amine (LOA) | 2104 | 5 | NI | 5 | NR | 0 | NI | 0 | 0 | (1) | 1 | (1) | | | Fp | 2 |
| Polyolefin amide alkeneamine (C17+) | 597 | | | | | | | | **CAS No** | | | | | | | |
| Polyolefin amide alkeneamine (C28+) (LOA) | 1971 | 0 | NI | 0 | NR | 0 | NI | 0 | 0 | (0) | 1 | (1) | | | NI | 1 |
| Polyolefin amide alkeneamine (C28+) | 598 | | | | | | | | **CAS No** | | | | | | | |
| Polyolefin amide alkeneamine borate (C28-C250) (LOA) | 1970 | 0 | NI | 0 | NR | 0 | NI | 0 | 0 | (0) | 0 | (0) | | | Fp | 2 |
| Polyolefin amide alkeneamine borate (C28-C250) | 600 | | | | | | | | **CAS No** | | | | | | | |
| Polyolefin amide alkeneamine/molybden oxysulphide mi | 2256 | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | NI | | | NI | NI |
| Polyolefin amide alkeneamine/molybdenum oxysulphide mixture | 603 | | | | | | | | **CAS No** | | | | | | | |
| Polyolefin amide alkylene amine polyol | 1989 | 0 | 2 | 2 | NR | 0 | NI | 0 | 0 | (0) | 0 | 0 | | | Fp | 3 |
| Polyolefin amide alkeneamine polyol | 602 | | | | | | | | **CAS No** | | | | | | | |
| Poly (17+) olefin amine | 2049 | 0 | NI | 0 | NR | 2 | NI | 0 | (0) | (1) | (1) | (1) | | | Fp | 2 |
| Poly (17+) olefin amine | 571 | | | | | | | | **CAS No** | | 98761-78-5 | | | | | |
| Polyolefinamine (C28-C250) (LOA) | 2107 | 0 | NI | 0 | NR | 2 | NI | 0 | (0) | (2) | 2 | (1) | | | Fp | 2 |
| Polyolefinamine in alkyl (C2-C4) benzenes | 610 | | | | | | | | **CAS No** | | | | | | | |
| Polyolefinamine (C28-C250) (LOA) | 2107 | 0 | NI | 0 | NR | 2 | NI | 0 | (0) | (2) | 2 | (1) | | | Fp | 2 |
| Polyolefinamine (C28-C250) | 609 | | | | | | | | **CAS No** | | | | | | | |
| Polyolefinamine (C28-C250) (LOA) | 2107 | 0 | NI | 0 | NR | 2 | NI | 0 | (0) | (2) | 2 | (1) | | | Fp | 2 |
| Polyolefinamine in aromatic solvent | 611 | | | | | | | | **CAS No** | | | | | | | |
| Polyolefin aminoester salt | 2095 | 0 | NI | 0 | NR | 1 | NI | 0 | 0 | (1) | 1 | (1) | | | Fp | 2 |
| Polyolefin aminoester salts (molecular weight 2000+) | 604 | | | | | | | | **CAS No** | | | | | | | |
| Polyolefin ester (C28-C250) (LOA) | 1969 | 0 | NI | 0 | NR | 0 | NI | 0 | 0 | (0) | 0 | 0 | | | Fp | 2 |
| Polyolefin ester (C28-C250) | 606 | | | | | | | | **CAS No** | | | | | | | |
| Polyolefin (molecular weight 300+) (LOA) | 1968 | 0 | NI | 0 | NR | 0 | NI | 0 | 0 | 0 | 0 | 0 | | | Fp | 2 |
| Polyolefin (molecular weight 300+) | 596 | | | | | | | | **CAS No** | | | | | | | |
| Polyolefin phenolic amine (C28-C250) (LOA) | 1980 | 0 | NI | 0 | NI | 0 | NI | 0 | 0 | (1) | (1) | (1) | | | Fp | 2 |
| Polyolefin phenolic amine (C28-C250) | 607 | | | | | | | | **CAS No** | | | | | | | |
| Polyolefin phosphoro sulphide - barium derivative (C28-C250) (LOA) | 1976 | 0 | NI | 0 | NI | 2 | NI | 0 | (0) | (0) | (0) | (0) | | | S | 0 |
| Polyolefin phosphorosulphide, barium derivative (C28-C250) | 608 | | | | | | | | **CAS No** | | | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Polyoxyethylene sorbitan monooleate | 1442 | 3 | (2) | 3 | R | 2 | 0 | 0 | (0) | (0) | 0 | 0 | | | D | 0 |
| Poly(20)oxyethylene sorbitan monooleate | 577 | | | | | | | | **CAS No** | | 9005-65-6 | | | | | |
| Polyoxypropylene diamine | 2352 | 1 | NI | 1 | NR | 1 | NI | 0 | 0 | (3) | 3 | 3 | | | D | 3 |
| | 3112 | | | | | | | | **CAS No** | | | | | | | |
| Polypropylene | 1512 | 0 | NI | 0 | NR | (0) | NI | (0) | (0) | (0) | (0) | (0) | | | F | 1 |
| Poly(5+)propylene | 579 | | | | | | | | **CAS No** | | 9003-07-0 | | | | | |
| Polypropylene glycol | 1159 | 0 | NI | 0 | (NR) | 1 | NI | 1 | 0 | (1) | 1 | 1 | | | D | 1 |
| Polypropylene glycol | 612 | | | | | | | | **CAS No** | | 25322-69-4 | | | | | |
| Polysiloxane | 1161 | NI | 4 | 4 | NI | 2 | NI | 0 | (0) | (0) | 0 | 0 | | | F | 1 |
| Dimethylpolysiloxane | 275 | | | | | | | | **CAS No** | | | | | | | |
| Polysiloxane | 1161 | NI | 4 | 4 | NI | 2 | NI | 0 | (0) | (0) | 0 | 0 | | | F | 1 |
| Polysiloxane | 613 | | | | | | | | **CAS No** | | | | | | | |
| Poly (tetramethylene) ether glycol (mw 600-3000) | 2147 | 2 | NI | 2 | NR | 3 | NI | 0 | 0 | (0) | 0 | (0) | | | FD | 0 |
| Poly(tetramethylene ether) glycol (mw 600-3000) | 2540 | | | | | | | | **CAS No** | | | | | | | |
| Potassium carbonate solution | 2465 | Inorg | 0 | 0 | Inorg | 2 | NI | 0 | 0 | (0) | 2 | 2 | | | D | 2 |
| | 3928 | | | | | | | | **CAS No** | | | | | | | |
| Potassium chloride brine (less than 26%) | 2345 | 0 | 0 | 0 | Inorg | 0 | 0 | 0 | (0) | (0) | 0 | 0 | | | D | 0 |
| Potassium chloride solution (less than 26%) | 3109 | | | | | | | | **CAS No** | | | | | | | |
| Potassium chloride solution | 1513 | 0 | 0 | 0 | Inorg | 1 | 0 | 0 | (0) | (0) | 0 | 0 | | | D | 0 |
| Potassium chloride solution | 614 | | | | | | | | **CAS No** | | 7447-40-7 | | | | | |
| Potassium formate solution (75% or more) | 2121 | 0 | NI | 0 | R | 0 | NI | (0) | (0) | (2) | 2 | 2 | | | D | 2 |
| Potassium formate solutions | 615 | | | | | | | | **CAS No** | | 590-29-4 | | | | | |
| Potassium hydroxide (sol.) | 1171 | Inorg | 0 | 0 | Inorg | 2 | NI | 2 | (2) | (3) | 3C | 3 | | | D | 3 |
| Potassium hydroxide solution | 616 | | | | | | | | **CAS No** | | 1310-58-3 | | | | | |
| Potassium oleate | 1497 | 3 | NI | 3 | R | 4 | NI | (0) | (0) | (1) | 1 | 1 | | | FD | 1 |
| Potassium oleate | 617 | | | | | | | | **CAS No** | | 143-18-0 | | | | | |
| Potassium thiosulphate solution (50% or less) | 2152 | Inorg | 0 | 0 | Inorg | 2 | NI | 0 | 0 | (2) | 2 | (2) | | | D | 2 |
| Potassium thiosulphate (50% or less) | 2335 | | | | | | | | **CAS No** | | | | | | | |
| Propanol | 1180 | 0 | NI | 0 | R | 0 | NI | 1 | 0 | 0 | 1 | 2 | R | | D | 3 |
| n-Propyl alcohol | 488 | | | | | | | | **CAS No** | | 71-23-8 | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Propanolamine | 1183 | 0 | NI | 0 | R | 2 | NI | 0 | 1 | (3) | 3 | 3 | | | D | 3 |
| n-Propanolamine | 485 | | | | | | | | **CAS No** | | 156-87-6 | | | | | |
| 2-Propene-1-aminium, N,N-dimethyl-N-2-propenyl-, chloride, homopolymer (aqueous solution) | 2420 | 0 | NI | 0 | R | 2 | 0 | 0 | (0) | (0) | 0 | (0) | | | D | 0 |
| 2-Propene-1-aminium, N,N-dimethyl-N-2-propenyl-, chloride, homopolymer | 3696 | | | | | | | | **CAS No** | | | | | | | |
| 2-Propenoic acid polymer with furandione (65% in 2-butoxyethanol) | 2435 | 0 | NI | 0 | NR | 2 | 0 | 1 | 0 | 0 | 2 | 2 | | | Fp | 2 |
| 2-Propenoic acid polymer with furandione (65% in 2-butoxyethanol) | 3750 | | | | | | | | **CAS No** | | | | | | | |
| beta-Propiolactone | 1184 | 0 | NI | 0 | R | (2) | NI | 2 | (2) | 4 | 3B | 3 | CM | | D | 3 |
| beta-Propiolactone | 142 | | | | | | | | **CAS No** | | 57-57-8 | | | | | |
| Propionaldehyde | 1185 | 0 | NI | 0 | R | 2 | NI | 1 | 0 | 1 | 2 | 2 | | | DE | 2 |
| Propionaldehyde | 619 | | | | | | | | **CAS No** | | 123-38-6 | | | | | |
| Propionic acid | 1186 | 0 | NI | 0 | R | 2 | NI | 0 | 0 | (3) | 3B | 3 | | | D | 3 |
| Propionic acid | 620 | | | | | | | | **CAS No** | | 79-09-4 | | | | | |
| Propionic anhydride | 1187 | 0 | NI | 0 | R | 2 | NI | 0 | 0 | (3) | 2 | 3 | | | FD | 3 |
| Propionic anhydride | 621 | | | | | | | | **CAS No** | | 123-62-6 | | | | | |
| Propionitrile | 1188 | 0 | NI | 0 | NI | 0 | NI | 3 | 3 | 4 | 1 | 2 | R | | D | 3 |
| Propionitrile | 622 | | | | | | | | **CAS No** | | 107-12-0 | | | | | |
| Propyl acetate | 1191 | 1 | NI | 1 | R | 2 | NI | 0 | 0 | 0 | 1 | 1 | | | ED | 1 |
| n-Propyl acetate | 487 | | | | | | | | **CAS No** | | 109-60-4 | | | | | |
| Propylamine | 1194 | 0 | NI | 0 | NI | 1 | NI | 2 | 2 | 3 | 3 | 3 | | | DE | 3 |
| n-Propylamine | 490 | | | | | | | | **CAS No** | | 107-10-8 | | | | | |
| Propyl benzene | 1196 | NI | NI | NI | NI | 3 | NI | NI | NI | NI | NI | NI | | (T) | FE | NI |
| Propylbenzene | 2686 | | | | | | | | **CAS No** | | 103-65-1 | | | | | |
| Propyl chloride | 1198 | 2 | NI | 2 | NI | 1 | NI | 0 | NI | NI | NI | NI | | | FED | 2 |
| n-Propyl chloride | 489 | | | | | | | | **CAS No** | | 540-54-5 | | | | | |
| Propylene carbonate | 2056 | 0 | NI | 0 | R | 0 | NI | 0 | 0 | (3) | 2 | 3 | | | D | 3 |
| Propylene carbonate | 624 | | | | | | | | **CAS No** | | 108-32-7 | | | | | |
| Propylene dimer | 1201 | 3 | NI | 3 | R | 3 | NI | NI | NI | NI | NI | NI | | | E | 2 |
| Propylene dimer | 625 | | | | | | | | **CAS No** | | | | | | | |
| 1,2-Propylene glycol | 1202 | 0 | NI | 0 | R | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | D | 0 |
| Propylene glycol | 626 | | | | | | | | **CAS No** | | 57-55-6 | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Propylene glycol methyl ether acetate | 1759 | 0 | NI | 0 | NR | 1 | NI | 0 | 0 | 0 | 0 | 1 | | | D | 1 |
| Propylene glycol methyl ether acetate | 627 | | | | | | | | **CAS No** | | 108-65-6 | | | | | |
| Propylene glycol monoalkyl ether | 1958 | 0 | NI | 0 | NR | 0 | NI | 0 | 1 | 0 | 2 | 3 | | | D | 3 |
| Propylene glycol monoalkyl ether | 628 | | | | | | | | **CAS No** | | | | | | | |
| Propylene glycol phenyl ether | 2057 | 1 | NI | 1 | NI | 1 | NI | 0 | 0 | (1) | (1) | (1) | | | SD | 1 |
| Propylene glycol phenyl ether | 629 | | | | | | | | **CAS No** | | 4169-04-4 | | | | | |
| Propylene oxide | 76 | 0 | NI | 0 | R | 2 | NI | 1 | 2 | 2 | 2 | 3 | CM | | DE | 3 |
| Propylene oxide | 630 | | | | | | | | **CAS No** | | 75-56-9 | | | | | |
| Propylene oxide/Ethylene oxide mixture | 78 | 0 | NI | 0 | R | 1 | NI | 1 | 1 | 3 | 3 | 3 | CMR | | DE | 3 |
| Ethylene oxide/Propylene oxide mixture with an ethylene oxide content of not more than 30% by mass | 341 | | | | | | | | **CAS No** | | | | | | | |
| Propylene tetramer | 2255 | NI | 4 | 4 | NR | (4) | NI | (0) | (0) | (1) | (1) | (1) | | | F | 1 |
| Propylene tetramer | 631 | | | | | | | | **CAS No** | | 6842-15-5 | | | | | |
| Propylene trimer | 1207 | 5 | 4 | 4 | NR | 3 | 2 | (0) | (0) | (1) | (1) | (1) | | | FE | 2 |
| Propylene trimer | 632 | | | | | | | | **CAS No** | | 13987-01-4 | | | | | |
| Pyridine | 1213 | 0 | NI | 0 | R | 3 | 0 | 1 | 1 | 2 | 1 | 3 | | NT | D | 3 |
| Pyridine | 634 | | | | | | | | **CAS No** | | 110-86-1 | | | | | |
| Pyridine bases | 2131 | 1 | NI | 1 | R | 2 | NI | 2 | 1 | (3) | 3B | 3 | | | FED | 3 |
| Paraldehyde-ammonia reaction product | 1989 | | | | | | | | **CAS No** | | | | | | | |
| Pyrolysis gasoline | 2271 | (4) | (3) | (3) | (R) | (3) | (1) | 1 | 0 | (2) | 2 | 2 | TCM | | FE | 3 |
| Pyrolysis gasoline (containing benzene) | 1990 | | | | | | | | **CAS No** | | | | | | | |
| Rapeseed oil (high erucic acid; containing less than 4% free fatty acids) | 2315 | 0 | NI | 0 | R | (2) | NI | (0) | (0) | (0) | (1) | (1) | | | Fp | 2 |
| Rapeseed oil | 3045 | | | | | | | | **CAS No** | | | | | | | |
| Rapeseed oil (Low erucic acid containing less than 4% free fatty acids) | 2296 | 0 | NI | 0 | R | (2) | NI | 0 | 0 | 0 | (1) | (1) | | | Fp | 2 |
| Rapeseed oil (low erucic acid containing less than 4% free fatty acids) | 2956 | | | | | | | | **CAS No** | | | | | | | |
| Rape seed oil fatty acid, methyl ester | 2209 | 0 | 0 | 0 | R | 0 | NI | 0 | (0) | (1) | 1 | 1 | | | Fp | 2 |
| Rape seed oil fatty acid methyl esters | 2576 | | | | | | | | **CAS No** | | | | | | | |
| Rice bran oil (containing less than 15% of free fatty acids) | 2312 | (0) | NI | (0) | (R) | (0) | NI | 0 | (0) | (1) | 0 | 1 | | | Fp | 2 |
| Rice bran oil | 3043 | | | | | | | | **CAS No** | | | | | | | |
| Rosin | 1219 | 3 | NI | 3 | NR | 3 | NI | 0 | 0 | 2 | (1) | 1 | Ss | | S | 2 |
| Rosin | 635 | | | | | | | | **CAS No** | | 8050-09-7 | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rosin soap (disproportionated solution) | 1220 | 3 | NI | 3 | NR | 3 | NI | 0 | NI | NI | NI | NI | | | S | NI |
| Rosin soap (disproportionated) solution | 636 | | | | | | | | **CAS No** | | | | | | | |
| Safflower oil (containing less than 5% free fatty acids) | 1222 | (0) | NI | (0) | (R) | (0) | NI | (0) | (0) | (1) | 1 | 1 | | | Fp | 2 |
| Safflower oil | 3041 | | | | | | | | **CAS No** | | 8001-23-8 | | | | | |
| Saturated and unsaturated alkyl (C10-C20) phosphite (LOA) | 2108 | 0 | NI | 0 | R | 1 | NI | 0 | 0 | (0) | 0 | 0 | | | Fp | 2 |
| Alkyl (C10-C20, saturated and unsaturated) phosphite | 96 | | | | | | | | **CAS No** | | | | | | | |
| Shea butter (containing less than 15% free fatty acids) | 2311 | (0) | NI | (0) | NR | (0) | NI | (0) | (0) | (1) | (0) | (1) | | | Fp | 2 |
| Shea butter | 3042 | | | | | | | | **CAS No** | | | | | | | |
| Silica slurry | 1514 | Inorg | 0 | 0 | Inorg | 0 | 0 | (0) | (0) | 0 | (0) | (0) | | | S | 0 |
| Microsilica slurry | 2507 | | | | | | | | **CAS No** | | 7631-86-9 | | | | | |
| Sodium acetate | 1498 | 0 | NI | 0 | R | 0 | NI | 0 | 0 | 0 | 1 | 1 | | | D | 1 |
| Sodium acetate solutions | 639 | | | | | | | | **CAS No** | | 127-09-3 | | | | | |
| Sodium aluminosilicate slurry | 1235 | Inorg | 0 | 0 | Inorg | 1 | 0 | 0 | 0 | 0 | 1 | 1 | | | S | 1 |
| Sodium aluminosilicate slurry | 643 | | | | | | | | **CAS No** | | 1344-00-9 | | | | | |
| Sodium benzoate | 1475 | 0 | NI | 0 | R | 1 | NI | 0 | (0) | (1) | 0 | 1 | | | D | 1 |
| Sodium benzoate | 644 | | | | | | | | **CAS No** | | 532-32-1 | | | | | |
| Sodium bicarbonate solution (less than 10%) | 2386 | 0 | NI | 0 | Inorg | 0 | 0 | 0 | 0 | (0) | 0 | 0 | | | D | 0 |
| Sodium bicarbonate solution (less than 10%) | 3558 | | | | | | | | **CAS No** | | 144-55-8 | | | | | |
| Sodium borohydride/sodium hydroxide mixture (soln.) | 1239 | Inorg | 0 | 0 | Inorg | 2 | NI | (2) | (1) | (3) | (3) | (3) | | | D | 3 |
| Sodium borohydride (15% or less)/Sodium hydroxide solution | 645 | | | | | | | | **CAS No** | | | | | | | |
| Sodium bromide solution (less than 50%) | 2387 | 0 | NI | 0 | Inorg | 0 | 0 | 0 | 0 | (1) | 0 | 1 | R | | D | 3 |
| Sodium bromide solution (less than 50%) (*) | 3410 | | | | | | | | **CAS No** | | 7647-15-6 | | | | | |
| Sodium carbonate | 1243 | Inorg | 0 | 0 | Inorg | 1 | NI | 0 | 0 | 2 | 1 | 2 | | | SD | 2 |
| Sodium carbonate solution | 646 | | | | | | | | **CAS No** | | 497-19-8 | | | | | |
| Sodium chlorate solid and solutions (50% or less) | 1244 | Inorg | 0 | 0 | Inorg | 1 | NI | 1 | 0 | (2) | 1 | 1 | | | D | 2 |
| Sodium chlorate solution (50% or less) | 647 | | | | | | | | **CAS No** | | 7775-09-9 | | | | | |
| Sodium dichromate solution | 487 | Inorg | 0 | 0 | Inorg | 4 | 1 | 2 | 2 | 4 | 2 | 3 | CMSsSr | | D | 3 |
| Sodium dichromate solution (70% or less) | 649 | | | | | | | | **CAS No** | | 10588-01-9 | | | | | |
| Sodium dodecyl sulphate (*) | 2451 | 0 | NI | 0 | R | 3 | 1 | NI | NI | NI | NI | NI | | | NI | NI |
| | 3869 | | | | | | | | **CAS No** | | | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sodium hydrogen sulphide/Ammonium sulphide(mixture) | 1253 | Inorg | 0 | 0 | Inorg | 3 | NI | 1 | 1 | 0 | 2 | 2 | | | D | 2 |
| Sodium hydrosulphide/Ammonium sulphide solution | 653 | | | | | | | | **CAS No** | | | | | | | |
| Sodium hydrogen sulphide (6% or less)/sodium carbonate (3% or less) | 2262 | 0 | NI | 0 | Inorg | 1 | NI | (0) | (0) | (1) | (1) | (1) | | | D | 1 |
| Sodium hydrogen sulphide (6% or less)/Sodium carbonate (3% or less) solution | 650 | | | | | | | | **CAS No** | | | | | | | |
| Sodium hydrogen sulphide,solutions | 1252 | Inorg | 0 | 0 | Inorg | 1 | NI | 1 | 1 | 1 | 2 | 2 | | | D | 2 |
| Sodium hydrosulphide solution (45% or less) | 652 | | | | | | | | **CAS No** | | 16721-80-5 | | | | | |
| Sodium hydrogen sulphite,solutions | 1251 | Inorg | 0 | 0 | Inorg | 1 | NI | 0 | (0) | (0) | 0 | 0 | | | D | 0 |
| Sodium hydrogen sulphite solution (45% or less) | 651 | | | | | | | | **CAS No** | | 7631-90-5 | | | | | |
| Sodium hydroxide solution (#) | 1254 | Inorg | 0 | 0 | Inorg | 2 | NI | 1 | 1 | 3 | 3C | 3 | | | D | 3 |
| Sodium hydroxide solution | 654 | | | | | | | | **CAS No** | | 1310-73-2 | | | | | |
| Sodium hypochlorite solutions containing 20% and less but more than 2% NaOCl | 1256 | Inorg | 0 | 0 | Inorg | (4) | (1) | 0 | 0 | 1 | 3 | 3 | | | D | 3 |
| Sodium hypochlorite solution (15% or less) | 2785 | | | | | | | | **CAS No** | | 7681-52-9 | | | | | |
| Sodium hypochlorite solutions containing more than 20% Na0Cl | 1255 | Inorg | 0 | 0 | Inorg | 5 | 2 | 0 | 0 | 1 | 3 | 3 | | | D | 3 |
| Sodium hypochlorite solution (Full strength solution) | 655 | | | | | | | | **CAS No** | | 7681-52-9 | | | | | |
| Sodium methylate (**) | 2443 | NI | NI | (0) | (R) | (2) | NI | NI | NI | NI | NI | NI | T | | DE | NI |
| Sodium methylate | 3822 | | | | | | | | **CAS No** | | | | | | | |
| Sodium Methylate (21-30% in Methanol) | 2427 | 0 | NI | 0 | R | 1 | NI | 2 | (2) | (3) | 3 | 3 | T | | D | 3 |
| Sodium methylate 21-30% in methanol | 3608 | | | | | | | | **CAS No** | | | | | | | |
| Sodium nitrate | 1259 | Inorg | 0 | 0 | Inorg | 0 | NI | (0) | (0) | (0) | (1) | (1) | | | SD | 1 |
| Sodium nitrate | 656 | | | | | | | | **CAS No** | | 7631-99-4 | | | | | |
| Sodium nitrite | 340 | Inorg | 0 | 0 | Inorg | 3 | 0 | 2 | (2) | 2 | 0 | 1 | | | SD | 2 |
| Sodium nitrite solution | 658 | | | | | | | | **CAS No** | | 7632-00-0 | | | | | |
| Sodium perborate monohydrate | 2284 | Inorg | NI | NI | Inorg | 3 | NI | 1 | 0 | (3) | 2 | 3 | | | NI | 3 |
| Sodium perborate monohydrate | 2948 | | | | | | | | **CAS No** | | | | | | | |
| Sodium petroleum sulphonate | 1860 | 0 | NI | 0 | (NR) | 2 | NI | 0 | (0) | (2) | 1 | 2 | | | S | 2 |
| Sodium petroleum sulphonate | 660 | | | | | | | | **CAS No** | | | | | | | |
| Sodium polyacrylate solution | 1487 | 0 | NI | 0 | NR | 1 | 0 | 0 | (0) | (1) | 1 | 1 | | | D | 1 |
| Sodium poly(4+)acrylate solutions | 826 | | | | | | | | **CAS No** | | | | | | | |
| Sodium silicate (solution) | 1262 | Inorg | 0 | 0 | Inorg | 2 | NI | 1 | 0 | (3) | 3 | 3 | | | D | 3 |
| Sodium silicate solution | 661 | | | | | | | | **CAS No** | | 1344-09-8 | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sodium sulphate (solution) | 1499 | Inorg | 0 | 0 | Inorg | 0 | 0 | 0 | (0) | (1) | 1 | 1 | | | SD | 1 |
| Sodium sulphate solutions | 662 | | | | | | | | **CAS No** | | 7757-82-6 | | | | | |
| Sodium sulphide (solution) | 1263 | Inorg | 0 | 0 | Inorg | 3 | NI | 1 | 1 | (3) | 3A | 3 | | | D | 3 |
| Sodium sulphide solution (15% or less) | 663 | | | | | | | | **CAS No** | | 1313-82-2 | | | | | |
| Sodium sulphite (solution) | 9 | Inorg | 0 | 0 | Inorg | 2 | NI | 0 | (0) | (1) | 0 | 1 | | | D | 1 |
| Sodium sulphite solution (25% or less) | 664 | | | | | | | | **CAS No** | | 7757-83-7 | | | | | |
| Sodium tartrate succinate/Sodium tartrate disuccinate mixtures | 1771 | NI | 1 | 1 | NI | 1 | NI | 0 | NI | NI | NI | NI | | | D | NI |
| Sodium tartrates/Sodium succinates solution | 665 | | | | | | | | **CAS No** | | | | | | | |
| Sodium thiocyanate | 1264 | Inorg | 0 | 0 | Inorg | 2 | NI | 1 | (0) | (1) | 0 | 0 | | | D | 1 |
| Sodium thiocyanate solution (56% or less) | 667 | | | | | | | | **CAS No** | | 540-72-7 | | | | | |
| Sorbitan monooleate | 2215 | (5) | NI | (5) | R | 3 | NI | 0 | NI | NI | 0 | 0 | | | Fp | 2 |
| Sorbitan monooleate | 2408 | | | | | | | | **CAS No** | | | | | | | |
| Sorbitol | 1265 | 0 | NI | 0 | R | 0 | NI | 0 | (0) | (0) | (0) | (0) | | | D | 0 |
| Sorbitol solution | 668 | | | | | | | | **CAS No** | | 50-70-4 | | | | | |
| Soyabean oil (containing less than 4% free fatty acids) | 2320 | 0 | NI | 0 | R | 0 | NI | 0 | (0) | (1) | (0) | 1 | | | Fp | 2 |
| Soyabean oil | 3050 | | | | | | | | **CAS No** | | | | | | | |
| Soybean oil fatty acids, methyl esters | 2431 | 0 | NI | 0 | R | 2 | NI | 0 | 0 | 0 | 0 | 0 | | | Fp | 2 |
| Soybean Oil Fatty Acid Methyl Ester | 3737 | | | | | | | | **CAS No** | | | | | | | |
| Styrene (monomer) | 1273 | 3 | (2) | 3 | R | 3 | NI | 1 | 0 | 2 | 2 | 2 | CM | | FE | 3 |
| Styrene monomer | 669 | | | | | | | | **CAS No** | | 100-42-5 | | | | | |
| Styrene butadiene rubber latex | 1274 | 0 | NI | 0 | NR | 0 | NI | 0 | 0 | (1) | 0 | 1 | | | D | 1 |
| Latex: Carboxylated styrene-Butadiene copolymer; Styrene-Butadiene rubber | 414 | | | | | | | | **CAS No** | | | | | | | |
| Sulpho hydrocarbon (C3-C88) (LOA) | 1972 | 4 | NI | 4 | NR | 2 | NI | 0 | 0 | 0 | 0 | 0 | | | Fp | 2 |
| Sulphohydrocarbon (C3-C88) | 672 | | | | | | | | **CAS No** | | | | | | | |
| Sulpholane | 1277 | 0 | 1 | 1 | NR | 2 | 0 | 1 | 0 | 0 | 1 | 2 | | | SD | 2 |
| Sulpholane | 673 | | | | | | | | **CAS No** | | 126-33-0 | | | | | |
| Sulphonated polyacrylate solution | 1760 | NI | 0 | 0 | NI | 0 | NI | (0) | (0) | (0) | (0) | (0) | | | D | 0 |
| Sulphonated polyacrylate solution | 674 | | | | | | | | **CAS No** | | | | | | | |
| Sulphur | 906 | Inorg | 0 | 0 | Inorg | 0 | NI | 0 | 0 | (1) | 1 | 1 | | | S | 1 |
| Sulphur (molten) | 675 | | | | | | | | **CAS No** | | 7704-34-9 | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sulphuric acid | 1280 | 0 | NI | 0 | Inorg | 2 | NI | 0 | (0) | 3 | 3C | 3 | C | | D | 3 |
| Oleum | 549 | | | | | | | | **CAS No** | | 7664-93-9 | | | | | |
| Sulphuric acid | 1280 | 0 | NI | 0 | Inorg | 2 | NI | 0 | (0) | 3 | 3C | 3 | C | | D | 3 |
| Sulphuric acid | 676 | | | | | | | | **CAS No** | | 7664-93-9 | | | | | |
| Sulphuric acid | 1280 | 0 | NI | 0 | Inorg | 2 | NI | 0 | (0) | 3 | 3C | 3 | C | | D | 3 |
| Sulphuric acid, spent | 677 | | | | | | | | **CAS No** | | 7664-93-9 | | | | | |
| Sulphurized fat(C14-C20) (LOA) | 1853 | 0 | NI | 0 | NR | 1 | NI | 0 | (0) | (1) | 0 | (1) | | | FD | 1 |
| Sulphurized fat (C14-C20) | 2257 | | | | | | | | **CAS No** | | | | | | | |
| Sulphurized polyolefinamide alkene(C28-C250)amine (LOA) | 1855 | 0 | NI | 0 | NR | 0 | NI | 0 | 0 | (0) | 0 | 0 | | | FD | 0 |
| Sulphurized polyolefinamide alkene (C28-C250) amine | 2258 | | | | | | | | **CAS No** | | | | | | | |
| Sunflower oil | 1283 | 0 | NI | 0 | R | 0 | NI | (0) | (0) | (1) | (0) | (1) | | | Fp | 2 |
| Sunflower seed oil | 2782 | | | | | | | | **CAS No** | | 8001-21-6 | | | | | |
| sym-Dichlorodiethyl ether | 588 | 1 | 1 | 1 | NR | 1 | 0 | 2 | 3 | 4 | 1 | 3 | | T | SD | 3 |
| Dichloroethyl ether | 233 | | | | | | | | **CAS No** | | 111-44-4 | | | | | |
| Tall oil acids/linoleic acid dimer/polyalkylenepolyamines/dodecylbenzenesulphonic acid complexes in naphtha/isopropanol | 2448 | 0 | NI | 0 | NR | 1 | NI | 0 | 0 | (0) | 0 | 0 | CM | | Fp | 3 |
| Tall oil acids/linoleic acid dimer/polyalkylenepolyamines/dodecylbenzenesulphonic acid complexes in naphtha/isopropanol | 3866 | | | | | | | | **CAS No** | | | | | | | |
| Tall oil, crude and distilled | 1285 | (4) | NI | (4) | (R) | (2) | NI | 0 | 0 | (0) | 0 | 0 | Ss | | Fp | 2 |
| Tall oil (crude and distilled) | 678 | | | | | | | | **CAS No** | | 68187-71-3 | | | | | |
| Tall oil, distilled | 2283 | 0 | NI | 0 | R | 0 | NI | 0 | (0) | (0) | 0 | (0) | | | Fp | 2 |
| Tall oil, distilled | 2890 | | | | | | | | **CAS No** | | | | | | | |
| Tall oil fatty acid (resin acids less than 2%) | 1287 | 0 | 0 | 0 | R | 0 | 0 | 0 | 0 | (1) | 1 | 0 | | | Fp | 2 |
| Tall oil fatty acid (resin acids less than 20%) | 679 | | | | | | | | **CAS No** | | 61790-12-3 | | | | | |
| Tall oil fatty acid, barium salt | 1864 | NI | NI | NI | NI | NI | NI | (1) | (0) | (2) | 1 | 2 | | | S | 2 |
| Tall oil fatty acid, barium salt | 680 | | | | | | | | **CAS No** | | | | | | | |
| Tall oil pitch | 2323 | 3 | NI | 3 | NR | 0 | 0 | 0 | 0 | (0) | 0 | (0) | | | Fp | 2 |
| Tall oil pitch | 3051 | | | | | | | | **CAS No** | | | | | | | |
| Tall oil soap (disproportionated solution) | 1286 | NI | NI | NI | NI | NI | NI | (1) | (0) | (2) | 1 | 2 | | | D | 2 |
| Tall oil soap (disproportionated) solution | 681 | | | | | | | | **CAS No** | | | | | | | |

| EHS Name<br>TRN Name | EHS<br>TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tall oil soap, crude | 2432 | 0 | NI | 0 | R | 2 | 0 | (0) | (0) | (3) | (3) | (3) | Ss | | Fp | 3 |
| Tall oil soap, crude | 3735 | | | | | | | | **CAS No** | | | | | | | |
| Tallow | 1288 | 0 | NI | 0 | R | 0 | NI | 0 | 0 | (0) | (0) | (0) | | | Fp | 2 |
| Tallow | 682 | | | | | | | | **CAS No** | | 61789-21-6 | | | | | |
| Tallow fatty acid | 1289 | 0 | NI | 0 | R | 0 | NI | 0 | (0) | (0) | (0) | (0) | | | Fp | 2 |
| Tallow fatty acid | 684 | | | | | | | | **CAS No** | | | | | | | |
| 1,1,2,2-Tetrachloroethane | 53 | 2 | 2 | 2 | NR | 3 | 0 | 2 | 0 | 2 | 2 | 2 | | | SD | 2 |
| Tetrachloroethane | 687 | | | | | | | | **CAS No** | | 79-34-5 | | | | | |
| 1,1,2,2-Tetrachloroethylene | 1295 | 3 | 2 | 2 | NR | (3) | 2 | 0 | 0 | 0 | 2 | 1 | C | | S | 3 |
| Perchloroethylene | 564 | | | | | | | | **CAS No** | | 127-18-4 | | | | | |
| Tetrachloromethane | 1296 | 2 | 2 | 2 | NR | 3 | 0 | 0 | 0 | 0 | 1 | 1 | CT | | S | 3 |
| Carbon tetrachloride | 178 | | | | | | | | **CAS No** | | 56-23-5 | | | | | |
| Tetradecanoic acid (Myristic acid) | 1298 | 5 | NI | 0 | R | 0 | NI | 0 | (0) | (1) | (1) | (1) | | | Fp | 2 |
| n-Tetradecanoic acid | 491 | | | | | | | | **CAS No** | | 544-63-8 | | | | | |
| Tetradecanoic acid (Myristic acid) | 1298 | 5 | NI | 0 | R | 0 | NI | 0 | (0) | (1) | (1) | (1) | | | Fp | 2 |
| Fatty acid (saturated C13+) | 347 | | | | | | | | **CAS No** | | 544-63-8 | | | | | |
| Tetraethylene glycol | 1301 | 0 | NI | 0 | NR | 0 | NI | 0 | 0 | 0 | 1 | 1 | | | D | 1 |
| Tetraethylene glycol | 688 | | | | | | | | **CAS No** | | 112-60-7 | | | | | |
| Tetraethylene pentamine | 1302 | 0 | NI | 0 | NR | 3 | NI | 0 | 2 | (3) | 3 | 3 | Ss | | D | 3 |
| Tetraethylene pentamine | 689 | | | | | | | | **CAS No** | | 112-57-2 | | | | | |
| Tetraethyl lead | 1303 | 4 | 5 | 5 | NR | 5 | NI | 3 | 2 | 4 | 2 | 2 | NR | | S | 3 |
| Motor fuel anti-knock compound (containing lead alkyls) | 464 | | | | | | | | **CAS No** | | 78-00-2 | | | | | |
| Tetrahydrofuran | 1304 | 0 | NI | 0 | R | 0 | NI | 0 | (0) | 0 | 1 | 2 | | | DE | 2 |
| Tetrahydrofuran | 690 | | | | | | | | **CAS No** | | 109-99-9 | | | | | |
| Tetrahydronaphthalene | 1305 | 3 | 3 | 3 | NR | 3 | NI | 0 | 0 | (2) | 2 | 0 | | | F | 2 |
| Tetrahydronaphthalene | 691 | | | | | | | | **CAS No** | | 119-64-2 | | | | | |
| 1,2,3,4-Tetramethylbenzene | 1307 | 4 | NI | 4 | NI | 4 | NI | 0 | (0) | (1) | 1 | (1) | | | F | 1 |
| Tetramethylbenzene (all isomers) | 692 | | | | | | | | **CAS No** | | 488-23-3 | | | | | |
| Tetrapotassium pyrophosphate | 2400 | Inorg | 0 | 0 | Inorg | 1 | NI | 0 | NI | NI | NI | NI | | | D | NI |
| Tetrapotassium pyrophosphate | 3635 | | | | | | | | **CAS No** | | 7320-34-5 | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Thixatrol plus | 2210 | 5 | NI | 5 | R | 3 | NI | 0 | 0 | 0 | 1 | 1 | | | S | 1 |
| Thixatrol Plus | 2699 | | | | | | | | **CAS No** | | | | | | | |
| Titanium dioxide (64 - 77% solution in water) | 2080 | Inorg | 1 | 1 | Inorg | 1 | NI | 0 | 0 | 0 | 1 | 1 | | | NI | 1 |
| Titanium dioxide slurry | 2259 | | | | | | | | **CAS No** | | 13463-67-7 | | | | | |
| Toluene | 330 | 2 | 2 | 2 | R | 3 | 0 | 0 | 0 | 0 | 2 | 2 | ANR | NT | E | 3 |
| Toluene | 693 | | | | | | | | **CAS No** | | 108-88-3 | | | | | |
| Toluene diisocyanate | 1315 | (3) | 1 | 1 | NR | 2 | NI | 0 | (0) | 4 | 3 | 3 | CSsSr | | S | 3 |
| Toluene diisocyanate | 694 | | | | | | | | **CAS No** | | 584-84-9 | | | | | |
| Toluidines | 1316 | 1 | 1 | 1 | R | 4 | 2 | 1 | 0 | (2) | 2 | 2 | CM | | FD | 3 |
| o-Toluidine | 537 | | | | | | | | **CAS No** | | | | | | | |
| 2,4-Tolylenediamine | 1317 | 0 | 2 | 2 | NR | 3 | 0 | 2 | 2 | 4 | 2 | 3 | CMSs | | Fp | 3 |
| Toluenediamine | 695 | | | | | | | | **CAS No** | | 95-80-7 | | | | | |
| Tolyl triazole | 2292 | 1 | NI | 1 | NR | 2 | 0 | 1 | 0 | (2) | (1) | 2 | | | S | 2 |
| Tolyl triazole | 696 | | | | | | | | **CAS No** | | | | | | | |
| Tributyl phosphate | 1319 | 4 | 2 | 2 | R | 3 | 0 | 1 | 0 | 2 | 2 | 2 | | | F | 2 |
| Tributyl phosphate | 697 | | | | | | | | **CAS No** | | 126-73-8 | | | | | |
| 1,2,3-Trichlorobenzene | 2191 | 4 | 4 | 4 | NR | 4 | 2 | 1 | 0 | (2) | 2 | 2 | | | S | 2 |
| 1,2,3-Trichlorobenzene (molten) | 2288 | | | | | | | | **CAS No** | | | | | | | |
| 1,2,4-Trichlorobenzene | 1323 | 4 | 5 | 5 | NR | 4 | 1 | 1 | 0 | (2) | 2 | 2 | M | | S | 3 |
| 1,2,4-Trichlorobenzene | 7 | | | | | | | | **CAS No** | | 120-82-1 | | | | | |
| 1,1,1-Trichloroethane | 1326 | 2 | NI | 2 | NR | 2 | NI | 0 | 0 | 0 | 2 | 2 | | | SD | 2 |
| 1,1,1-Trichloroethane | 1 | | | | | | | | **CAS No** | | 71-55-6 | | | | | |
| 1,1,2-Trichloroethane | 1327 | 2 | 1 | 1 | NR | 2 | 0 | 1 | 0 | 1 | 2 | 1 | | | SD | 2 |
| 1,1,2-Trichloroethane | 3 | | | | | | | | **CAS No** | | 79-00-5 | | | | | |
| 1,1,2-Trichloro-ethylene | 329 | 2 | 2 | 2 | NR | 3 | NI | 0 | 0 | 0 | 2 | 2 | MC | | SD | 3 |
| Trichloroethylene | 698 | | | | | | | | **CAS No** | | 79-01-6 | | | | | |
| Trichloromethane | 1328 | 1 | 1 | 1 | NR | 2 | 0 | 2 | 0 | 2 | 1 | 1 | CT | | SD | 3 |
| Chloroform | 186 | | | | | | | | **CAS No** | | 67-66-3 | | | | | |
| 1,2,3-Trichloropropane | 1329 | 2 | 2 | 2 | NR | 2 | 0 | 2 | 2 | 2 | 2 | 2 | C | | SD | 3 |
| 1,2,3-Trichloropropane | 6 | | | | | | | | **CAS No** | | 96-18-4 | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1,1,2-Trichloro-1,2,2-trifluoroethane | 1330 | 3 | 2 | 2 | NR | 3 | 0 | 0 | 0 | 0 | 1 | 1 | | | S | 1 |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 2 | | | | | | | | **CAS No** | | 76-13-1 | | | | | |
| Tricresyl phosphate (less than 1% ortho-isomers) | 1331 | 5 | (3) | (3) | (R) | (4) | (4) | 0 | 1 | 0 | 1 | 1 | N | | S | 2 |
| Tricresyl phosphate (containing less than 1% ortho-isomer) | 700 | | | | | | | | **CAS No** | | 1330-78-5 | | | | | |
| Tricresyl phosphate (more than 1% ortho-isomers) | 1332 | 5 | 3 | 3 | R | 4 | 4 | 0 | 1 | 0 | 1 | 1 | N | | S | 2 |
| Tricresyl phosphate (containing 1% or more ortho-isomer) | 699 | | | | | | | | **CAS No** | | 1330-78-5 | | | | | |
| Tridecane | 1333 | 0 | NI | 0 | NI | 0 | NI | 0 | 0 | (1) | 1 | 0 | | | Fp | 2 |
| Tridecane | 701 | | | | | | | | **CAS No** | | 629-50-5 | | | | | |
| Tridecanoic acid | 1334 | 5 | NI | 5 | (R) | 3 | NI | (0) | (0) | (1) | (1) | (1) | | | Fp | 2 |
| Tridecanoic acid | 702 | | | | | | | | **CAS No** | | 638-53-9 | | | | | |
| Tridecyl acetate | 1768 | 5 | NI | 5 | NI | 0 | NI | 0 | (0) | (2) | 2 | 2 | | | F | 2 |
| Tridecyl acetate | 703 | | | | | | | | **CAS No** | | 1072-33-9 | | | | | |
| Triethanolamine | 1338 | 0 | 0 | 0 | R | 1 | NI | 0 | 0 | (2) | 1 | 2 | | | D | 2 |
| Triethanolamine | 704 | | | | | | | | **CAS No** | | 102-71-6 | | | | | |
| 3-(Triethoxsilyl)propylamine | 2445 | 1 | 1 | 1 | R | 1 | NI | 1 | 0 | (3) | 3B | 3 | Ss | | D | 3 |
| | 3824 | | | | | | | | **CAS No** | | 919-30-2 | | | | | |
| Triethylamine | 1339 | 1 | 0 | 0 | R | 3 | 0 | 1 | 2 | 2 | 2 | 3 | | | D | 3 |
| Triethylamine | 706 | | | | | | | | **CAS No** | | 121-44-8 | | | | | |
| 1,3,5-Triethylbenzene | 1340 | 5 | NI | 5 | NI | 4 | NI | 0 | (0) | (2) | (2) | (1) | | | F | 2 |
| Triethylbenzene | 707 | | | | | | | | **CAS No** | | 25340-18-5 | | | | | |
| Triethylene glycol | 1341 | 0 | NI | 0 | R | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | D | 0 |
| Triethylene glycol | 708 | | | | | | | | **CAS No** | | 112-27-6 | | | | | |
| Triethylenetetramine | 1346 | 0 | NI | 0 | NR | 3 | NI | 0 | 2 | (3) | 3 | 3 | Ss | | D | 3 |
| Triethylenetetramine | 709 | | | | | | | | **CAS No** | | 112-24-3 | | | | | |
| Triethylenetetramine/2-piperazine-1-ylethylamine mixtures (#) | 2456 | 0 | NI | 0 | NR | 2 | NI | 0 | 2 | (3) | 3 | 3 | Ss | | D | 3 |
| | 3872 | | | | | | | | **CAS No** | | | | | | | |
| Triethyl phosphate | 1348 | 0 | 0 | 0 | NR | 1 | 0 | 1 | 0 | 0 | (2) | (2) | | | D | 2 |
| Triethyl phosphate | 705 | | | | | | | | **CAS No** | | 78-40-0 | | | | | |
| Triethyl phosphite | 1349 | 0 | NI | 0 | R | 1 | NI | 1 | 0 | 2 | 1 | 2 | Ss | | FE | 2 |
| Triethyl phosphite | 710 | | | | | | | | **CAS No** | | 122-52-1 | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Triglycerides, C16-C18 and C18 unsaturated, reclaimed (UCO) | 2470 | (5) | NI | (5) | R | (0) | (0) | (0) | (0) | (1) | (1) | (1) | | | Fp | 2 |
| Used cooking oil (m) | 3974 | | | | | | | | **CAS No** | | 68990-65-8 | | | | | |
| Triisopropanolamine | 1370 | 0 | 0 | 0 | NR | 1 | 0 | 1 | 0 | 0 | (2) | 3 | | | FD | 3 |
| Triisopropanolamine | 711 | | | | | | | | **CAS No** | | 122-20-3 | | | | | |
| Triisopropylated phenyl phosphates | 1375 | 5 | 5 | 5 | R | 4 | NI | 0 | 0 | 0 | 0 | 0 | | | S | 0 |
| Triisopropylated phenyl phosphates | 712 | | | | | | | | **CAS No** | | 68937-41-7 | | | | | |
| Trimethylacetic acid | 1350 | 1 | 1 | 1 | R | 2 | NI | 1 | 1 | (2) | 2 | 2 | | | Fp | 2 |
| Trimethylacetic acid | 714 | | | | | | | | **CAS No** | | 75-98-9 | | | | | |
| Trimethylamine | 1353 | 0 | NI | 0 | R | 1 | NI | 1 | 0 | 2 | 3 | 3 | | | DE | 3 |
| Trimethylamine solution (30% or less) | 715 | | | | | | | | **CAS No** | | 75-50-3 | | | | | |
| 1,2,3-Trimethyl benzene | 1354 | 3 | 3 | 3 | NR | 4 | 0 | 0 | 0 | 1 | 2 | 1 | | | FE | 2 |
| Trimethylbenzene (all isomers) | 716 | | | | | | | | **CAS No** | | 526-73-8 | | | | | |
| 2,4,4-Trimethyl hexamethylene diamine | 1359 | 1 | NI | 1 | NI | NI | NI | 1 | 0 | (3) | 2 | 3 | Ss | | D | 3 |
| Trimethylhexamethylenediamine (2,2,4- and 2,4,4-isomers) | 718 | | | | | | | | **CAS No** | | 25620-58-0 | | | | | |
| Trimethyl hexamethylene diisocyanate | 1360 | 0 | NI | 0 | NI | 3 | NI | 0 | NI | NI | NI | NI | SsSr | | NI | 2 |
| Trimethylhexamethylene diisocyanate (2,2,4- and 2,4,4-isomers) | 717 | | | | | | | | **CAS No** | | 28679-16-5 | | | | | |
| Trimethylol propane polyethoxylate | 1362 | NI | NI | NI | NR | 1 | NI | 0 | 0 | NI | NI | NI | | | NI | NI |
| Trimethylolpropane polyethoxylate | 719 | | | | | | | | **CAS No** | | | | | | | |
| Trimethylol propane, propoxylated | 2274 | 0 | NI | 0 | (NR) | 1 | 0 | 0 | 0 | (1) | 0 | 1 | | | SD | 1 |
| Trimethylol propane propoxylated | 2870 | | | | | | | | **CAS No** | | | | | | | |
| 2,2,4-Trimethyl-1,3-pentanediol diisobutyrate | 1845 | 4 | NI | 4 | NR | 0 | NI | 0 | 0 | (1) | 1 | 0 | | | F | 1 |
| 2,2,4-Trimethyl-1,3-pentanediol diisobutyrate | 26 | | | | | | | | **CAS No** | | | | | | | |
| 2,2,4-Trimethyl-1,3-pentanediol monoisobutyrate | 1364 | 3 | NI | 3 | NI | 2 | NI | 0 | 0 | (1) | 1 | 1 | | | Fp | 2 |
| 2,2,4-Trimethyl-1,3-pentanediol-1-isobutyrate | 27 | | | | | | | | **CAS No** | | 25264-77-4 | | | | | |
| Trimethyl phosphite | 1365 | 0 | NI | 0 | R | NI | NI | NI | NI | NI | NI | NI | | | S | NI |
| Trimethyl phosphite | 713 | | | | | | | | **CAS No** | | 121-45-9 | | | | | |
| 1,3,5-Trioxane | 1844 | 0 | NI | 0 | NI | 0 | NI | 0 | 0 | 0 | 0 | 1 | R | | SD | 3 |
| 1,3,5-Trioxane | 10 | | | | | | | | **CAS No** | | 110-88-3 | | | | | |
| Tripropylene glycol | 1372 | 0 | 0 | 0 | R | 0 | 0 | 0 | 0 | (0) | 0 | 0 | | | D | 0 |
| Tripropylene glycol | 720 | | | | | | | | **CAS No** | | 24800-44-0 | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Trixylenyl phosphate | 1377 | 5 | 4 | 4 | NR | 4 | 1 | (0) | (1) | (0) | (1) | (1) | R | | S | 3 |
| Trixylyl phosphate | 721 | | | | | | | | **CAS No** | | 25155-23-1 | | | | | |
| Tung oil | 1378 | 0 | NI | 0 | R | (2) | NI | (0) | (0) | (1) | (0) | (1) | | | Fp | 2 |
| Tung oil | 2784 | | | | | | | | **CAS No** | | | | | | | |
| Turpentine (wood) | 1379 | 4 | NI | 4 | NI | 4 | NI | 0 | (0) | 1 | (2) | 2 | SsA | (T) | D | 2 |
| Turpentine | 722 | | | | | | | | **CAS No** | | 8006-64-2 | | | | | |
| Undecanoic acid | 1381 | 4 | NI | 4 | (R) | 3 | NI | (0) | (0) | (2) | 1 | (2) | | | Fp | 2 |
| Undecanoic acid | 723 | | | | | | | | **CAS No** | | 112-37-8 | | | | | |
| 1-Undecanol | 1382 | 4 | NI | 4 | R | 4 | NI | 0 | 0 | (2) | 2 | (1) | | | Fp | 2 |
| Undecyl alcohol | 724 | | | | | | | | **CAS No** | | 112-42-5 | | | | | |
| 1-Undecene | 1383 | 5 | NI | 5 | NR | 4 | NI | (0) | (0) | (1) | (2) | (1) | A | | F | 3 |
| 1-Undecene | 24 | | | | | | | | **CAS No** | | 821-95-4 | | | | | |
| Urea | 1384 | 0 | 0 | 0 | R | 1 | NI | 0 | 0 | (1) | 1 | (1) | | | D | 1 |
| Urea solution | 726 | | | | | | | | **CAS No** | | 57-13-6 | | | | | |
| Urea | 1384 | 0 | 0 | 0 | R | 1 | NI | 0 | 0 | (1) | 1 | (1) | | | D | 1 |
| Urea | 2627 | | | | | | | | **CAS No** | | 57-13-6 | | | | | |
| Urea/Ammonium mono and dihydrogen phosphate/ Potassium chloride solution | 1386 | 0 | 0 | 0 | R | 3 | 2 | NI | NI | NI | NI | NI | | | NI | NI |
| Urea/Ammonium mono- and di-hydrogen phosphate/Potassium chloride solution | 727 | | | | | | | | **CAS No** | | | | | | | |
| Urea/Ammonium nitrate solution ( > 1%  aq. ammonia) | 2322 | 0 | NI | 0 | R | 3 | NI | 0 | 0 | (2) | 1 | 2 | | | D | 2 |
| Urea/Ammonium nitrate solution | 728 | | | | | | | | **CAS No** | | | | | | | |
| Urea/Ammonium nitrate solution (containing < 1% aq. ammonia) | 1387 | 0 | NI | 0 | R | (2) | (0) | 0 | 0 | (1) | (1) | (1) | | | D | 1 |
| Urea/Ammonium nitrate solution (containing less than 1% free ammonia) | 729 | | | | | | | | **CAS No** | | | | | | | |
| Urea-ammonium phosphate solutions | 2179 | 0 | 0 | 0 | R | 3 | 2 | (0) | (0) | (2) | (2) | (2) | | | D | 2 |
| Urea/Ammonium phosphate solution | 730 | | | | | | | | **CAS No** | | | | | | | |
| Urea-formaldehyde resin solution | 1388 | NI | NI | NI | NI | 1 | NI | 1 | 1 | NI | NI | NI | Ss | | NI | 2 |
| Urea formaldehyde resin solution | 725 | | | | | | | | **CAS No** | | | | | | | |
| Vegetable acid oils | 2371 | 0 | NI | 0 | R | 0 | NI | (0) | (0) | (1) | (1) | (1) | | | Fp | 2 |
| Vegetable acid oils (m) | 3138 | | | | | | | | **CAS No** | | | | | | | |
| Vegetable oils fatty acid distillates | 2369 | 0 | NI | 0 | R | 0 | NI | (0) | (0) | (0) | (0) | (0) | | | Fp | 2 |
| Vegetable fatty acid distillates (m) | 3137 | | | | | | | | **CAS No** | | | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vegetable protein solution,hydrolyzed | 1398 | 0 | NI | 0 | R | 0 | NI | (0) | (0) | (0) | (0) | (0) | | | D | 0 |
| Vegetable protein solution (hydrolysed) | 734 | | | | | | | | **CAS No** | | | | | | | |
| Vinyl acetate | 1400 | 0 | NI | 0 | R | 2 | NI | 1 | 0 | 2 | 1 | 1 | C | | ED | 3 |
| Vinyl acetate | 735 | | | | | | | | **CAS No** | | 108-05-4 | | | | | |
| Vinyl ethyl ether | 1405 | 1 | NI | 1 | NR | 1 | NI | 0 | 0 | 0 | 1 | 1 | | | E | 2 |
| Vinyl ethyl ether | 736 | | | | | | | | **CAS No** | | 109-92-2 | | | | | |
| Vinylidene chloride | 1406 | 2 | 1 | 1 | NR | 2 | NI | 2 | 0 | (2) | 2 | 2 | M | | SD | 3 |
| Vinylidene chloride | 738 | | | | | | | | **CAS No** | | 75-35-4 | | | | | |
| Vinyl neodecanoate | 1404 | 5 | NI | 5 | NR | 3 | NI | 0 | 0 | (3) | 3 | 3 | | | F | 3 |
| Vinyl neodecanoate | 737 | | | | | | | | **CAS No** | | 45115-34-2 | | | | | |
| Vinyl toluenes | 1409 | 3 | 3 | 3 | NR | 3 | NI | 0 | 0 | 2 | 2 | 1 | NM | (T) | F | 3 |
| Vinyltoluene | 739 | | | | | | | | **CAS No** | | 25013-15-4 | | | | | |
| White spirit, low (15-20%)aromatic | 1411 | (4) | NI | (4) | (R) | 3 | NI | (0) | (0) | (2) | (1) | (2) | A | | F | 3 |
| White spirit, low (15-20%) aromatic | 742 | | | | | | | | **CAS No** | | | | | | | |
| Wood lignin with sodium acetate/oxalate | 2403 | NI | NI | (0) | NR | (0) | NI | 0 | (0) | (1) | (1) | (1) | | | D | 1 |
| Wood lignin with sodium acetate/oxalate | 3638 | | | | | | | | **CAS No** | | | | | | | |
| Xylene (mixed isomers) | 1408 | 3 | NI | 3 | NR | 3 | 0 | 0 | 0 | 0 | 2 | 2 | | (T) | FE | 2 |
| Xylenes | 743 | | | | | | | | **CAS No** | | 133-20-7 | | | | | |
| Xylenes/Ethyl benzene (10% or more) mixture | 2269 | 3 | 2 | 2 | NR | 3 | 1 | (0) | (0) | (2) | (2) | (2) | | (T) | FE | 2 |
| Xylenes/ethylbenzene (10% or more) mixture | 2337 | | | | | | | | **CAS No** | | | | | | | |
| Xylenols (mixtures) | 1422 | 2 | NI | 2 | R | 3 | NI | 1 | 2 | (3) | 3 | 3 | | (T) | Fp | 3 |
| Xylenol | 744 | | | | | | | | **CAS No** | | 1300-71-6 | | | | | |
| Yeast Extract Solution with Propylene Glycol (25% or less) | 2396 | NI | 0 | 0 | R | 0 | NI | 0 | 0 | (1) | 0 | 1 | | | D | 1 |
| Stabilized Yeast Extract Solution | 3631 | | | | | | | | **CAS No** | | 8013-01-2 | | | | | |
| Zinc alkaryl dithiophosphate (C7-C16) (LOA) | 1977 | 0 | NI | 0 | NR | 3 | NI | 0 | 0 | (0) | (0) | (0) | | | Fp | 2 |
| Zinc alkaryl dithiophosphate (C7-C16) | 745 | | | | | | | | **CAS No** | | | | | | | |
| Zinc alkenylcarboxamide (LOA) | 2053 | NI | 0 | 0 | NR | 0 | NI | 0 | 0 | (1) | 1 | (1) | | | Fp | 2 |
| Zinc alkenyl carboxamide | 746 | | | | | | | | **CAS No** | | | | | | | |
| Zinc alkyl dithiophosphate | 1428 | 5 | NI | 5 | NR | 3 | NI | 0 | 0 | 0 | 2 | 2 | | | S | 2 |
| Zinc alkyl dithiophosphate (C3-C14) | 747 | | | | | | | | **CAS No** | | | | | | | |

| EHS Name<br>TRN Name | EHS TRN | A1a | A1b | A1 | A2 | B1 | B2 | C1 | C2 | C3 | D1 | D2 | D3 | E1 | E2 | E3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Zinc bromide solutions | 2227 | Inorg | 4 | 4 | Inorg | 3 | NI | 1 | (2) | (3) | 3B | 3 | Ss | | D | 3 |
| Zinc bromide solutions | 2617 | | | | | | | | **CAS No** | | | | | | | |
| Zinc chloride | 1425 | Inorg | 4 | 4 | Inorg | 4 | 1 | (1) | (1) | (3) | (3) | (3) | | | D | 3 |
| Zinc chloride | 2869 | | | | | | | | **CAS No** | | 7646-85-7 | | | | | |
| Zinc chloride | 1425 | Inorg | 4 | 4 | Inorg | 4 | 1 | (1) | (1) | (3) | (3) | (3) | | | D | 3 |
| Drilling brines (containing zinc salts) | 307 | | | | | | | | **CAS No** | | 7646-85-7 | | | | | |

# ANNEX 6

# REVIEW OF SENSITIZERS

| EHS Name | EHS No. | Conclusions Column D3 | Consequential Changes to E3 Ratings |
|---|---|---|---|
| 1. Acrylamide | 23 | **C M N Ss** | |
| 2. Acrylonitrile | 25 | **C M Ss** | |
| 3. Alachlor (ISO) | 1488 | **C Ss** | |
| 4. Alkenyl succinic anhydride | 298 | **Ss Sr** | |
| 5. Alkyl amine, alkenyl acid ester, mixture | 1433 | | **2** |
| 6. Alkyl (C7-C9) nitrates | 8 | | |
| 7. Alkyl(C18-C28)toluenesulphonic acid (>90% in mineral oil) | 2429 | **Ss** | |
| 8. Alkyl(C18-C28)toluenesulphonic acid, calcium salts, borated (up to 70% in mineral oil) | 2404 | **Ss** | |
| 9. Alkyl(C18-C28)toluenesulphonic acid, calcium salts, high overbase (up to 70% in mineral oil) | 2373 | **Ss** | |
| 10. Alkyl(C18-C28)toluenesulphonic acid, calcium salts, low overbase (up to 60% in mineral oil) | 2409 | **Ss** | |
| 11. Aminoethylethanolamine | 68 | **Ss Sr** | |
| 12. Aminoethylethanolamine/Aminoethyldiethanolamine solution | 74 | **Ss Sr** | |
| 13. N-Aminoethylpiperazine | 88 | **Ss** | |
| 14. Amyl acetate | 255 | | |
| 15. Aniline | 261 | **C T Ss** | |
| 16. Benzene sulphonyl chloride | 320 | **Ss** | |
| 17. Benzyl chloride | 352 | **C Ss A** | |
| 18. Butyl acrylate | 390 | **Ss A** | |
| 19. Butyl/Decyl/Cetyl/Eicosyl methacrylate mixture | 2295 | **Ss** | |
| 20. Butyl methacrylate | 409 | **Ss** | |
| 21. Calcium alkyl (long chain) salicylate (overbased) in mineral oil (LOA) | 70 | **Ss** | |
| 22. Calcium long chain alkaryl sulphonate (C11-C50) (LOA) | 1973 | | **1** |
| 23. Calcium long-chain alkyl (C18-C28) salicylate | 2383 | **Ss** | |
| 24. Cashew nut shell oil (untreated) | 443 | **Ss** | |
| 25. Chlorohydrins | 463 | **C** | |
| 26. N-(3-Chloro-2-hydroxypropyl) trimethylammonium chloride solution (75% or less) | 2286 | **C** | |
| 27. 4-Chloro-2-methylphenoxyacetic acid, dimethylamine salt solution | 1536 | | |
| 28. Crotonaldehyde | 528 | | |
| 29. Crude Piperazine | 2331 | **Ss Sr** | |
| 30. Crude Tall Oil | 2357 | **Ss** | |
| 31. 1,5,9-Cyclododecatriene | 534 | **A** | |
| 32. Cyclohexylamine | 542 | | |
| 33. Dichloropropane and dichloropropene, mixture | 608 | **C Ss** | |
| 34. 1,3-Dichloropropene | 612 | **C Ss** | |
| 35. Diethylene triamine | 638 | **Ss** | |
| 36. Diglycidyl ether of Bisphenol A | 653 | **Ss** | |
| 37. Diglycidyl ether of Bisphenol F | 728 | **Ss R** | |
| 38. Dimethylamine (40-50% aq.sol.) | 661 | **Ss** | |

| EHS Name | EHS No. | Conclusions Column D3 | Consequential Changes to E3 Ratings |
|---|---|---|---|
| 39. Dipentene | 686 | **Ss** | |
| 40. Diphenylamine, reaction product with 2,4,4-trimethylpentene | 1500 | | **2** |
| 41. Diphenylamines, alkylated | 1770 | | **2** |
| 42. Diphenylmethane-4,4'-diisocyanate | 700 | **Ss Sr** | |
| 43. Ditridecyl adipate | 2351 | | |
| 44. tert-Dodecanethiol | 2233 | **Ss** | |
| 45. Epichlorohydrin | 731 | **C Ss** | |
| 46. Ethanoltriazine (aqueous solution) | 2411 | **Ss** | |
| 47. Ethoxylated tallow amine (>95%) | 2313 | | |
| 48. Ethoxylated tallow amine, glycol mixture | 2252 | | |
| 49. Ethyl acrylate | 734 | **C Ss** | |
| 50. Ethylene diamine | 758 | **Ss Sr** | |
| 51. Ethylene glycol acrylate | 869 | **M Ss** | |
| 52. Ethylene oxide | 77 | **C M R** | |
| 53. 2-Ethylhexyl acrylate | 782 | **Ss** | |
| 54. Ethyl methacrylate | 785 | **Ss** | |
| 55. Formaldehyde (37%-50% solution) | 807 | **C M Ss** | |
| 56. Glyoxal solutions (40% or less) | 84 | **M Ss Sr** | |
| 57. Glyoxylic acid | 1535 | **Ss** | |
| 58. Hexamethylene diamine | 845 | **R** | |
| 59. Hexamethylene diisocyanate | 2142 | **Ss Sr** | |
| 60. Hexamethylene tetramine (40% solution) | 849 | **Ss** | |
| 61. Isobutyl methacrylate | 408 | **Ss** | |
| 62. Isophorone diamine | 880 | **Ss** | |
| 63. Isophorone diisocyanate | 881 | **Ss Sr A** | |
| 64. Linear alkyl (C12-16) propoxyamine ethoxylate | 2380 | | |
| 65. Long-chain alkylphenate/Phenol sulphide mixture | 1754 | | **2** |
| 66. Magnesium alkyl (long chain) salicylate (overbased) in mineral oil (LOA) | 71 | **Ss** | |
| 67. Magnesium long chain alkaryl sulphonate (C11-C50) (LOA) | 1967 | | **2** |
| 68. Maleic anhydride | 921 | **Ss Sr** | |
| 69. 2-Mercaptobenzothiazol | 925 | **Ss** | |
| 70. Metam-sodium (ISO) | 202 | **Ss** | |
| 71. Methacrylonitrile | 949 | **Ss** | |
| 72. Methyl acrylate | 955 | **M Ss** | |
| 73. Methylene dithiocyanate | 2235 | **Ss** | |
| 74. Methyl methacrylate | 995 | **Ss** | |
| 75. 3-(Methylthio) propionaldehyde | 993 | **N Ss** | |
| 76. Metolachlor (ISO) | 113 | **Ss** | |
| 77. Pentaethylene hexamine | 1103 | **Ss** | |
| 78. 1,5-Pentanedial solution, (5-50%) | 1107 | **Ss Sr** | |
| 79. Phthalic anhydride (molten) | 1146 | **Ss Sr** | |
| 80. alpha-Pinene | 40 | **Ss** | |
| 81. beta-Pinene | 41 | **Ss** | |
| 82. Pine oil | 1148 | **Ss** | |
| 83. Piperazine, 68% Aqueous | 2433 | **N Sr Ss** | |
| 84. Polyethylene amines / paraffin mixtures | 1991 | **Ss** | |
| 85. Polyethylene polyamines | 2367 | **Ss** | |

| EHS Name | EHS No. | Conclusions Column D3 | Consequential Changes to E3 Ratings |
|---|---|---|---|
| 86. Polymethylene polyphenyl isocyanate | 1153 | **Ss Sr** | |
| 87. Rosin | 1219 | **Ss** | |
| 88. Sodium chlorate solid and solutions (50% or less) | 1244 | | |
| 89. Sodium dichromate solution | 487 | **C M Ss Sr** | |
| 90. Sodium hypochlorite solutions containing 20% and less but more than 2% NaOCl | 1256 | | |
| 91. Sodium hypochlorite solutions containing more than 20% Na0Cl | 1255 | | |
| 92. Sodium petroleum sulphonate | 1860 | | |
| 93. Tall oil, crude and distilled | 1285 | **Ss** | |
| 94. Tall oil soap, crude | 2432 | **Ss** | |
| 95. Tetraethylene pentamine | 1302 | **Ss** | |
| 96. Toluene diisocyanate | 1315 | **C Ss Sr** | |
| 97. 2,4-Tolylenediamine | 1317 | **C M Ss** | |
| 98. Tributyl phosphate | 1319 | | **2** |
| 99. Triethylenetetramine | 1346 | **Ss** | |
| 100. Triethyl phosphite | 1349 | **Ss** | |
| 101. 2,4,4-Trimethyl hexamethylene diamine | 1359 | **Ss** | |
| 102. Trimethyl hexamethylene diisocyanate | 1360 | **Ss Sr** | |
| 103. Turpentine (wood) | 1379 | **A Ss** | |
| 104. Urea-formaldehyde resin solution | 1388 | **Ss** | |
| 105. Zinc bromide solutions | 2227 | **Ss** | |

***

**ANNEX 7**

**DRAFT AGENDA FOR THE FIFTY-THIRD SESSION OF THE GESAMP/EHS WORKING GROUP**

1 Adoption of the agenda

2 Outcome of other bodies

3 Evaluation of new substances

4 Correspondence with industry/government

5 Classification issues

6 Consolidation of existing data files

7 Communication and publication

8 Any other business

9 Future Work Programme

10 Consideration and adoption of the report

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