
4 ALBERT EMBANKMENT
LONDON SE1 7SR
Telephone: +44 (0)20 7735 7611 Fax: +44 (0)20 7587 3210

PPR.1/Circ.1
21 May 2014

HAZARD EVALUATION OF SUBSTANCES TRANSPORTED BY SHIPS

**Report of the fifty-first session of the GESAMP/EHS Working Group on the
evaluation of the hazards of harmful substances carried by ships**

The report of the fifty-first session of the GESAMP/EHS Working Group on the evaluation of the hazards of harmful substances carried by ships, held from 16 to 20 May 2014 (EHS 51/9), is attached for information.

Any comments would be welcome and should be addressed to:

Technical Secretary of the GESAMP/EHS Working Group
Marine Environment Division
International Maritime Organization
4 Albert Embankment
London SE1 7SR
United Kingdom

Email: gesamp-ehs@imo.org

WORKING GROUP ON THE EVALUATION
OF THE HAZARDS OF HARMFUL
SUBSTANCES CARRIED BY SHIP
51st session
Agenda item 9

EHS 51/9
16 May 2014
Original: ENGLISH

REPORT OF THE FIFTY-FIRST SESSION

1 INTRODUCTION

1.1 The fifty-first session of the GESAMP/EHS Working Group on the Evaluation of the Hazards of Harmful Substances Carried by Ships was held at the Centre of Documentation, Research and Experimentation on Accidental Water Pollution (Cedre), Brest, France, from 12 to 16 May 2014 under the chairmanship of Dr. Thomas Höfer. The list of members present at the fifty-first session is set out in annex 1.

1.2 In his opening remarks, Dr. Höfer, having advised the group of the retirement of the previous Chairman, Dr. Tim Bowmer, took the opportunity to recognize his significant contribution and achievements during his long tenure as Chairman. He also thanked Cedre for hosting the meeting and Dr. Stéphane Le Floch and his colleagues personally for their significant efforts in organizing the meeting. Dr. Höfer also welcomed the two new members of the group, Mr. Richard Luit and Dr. Patricio H. Rodriguez, who were attending the meeting for the first time.

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

2 DECISIONS OF OTHER BODIES

Outcome of IMO bodies

2.1 The group noted that the following meetings of relevance to its work had taken place since the fiftieth session of the GESAMP/EHS Working Group:

- .1 the nineteenth intersessional meeting of the Working Group on the Evaluation of Safety and Pollution Hazards of Chemicals (ESPH 19) met from 21 to 25 October 2013;
- .2 the Working Group on the Evaluation of Safety and Pollution Hazards (ESPH) also met from 3 to 5 February 2014 during the first meeting of the PPR Sub-Committee, which took place from 3 to 7 of February;
- .3 The Sub-Committee on Dangerous Goods, Solid Cargoes and Containers (DSC 18) held its eighteenth session from 16 to 20 September 2013.

2.2 The group noted the information presented and agreed to take action under the relevant agenda items, as appropriate. A summary of the outcome of IMO bodies 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 Secretariat on the outcome of the fortieth session of GESAMP, which took place from 9 to 13 September 2013 in Vienna, Austria. A summary of the outcome of the meeting is set out in annex 3.

2.4 With regard to the GESAMP/EHS Working Group, the group recalled that whilst the GESAMP peer reviews and approves any substantive changes to its working methods, the hazard profiles assigned by the group are not reviewed by GESAMP, as per the agreed working arrangements for the EHS working group.

2.5 The group further noted that the forty-first session of GESAMP would be held from 1 to 4 September 2014, at the World Maritime University, Malmö, Sweden.

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 were 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 by industry for evaluation:

- .1 Bis(chloroglycidyl) ether of Bisphenol A / diglycidyl ether of butanediol blend (carried over from GESAMP/EHS 50)
- .2 Cyclohexane oxidation products, sodium salts solution
- .3 Naphthalene crude (molten)
- .4 n-Octyl mercaptan
- .5 n-Dodecyl mercaptan
- .6 Alkanes (C10-C17), linear and branched
- .7 Alkanes (C5-C7), linear and branched
- .8 Potassium carbonate solution
- .9 Diethylenetriamine pentaacetic acid, pentapotassium salt (40% solution)
- .10 Diethylenetriamine pentamethylene phosphonic acid, pentasodium salt (47% solution)
- .11 Poly N-alkylmethacrylamide ammonium acrylate copolymer (20% solution in DEGME)

3.3 The resultant hazard profiles assigned by the working group are set out in annex 4.

3.4 The observations and comments made by the group in considering the products, are set out below.

EHS 2454 Bis(chloroglycidyl) ether of Bisphenol A/diglycidyl ether of butanediol blend (carried over from EHS 50)

3.5 The group recalled that this product had first been considered at GESAMP/EHS 50, but had been held over pending receipt of additional information needed to complete the GHP by the submitting company. The group noted, however, that subsequent to GESAMP/EHS 50, this product had been withdrawn by the submitting company and therefore no further action was required.

EHS 2458 Cyclohexane oxidation products, sodium salts solution

Submitted as: Sodium carboxylate

3.6 The group observed that a comprehensive set of test data had been submitted for this substance and assigned a hazard profile accordingly. Having considered the proposed name for the product, the group agreed that a more appropriate product name for the Composite List entry was Cyclohexane oxidation products, sodium salts solution.

<i>Rating</i>	A1a=0	A1b=NI	A1=0	A2=Inorg	B1=1	B2=0
	C1 =0	C2 =(0)	C3=(0)	D1=0	D2=0	D3= -
	E2 =D	E3 =0				

EHS 2459 Naphthalene crude (molten)

Submitted as: Raw naphthalene

3.7 Having reviewed the data submitted and the product name proposed, the group agreed that Naphthalene crude (molten) would be a more appropriate name for entry into the Composite List and was also more consistent with the IBC Code entry for Naphthalene.

3.8 In considering the submission for the product under review, the group also decided to review the ratings for Naphthalene (EHS 1) resulting in the modification of a number of the ratings, further to the submission of new data. It also agreed to rename this product to Naphthalene (molten) for purposes of consistency with the new Naphthalene Crude (molten) entry and the corresponding entry in the IBC Code.

<i>Rating</i>	A1a=NI	A1b=(3)	A1=(3)	A2=NR	B1=3	B2=0
	C1 =0	C2 =(0)	C3=(2)	D1=2	D2=2	D3=CMT
	E2 =Fp	E3 =3				

EHS 2461 n-Octyl mercaptan

Submitted as: n-Octyl mercaptan

3.9 In considering the submission, the group confirmed the name of the substance, as submitted, for entry into the Composite List. Noting that a full set of data had been provided for the product, the group assigned a GESAMP hazard profile accordingly.

<i>Rating</i>	A1a=4	A1b=3	A1=3	A2=NR	B1=5	B2=NI
	C1 =1	C2 =0	C3=(1)	D1=1	D2=0	D3=S
	E2 =F	E3 =3				

EHS 2462 n-Dodecyl mercaptan
Submitted as: n-Dodecyl mercaptan

3.10 In considering the submission, the group confirmed the name of the substance, as submitted, for entry into the Composite List. Noting that a full set of data had been provided for the product, the group assigned a GESAMP hazard profile accordingly.

<i>Rating</i>	A1a=5	A1b=3	A1=3	A2=NR	B1=5	B2=NI
	C1 =0	C2 =0	C3=(3)	D1=3	D2=(3)	D3=S
	E2 =F	E3 =3				

EHS 2463 Alkanes (C10-C17), linear and branched
Submitted as: Renewable aviation fuel

3.11 Having considered the product name, as put forward in the submission, the group agreed to assign the following new product name for entry in the Composite List: Alkanes (C10-C17), linear and branched, for purposes of consistency with the nomenclature of other alkanes contained in the Composite List. The group concluded by assigning a GHP for the product for entry into the Composite List.

3.12 Noting that new data was available for read across, as submitted for the evaluation of this substance, the group decided that a review of the family of alkanes would be beneficial. The group correspondingly agreed to undertake this review at their next meeting.

<i>Rating</i>	A1a=(5)	A1b=NI	A1=(5)	A2=R	B1=0	B2=1
	C1 =0	C2 =0	C3=(0)	D1=0	D2=0	D3=A
	E2 =F	E3 =3				

EHS 2464 Alkanes (C5-C7), linear and branched
Submitted as: Renewable naphtha

3.13 Having considered the product name as put forward in the submission, the group agreed to assign the following new product name for entry in the Composite List: Alkanes (C5-C7), linear and branched, to ensure consistency with the nomenclature of other alkanes contained in the Composite List. The group concluded by assigning a GHP for the product for entry into the Composite List.

3.14 As mentioned for the previous substance, the group agreed to undertake a more in-depth review of the family alkanes at its next meeting.

<i>Rating</i>	A1a=(5)	A1b=NI	A1=(5)	A2=(R)	B1=(3)	B2=(0)
	C1 =0	C2 =0	C3=0	D1=2	D2=	D3=NA
	E2 =E	E3 =2				

EHS 2465 Potassium carbonate solution
Submitted under a tradename

3.15 Having noted that the product had been submitted under a tradename, the group agreed that the product should be recorded as Potassium carbonate solution for entry in the Composite List and, having considered the complete set of data submitted, assigned a hazard profile to the substance accordingly.

<i>Rating</i>	A1a=Inorg	A1b=0	A1=0	A2=Inorg	B1=2	B2=NI
	C1 =0	C2 =0	C3=(0)	D1=2	D2=2	D3= -
	E2 =D	E3 =2				

EHS 2466 Diethylenetriamine pentaacetic acid, pentapotassium salt (40% solution);
Submitted under a tradename

3.16 The group noted that this product had been submitted for a partial profile for eventual inclusion in list 5 of the IMO MEPC.2/Circular and assigned a hazard profile accordingly. The group, having noted that this product had been submitted under a tradename, agreed that the product name for entry into the Composite List would be Diethylenetriamine pentaacetic acid, pentapotassium salt (40% solution).

<i>Rating</i>	A1a=1	A1b=NI	A1=1	A2=NR	B1=2	B2=NI
	C1 =NI	C2 =NI	C3=NI	D1=NI	D2=NI	D3= -
	E2 =D	E3 =NI				

EHS 2467 Diethylenetriamine pentamethylene phosphonic acid, pentasodium salt (47% solution); Submitted under a tradename

3.17 The group noted that this product had been submitted for a partial profile for eventual inclusion in list 5 of the IMO MEPC.2/Circular. The group, having noted that this product had been submitted under a tradename, agreed that the product name for entry into the Composite List would be Diethylenetriamine pentamethylene phosphonic acid, pentasodium salt (47% solution). Given the full complement of data submitted, the group assigned a hazard profile to the substance accordingly.

<i>Rating</i>	A1a=0	A1b=NI	A1=0	A2=R	B1=2	B2=NI
	C1 =NI	C2 =NI	C3=NI	D1=NI	D2=NI	D3= -
	E2 =D	E3 =NI				

EHS 2468 Poly N-alkylmethacrylamide ammonium acrylate copolymer (20% solution in DEGME); Submitted under a tradename

3.18 The group noted that this product had been submitted for a partial profile for eventual inclusion in list 5 of the IMO MEPC.2/Circular. The group, having noted that this product had been submitted under a tradename, agreed that the product name for entry into the Composite List would be Poly N-alkylmethacrylamide ammonium acrylate copolymer (20% solution in DEGME). Having noted the full complement of data submitted, the group assigned a hazard profile to the substance accordingly.

<i>Rating</i>	A1a=0	A1b=NI	A1=0	A2=NR	B1=2	B2=NI
	C1 =NI	C2 =NI	C3=NI	D1=NI	D2=NI	D3= -
	E2 =D	E3 =NI				

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

4.1 The group recalled that the GESAMP hazard profiles were revised between 1998 and 2006 according to the new 14 column procedure described in GESAMP Reports & Studies No.64. The group recalled that, as per its usual practice, it continually reviews and updates its data set and associated hazard profiles through two processes:

- .1 responding to queries submitted by the chemical industry to the GESAMP/EHS Working Group regarding hazard profiles for identified substances. This may include the consideration of new data or scientific insights into the hazards of substances that may result in a change to a hazard profile; and
- .2 an ongoing review and update of the existing GESAMP/EHS files for completeness and consistency and the subsequent communication of any amendments relating to such matters to the attention of IMO (i.e. the ESPH Working Group of the PPR Sub-Committee).

4.2 The group noted that two substances had been carried over from GESAMP/EHS 50 (4.2.1 and 4.2.2 below). The group also considered new information received from industry related to four substances, with a view to revising some or all of their GHP hazard ratings (4.2.3 to 4.2.6).

- .1 Glucitol/glycerol blend propoxylated (containing 10% or more amines);
- .2 n-Alkanes (C9-C11);
- .3 Allyl alcohol;
- .4 Sodium hydroxide;
- .5 tert-Dodecanethiol; and
- .6 Fluorosilicic acid 20-30% in water.

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

EHS 2441 Glucitol/glycerol blend propoxylated (containing 10% or more amines)

4.4 The group reviewed three study reports, which had been requested following the group's initial review of the product at GESAMP/EHS 50, to address, in particular, questions raised with regard to the D1 and D2 ratings. In doing so, the group noted that the test data provided were for the constituent components, but that no test data had been provided for the mixture as a whole. Taking this data into account, which indicated a likelihood of irritation from the respective components, and having also noted that the product contained more than 10% amines, the group agreed that the data submitted justified a D1 rating of 1. However, it decided that the rating should be placed in brackets, given that it was arrived at based on an estimation method. The group also agreed that the D2 rating should be revised from 0 to (1), accordingly.

Amended rating D1=(1) D2=(1)

EHS 2449 n-Alkanes (C9-C11)

4.5 Having reviewed a number of study reports related to skin irritation specific to the C9-C11 analog, the group concluded that the test data did not justify a D2 rating of 2 and consequently amended the rating to 1. In assigning the rating, the group noted that a number of new test results for other analogs were now available for read across. Taking this 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 the substance. In this context, the group decided to also undertake a review of the alkenes, in order to cross-check for additional read across information.

Amended rating D2=1

EHS 28 Allyl alcohol

4.6 The group recalled that at GESAMP/EHS 50, further to a request from industry, it had re-evaluated the inhalation toxicity of Allyl alcohol, based on a new test performed using 10% Allyl alcohol in corn oil to provide a mist. However, noting that the existing 4 rating in column C3 was based on a 4-hour exposure vapour inhalation test, the group had reconfirmed the existing rating of 4, given that this test had been already evaluated and accepted by the OECD.

4.7 The group in considering a second request for re-evaluation of the C3 rating submitted by industry to the GESAMP/EHS 51, noted that industry had approached the OECD intersessionally, requesting approval of a new test and its results, which were duly accepted. Taking this into account and having reviewed the data submitted, the group agreed that the previous rating was no longer justified and agreed to amend the C3 rating for Allyl alcohol from 4 to 3, accordingly.

Amended rating C3=3

EHS 1254 Sodium hydroxide solution

4.8 The group considered a request from industry for a review of the C3 acute inhalation for sodium hydroxide. The group, having reviewed the new data provided, which was for a 48% sodium hydroxide solution in water, concurred with the results but not with the submitted report's conclusion. Taking the results into account, the group confirmed the existing C3 rating of 3, with removal of the brackets, given that this was no longer based on an estimation, but on the actual study data submitted. The group also concurred that a hash mark (#) be added to the entry to reflect that, in view of its lower vapour pressure, the product could be considered to have a lower inhalation hazard rating for the purposes of risk management.

4.9 The group, having noted that test data had been submitted for a 48% solution, as indicated above, observed that no percentage value of sodium hydroxide had been provided for the submitted product. The group concluded by deciding that the entry in the Composite List should be amended to "sodium hydroxide solution", for purposes of precision and to ensure consistency with the IBC Code entry for sodium hydroxide. While it had reached a decision on the C3 rating, 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.

Amended rating C3=3 (#)

EHS 2233 tert-Dodecanethiol

4.10 The group considered a request received from industry for a review and revision of the B1 acute aquatic toxicity rating for tert-Dodecanethiol, based on new study data submitted. Further to a detailed analysis of the new data, the group agreed that the information provided substantiated an amendment to the A1, B1 and B2 ratings. With regard to the B1 and B2 ratings, the group concluded there was no evidence of aquatic toxicity at or below the limit of solubility.

Amended rating A1b=4 A1=4 B1=0 B2=0

EHS 2240 Fluorosilicic acid solution (20-30%)

4.11 The group considered a request from industry for a general re-evaluation of this material, with particular consideration given to the C1 to C3 ratings. Having reviewed the data submitted, the group agreed to a revision of the A1b rating to 2, resulting in a change to the overall A1 rating to 2, and a revision of the B2 rating to 0. With respect to C3, a rating of (3) was given, since the study data initially provided were for the full strength solution and the rating for the 20-30% solution had to be estimated on the reduced concentration basis. The D1 and D3 ratings were also amended, based on the new data submitted. The group also agreed to modify the name to Fluorosilicic acid solution (20-30%) for purposes of consistency with similar entries in the Composite List.

Amended rating A1b=2 A1=2 B2=0 C3=(3)
 D1=3B D3=T

5 CONSOLIDATION OF DATA FILES

5.1 The group recalled the ongoing review of the GESAMP/EHS files undertaken by the Secretariat and that any issues encountered were routinely considered as part of the group's regular agenda.

5.2 The group noted that a number of other additional matters had been submitted for its attention, some by members of the GESAMP/EHS Working Group, others from members of the ESPH Working Group, as well as the items emanating from the outcome of IMO bodies, and agreed to consider these matters under this agenda item.

5.3 The group considered a number of substances requiring additions or amendments to their hazard profiles. The amended ratings and any specific comments on the respective products are included below. The agreed modifications to the ratings have also been duly incorporated into the updated GESAMP/EHS Composite List, set out in annex 5.

5.4 The group having noted that a request had been made by the ESPH Working Group for GESAMP/EHS to comment on how solubility classification was considered within the GHP for cases where a solvent system may dissolve readily in water, but other product components may not disperse. In response, GESAMP/EHS advised that, where appropriate, if multiple dispersion behaviour was anticipated for a product, this was usually recorded in the E2 column of the GESAMP/EHS Composite List, in line with the European Behaviour Classification System, developed within the framework of the Bonn Agreement. Such behaviour may sometimes be displayed by pure substances or substance mixtures, with typical examples being:

Pure substance: Butylene Glycol Methyl Ether Acetate – FED

Mixtures: Cresols (mixed isomers) – SD
Dialkyl (C8-C9) diphenylamines – FD

5.5 Whilst the GESAMP hazard evaluation procedure uses only the ratings F (floaters), Fp (persistent floater) and S (sinker), other standard behaviour categories and combinations are included in column E2 for the benefit of other users of GESAMP hazard profiles. If a combination of floater and sinker behaviour is anticipated, as this is not a standard combination used in the European system, the group's practice is generally to assign an F, or Fp rating, since this can be a contributory property for the assignment of a rating for the E3 rating related to interference with coastal amenities. An example of this is the rating given for Naphthalenes, crude (molten), which was determined to be Fp, given that it is a complex mixture containing Naphthalene (a sinker), together with other components which have floater characteristics.

5.6 The group noted the request by the ESPH Working Group to review the profile for Calcium long chain phenate sulphide (C8-C40) and Calcium alkyl (C10-C28) salicylate, in particular the D3 rating, given that one manufacturer had indicated that these substances had reprotoxic effects. However, given time constraints, the group agreed to defer this matter for consideration at GESAMP/EHS 52.

5.7 Given that the other considerations under additional matters were product specific, a summary of the group's conclusions on the products considered are provided below:

1.	EHS 1991	Polyethylene amines / paraffin mixtures	E3=3
2.	EHS 2204	Iso-and cyclo-alkanes (C12+)	D1=(0), D2=(0), D3=A, E3=2
3.	EHS 547	Cyclopentene	D1=(2), D2=(0), D3=A
4.	EHS 2324	Fatty acids saturated, C8-C10	E2=Fp, E3=3
5.	EHS 2261	Fatty acids, linear C12+ saturated with C12+ unsaturated	E2=Fp
6.	EHS 2447	Pentylol	Renamed as: Alkyl/cyclo (C4-C5) alcohols

5.8 Having also provisionally reviewed the available information on hydrocarbon waxes and paraffin wax, the group concurred that further consideration of these substances was 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.

6 COMMUNICATION AND PUBLICATION

Revision of the GESAMP Reports and Studies No.64

6.1 The group recalled its decision to update and re-issue GESAMP Reports and Studies No.64 (Revised GESAMP Hazard Evaluation Procedure for Chemical Substances Carried by Ships) and the review work undertaken over a number of sessions to arrive at a final draft of the document.

6.2 The group, having considered a finalized draft of the manual incorporating the comments provided intersessionally, agreed on the finalized text, with a number of minor editorial revisions.

6.3 Having concluded its work, the group instructed the Secretariat to proceed with the publication of the second edition of the Reports and Studies No.64, through the IMO Publishing Service, as soon as possible.

7 ANY OTHER BUSINESS

Membership issues

7.1 The group recalled that at GESAMP/EHS 50, 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. In this connection, the group recognized the need to ensure an appropriate gender and geographical balance was maintained within the group.

7.2 In this connection, further to the resignation of Dr. Tim Bowmer, the group noted the recent addition of two new members, Mr. Richard Luit of RIVM, Centre for Safety of Substances and Products, Member of the Dutch Bureau REACH; and Dr. Patricio H. Rodriguez, Director of the Center for Ecotoxicology and Chemistry of Metals, Adolfo Ibañez University, Santiago, Chile, and welcomed them to the meeting.

Funding arrangements

7.3 The group recalled that fees had been introduced for the evaluation of new substances, in line with the decision taken by MEPC. The financing mechanism is based on a fixed fee 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.

7.4 As part of these arrangements, it had been agreed that a fee would be charged for each evaluation undertaken, since this provided a clear incentive to those submitting to provide the complete range of data necessary for the working group to carry out an evaluation in one session. It was noted, however, that no additional fees would be charged for cases where 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.

7.5 During the session, the group noted that ten product submissions had been processed at the usual rate. The group recalled that, as agreed by MEPC and BLG (now PPR), 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.

7.6 Having noted that it had not had sufficient time to address the agenda item on Read across in chemical hazard evaluation, and having noted that this had been on its agenda for a number of sessions without any action having been initiated, the group agreed to place the matter in abeyance for the time being due to other priorities.

Ongoing research on behaviour classification

7.7 Given that the meeting was being hosted at Cedre, the group benefited from a tour of the facility and were provided an overview and demonstration of some of the research being undertaken, notably by GESAMP/EHS expert Dr. Stéphane Le Floch and his colleagues. During the tour, Dr. Le Floch provided a general overview of Cedre's work and research strategy, which aims to achieve a better understanding of the impacts of harmful bulk liquids on the marine environment.

7.8 The group observed demonstrations of current experiments being carried out at the Centre, notably a pilot project on certain chemicals classified as floaters. To study this topic, Cedre has developed unique equipment that can be used to monitor the behaviour of a floater under different environmental conditions (wind speed, air and water temperatures). The instrumentation used is designed to identify, in a scientific way, the parameters which could have an impact on the fate of a chemical slick at the sea surface. The main goal is to evaluate how these parameters can enhance classification procedures for chemicals which may drift on the surface, be dispersed by wind and waves at sea or evaporate into the air. The group concluded that the project could have a significant impact on the further future refinement of the GESAMP Hazard Evaluation Procedure with respect to behaviour classification.

7.9 As part of the tour, the group was introduced to Cedre's work related to the testing of the acute aquatic toxicity of mixtures. It was noted that these experiments aimed to provide a better understanding of mixtures for which the data on the components alone may provide a misleading evaluation of the hazard to the marine environment.

Use of GESAMP profiles to support chemical incident response

7.10 Cedre is the focal point within France and Europe for providing technical advice for the response to maritime incidents involving chemical substances. Mr. Fanch Cabioc'h of Cedre presented case studies from recent incidents involving liquid bulk cargoes in which Cedre assisted. He highlighted the importance of the GESAMP Hazard Profile and its use during maritime emergencies involving cargoes regulated under MARPOL Annex II. The group noted that such incidents required rapid and competent identification of the hazards of the cargoes involved and their behaviour in the marine environment. In general, the GESAMP Hazard Profile offers immediate technical information to assist responders in determining the immediate actions to be taken. It was noted that challenges arise when such information is not available, and response actions must be taken based on limited available scientific data.

7.11 The group, in noting the utility of the GESAMP hazard profiles for spill response at sea, recognized that more outreach activities should be undertaken to promote its wider usage.

Note of appreciation

7.12 Further to the introduction by the Chairman in his opening remarks, the group noted the retirement of the outgoing Chairman, Dr. Tim Bowmer, who had chaired the group for the past sixteen years. The group recalled how he had guided it through a wide range of challenging tasks that had resulted in a considerable number of achievements under his leadership, notably the revision of the GESAMP Hazard Evaluation Procedure, which had been finalized and published as GESAMP Reports & Studies No.64 in 2002. During his tenure, more than 850 chemicals had been re-evaluated according to this established procedure within a relatively short period of several years, covering more than a million data

points. The group expressed its gratitude for his untiring efforts and dedication to the work of the group over nearly 20 years.

8 FUTURE WORK PROGRAMME AND DATE OF THE NEXT SESSION

8.1 The group agreed to the draft agenda for its next session, set out in annex 6, and that its next meeting would be tentatively scheduled for 13 to 17 April 2015.

9 CONSIDERATION AND ADOPTION OF THE REPORT

9.1 The group adopted the report, noting that it would be circulated as a PPR.1/Circular.

ANNEX 1

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

EXPERTS

Dr. T. Höfer (Chairman) Federal Institute for Risk Assessment Max-Dohrn-Str. 8-10 D-10589 Berlin Germany	E-mail: thomas.hoefer@bfr.bund.de Tel: +49 30 18 412 3267 Fax: +49 30 18 412 2714
Dr. D. James Ty Llwyd Llanwrda Carmarthenshire Wales SA19 8AW	E-mail: derek777.james@gmail.com Tel: +44 1550 779034
Mr. M. Morrisette Dangerous Goods Advisory Council Suite 740 1100 H Street, NW Washington, D.C. 20005 United States	E-mail: mmorrisette@dgac.org Tel: +1 202 289 4550 Fax: +1 202 289 4074
Dr. H. Saito LSI Medience Corporation subsidiary of Mitsubishi Chemical Holdings The Kaiteki Bldg., 13-4, Uchikand1-chome Chiyoda- ku, Tokyo 101-8517 Japan	E-mail: Tel: +81 3 5577 0409 Fax: +81 3 5577 0459
Dr. S. Le Floch Cedre 715 rue Alain Colas CS 41836 29218 Brest Cedex 2 France	E-mail: Stephane.Le.Floch@cedre.fr Tel: +33 (0)2 98 33 67 02 Fax: +33 (0)2 98 44 91 38
Dr. W. Jiang Tianjin Research Institute of Water Transport Engineering (TRIWTE) 2618#, Xingang Road No.2 Tanggu, Tianjin China	E-mail: wenxin-jiang@126.com Tel: +86 22 59812345 269
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	E-mail: richard.luit@rivm.nl Tel: +31-302743073 Fax: +31-302744401 Mob: +31 6 46860770

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

E-mail: patricio.rodriguez@uai.cl
Tel: +56-2-22258936
Mob: +56-9-98896027

IMO SECRETARIAT

Ms. Patricia Charlebois
Senior Technical Officer &
Technical Secretary of the GESAMP/EHS
Working Group
International Maritime Organization
Marine Environment Division
4 Albert Embankment
London SE1 7SR
United Kingdom

E-mail: pcharlebois@imo.org
Tel: +44 (0)20 7587 3163
Fax: +44 (0)20 7587 3210

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

E-mail: kmcdonald@imo.org
Tel: +44 (0)20 7587 3249
Fax: +44 (0)20 7587 3210

Ms. Regina Lamin
Principal Secretary
International Maritime Organization
Marine Environment Division
4 Albert Embankment
London SE1 7SR
United Kingdom

Email: rlamin@imo.org
Tel: +44 (0)20 7463 4241
Fax: +44 (0)20 7587 3210

ANNEX 2

MATTERS ARISING FROM IMO

Outcome of ESPH 20 and PPR 1

1 The ESPH Working Group, at its nineteenth meeting and during the first session of the PPR Sub-Committee session:

- .1 evaluated a number of new products, cleaning additives and trade-named mixtures presenting safety hazards for their consequential inclusion in the MEPC.2/Circular;
- .2 undertook a review of the draft of MEPC.2/Circ.19 and the amendments and deletion of products from the lists that have reached their expiry dates, which was subsequently disseminated in December 2013;
- .3 continued its ongoing discussions with regard to issues related to the discharge of high-viscosity and persistent floating products, noting that this may require a revision of certain entries or GESAMP hazard profiles at some future date. The group correspondingly invited Member Governments and international organizations to submit information on this topic to ESPH 20 to inform the discussion; and
- .4 progressed its work on the revision of chapter 21 of the IBC Code, noting that this work would continue at ESPH 20.

2 In particular, ESPH 19:

- .1 proposed amendments to the current entry for Poly(4+)isobutylene in chapter 17 of the IBC Code and agreed to a new entry in chapter 17 for Poly(4+)isobutylene, as a pollution category X, and the addition "Highly-Reactive Polyisobutylene" as a synonym in chapter 19; and
- .2 noted the outcome of the GESAMP/EHS 50 meeting, in particular the progress towards finalization of the work on the revision of GESAMP Reports and Studies No.64 that was subsequently approved at GESAMP 40, noting that it would be published through the IMO Publishing Service.

3 The group, having noted the list 4 entry in the MEPC.2/Circ for used cooking oil, further noted that the transportation of this material was on the increase, with some ships carrying it as yellow grease. Recalling that yellow grease was a synonym for tallow, the group noted that this name was not correct and should not be used when shipping such a product. In discussing the matter, the group agreed that one way of solving the issue was for countries to establish appropriate tripartite agreements, followed by assessment of the specific used cooking oils (which were being used as biodiesel) and for these to become entries in the IBC code.

4 Another suggested alternative was to develop a single generic entry with a profile consistent with the "worst case" product from a safety and pollution perspective that would then capture all used cooking oils. It recognized, however, that developing new entries for

used cooking oils would require delegations to submit supporting data before any further action could be taken by ESPH.

5 The group considered a revised text of chapter 21, prepared by the Chairman, as well as a preliminary analysis of the consequential impacts to the carriage requirements of the substances included in chapter 17 of the IBC Code and the MEPC.2/Circular.

6 In carrying out its review of the proposed revisions to chapter 21, the group, in particular:

- .1 agreed to the use of a new SVC/LC50 ratio method to qualify the toxicity hazard for those toxic products that are likely to produce little if any vapour and as a consequence, would not present a significant inhalation hazard and corresponding text providing a rationale for the use of this method.
- .2 added a new level 3 criterion and associated definition for the assignment of the water reactivity index; and
- .3 agreed to include the associated GESAMP hazard profile rating codes throughout chapter 21.

7 As a general point, the group also discussed how solubility classification is considered within the GHP in cases where a solvent system may dissolve readily in water but other product components may then not disperse. The group, as a consequence, had agreed to request the GESAMP/EHS Working Group to comment on this issue.

8 In addition, the group, having noted that one manufacturer had stated that two component products, i.e. calcium long chain phenate sulphide (C8-C40) and calcium alkyl (C10-C28) salicylate, had reprotoxic effects that were not reflected in their respective GESAMP hazard profiles, consequently invited GESAMP/EHS to review the GHPs for these two materials, in particular the D3 ratings related to long-term health effects.

9 The group, having considered a list 3 submission for Pentylol submitted by South Africa, noted that whilst the product had an S/P rating, as assigned in the GESAMP Hazard Profile, all the listed components, as found in the IBC Code and the MEPC.2/Circular, were found to have P only ratings. The group further noted, as conveyed by the delegate from South Africa, that this had presented some difficulties in assigning a "contains name" for the product, given that the "contains name" should correspond with the component demonstrating the highest safety and/or pollution concern. Having noted the issue, the group agreed with the proposed carriage requirements, including the "contains name" of n-amyl alcohol and sec-amyl alcohol, but concurred that it should be inserted in square brackets. The group also agreed to the product's inclusion as a list 3 entry, as amended.

10 Having noted that GESAMP/EHS had assessed this product and had established the GESAMP Hazard Profile under its trade name "Pentylol", the group agreed to request GESAMP/EHS to review the EHS name, with a view to identifying a more precise chemical descriptor, in order to avoid any confusion between chemical names and trade names.

11 As a consequence, the group agreed that, further to consideration of the matter by GESAMP/EHS and the resulting outcome of the discussions in that forum, it would revisit the matter at ESPH 20.

Outcome of DSC 18

12 The Sub-Committee on Dangerous Goods, Solid Cargoes and Containers (DSC) held its eighteenth session from 16 to 20 September 2013.

13 With regard to possible amendments to the IMSBC Code in relation to Revised MARPOL Annex V, the Sub-Committee noted that MEPC 65 had agreed to instruct the DSC Sub-Committee (Now CCC) to compile a list of solid bulk cargoes classified as harmful to the marine environment (HME) for possible inclusion in the IMSBC Code. In this connection, the Sub-Committee considered proposals on how it could proceed in identifying and compiling a list of solid bulk cargoes that are potential HME candidates and to document cargoes that are not expected to be classified as HME.

14 During the session, a working group was established to consider the matter, which also considered a document submitted by Norway that proposed, among other things, the possible involvement of the scientific experience of the GESAMP/EHS Working Group to obtain a harmonized classification of complex solid bulk cargoes.

15 The Sub-Committee, having considered the group's recommendations, established a correspondence group on HME Substances within the IMSBC Code, in relation to the Revised MARPOL Annex V, and instructed it to:

- .1 consider the amendments to the IMSBC Code to facilitate the implementation of MARPOL Annex V, based on the *2012 Guidelines for the Implementation of MARPOL Annex V* (resolution MEPC.219(63));
- .2 with regard to issues related to an indicative list of solid bulk cargoes that may be classified as harmful to the marine environment to:
 - .1 consider how to use the list;
 - .2 acquire information on classification of cargoes; and
 - .3 consider the utilization of experts on the evaluation of hazardous materials, including involvement of the GESAMP Working Group on the evaluation of the hazards of harmful substances carried by ships and industry experts;
- .3 submit a progress report to E&T 21; and
- .4 submit a final report to CCC 1.

16 Whilst a preliminary report of the correspondence group was anticipated at E&T 21 (April 2014), it was agreed at that session that, given that the work of the correspondence group was ongoing, a report on its work would be deferred to CCC 1 (September 2014).

ANNEX 3

REVIEW OF GESAMP ACTIVITIES

1 The Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP) held its 40th session, hosted by the United Nations Industrial Development Organization (UNIDO), in Vienna, from 9 to 13 September 2013. A summary of the outcomes of that meeting is set out below.

2 GESAMP continues to function with high levels of activity in its working groups, which are sponsored directly by United Nations agencies in answer to their science needs. Alternatively, attention to topical and urgent issues is raised through GESAMP's New and Emerging Issues programme with mixed or outside funding; the most recent example being the micro-plastics working group. Nevertheless, sustained and predictable core funding is required and securing this remains a concern for GESAMP and its Executive Committee.

3 GESAMP noted that the GESAMP/EHS Working Group had met twice since GESAMP 39 and further noted the outcomes of the ESPH Working Group arising from ESPH 18 and BLG 17. Having also reviewed and approved the final manuscript of the second edition of GESAMP Reports & Studies No.64 "The Revised GESAMP Hazard Evaluation Procedure for Chemical Substances Carried by Ships", GESAMP reiterated the decision taken at its 32nd session (2001) that the hazard profiles developed by WG 1 should be transmitted by the GESAMP/EHS Working Group directly to IMO.

4 GESAMP 40 also reviewed the outcomes of its other working groups, notably:

- Review of applications for "active substances" to be used in ballast water management systems (WG 34);
- Metals (formerly mercury) Working Group (WG 37);
- Atmospheric input of chemicals to the ocean (WG 38);
- Establishment of trends in global pollution in coastal environments (WG 39); and
- Global assessment of micro-plastics (WG 40).

5 With regard to the identification of new and emerging issues regarding the degradation of the marine environment, several possible issues were discussed. As a result of a discussion during the Side Event, GESAMP agreed to establish a correspondence group to develop a scoping paper and possible plan for taking this issue forward, as it was of interest to several sponsoring organizations. It was further agreed that the correspondence group would, if possible, try to convene a workshop on this topic before reporting back to GESAMP 41. It was also noted that several of the Sponsoring Organizations would be able to provide some limited financial and in-kind support to this scoping process.

6 GESAMP agreed to continue its exploration of the issue of bio-magnification in top predators and its ecological and social implications, including the possibility of organizing a GESAMP workshop on bio-magnification, subject to interest from the Sponsoring Organizations. A scoping paper on the relevance of the production of disinfection by-products (DBP) against other inputs of DBPs in the aquatic environment was presented, and an inter-sessional correspondence group was established to look at developing terms of reference for a possible future working group, as well as potential funding sources and identification of a chair.

ANNEX 4

**GHPs for NEW SUBSTANCES SUBMITTED FOR EVALUATION
to GESAMP/EHS 51**

1 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 table.

ANNEX 4 - NEW SUBSTANCES SUBMITTED FOR EVALUATION (GESAMP Hazard Profile)

16 May 2014

Page 1 of 1

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3	
Alkanes (C10-C17), linear and branched	2463	(5)	NI	(5)	R	0	1	0	0	(0)	0	0	A		F	3	
Renewable Aviation Fuel	3815		RTECS No						CAS No								
Alkanes (C5 - C7), linear and branched	2464	(5)	NI	(5)	(R)	(3)	(0)	0	0	0	2	0	NA		E	2	
Renewable Naphtha	3799		RTECS No						CAS No								
Cyclohexane oxidation products, sodium salts solution	2458	0	NI	0	Inorg	1	0	0	(0)	(0)	0	0			D	0	
Sodium carboxylate solution	3739		RTECS No						CAS No								
Diethylenetriamine pentaacetic acid, pentapotassium salt solution (40%) (**)	2466	1	NI	1	NR	2	NI	NI	NI	NI	NI	NI			D	NI	
	3929		RTECS No						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		RTECS No						CAS No								
n-Dodecyl mercaptan	2462	5	3	3	NR	5	NI	0	0	(3)	3	(3)	S		F	3	
n-Dodecyl Mercaptan	3743		RTECS No						CAS No								
Naphthalene, crude (molten) (#)	2459	NI	(3)	(3)	NR	3	0	0	(0)	(2)	2	2	CMT		Fp	3	
Raw Naphthalene, molten	3858		RTECS No						CAS No			85117-10-8					
n-Octyl mercaptan	2461	4	3	3	NR	5	NI	1	0	(1)	1	0	S		F	3	
n-Octyl Mercaptan	3742		RTECS No						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		RTECS No						CAS No								
Potassium carbonate solution	2465	Inorg	0	0	Inorg	2	NI	0	0	(0)	2	2			D	2	
	3928		RTECS No						CAS No								

ANNEX 5

UPDATED GESAMP COMPOSITE LIST

Notes:

- 1 The Composite List, sets out both the EHS and TRN (shipping) names for each product. The alphabetical listing of the products is based on EHS names.
- 2 Any changes introduced into the table since the last issue of the Composite List are highlighted in grey.
- 3 Entries with an EHS name marked with a single asterisk (*) represent cleaning additive components for which only a partial hazard profile have assigned. These profiles **cannot be used** for mixture calculations in relation to bulk shipments.
- 4 Entries with an EHS name marked 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.

**ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles**

16 May 2014
Page 1 of 64

EHS Name TRN Name	EHS 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		RTECS No		AF1225000				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		RTECS No		AK1925000				CAS No		108-24-7					
Acetochlor (ISO)	2047	3	2	2	NR	4	NI	1	0	(1)	0	0			S	2
Acetochlor	66		RTECS No		AB5457000				CAS No		34256-82-1					
Acetone	15	0	0	0	R	0	0	0	0	0	1	2		NT	DE	2
Acetone	67		RTECS No		AL3150000				CAS No		67-64-1					
Acetone cyanohydrin	14	0	0	0	R	4	NI	3	4	3	(3)	(3)			D	3
Acetone cyanohydrin	68		RTECS No		OD9275000				CAS No		75-86-5					
Acetonitrile	16	0	0	0	R	1	NI	1	1	2	1	2			D	2
Acetonitrile	69		RTECS No		AL7700000				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		RTECS No						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		RTECS No						CAS No							
Acrylamide	23	0	0	0	R	2	0	2	2	(2)	1	2	CMNS		D	3
Acrylamide solution (50% or less)	70		RTECS No		AS3325000				CAS No		79-06-1					
Acrylic acid	24	0	0	0	R	4	NI	2	2	2	3C	3			D	3
Acrylic acid	71		RTECS No		AS4375000				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		RTECS No						CAS No							
Acrylic acid/ethenesulfonic 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 / ethenesulfonic acid copolymer with phosphonate groups, sodium salt solution	3693		RTECS No						CAS No							
Acrylonitrile	25	0	2	2	NR	3	0	2	3	3	2	2	CSM	NT	DE	3
Acrylonitrile	72		RTECS No		AT5250000				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		RTECS No						CAS No							
Adiponitrile	26	0	0	0	R	1	NI	3	(3)	3	3	(3)			FD	3

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014

Page 2 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3
Adiponitrile	74		RTECS No		AV2625000				CAS No		111-69-3					
Alachlor (ISO)	1488	3	3	3	NI	4	1	1	0	(2)	1	0	CS		S	3
Alachlor technical (90% or more)	75		RTECS No		AE1225000				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		RTECS No						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		RTECS No						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		RTECS No						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		RTECS No						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		RTECS No						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		RTECS No						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		RTECS No						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		RTECS No						CAS No							
Alcohol(C12 – C14)poly(2)ethoxylate sulfate, sodium salt (*)	2419	2	NI	2	R	3	NI	NI	NI	NI	NI	NI			NI	NI
	3695		RTECS No						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		RTECS No						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		RTECS No						CAS No							
Alcohols, C10-C16 ethoxylated propoxylated (*)	2450	0	NI	0	R	3	NI	NI	NI	NI	NI	NI			NI	NI
	3868		RTECS No						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		RTECS No						CAS No							
Alcohols (C14-C18), linear	2293	5	2	2	R	0	1	0	0	(1)	1	1			Fp	2

**ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles**

16 May 2014

Page 3 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3	
Alcohols (C14-C18), primary, linear and essentially linear	2951	RTECS No			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	RTECS No			CAS No												
Alkanes (C6-C9)	2202	(5)	NI	(5)	(R)	(4)	NI	(0)	(0)	(1)	(2)	(2)	N		FE	2	
Alkanes (C6-C9)	88	RTECS No			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	RTECS No			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	RTECS No			CAS No												
Alkanes (C10-C17), linear and branched	2463	(5)	NI	(5)	R	0	1	0	0	(0)	0	0	A		F	3	
Renewable Aviation Fuel	3815	RTECS No			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	RTECS No			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	
Renewable Naphtha	3799	RTECS No			CAS No												
n-Alkanes (C9-C11)	2449	(5)	NI	(5)	R	0	(0)	0	0	(2)	1	0	A		F	3	
n-Alkanes (C9-C11)	3867	RTECS No			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	RTECS No			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	RTECS No			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	RTECS No			CAS No												
Alkenoic acid ester, borated	2376	5	(3)	(3)	R	2	NI	0	0	(2)	2	0			Fp	2	
Alkenoic acid ester, borated	3153	RTECS No			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	RTECS No			CAS No												
Alkenyl succinic anhydride	298	0	0	0	NR	1	NI	0	0	(2)	2	(2)	S		FD	2	
Alkenyl (C16-C20) succinic anhydride	2336	RTECS No			CAS No												
Alkyl acrylate/Vinyl pyridine copolymer in toluene	299	2	2	2	R	2	0	0	0	(2)	2	2	RNA		F/Fp	3	

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014

Page 4 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3	
Alkyl acrylate-vinylpyridine copolymer in toluene	94	RTECS No			CAS No												
Alkyl/cyclo(C4-C5)alcohols	2447	(1)	(1)	(1)	(R)	(2)	(0)	(1)	(1)	(2)	(2)	(3)			FED	3	
	3825	RTECS No			CAS No												
Alkyl amine, alkenyl acid ester, mixture	1433	NI	NI	NI	NI	1	NI	(0)	(0)	NI	NI	NI	S		Fp	3	
Alkyl(C8+)amine, Alkenyl (C12+) acid ester mixture	98	RTECS No			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	RTECS No			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	RTECS No			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	RTECS No			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	RTECS No			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	RTECS No			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	RTECS No			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	RTECS No			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	RTECS No			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	RTECS No			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	RTECS No			CAS No												
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	RTECS No			DB4370000			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	RTECS No			CAS No												
Alkyl dithio thiadiazole (C6-C24) (LOA)	1981	5	NI	5	NR	1	NI	0	0	(0)	0	0			S	2	

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014

Page 5 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3	
Alkyldithiothiadiazole (C6-C24)	104		RTECS No					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		RTECS No					CAS No									
Alkyl naphthalenes, crude (containing less than 1% naphthalene)	2425	4	4	4	R	4	NI	0	0	(1)	1	1	AC		F	3	
Alkyl naphthalenes (containing less than 1% naphthalene), crude	3601		RTECS No					CAS No									
Alkyl naphthalenes, crude (containing naphthalene)	2426	(4)	(4)	(4)	(R)	(4)	NI	0	0	(1)	1	1	AC		F	3	
Alkyl naphthalenes (containing naphthalenes), crude	3699		RTECS No					CAS No									
Alkyl (C7-C9) nitrates	8	4	NI	4	NR	3	NI	0	0	(3)	2	(3)	S		F	3	
Alkyl (C7-C9) nitrates	93		RTECS No					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		RTECS No					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		RTECS No					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		RTECS No					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		RTECS No					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		RTECS No					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		RTECS No					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		RTECS No					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	
Lauryl polyglucose (50% or less)	416		RTECS No					CAS No			110615-47-9						
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		RTECS No					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		RTECS No					CAS No			91082-17-6						
Alkyltoluenes	2374	0	2	2	NR	0	NI	0	(0)	(1)	0	1			Fp	2	

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014

Page 6 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3
Alkyl (C18+) toluenes	3148		RTECS No						CAS No							
Alkyl(C18-C28)toluenesulfonic acid (>90% in mineral oil)	2429	0	4	4	NR	3	NI	0	0	(3)	2	3	S		Fp	3
Alkyl(C18-C28)toluenesulfonic acid	3658		RTECS No						CAS No							
Alkyl(C18-C28)toluenesulfonic acid, calcium salts, borated (up to 70% in mineral oil)	2404	0	4	4	NR	0	NI	(0)	(0)	(1)	(1)	(1)	S		S	2
Alkyl(C18-C28)toluenesulfonic acid, calcium salts, borated	3661		RTECS No						CAS No							
Alkyl(C18-C28)toluenesulfonic acid, calcium salts, high overbase (up to 70% in mineral oil)	2373	(0)	(4)	(4)	(NR)	(0)	NI	0	0	(0)	0	0	S		S	2
Alkyl (C18-C28) toluenesulphonic acid, calcium salts, high overbase	3149		RTECS No						CAS No							
Alkyl(C18-C28)toluenesulfonic acid, calcium salts, low overbase (up to 60% in mineral oil)	2409	0	4	4	NR	0	NI	0	0	(2)	2	0	S		Fp	3
Alkyl (C18-C28) toluenesulfonic acid, calcium salts, low overbase	3685		RTECS No						CAS No							
Allyl alcohol	28	0	0	0	R	4	NI	2	3	3	2	3	A		D	3
Allyl alcohol	105		RTECS No		BA5075000				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		RTECS No						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		RTECS No						CAS No							
Aluminium sulphate solution	2205	Inorg	Inorg	2	Inorg	3	1	1	(0)	(3)	(2)	(3)			D	3
Aluminium sulphate solution	111		RTECS No						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		RTECS No		KJ6125000				CAS No		929-06-6					
Aminoethylethanolamine	68	0	0	0	NR	1	0	0	0	(3)	3B	2	S		D	3
Aminoethyl ethanolamine	112		RTECS No		KJ6300000				CAS No		111-41-1					
Aminoethylethanolamine/Aminoethyldiethanolamine solution	74	Inorg	0	0	NR	1	0	(0)	(0)	(3)	(3B)	(2)	S		D	3
Aminoethyldiethanolamine/Aminoethylethanolamine solution	113		RTECS No						CAS No							
N-Aminoethylpiperazine	88	0	0	0	NR	1	NI	0	2	(3)	3	3	S		D	3
N-Aminoethylpiperazine	472		RTECS No		TK8050000				CAS No		140-31-8					
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		RTECS No		TY2900000				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		RTECS No		UA5950000				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

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014

Page 7 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3
Ammonia aqueous (28% or less)	114		RTECS No		BO0875000			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		RTECS No		WT3595000			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		RTECS No		BP4550000			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		RTECS No					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		RTECS No					CAS No								
Ammonium polyphosphate solution	1764	Inorg	0	0	Inorg	1	NI	0	0	0	1	0			D	1
Ammonium polyphosphate solution	120		RTECS No					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		RTECS No		BS4500000			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		RTECS No		BS4900000			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		RTECS No					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		RTECS No		XN6465000			CAS No		7783-18-8						
Amyl acetate	255	2	2	2	NR	2	NI	0	(0)	0	1	1	S	NT	FED	2
Amyl acetate (all isomers)	125		RTECS No		AJ1925000			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		RTECS No					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		RTECS No					CAS No								
Amyl propionate	1484	2	NI	2	R	2	NI	0	0	(2)	2	1			F	2
n-Pentyl propionate	484		RTECS No					CAS No		624-54-4						
Aniline	261	0	0	0	R	3	2	2	2	3	1	3	CTS	NT	FD	3
Aniline	127		RTECS No		BW6650000			CAS No		62-53-3						
Apple juice	275	0	NI	0	R	0	0	0	0	0	0	0			D	0

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014

Page 8 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3	
Apple juice	130																
		RTECS No							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																
		RTECS No							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																
		RTECS No							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																
		RTECS No							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																
		RTECS No							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																
		RTECS No							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																
		RTECS No			CY1400000				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																
		RTECS No							CAS No								
Benzene sulphonyl chloride	320	1	1	1	R	3	NI	1	(2)	(3)	3	3	S		SD	3	
Benzene sulphonyl chloride	134																
		RTECS No			DB8750000				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																
		RTECS No							CAS No								
Benzyl acetate	348	1	NI	1	R	3	1	1	0	2	1	1			SD	2	
Benzyl acetate	138																
		RTECS No			AF5075000				CAS No			140-11-4					
Benzyl alcohol	349	1	NI	1	R	2	NI	1	1	2	2	2			SD	2	
Benzyl alcohol	139																
		RTECS No			DN3150000				CAS No			100-51-6					
Benzyl chloride	352	NI	1	1	R	3	1	1	(2)	3	3	3	CSA		S	3	
Benzyl chloride	140																
		RTECS No			XS8925000				CAS No			100-44-7					
Bis(2-ethylhexyl) terephthalate	2437	0	3	3	R	0	0	0	0	(1)	1	1			Fp	2	
Bis(2-ethylhexyl) terephthalate	3752																
		RTECS No							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																
		RTECS No							CAS No								
Bis[3-(triethoxysilyl)propyl]amine	2444	1	NI	1	R	1	NI	0	0	(2)	2	2			D	2	

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014

Page 9 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3
	3823															
									RTECS No	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															
									RTECS No	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															
									RTECS No	CAS No	10043-35-3					
Bromochloromethane	2084	1	1	1	NR	1	NI	0	0	0	1	0			SD	1
Bromochloromethane	145															
									RTECS No	CAS No	74-97-5					
1-Bromopropane	2229	2	NI	2	NI	NI	NI	0	(0)	0	(2)	(2)			SD	2
1-Bromopropane	2696															
									RTECS No	CAS No						
Butanol	381	0	(0)	0	R	0	NI	0	0	0	2	3		NT	D	3
Butyl alcohol (all isomers)	2216															
									RTECS No	CAS No	71-36-3					
Butanol	381	0	(0)	0	R	0	NI	0	0	0	2	3		NT	D	3
n-Butyl alcohol	474															
									RTECS No	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															
									RTECS No	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															
									RTECS No	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															
									RTECS No	CAS No	78-93-3					
Butene oligomer	386	0	NI	0	NR	(4)	0	0	0	0	0	1			FE	2
Butene oligomer	146															
									RTECS No	CAS No						
Butyl acetate	387	1	NI	1	R	2	NI	0	0	0	0	1			FED	2
Butyl acetate (all isomers)	147															
									RTECS No	CAS No	123-86-4					
Butyl acrylate	390	2	NI	2	R	3	NI	1	1	1	2	2	SA		FED	2
Butyl acrylate (all isomers)	148															
									RTECS No	CAS No	141-32-2					
Butylamine	392	0	NI	0	R	2	NI	2	2	3	3C	3			DE	3
Butylamine (all isomers)	154															
									RTECS No	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															
									RTECS No	CAS No	104-51-8					
Butyl benzyl phthalate	398	4	4	4	R	4	2	0	0	(0)	(0)	(0)	R		S	3

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014

Page 10 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3
Butyl benzyl phthalate	149		RTECS No	TH9990000		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		RTECS No	ES8120000		CAS No	109-21-7									
Butyl/Decyl/Cetyl/Eicosyl methacrylate mixture	2295	(5)	NI	(5)	(R)	(3)	NI	0	0	0	2	2	S		FE	2
Butyl/Decyl/Cetyl/Eicosyl methacrylate mixture	153		RTECS No			CAS No										
Butylene glycol(s)	402	0	NI	0	R	1	NI	1	0	0	0	0			D	1
Butylene glycol	156		RTECS No	EK0525000		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		RTECS No	EL4725000		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		RTECS No			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		RTECS No	EK3675000		CAS No	106-88-7									
Butyl methacrylate	409	2	NI	2	NR	1	NI	0	0	0	2	2	S		FE	2
Butyl methacrylate	151		RTECS No	OZ3675000		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		RTECS No			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		RTECS No			CAS No										
Butyl propionate	1483	2	NI	2	R	2	NI	0	0	0	1	1			FED	2
n-Butyl propionate	476		RTECS No	UE8245000		CAS No	590-01-2									
Butyl stearate	413	0	NI	0	(R)	0	NI	0	NI	NI	2	NI			Fp	2
Butyl stearate	152		RTECS No	WI2900000		CAS No	123-95-5									
Butyraldehyde	416	1	NI	1	R	2	0	0	1	0	3	3			DE	3
Butyraldehyde (all isomers)	157		RTECS No	ES2275000		CAS No	123-72-8									
Butyric acid	418	0	NI	0	R	2	0	0	0	0	3A	3			D	3
Butyric acid	158		RTECS No	ES5425000		CAS No	107-92-6									
Butyrolactone	420	0	NI	0	R	(3)	NI	1	(0)	0	0	1	C		D	3
gamma-Butyrolactone	360		RTECS No	LU3500000		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)	S		Fp	3

**ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles**

16 May 2014
Page 11 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3	
Calcium long-chain alkyl salicylate (C13+)	166		RTECS No					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		RTECS No					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		RTECS No					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		RTECS No			EV9328000		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		RTECS No			FF9335000		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		RTECS No			EW2800000		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		RTECS No			NH3485000		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		RTECS No			NH3485000		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		RTECS No					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	S		FD	2	
Calcium alkaryl sulphonate (C11-C50)	169		RTECS No					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		RTECS No					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		RTECS No					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		RTECS No					CAS No									
Calcium long-chain alkyl phenolic amine (C8-C40)	1728	NI	NI	NI	NR	0	NI	0	0	(1)	1	(1)			Fp	2	
	171		RTECS No					CAS No									
Calcium long-chain alkyl (C18-C28) salicylate	2383	0	NI	0	NR	0	NI	0	0	(1)	1	0	S		Fp	3	
Calcium long-chain alkyl (C18-C28) salicylate	3426		RTECS No					CAS No									
Calcium nitrate	1803	Inorg	0	0	Inorg	0	NI	0	(0)	(1)	1	1			D	1	

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014
Page 12 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3
Calcium nitrate solutions (50% or less)	172		RTECS No		EW2985000			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		RTECS No					CAS No								
Camelina oil	2440	(0)	NI	(0)	(R)	(0)	(0)	(0)	(0)	(1)	(0)	(1)			Fp	2
Camelina oil	3767		RTECS No					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		RTECS No		EX1490000			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		RTECS No		CM3675000			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		RTECS No					CAS No								
Carbon disulphide	439	2	1	1	NR	3	NI	2	(3)	4	3A	3	RN		SD	3
Carbon disulphide	177		RTECS No		FF6650000			CAS No		75-15-0						
Cashew nut shell oil (untreated)	443	0	NI	0	R	0	NI	(0)	(0)	(2)	2	(2)	S		Fp	3
Cashew nut shell oil (untreated)	179		RTECS No					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		RTECS No					CAS No								
Cesium Formate, drilling brines	2384	0	3	3	Inorg	2	NI	1	0	(2)	2	2			D	2
Cesium formate solution (*)	3421		RTECS No					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		RTECS No					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		RTECS No					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		RTECS No					CAS No								
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		RTECS No					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		RTECS No					CAS No								
Chloroacetic acid	450	0	NI	0	R	2	0	2	3	(4)	3C	3	A		D	3

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014

Page 13 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3
Chloroacetic acid (80% or less)	184		RTECS No		AF8575000				CAS No		79-11-8					
Chlorobenzene	456	2	2	2	NR	3	0	1	0	2	2	0			S	2
Chlorobenzene	185		RTECS No		CZ0175000				CAS No		108-90-7					
Chlorohydrins	463	0	NI	0	R	0	NI	(2)	(2)	(3)	(3A)	3	CS		D	3
Chlorohydrins (crude)	187		RTECS No		TY4025000				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)	SC		D	3
N-(3-Chloro-2-hydroxypropyl)trimethyl ammonium chloride solution (75% or less)	2579		RTECS No						CAS No							
4-Chloro-2-methylphenoxyacetic acid, dimethylamine salt solution	1536	2	NI	2	NI	2	NI	1	0	2	1	1	S		S	2
4-Chloro-2-methylphenoxyacetic acid, dimethylamine salt solution	62		RTECS No						CAS No							
Chloronitrobenzenes	467	2	2	2	NR	3	NI	2	2	2	1	1			S	2
o-Chloronitrobenzene	533		RTECS No		CZ0855000				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		RTECS No						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		RTECS No		UE8570000				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		RTECS No		UC7350000				CAS No		107-05-1					
Chlorosulphonic acid	479	Inorg	0	0	Inorg	2	NI	(2)	(3)	4	3C	3			D	3
Chlorosulphonic acid	188		RTECS No		FX5730000				CAS No		7790-94-5					
m-Chlorotoluene	481	3	NI	3	NR	2	NI	2	0	(2)	1	1			S	2
m-Chlorotoluene	426		RTECS No		XS8990000				CAS No		108-41-8					
o-Chlorotoluene	480	3	3	3	NR	3	1	0	0	0	1	1			S	1
Chlorotoluenes (mixed isomers)	189		RTECS No		XS9000000				CAS No		95-49-8					
o-Chlorotoluene	480	3	3	3	NR	3	1	0	0	0	1	1			S	1
o-Chlorotoluene	534		RTECS No		XS9000000				CAS No		95-49-8					
p-Chlorotoluene	482	3	3	3	NR	3	0	0	0	0	1	1			S	2
p-Chlorotoluene	551		RTECS No		XS9010000				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		RTECS No		KH2975000				CAS No		67-48-1					
Citric acid	493	0	NI	0	R	1	0	0	(0)	(3)	1	3			D	3

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014

Page 14 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3
Citric acid (70% or less)	748		RTECS No		GE7350000				CAS No		77-92-9					
Citric juices	494	0	0	0	Inorg	0	0	0	0	0	0	0			D	0
Water	740		RTECS No						CAS No							
Clay	495	Inorg	0	0	Inorg	0	0	0	0	0	0	0			S	0
Clay slurry	191		RTECS No						CAS No							
Coal slurry	498	Inorg	0	0	Inorg	0	0	0	0	0	0	0			S	0
Coal slurry	192		RTECS No						CAS No							
Coal tar	499	(4)	4	4	NR	3	1	0	0	0	2	2	CMR	(T)	S	3
Coal tar	193		RTECS No		GF8600000				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		RTECS No		DE3030000				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		RTECS No		GF8655000				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		RTECS No						CAS No							
Cocoa butter	2342	0	NI	0	R	0	NI	(0)	(0)	(1)	(0)	(1)			Fp	2
Cocoa butter	3096		RTECS No						CAS No							
Coconut acid oil	2370	0	0	0	R	3	NI	(0)	(0)	(1)	(1)	(1)			Fp	2
Coconut acid oil	3139		RTECS No						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		RTECS No						CAS No							
Coconut oil	503	0	NI	0	R	1	NI	0	(0)	(1)	0	(1)			Fp	2
Coconut oil	2772		RTECS No		GG6040000				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		RTECS No						CAS No		61788-47-4					
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		RTECS No						CAS No		61788-59-8					
Copper salt of long chain(>C17) alkanolic acid (LOA)	2111	0	NI	0	(R)	2	NI	0	0	(0)	0	0			Fp	2
Copper salt of long chain (C17+) alkanolic acid	2214		RTECS No						CAS No							
Corn oil	521	0	NI	0	R	(2)	NI	0	(0)	(1)	1	1			Fp	2

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014
Page 15 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3
Corn Oil	2781		RTECS No	GM4800000		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		RTECS No	GN2815000		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		RTECS No	GF8615000		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		RTECS No	GO5870000		CAS No	8021-39-4									
Cresols (mixed isomers)	527	2	2	2	R	3	0	2	2	4	3A	3		T	SD	3
Cresols (all isomers)	201		RTECS No	GO5950000		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		RTECS No			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		RTECS No			CAS No										
Crotonaldehyde	528	0	NI	0	NR	4	1	2	4	4	2	3	S		D	3
Crotonaldehyde	204		RTECS No	GP9499000		CAS No	4170-30-3									
Crude Piperazine	2331	0	NI	0	R	2	NI	(1)	(2)	(3)	3	3	S		D	3
Crude Piperazine	2810		RTECS No			CAS No										
Crude Tall Oil	2357	4	NI	4	R	2	0	0	0	(0)	0	0	S		Fp	3
Tall oil, crude	3118		RTECS No			CAS No										
1,5,9-Cyclododecatriene	534	5	5	5	NR	4	NI	0	0	1	2	1	SA		F	3
1,5,9-Cyclododecatriene	17		RTECS No	GU2308000		CAS No	4904-61-4									
Cycloheptane	535	4	NI	4	(NR)	4	NI	(0)	0	(1)	(0)	(1)			FE	2
Cycloheptane	205		RTECS No	GU3140000		CAS No	291-64-5									
Cyclohexane	536	3	3	3	NR	3	NI	0	0	1	0	1			E	2
Cyclohexane	206		RTECS No	GU6300000		CAS No	110-82-7									
Cyclohexane oxidation products, sodium salts solution	2458	0	NI	0	Inorg	1	0	0	(0)	(0)	0	0			D	0
Sodium carboxylate solution	3739		RTECS No			CAS No										
Cyclohexanol	537	1	NI	1	R	2	NI	0	0	0	2	2			Fp	2
Cyclohexanol	207		RTECS No	GV7875000		CAS No	108-93-0									
Cyclohexanone	539	0	1	1	R	1	0	1	1	1	2	2			FE	2

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014
Page 16 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3
Cyclohexanone	208		RTECS No		GW1050000			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		RTECS No					CAS No								
Cyclohexyl acetate	541	2	NI	2	(R)	(2)	NI	0	0	(2)	2	1			FED	2
Cyclohexyl acetate	210		RTECS No		AG5075000			CAS No		622-45-7						
Cyclohexylamine	542	1	NI	1	R	2	NI	2	2	3	3	3	S		D	3
Cyclohexylamine	211		RTECS No		GX0700000			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		RTECS No		PC1050000			CAS No		77-73-6						
Cyclopentane	546	3	NI	3	NR	3	NI	(0)	(0)	0	1	(1)			E	2
Cyclopentane	212		RTECS No		GY2390000			CAS No		287-92-3						
Cyclopentene	547	2	NI	2	(R)	3	NI	1	1	0	2	(0)	A		E	2
Cyclopentene	213		RTECS No		GY5950000			CAS No		142-29-0						
Decahydronaphthalene	551	4	4	4	NR	3	NI	0	0	2	2	1			F	1
Decahydronaphthalene	214		RTECS No		QJ3150000			CAS No		91-17-8						
Decane	554	5	NI	5	R	0	0	0	0	0	1	0			F	1
Decane	2620		RTECS No		HD6550000			CAS No		124-18-5						
Decanoic acid	555	4	NI	4	R	4	1	0	0	(2)	2	2			Fp	2
Decanoic acid	215		RTECS No		HD9100000			CAS No		334-48-5						
1-Decene	558	5	NI	5	R	4	2	0	0	0	2	0	A		F	3
Decene	216		RTECS No					CAS No		872-05-9						
Decyl acetate	1767	4	NI	4	NI	NI	NI	0	0	(1)	(1)	(1)			F	1
Decyl acetate	217		RTECS No					CAS No		112-17-4						
Decyl acrylate	559	5	NI	5	(R)	5	NI	0	0	(2)	2	1			Fp	2
Decyl acrylate	218		RTECS No		AS7400000			CAS No		2156-96-9						
Decyloxytetrahydrothiophene dioxide	1859	3	NI	3	NR	4	NI	0	0	(1)	1	0			Fp	2
Decyloxytetrahydrothiophene dioxide	220		RTECS No					CAS No								
Dextrose solution	562	0	0	0	R	0	NI	0	0	0	0	(0)			D	0
Glucose solution	361		RTECS No		LZ6600000			CAS No		50-99-7						
Dextrose solution	562	0	0	0	R	0	NI	0	0	0	0	(0)			D	0

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014
Page 17 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3
Dextrose solution	221		RTECS No	LZ6600000		CAS No	50-99-7									
Diacetone alcohol	563	0	NI	0	R	1	0	0	0	(2)	2	2			D	2
Diacetone alcohol	226		RTECS No	SA9100000		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		RTECS No			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		RTECS No			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		RTECS No			CAS No										
Diammonium hydrogen phosphate	98	0	0	0	Inorg	1	NI	0	0	(0)	(1)	(1)			D	1
Ammonium hydrogen phosphate solution	117		RTECS No			CAS No	7783-28-0									
Dibromomethane	574	1	NI	1	NR	(2)	NI	1	0	0	(2)	(2)			SD	2
Dibromomethane	228		RTECS No	PA7350000		CAS No	74-95-3									
Di-n-butylamine	577	2	NI	2	R	3	NI	2	2	3	3	3			FD	3
Dibutylamine	231		RTECS No	HR7780000		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		RTECS No	EK5425000		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		RTECS No			CAS No	1809-19-4									
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		RTECS No	SK8260000		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		RTECS No	SK8265000		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		RTECS No	TI0875000		CAS No	84-74-2									
Dibutyl terephthalate	2430	5	(3)	(3)	R	4	2	0	0	(0)	0	0			S	0
Dibutyl terephthalate	3596		RTECS No			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		RTECS No			CAS No										
3,4-Dichlorobut-1-ene	2079	2	2	2	NR	3	NI	1	0	2	2	3			S	3

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014
Page 18 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3
3,4-Dichloro-1-butene	56		RTECS No	EM4740000		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		RTECS No	KI0175000		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		RTECS No	KI0525000		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		RTECS No			CAS No	2163-00-0									
Dichloromethane	594	1	2	2	NR	1	0	1	0	0	2	2	C		SD	3
Dichloromethane	234		RTECS No	PA8050000		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		RTECS No	SK8575000		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		RTECS No			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		RTECS No			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		RTECS No			CAS No										
1,1-Dichloropropane	605	2	1	1	NR	2	1	0	0	1	1	1			SD	1
1,1-Dichloropropane	5		RTECS No	TX9450000		CAS No	78-99-9									
1,2-Dichloropropane	606	2	1	1	NR	2	0	1	0	2	2	2			SD	2
1,2-Dichloropropane	9		RTECS No	TX9625000		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		RTECS No	TX9660000		CAS No	142-28-9									
Dichloropropane and dichloropropene, mixture	608	(2)	(1)	(1)	(NR)	(4)	(1)	2	1	2	3	3	CS		SD	3
Dichloropropene/Dichloropropane mixtures	235		RTECS No	TX9800000		CAS No	8003-19-8									
1,3-Dichloropropene	612	1	NI	1	NR	4	1	2	1	2	3	3	CS		SD	3
1,3-Dichloropropene	13		RTECS No	UC8310000		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		RTECS No	UF0690000		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

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014
Page 19 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3
2,2'-Dichloroisopropyl ether	25		RTECS No	KN1750000				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		RTECS No					CAS No								
Diethanolamine	620	0	NI	0	R	1	0	1	0	0	2	3	T		D	3
Diethanolamine	236		RTECS No	KL2975000				CAS No	111-42-2							
Diethylamine	621	0	NI	0	R	2	NI	1	2	3	3C	3			DE	3
Diethylamine	240		RTECS No	HZ8750000				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		RTECS No	BX3500000				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		RTECS No	CZ5600000				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		RTECS No	TI1100000				CAS No	84-75-3							
Diethylene glycol	628	0	NI	0	R	0	0	1	0	2	1	1			D	2
Diethylene glycol	243		RTECS No	ID5950000				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		RTECS No	KN0350000				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		RTECS No	KN3160000				CAS No	112-36-7							
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		RTECS No					CAS No								
Diethylene glycol initiated polyoxypropylene diamine	2353	0	NI	0	NR	2	NI	0	0	(3)	3B	(3)			D	3
Polyetheramine	2946		RTECS No					CAS No								
Diethylene glycol phthalate	1438	2	NI	2	NR	1	NI	0	0	(2)	(1)	2			S	2
Diethylene glycol phthalate	247		RTECS No					CAS No								
Diethylene triamine	638	0	1	1	(R)	2	NI	1	3	3	3A	3	S		FD	3
Diethylenetriamine	248		RTECS No	IE1225000				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		RTECS No					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

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014
Page 20 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3	
Diethylenetriaminepentaacetic acid, pentasodium salt solution	249	RTECS No			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	RTECS No			CAS No												
Diethyl ethanolamine	622	0	NI	0	NR	3	NI	1	1	2	3	3			D	3	
Diethylaminoethanol	241	RTECS No			KK5075000			CAS No			100-37-8						
Diethyl ether	640	0	1	1	NR	0	NI	1	0	0	1	1			DE	2	
Diethyl ether	237	RTECS No			KI5775000			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	RTECS No			AU9700000			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	RTECS No			TB7875000			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	RTECS No			TI0350000			CAS No			117-81-7						
Diethyl phthalate	648	3	3	3	R	2	0	0	0	(1)	1	1			S	1	
Diethyl phthalate	238	RTECS No			TI1050000			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	RTECS No			WS7875000			CAS No			64-67-5						
Diglycidyl ether of Bisphenol A	653	3	NI	3	NR	4	NI	0	0	(2)	1	2	S		S	2	
Diglycidyl ether of bisphenol A	250	RTECS No			TX3800000			CAS No			1675-54-3						
Diglycidyl ether of Bisphenol F	728	0	NI	0	NR	3	NI	0	(0)	(2)	1	(2)	SR		S	3	
Diglycidyl ether of bisphenol F	251	RTECS No						CAS No			55492-52-9						
Diheptyl phthalate	655	0	(4)	(4)	R	0	NI	0	0	(1)	1	1			Fp	3	
Diheptyl phthalate	252	RTECS No			TI1090000			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	RTECS No			AV1150000			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	RTECS No			TI1100000			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	RTECS No						CAS No									
Diisobutene	575	4	4	4	NR	3	NI	0	0	0	1	0			FE	2	

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014
Page 21 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3
Diisobutylene	257		RTECS No	SB2715000		CAS No	11071-47-9									
Diisobutylamine	576	(2)	NI	(2)	(R)	(3)	NI	2	(2)	2	(3)	(3)			FED	3
Diisobutylamine	256		RTECS No	TX1750000		CAS No	110-96-3									
Diisobutyl ketone	579	3	NI	3	R	2	NI	0	0	2	2	2			F	2
Diisobutyl ketone	254		RTECS No	MJ5775000		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		RTECS No	T11225000		CAS No	84-69-5									
Diisodecyl phthalate	619	0	0	0	(R)	0	(0)	0	0	(1)	0	1			Fp	2
Diisodecyl phthalate	3119		RTECS No	T11270000		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		RTECS No			CAS No										
Diisononyl adipate	690	0	NI	0	R	0	0	0	0	(1)	1	1			Fp	2
Diisononyl adipate	258		RTECS No			CAS No	33703-08-1									
Diisononyl phthalate	691	0	0	0	R	0	0	0	0	(0)	0	0			Fp	2
Diisononyl phthalate	3120		RTECS No			CAS No										
Diisooctyl phthalate	693	0	4	4	(R)	0	0	0	0	(1)	1	0			Fp	2
Diisooctyl phthalate	259		RTECS No	T11300000		CAS No	27554-26-3									
Diisopropanolamine	703	0	NI	0	NR	1	NI	0	0	0	2	3			FD	3
Diisopropanolamine	260		RTECS No	UB6600000		CAS No	110-97-4									
Diisopropylamine	705	1	NI	1	NR	2	0	1	1	2	3	3			ED	3
Diisopropylamine	261		RTECS No	IM4025000		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		RTECS No			CAS No										
1,3-Diisopropylbenzene	706	5	4	4	NR	4	NI	0	0	2	2	1			F	2
1,3-Diisopropyl benzene	2626		RTECS No	CZ6330000		CAS No	25321-09-9									
Diisopropyl ether	711	1	NI	1	NR	2	NI	0	0	0	1	2			E	2
Isopropyl ether	406		RTECS No	TZ5425000		CAS No	108-20-3									
Diisopropyl naphthalene, mixed isomers	712	5	4	4	NR	3	NI	0	0	(1)	1	1			Fp	2
Diisopropyl naphthalene	263		RTECS No	QJ1527000		CAS No	38640-62-9									
Dimethoxymethane	2405															

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014

Page 22 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3
Methylal (>=85%)	3662															
			RTECS No						CAS No							
Dimethyl acetamide	658	0	NI	0	R	1	NI	0	0	2	1	2			D	2
N,N-Dimethylacetamide	2730		RTECS No		AB7700000				CAS No		127-19-5					
Dimethyl acetamide	658	0	NI	0	R	1	NI	0	0	2	1	2			D	2
N,N-Dimethylacetamide solution (40% or less)	466		RTECS No		AB7700000				CAS No		127-19-5					
Dimethyl adipate	659	1	NI	1	(R)	4	NI	0	0	(0)	1	1			SD	2
Dimethyl adipate	264		RTECS No		AV1645000				CAS No		627-93-0					
Dimethylamine (40-50% aq.sol.)	661	0	NI	0	R	3	0	2	0	2	3B	3	S	NT	DE	3
Dimethylamine solution (45% or less)	270		RTECS No		IP8750000				CAS No		124-40-3					
Dimethylamine (40-50% aq.sol.)	661	0	NI	0	R	3	0	2	0	2	3B	3	S	NT	DE	3
Dimethylamine solution (greater than 45% but not greater than 55%)	271		RTECS No		IP8750000				CAS No		124-40-3					
Dimethylamine (40-50% aq.sol.)	661	0	NI	0	R	3	0	2	0	2	3B	3	S	NT	DE	3
Dimethylamine solution (greater than 55% but not greater than 65%)	272		RTECS No		IP8750000				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		RTECS No		GX1198000				CAS No		98-94-2					
Dimethyl disulphide	1616	1	NI	1	NR	3	2	2	0	2	1	1			SD	2
Dimethyl disulphide	2504		RTECS No		JO1927500				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		RTECS No		JR6600000				CAS No		112-18-5					
Dimethylethanolamine	667	0	NI	0	R	2	NI	1	1	2	3	3			D	3
Dimethylethanolamine	273		RTECS No		KK6125000				CAS No		108-01-0					
Dimethyl formamide	676	0	0	0	R	1	0	0	1	2	1	2	R		D	3
Dimethylformamide	274		RTECS No		LQ2100000				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		RTECS No						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		RTECS No		SZ7710000				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		RTECS No						CAS No		29662-90-6					
Dimethyl phthalate	678	2	2	2	R	2	0	0	0	(1)	0	1			SD	1

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014
Page 23 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3
Dimethyl phthalate	268		RTECS No	TI1575000		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		RTECS No	TY5775000		CAS No	126-30-7									
Dimethyl succinate	681	0	NI	0	NI	2	NI	0	0	0	0	2			SD	2
Dimethyl succinate	269		RTECS No	WM7675000		CAS No	106-65-0									
Dinitrotoluene	688	2	2	2	NR	4	2	2	(2)	(2)	1	0	CMR		S	3
Dinitrotoluene (molten)	276		RTECS No	XT1300000		CAS No	25321-14-6									
Dinonyl phthalate	689	0	NI	0	R	0	0	0	0	(1)	1	1			Fp	2
Dinonyl phthalate	2993		RTECS No	TI1800000		CAS No	84-76-4									
Di-n-octyl phthalate	692	0	(4)	(4)	(R)	0	0	0	0	(1)	1	(1)			Fp	2
Diocetyl phthalate	277		RTECS No	TI1925000		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		RTECS No	JG8225000		CAS No	123-91-1									
Dipentene	686	4	NI	4	NR	2	NI	0	0	(2)	2	2	S		F	3
Dipentene	278		RTECS No	OS8100000		CAS No	138-86-3									
Diphenyl	694	3	4	4	R	4	1	0	0	(1)	0	1			S	1
Diphenyl	279		RTECS No	DU8050000		CAS No	92-52-4									
Diphenylamine (molten)	2186	3	3	3	NR	3	1	0	0	(1)	1	1			S	1
Diphenylamine (molten)	285		RTECS No			CAS No										
Diphenylamine, reaction product with 2,4,4-trimethylpentene	1500	NI	1	1	NR	3	NI	0	0	(1)	1	1	S		Fp	3
Diphenylamine, reaction product with 2,2,4-Trimethylpentene	286		RTECS No			CAS No										
Diphenylamines, alkylated	1770	5	NI	5	NR	(3)	NI	0	0	(1)	(1)	(1)	S		F	3
Diphenylamines, alkylated	287		RTECS No			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		RTECS No	DV1500000		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		RTECS No	KN8970000		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		RTECS No			CAS No										
Diphenylmethane-4,4'-diisocyanate (#)	700	5	2	2	NR	0	0	0	0	3	2	2	S		S	3

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014
Page 24 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3
Diphenylmethane diisocyanate	288		RTECS No		NQ9350000			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		RTECS No					CAS No								
Di-n-propylamine	704	1	NI	1	NR	3	NI	2	2	2	3C	3			FED	3
Di-n-propylamine	225		RTECS No		JL9200000			CAS No			142-84-7					
Dipropylene glycol	707	0	1	1	NR	0	NI	0	0	0	1	1			D	1
Dipropylene glycol	291		RTECS No		UB8785000			CAS No			110-98-5					
Dipropylene glycol dibenzoate	708	3	NI	3	R	3	NI	0	0	0	0	0			S	0
Dipropylene glycol dibenzoate	2431		RTECS No		UB8787500			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		RTECS No		TI1940000			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		RTECS No					CAS No								
Dithiocarbamate ester (C7-C35)	2185	NI	2	2	NR	4	NI	0	0	(1)	1	1			S	1
Dithiocarbamate ester (C7-C35)	2371		RTECS No					CAS No								
Ditridecyl adipate	2351	0	NI	0	NR	0	NI	0	0	(2)	2	1	S		Fp	2
Ditridecyl adipate	293		RTECS No					CAS No								
Ditridecyl phthalate	714	0	(0)	0	NR	0	(0)	0	0	(1)	1	(1)			Fp	2
Ditridecyl phthalate	2994		RTECS No		TI1950000			CAS No			119-06-2					
Diundecyl phthalate	715	0	(0)	0	NR	0	0	0	0	(1)	1	1			Fp	2
Diundecyl phthalate	294		RTECS No		TI1980000			CAS No			3648-20-2					
Dodecane	718	5	NI	5	(R)	0	NI	0	0	(1)	(1)	(0)			Fp	2
Dodecane (all isomers)	295		RTECS No		JR2125000			CAS No			112-40-3					
tert-Dodecanethiol	2233	5	4	4	NR	0	0	0	0	(2)	2	1	S		F	3
tert-Dodecanethiol	2418		RTECS No					CAS No								
1-Dodecanol	719	5	2	2	R	4	1	0	0	(1)	1	(1)			Fp	2
Dodecyl alcohol	298		RTECS No		JR5775000			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		RTECS No		UD1950000			CAS No			6842-15-5					
2-Dodecenyl succinic acid, dipotassium salt, solution	727	4	NI	4	NR	1	NI	(0)	(0)	NI	NI	NI			D	NI

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014

Page 25 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3
Dodecenylsuccinic acid, dipotassium salt solution	297															
			RTECS No						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		RTECS No						CAS No							
Dodecyl benzene	126	0	NI	0	NR	0	3	0	0	(2)	(2)	(1)			F	2
Dodecylbenzene	304		RTECS No		CZ9540000				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		RTECS No						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		RTECS No		JR8050000				CAS No							
Dodecyl hydroxypropyl sulphide (LOA)	1861	5	NI	5	NI	4	NI	0	0	(0)	0	0			FD	0
Dodecyl hydroxypropyl sulphide	2252		RTECS No						CAS No							
n-Dodecyl mercaptan	2462	5	3	3	NR	5	NI	0	0	(3)	3	(3)	S		F	3
n-Dodecyl Mercaptan	3743		RTECS No						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		RTECS No						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		RTECS No						CAS No							
Dodecyl phenol	725	0	4	4	NI	4	NI	0	0	(3)	3	2			Fp	3
Dodecyl phenol	301		RTECS No		SL3675000				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		RTECS No						CAS No							
Dodecylxylene	1763	0	NI	0	NI	0	NI	0	0	(1)	1	1			Fp	2
Dodecyl Xylene	306		RTECS No						CAS No							
Epichlorohydrin	731	0	0	0	R	2	NI	2	2	3	3A	3	CS		D	3
Epichlorohydrin	309		RTECS No		TX4900000				CAS No	106-89-8						
Ethanol	732	0	NI	0	R	0	NI	0	0	0	1	2			D	2
Ethyl alcohol	315		RTECS No		KQ6300000				CAS No	64-17-5						
Ethanolamine	733	0	NI	0	R	2	0	1	1	3	3A	3			D	3
Ethanolamine	311		RTECS No		KJ5775000				CAS No	141-43-5						
Ethanoltriazine (aqueous solution)	2411	(0)	NI	(0)	R	3	NI	1	0	4	0	2	S		D	3

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014
Page 26 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3
1,3,5-Hexahydrotriethanol-1,3,5-triazine	3687		RTECS No						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		RTECS No						CAS No							
Ethoxylated tallow amine (>95%)	2313	0	NI	0	NR	4	NI	1	(1)	3	2	3	S		Fp	3
Ethoxylated tallow amine (> 95%)	2959		RTECS No						CAS No							
Ethoxylated tallow amine, glycol mixture	2252	2	NI	2	NR	6	NI	1	0	3	2	3	S		D	3
Ethoxylated tallow amine, glycol mixture	2476		RTECS No						CAS No							
Ethyl acetate	735	0	2	2	R	1	0	0	0	1	0	1			DE	2
Ethyl acetate	312		RTECS No			AH5425000			CAS No		141-78-6					
Ethyl acetoacetate	736	0	0	0	R	1	NI	0	0	(1)	1	1			D	1
Ethyl acetoacetate	313		RTECS No			AK5250000			CAS No		141-97-9					
Ethyl acrylate	734	1	NI	1	R	3	1	1	2	2	2	2	SC	T	ED	3
Ethyl acrylate	314		RTECS No			AT0700000			CAS No		140-88-5					
Ethylamine	1016	0	NI	0	R	2	NI	2	2	1	3	3			GD	3
Ethylamine	322		RTECS No			KH2100000			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		RTECS No						CAS No							
Ethyl amyl ketone	1784	2	NI	2	NI	2	NI	0	0	(2)	2	NI			FD	2
Ethyl amyl ketone	316		RTECS No			RH1485000			CAS No		106-68-3					
Ethylbenzene	740	3	2	2	R	3	(1)	0	0	0	2	2	C		FE	3
Ethylbenzene	324		RTECS No			DA0700000			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		RTECS No			EO4880000			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		RTECS No			KN4730200			CAS No		637-92-3					
Ethyl butyrate	748	1	NI	1	NI	2	NI	0	0	(2)	2	NI			FED	2
Ethyl butyrate	317		RTECS No			ET1660000			CAS No		105-54-4					
Ethyl cyclohexane	751	4	4	4	NR	3	NI	(0)	(0)	(1)	(1)	(1)			FE	2
Ethylcyclohexane	325		RTECS No			GV1140000			CAS No		1678-91-7					
N-Ethyl cyclohexylamine	752	2	NI	2	NI	(3)	NI	1	2	2	3	3			FED	3

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014
Page 27 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3
N-Ethylcyclohexylamine	478		RTECS No		GX1225000				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		RTECS No						CAS No		759-94-4					
Ethylene carbonate	755	0	NI	0	R	0	NI	0	0	(2)	1	2			SD	2
Ethylene carbonate	326		RTECS No		FF9550000				CAS No		96-49-1					
Ethylene chlorohydrin	756	0	0	0	R	3	NI	2	3	4	2	3			D	3
Ethylene chlorohydrin	327		RTECS No		KK0875000				CAS No		107-07-3					
Ethylene cyanohydrin	757	0	0	0	NI	2	NI	1	0	(2)	1	2			D	2
Ethylene cyanohydrin	328		RTECS No		MU5250000				CAS No		109-78-4					
Ethylene diamine	758	0	1	1	R	3	1	1	2	1	3	3	S		D	3
Ethylenediamine	343		RTECS No		KH8575000				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		RTECS No		AH4375000				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		RTECS No		KH9275000				CAS No		106-93-4					
Ethylene glycol	761	0	NI	0	R	0	NI	1	(1)	(1)	0	0			D	1
Ethylene glycol	331		RTECS No		KW2975000				CAS No		107-21-1					
Ethylene glycol acrylate	869	0	NI	0	R	4	NI	1	3	3	3	3	SM		D	3
2-Hydroxyethyl acrylate	51		RTECS No		AT1750000				CAS No		818-61-1					
Ethylene glycol butyl ether acetate	764	1	NI	1	R	2	NI	0	1	(1)	1	1			FD	1
Ethylene glycol butyl ether acetate	334		RTECS No		KJ8925000				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		RTECS No		KW4025000				CAS No		111-55-7					
Ethylene glycol ethyl ether acetate	767	0	NI	0	R	2	0	1	0	1	1	2	R		D	3
2-Ethoxyethyl acetate	41		RTECS No		KK8225000				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		RTECS No						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		RTECS No		KL5950000				CAS No		110-49-6					
Ethylene glycol monoacetate	762	0	NI	0	R	2	NI	0	0	(3)	NI	(3)			D	3

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014

Page 28 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3
Ethylene glycol acetate	333		RTECS No		KW7175000			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		RTECS No					CAS No								
Ethylene glycol monoethyl ether	766	0	NI	0	R	0	0	0	0	1	2	2			D	3
2-Ethoxyethanol	40		RTECS No		KK8050000			CAS No		110-80-5						
Ethylene glycol phenyl ether	775	1	NI	1	R	1	0	1	0	(2)	1	2			SD	2
Ethylene glycol phenyl ether	339		RTECS No		KM0350000			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		RTECS No					CAS No								
Ethylene oxide	77	NI	NI	NI	NI	NI	NI	1	(1)	3	3	3	CMRS		GD	3
Ethylene oxide	2744		RTECS No		KX2450000			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		RTECS No					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		RTECS No					CAS No								
Ethyl 3-ethoxypropionate	1439	1	NI	1	NR	2	NI	0	0	0	1	1			FD	1
Ethyl-3-ethoxypropionate	321		RTECS No		UF3325000			CAS No		763-69-9						
2-Ethylhexanoic acid	776	2	NI	2	R	2	NI	0	0	(2)	2	2			FD	3
2-Ethylhexanoic acid	45		RTECS No		MO7700000			CAS No		149-57-5						
2-Ethylhexyl acrylate	782	3	NI	3	R	2	NI	0	0	(2)	2	2	S		F	3
2-Ethylhexyl acrylate	46		RTECS No		AT0855000			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		RTECS No					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		RTECS No					CAS No								
5-Ethylidene-2-norbornene	783	3	3	3	NR	3	0	0	0	2	1	2			FE	2
Ethylidene norbornene	345		RTECS No		RB9450000			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		RTECS No		MJ7350000			CAS No		541-85-5						
Ethyl methacrylate	785	1	NI	1	R	2	0	0	0	0	(2)	(2)	S		FE	2

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014

Page 29 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3
Ethyl methacrylate	318		RTECS No		OZ4550000				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		RTECS No						CAS No							
o-Ethyl phenol	788	2	NI	2	NI	(2)	NI	1	NI	NI	NI	NI			S	NI
o-Ethylphenol	535		RTECS No		SL4025000				CAS No		90-00-6					
Ethyl propionate	790	1	NI	1	NI	2	0	0	(1)	(2)	2	2			ED	2
Ethyl propionate	319		RTECS No		UF3675000				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		RTECS No		MP6300000				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		RTECS No						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		RTECS No						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		RTECS No						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		RTECS No						CAS No							
Fatty acids, linear, C8-C18 saturated with C18 unsaturated	2260	(4)	NI	(4)	R	(4)	(1)	(0)	(0)	(1)	(1)	(1)			Fp	3
Fatty acids, (C8-C18)	2779		RTECS No						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		RTECS No						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		RTECS No						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		RTECS No						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		RTECS No						CAS No							
Fatty alcohols, linear, (C16+)	2327	(5)	(2)	(2)	(R)	(0)	(1)	0	0	(1)	1	1			Fp	2
Alcohols, linear (C16+)	3082		RTECS No						CAS No							
Ferric chloride	339	Inorg	5	5	Inorg	2	0	1	(0)	(3)	2	3			D	3

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014
Page 30 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3
Ferric chloride solutions	348		RTECS No		LJ9100000				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		RTECS No						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		RTECS No						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		RTECS No						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		RTECS No						CAS No							
Fluorosilicic acid	806	Inorg	0	0	Inorg	2	NI	2	(2)	4	3	3			D	3
Fluorosilicic acid	2716		RTECS No		VV8225000				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 (20-30%) in water solution	353		RTECS No						CAS No							
Formaldehyde (37%-50% solution)	807	0	NI	0	R	2	NI	2	2	3	3	3	CSM	NT	D	3
Formaldehyde solutions (45% or less)	354		RTECS No		LP8925000				CAS No		50-00-0					
Formaldehyde, polymer with isobutyleneated phenol	2377	NI	NI	NI	NR	NI	NI	NI	NI	NI	NI	NI			Fp	NI
Formaldehyde, polymer with isobutyleneated phenol	1203		RTECS No						CAS No							
Formamide	808	0	NI	0	NR	1	NI	0	0	1	1	2	R		D	3
Formamide	355		RTECS No		LQ0525000				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		RTECS No		LQ4900000				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		RTECS No						CAS No							
Fumaric adduct of rosin (water dispersion)	810	3	NI	3	NR	3	NI	0	(0)	(3)	0	3	S		D	3
Fumaric adduct of rosin, water dispersion	357		RTECS No						CAS No		65997-04-8					
Furfural	812	0	NI	0	R	2	1	2	(2)	3	2	2	C		D	3
Furfural	358		RTECS No		LT7000000				CAS No		98-01-1					
Furfuryl alcohol	813	0	NI	0	R	1	NI	2	2	3	2	2			D	2
Furfuryl alcohol	359		RTECS No		LU9100000				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

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014
Page 31 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3
Glucitol/glycerol blend propoxylated (containing 10% or more amines)	3919															
			RTECS No						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															
			RTECS No						CAS No							
Glycerine	814	0	NI	0	R	0	0	0	0	(1)	0	1			D	1
Glycerine	363															
			RTECS No		MA8050000				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															
			RTECS No						CAS No							
Glycerol ethoxylated	2360	0	NI	0	R	0	NI	0	0	(0)	0	0			D	0
Glycerol ethoxylated	3123															
			RTECS No						CAS No							
Glycerol monooleate	1898	0	0	0	R	0	NI	0	(0)	(1)	1	1			Fp	2
Glycerol monooleate	365															
			RTECS No		RK1300000				CAS No		25496-72-4					
Glycerol propoxylated	2346	0	NI	0	NR	1	NI	1	0	(2)	1	0			D	2
Glycerol propoxylated	3110															
			RTECS No						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															
			RTECS No						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															
			RTECS No						CAS No							
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															
			RTECS No						CAS No							
Glyceryl triacetate	816	0	NI	0	R	1	0	1	0	0	0	1			D	1
Glyceryl triacetate	367															
			RTECS No		AK3675000				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															
			RTECS No						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															
			RTECS No		MB7600000				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															
			RTECS No						CAS No							
Glyoxal solutions (40% or less)	84	0	NI	0	R	1	NI	0	0	2	2	3	MS		D	3
Glyoxal solution (40% or less)	370															
			RTECS No		MD2700000				CAS No		107-22-2					
Glyoxylic acid	1535	0	NI	0	R	2	0	0	0	(3)	0	3	S		D	3

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014
Page 32 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3
Glyoxylic acid solution (50 % or less)	371		RTECS No	MD4550000		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		RTECS No	MC1075000		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		RTECS No			CAS No	8024-22-4									
Groundnut oil	820	0	NI	0	R	(2)	NI	(0)	(0)	(0)	(0)	0			Fp	2
Groundnut oil	2769		RTECS No	RX2830000		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		RTECS No	MI7700000		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		RTECS No	MJ1575000		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		RTECS No			CAS No										
1-Heptanol	828	2	NI	2	R	2	0	1	0	2	(2)	(2)			FD	2
1-Heptanol	2688		RTECS No	MK0350000		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		RTECS No			CAS No										
1-Heptene	832	3	NI	3	NI	2	NI	(0)	(0)	(0)	(2)	(1)			E	2
1-Heptene	2685		RTECS No	MJ8815000		CAS No										
Heptyl acetate	833	3	NI	3	(R)	(3)	NI	0	0	(2)	1	2			F	2
Heptyl acetate	375		RTECS No	AH9901000		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-Hexadecyl naphthalene / 1,4-bis(hexadecyl)naphthalene mixture	2373		RTECS No			CAS No										
Hexamethylene diamine	845	0	NI	0	R	2	NI	1	1	(3)	3A	3	SR		D	3
Hexamethylenediamine solution	380		RTECS No	MO1180000		CAS No	124-09-4									
Hexamethylene diamine	845	0	NI	0	R	2	NI	1	1	(3)	3A	3	SR		D	3
Hexamethylenediamine (molten)	378		RTECS No	MO1180000		CAS No	124-09-4									
Hexamethylene diamine	845	0	NI	0	R	2	NI	1	1	(3)	3A	3	SR		D	3
Hexamethylenediamine	377		RTECS No	MO1180000		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

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014
Page 33 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3
Hexamethylenediamine adipate (50% in water)	379		RTECS No		AV1940000			CAS No		3323-53-3						
Hexamethylene diisocyanate	2142	3	0	0	NR	2	NI	1	2	4	3	3	S		S	3
Hexamethylene diisocyanate	18		RTECS No					CAS No		822-06-0						
Hexamethylene glycol	847	0	NI	0	R	1	NI	0	0	(1)	0	1			D	1
Hexamethylene glycol	376		RTECS No		MO2100000			CAS No		629-11-8						
Hexamethyleneimine	848	1	NI	1	NI	2	NI	3	1	2	2	2			FED	2
Hexamethyleneimine	381		RTECS No		CM3150000			CAS No		111-49-9						
Hexamethylene tetramine (40% solution)	849	0	NI	0	R	0	NI	0	0	(1)	0	1	S		D	2
Hexamethylenetetramine solutions	382		RTECS No		MN4725000			CAS No		100-97-0						
Hexane	850	3	NI	3	R	4	NI	0	0	0	2	2	NA		E	2
Hexane	2683		RTECS No		MN9275000			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		RTECS No		MN9275000			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		RTECS No					CAS No								
Hexanoic acid	853	2	NI	2	R	2	NI	0	0	(3)	(3)	3			FD	3
Hexanoic acid	384		RTECS No		MO5250000			CAS No		142-62-1						
1-Hexanol	854	1	0	0	(R)	2	NI	1	0	(3)	1	3			FD	3
Hexanol	385		RTECS No		MQ4025000			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		RTECS No					CAS No								
1-Hexene	855	3	NI	3	R	3	NI	0	0	0	1	1			E	2
1-Hexene	2681		RTECS No		MP6600100			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		RTECS No					CAS No								
Hexyl acetate	857	2	NI	2	NI	3	NI	0	0	(1)	1	1			FE	2
Hexyl acetate	387		RTECS No		AI0875000			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		RTECS No		SA7525000			CAS No		108-84-9						
Hexylene glycol	859	0	NI	0	R	0	0	0	0	(3)	2	3			D	2

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014
Page 34 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3
Hexylene glycol	388		RTECS No		SA0810000				CAS No		107-41-5					
Hydrocarbon waxes	2278	0	NI	0	NR	0	0	0	0	(0)	1	1			Fp	2
Hydrocarbon waxes	2886		RTECS No						CAS No							
Hydrochloric acid	864	Inorg	0	0	Inorg	1	NI	1	1	3	3C	3			DE	3
Hydrochloric acid	389		RTECS No		MW4025000				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		RTECS No						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		RTECS No		MX0900000				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		RTECS No		MX0900000				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		RTECS No						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		RTECS No						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		RTECS No		MB9185000				CAS No		150-30-0					
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		RTECS No		ET4761500				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	2691		RTECS No						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	392		RTECS No						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		RTECS No						CAS No							
Interesterified Mixed Vegetable Oils	2355	0	NI	0	R	(0)	NI	(0)	(0)	(1)	(1)	(1)			Fp	2
Interesterified vegetable oils	3115		RTECS No						CAS No							
Isobutanol	382	0	NI	0	R	1	0	0	0	1	2	3			D	3
Isobutyl alcohol	397		RTECS No		NP9625000				CAS No		78-83-1					
Isobutyl formate	405	1	NI	1	NI	1	NI	0	(0)	0	(1)	(2)			E	2

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014
Page 35 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3
Isobutyl formate	398		RTECS No	LQ8650000				CAS No	542-55-2							
Isobutyl methacrylate	408	2	NI	2	NR	1	NI	0	0	0	2	2	S		FED	2
Isobutyl methacrylate	2673		RTECS No	OZ4900000				CAS No	97-86-9							
Isobutyric acid	419	0	NI	0	R	2	NI	2	2	(3)	3	3			E	NI
Isobutyric acid	2459		RTECS No	NQ4375000				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		RTECS No	NR0960000				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		RTECS No	RH1400000				CAS No	2430-22-0							
Isononylaldehyde	2300	3	NI	3	NR	(3)	NI	0	0	(2)	2	1			F	2
Isononylaldehyde	2754		RTECS No					CAS No								
Isooctaldehyde	1071	2	NI	2	NI	3	NI	0	0	(1)	1	1			F	1
Octyl aldehydes	542		RTECS No					CAS No	63885-09-6							
Isooctanol	1076	3	NI	3	R	2	0	1	0	(2)	2	(2)			F	2
iso-Octanol	2675		RTECS No	NS7700000				CAS No	26952-21-6							
Isooctylamine	1081	2	NI	2	NI	3	NI	1	1	3	3	3			FD	3
2-Ethylhexylamine	48		RTECS No	MQ5250000				CAS No	104-75-6							
Isopentene	1113	2	NI	2	NI	2	NI	(0)	(0)	(0)	(0)	(1)			E	2
iso-Pentene	2677		RTECS No	EM7600000				CAS No	563-45-1							
Isophorone	879	1	1	1	R	2	0	1	1	(2)	1	2			FD	2
Isophorone	399		RTECS No	GW7700000				CAS No	78-59-1							
Isophorone diamine	880	0	0	0	NR	2	0	1	(1)	(3)	3	3	S		D	3
Isophoronediamine	401		RTECS No	GV6129000				CAS No	2855-13-2							
Isophorone diisocyanate	881	1	NI	1	NR	3	NI	0	0	3	3	3	SA		S	3
Isophorone diisocyanate	400		RTECS No	NQ9370000				CAS No	4098-71-9							
Isoprene	882	2	2	2	NR	2	NI	0	0	0	1	2	CM		E	3
Isoprene	402		RTECS No	NT4037000				CAS No	78-79-5							
Isopropanol	1181	0	NI	0	R	0	0	0	0	0	1	2			D	2
Isopropyl alcohol	405		RTECS No	NT8050000				CAS No	67-63-0							
Isopropanolamine	1182	0	NI	0	R	2	NI	0	1	0	3	3			D	3

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014

Page 36 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3
Isopropanolamine	403		RTECS No	UA5775000		CAS No	78-96-6									
Isopropyl acetate	1192	1	NI	1	R	1	NI	0	0	0	1	2			ED	2
Isopropyl acetate	404		RTECS No	AI4930000		CAS No	108-21-4									
Isopropylamine	1195	0	NI	0	R	2	NI	2	2	1	3	3			DE	3
Isopropylamine	407		RTECS No	NT8400000		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		RTECS No			CAS No										
Isopropyl benzene	1197	3	2	2	R	3	NI	0	0	0	2	1			FE	2
Isopropylbenzene	2687		RTECS No	GR8575000		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		RTECS No	GR8575000		CAS No	98-82-8									
Isopropyl cyclohexane	1199	4	NI	4	(NR)	(3)	NI	(0)	(0)	(1)	(0)	(1)			FE	2
Isopropylcyclohexane	408		RTECS No			CAS No	696-29-7									
Isopropyltoluenes	549	4	4	4	(NR)	3	NI	0	(0)	1	2	(1)			FE	2
p-Cymene	552		RTECS No	GZ5950000		CAS No	99-87-6									
Isovaleraldehyde	1390	1	NI	1	R	3	NI	0	0	0	2	2			D	2
Valeraldehyde (all isomers)	731		RTECS No	ES3450000		CAS No	590-86-3									
Jatropha oil	2402	0	NI	(0)	(R)	(2)	NI	(0)	(0)	(0)	(0)	(0)			Fp	2
Jatropha oil	3637		RTECS No			CAS No										
Kaolin slurry	883	Inorg	NI	0	Inorg	0	NI	0	0	0	0	0			S	0
Kaolin slurry	409		RTECS No	GF1670500		CAS No	1332-58-7									
Lactic acid	886	0	NI	0	R	1	NI	0	0	(3)	2	3			D	3
Lactic acid	410		RTECS No	OD2800000		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		RTECS No	OD8225000		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		RTECS No			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		RTECS No			CAS No										
Lauric acid	891	4	NI	4	R	4	1	0	(0)	(2)	1	2			Fp	2

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014
Page 37 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3
Lauric acid	415		RTECS No	OE9800000		CAS No	143-07-7									
Lauryl methacrylate	893	0	2	2	R	0	0	0	(0)	(1)	1	1			F	1
Dodecyl methacrylate	300		RTECS No	OZ4300000		CAS No	142-90-5									
Lecithin (soybeans)	2146	0	NI	0	R	0	NI	0	0	(0)	0	(0)			SD	0
Lecithin	417		RTECS No			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		RTECS No			CAS No										
Linear alkyl (C12-16) propoxyamine ethoxylate	2380	3	0	3	NR	4	NI	1	(1)	(3)	3	(3)	S		D	3
Alkyl(C12-C16) propoxyamine ethoxylate	3423		RTECS No			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		RTECS No			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		RTECS No			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		RTECS No			CAS No										
Long-chain alkylphenate/Phenol sulphide mixture	1754	(0)	NI	(0)	(NR)	0	NI	0	0	(2)	2	2	S		Fp	3
Long-chain alkylphenate/Phenol sulphide mixture	425		RTECS No			CAS No										
Long-chain polyetheramine in alkyl(C2-C4)benzenes	1457	NI	NI	NI	NR	2	NI	0	0	(2)	2	2			Fp	2
	422		RTECS No			CAS No										
Lubrizol polyolefin anhydride	1865	0	NI	0	NR	1	NI	0	0	(2)	1	(2)			Fp	2
Polyolefin anhydride	605		RTECS No			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		RTECS No			CAS No										
Magnesium alkyl (long chain) salicylate (overbased) in mineral oil (LOA)	71	(0)	NI	(0)	NR	(2)	NI	0	0	(1)	(1)	(1)	S		S	2
Magnesium long-chain alkyl salicylate (C11+)	429		RTECS No			CAS No										
Magnesium chloride	915	Inorg	0	0	Inorg	1	0	0	0	(0)	0	0			D	0
Magnesium chloride solution	427		RTECS No	OM2800000		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		RTECS No	OM3570000		CAS No	1309-42-8									
Magnesium lignosulphonate solutions	2356	(0)	NI	(0)	(NR)	(0)	NI	0	0	(0)	(0)	(0)			D	0

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014
Page 38 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3	
Ligninsulphonic acid, magnesium salt solution	3116		RTECS No				CAS No										
Magnesium long chain alkaryl sulphonate (C11-C50) (LOA)	1967	0	NI	0	NR	0	NI	0	0	(2)	1	2	S		Fp	3	
Magnesium long-chain alkaryl sulphonate (C11-C50)	430		RTECS No				CAS No										
Maleic acid/allyl sulfonic 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 sulfonic acid copolymer with phosphonate groups, partial sodium salt (aqueous solution)	3688		RTECS No				CAS No										
Maleic anhydride	921	1	NI	1	R	2	0	1	2	(3)	3	3	S		D	3	
Maleic anhydride	431		RTECS No			ON3675000		CAS No			108-31-6						
Maleic anhydride - sodium allylsulfonate copolymer(aqueous solution)	2410	0	NI	0	NR	1	NI	0	0	(0)	(0)	0			D	0	
Maleic anhydride–sodium allylsulfonate copolymer solution	3686		RTECS No				CAS No										
Maltitol Syrup	2348	0	NI	0	R	0	NI	0	0	(0)	0	0			D	0	
Maltitol solution	3078		RTECS No				CAS No										
Mango kernal 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		RTECS No				CAS No										
2-Mercaptobenzothiazol	925	2	1	1	NR	4	2	0	0	(0)	0	0	S		S	2	
Mercaptobenzothiazol, sodium salt solution	432		RTECS No			DL6475000		CAS No			149-30-4						
Mesityl oxide	946	1	NI	1	R	(1)	NI	1	0	2	2	2			D	2	
Mesityl oxide	433		RTECS No			SB4200000		CAS No			141-79-7						
Metam-sodium (ISO)	202	0	NI	0	NR	4	NI	1	2	(2)	2	1	S		D	2	
Metam sodium solution	434		RTECS No			FC2100000		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 - alkoxy-poly (alkylene oxide) methacrylate copolymer, sodium salt aqueous solution (45% or less)	2819		RTECS No				CAS No										
Methacrylic acid, inhibited	948	0	NI	0	R	2	0	1	2	2	3	3			D	3	
Methacrylic acid	435		RTECS No			OZ2975000		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		RTECS No				CAS No										
Methacrylonitrile	949	0	NI	0	R	2	0	2	2	3	1	1	S	NT	ED	3	
Methacrylonitrile	437		RTECS No			UD1400000		CAS No			126-98-7						
Methanol	951	0	NI	0	R	0	0	(2)	(2)	(2)	2	2	T		DE	3	
Methyl alcohol	441		RTECS No			PC1400000		CAS No			67-56-1						

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014
Page 39 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3	
(2-Methoxymethylethoxy)propanols	2452	0	NI	0	R	0	(0)	0	0	(0)	0	0				D	0
	3870		RTECS No						CAS No								
Methyl acetate	954	0	NI	0	R	1	NI	0	0	0	1	2				DE	2
Methyl acetate	438		RTECS No		AI9100000				CAS No		79-20-9						
Methyl acetoacetate	335	0	NI	0	R	1	NI	0	0	(2)	1	2				D	2
Methyl acetoacetate	439		RTECS No		AK5775000				CAS No		105-45-3						
Methyl acrylate	955	0	NI	0	R	3	NI	1	1	2	2	3	MS			D	3
Methyl acrylate	440		RTECS No		AT2800000				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		RTECS No		PF6300000				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		RTECS No		SA7350000				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		RTECS No		MJ5075000				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		RTECS No		BY4550000				CAS No		100-61-8						
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		RTECS No						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		RTECS No		SC0175000				CAS No		75-85-4						
3-Methyl-1-butanol	965	1	1	1	(R)	1	0	1	0	(2)	2	2				FED	2
Amyl alcohol, primary	126		RTECS No		EL5425000				CAS No		123-51-3						
3-Methyl-1-butanol	965	1	1	1	(R)	1	0	1	0	(2)	2	2				FED	2
Isoamyl alcohol	396		RTECS No		EL5425000				CAS No		123-51-3						
Methyl butenol	967	0	NI	0	R	2	NI	1	0	(2)	2	2				D	2
Methylbutenol	458		RTECS No		EM9472500				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		RTECS No		KN5250000				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		RTECS No		MP1400000				CAS No		591-78-6						

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014

Page 40 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3
Methylbutynol	968	0	NI	0	NR	1	NI	1	1	0	0	2			D	2
Methylbutynol	459		RTECS No		ES0810000				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		RTECS No		ES0810000				CAS No		115-19-5					
Methyl butyrate	973	1	NI	1	NI	(2)	NI	0	0	2	2	(2)			ED	2
Methyl butyrate	444		RTECS No		ET5500000				CAS No		623-42-7					
Methyl cyclohexane	976	3	3	3	NR	3	1	0	0	1	1	1	A		E	2
Methylcyclohexane	460		RTECS No		GV6125000				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		RTECS No		PC1075000				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		RTECS No						CAS No							
N-Methyldiethanolamine	1491	0	NI	0	R	2	NI	1	0	(2)	1	2			D	2
Methyl diethanolamine	445		RTECS No		KL7525000				CAS No		105-59-9					
Methylene dithiocyanate	2235	2	NI	2	NR	5	NI	2	0	4	3	3	S		NI	3
Methylene bithiocyanate	2693		RTECS No						CAS No		6317-18-6					
2-Methyl-6-ethylaniline	984	2	NI	2	NR	2	NI	1	1	(2)	0	2			FD	2
2-Methyl-6-ethyl aniline	54		RTECS No		BY5600000				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		RTECS No		TJ6825000				CAS No		104-90-5					
Methyl formate	987	0	NI	0	R	1	NI	1	0	2	0	2			DE	2
Methyl formate	447		RTECS No		LQ8925000				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		RTECS No		000000000				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		RTECS No						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		RTECS No		RA8225000				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		RTECS No		SA9275000				CAS No		108-10-1					

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014
Page 41 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3
Methyl methacrylate	995	1	NI	1	R	2	NI	0	0	0	2	2	S		ED	2
Methyl methacrylate	450		RTECS No		OZ5075000				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		RTECS No						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		RTECS No						CAS No							
Methyl naphthalenes	1999	4	NI	4	(NR)	(4)	NI	1	0	(2)	1	1		T	F	2
Methyl naphthalene (molten)	451		RTECS No						CAS No							
2-Methyl pentane	1000	3	NI	3	NI	4	NI	(0)	(0)	(2)	(2)	(2)			E	2
2-Methylpentane	2684		RTECS No		SA2995000				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		RTECS No						CAS No							
Methyl propyl ketone	1003	0	NI	0	(R)	0	NI	1	0	(2)	1	2			FED	2
Methyl propyl ketone	452		RTECS No		SA7875000				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		RTECS No		TJ4900000				CAS No		109-06-8					
3-Methylpyridine	1006	1	NI	1	R	1	NI	1	2	2	3	3			D	3
3-Methylpyridine	61		RTECS No		TJ5000000				CAS No		108-99-6					
4-Methylpyridine	1007	1	NI	1	(R)	1	NI	1	2	2	3	3			D	3
4-Methylpyridine	63		RTECS No		UT5425000				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		RTECS No		UY5790000				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		RTECS No		VO4725000				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		RTECS No		WL5075300				CAS No		98-83-9					
3-(Methylthio) propionaldehyde	993	0	NI	0	R	3	1	1	1	2	2	3	NS	T	D	3
3-(methylthio)propionaldehyde	2368		RTECS No		UE2285000				CAS No		3268-49-3					
Metolachlor (ISO)	113	2	2	2	NR	5	1	1	0	(2)	1	0	S		S	2
N-(2-Methoxy-1-methyl ethyl)-2-ethyl-6-methyl chloroacetanilide	469		RTECS No		AN3430000				CAS No		51218-45-2					

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014
Page 42 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3
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		RTECS No						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		RTECS No						CAS No							
Molasses	1013	0	NI	0	R	0	NI	0	0	0	0	0			D	0
Molasses	462		RTECS No						CAS No							
Molybdenum polysulfide long chain alkyl dithiocarbamide complex	2344	4	2	2	NR	2	0	0	0	(2)	2	2			Fp	2
Molybdenum polysulfide long chain alkyl dithiocarbamide complex	3108		RTECS No						CAS No							
Mononitrobenzene	1017	1	1	1	R	3	(4)	(2)	2	2	1	1	CRT		SD	3
Nitrobenzene	501		RTECS No		DA6475000				CAS No		98-95-3					
Morpholine	1018	0	0	0	R	2	NI	1	2	2	3	3			D	3
Morpholine	463		RTECS No		QD6475000				CAS No		110-91-8					
Myrcene	1019	4	NI	4	R	4	1	0	0	(2)	2	NI			F	2
Myrcene	465		RTECS No		RG5365000				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		RTECS No		QJ0525000				CAS No		91-20-3					
Naphthalene, crude (molten) (#)	2459	NI	(3)	(3)	NR	3	0	0	(0)	(2)	2	2	CMT		Fp	3
Raw Naphthalene, molten	3858		RTECS No						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		RTECS No		EC4850000				CAS No		9084-06-4					
Neodecanoic acid	1025	4	NI	4	NR	2	NI	0	0	(2)	0	2			Fp	2
Neodecanoic acid	496		RTECS No						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		RTECS No		QU5775000				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		RTECS No		QU5775000				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		RTECS No		MB8400000				CAS No		5094-31-3					
Nitroethane	1037	0	NI	0	NR	2	NI	1	0	(2)	(0)	(1)			SD	2
Nitroethane	502		RTECS No		KI5600000				CAS No		79-24-3					

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014
Page 43 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3	
Nitroethane (80%)/Nitropropane (20%)	2245	0	1	1	NR	2	NI	1	1	2	0	1			E	2	
Nitroethane(80%)/ Nitropropane(20%)	503		RTECS No						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		RTECS No						CAS No								
2-Nitrophenol	1041	1	2	2	R	3	(2)	0	0	(1)	1	1			S	1	
o-Nitrophenol (molten)	536		RTECS No			SM2100000			CAS No			88-75-5					
1-Nitropropane	1044	0	1	1	NR	1	NI	1	0	2	0	1			FED	2	
1-Nitropropane	2747		RTECS No			TZ5075000			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		RTECS No						CAS No								
2-Nitropropane	1045	0	1	1	NR	2	NI	2	0	2	0	0	C		FED	3	
2-Nitropropane	2748		RTECS No			TZ5250000			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		RTECS No						CAS No								
o-Nitrotoluene	1049	2	2	2	NR	2	(1)	1	0	(2)	0	1	CMR		S	3	
o-Nitrotoluene	2745		RTECS No			XT3150000			CAS No			88-72-2					
p-Nitrotoluene	1051	2	1	1	NR	3	0	1	0	(2)	0	1	R		S	3	
p-Nitrotoluene	2746		RTECS No			XT3325000			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		RTECS No						CAS No								
Nonane	1054	4	NI	4	R	4	NI	0	0	1	1	1	A		FE	2	
Nonane (all isomers)	506		RTECS No			RA6115000			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		RTECS No			RA6650000			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		RTECS No						CAS No								
1-Nonene	1060	4	NI	4	NI	3	NI	0	0	0	1	1	A		FE	2	
1-Nonene	2680		RTECS No						CAS No			27215-95-8					
Nonyl acetate	1766	4	NI	4	NI	NI	NI	0	0	NI	NI	NI			F	NI	
Nonyl acetate	509		RTECS No						CAS No			143-13-5					

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014
Page 44 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3
Nonyl methacrylate monomer	1061	5	NI	5	R	3	NI	(0)	(0)	(1)	(1)	(1)			F	1
Nonyl methacrylate monomer	511		RTECS No						CAS No							
Nonyl phenol	1062	5	4	4	NR	5	3	1	0	(3)	3	3			Fp	3
Nonylphenol	512		RTECS No		SM5600000				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		RTECS No						CAS No							
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		RTECS No						CAS No							
Octamethylcyclotetrasiloxane	2398	5	5	5	NR	0	3	0	0	0	0	0			F	1
Octamethylcyclotetrasiloxane	3633		RTECS No						CAS No							
Octane	1072	5	NI	5	(R)	4	NI	(0)	(0)	0	0	0	A		FE	2
Octane (all isomers)	538		RTECS No		RG8400000				CAS No							
Octanoic acid (Caprylic acid)	1074	3	NI	3	R	1	NI	0	0	(3)	3	3			F	3
Octanoic acid (all isomers)	539		RTECS No		RH0175000				CAS No							
1-Octanol	1075	3	NI	3	R	2	0	1	0	(2)	2	2			Fp	2
1-Octanol	2676		RTECS No		RH6550000				CAS No							
1-Octanol	1075	3	NI	3	R	2	0	1	0	(2)	2	2			Fp	2
Octanol (all isomers)	540		RTECS No		RH6550000				CAS No							
Octene (all isomers)	1079	4	NI	4	NR	3	NI	0	0	0	2	1	A		FE	2
Octene (all isomers)	541		RTECS No						CAS No							
Octyl acetate	1080	3	NI	3	R	2	NI	0	0	(1)	1	NI			FD	1
n-Octyl acetate	483		RTECS No		AJ1400000				CAS No							
Octyl decyl adipate	1082	0	NI	0	(R)	(0)	(0)	(0)	(0)	(1)	(1)	(1)			Fp	2
Octyl decyl adipate	543		RTECS No						CAS No							
n-Octyl mercaptan	2461	4	3	3	NR	5	NI	1	0	(1)	1	0	S		F	3
n-Octyl Mercaptan	3742		RTECS No						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		RTECS No						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, stabilised	3548		RTECS No						CAS No							

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014
Page 45 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3
Olefin mixtures (C5-C7)	2243	3	NI	3	R	3	NI	(0)	(0)	(1)	(2)	(1)			E	2
Olefin mixtures (C5-C7)	545		RTECS No							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		RTECS No							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		RTECS No							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		RTECS No							CAS No						
Oleic acid	1089	0	NI	0	R	0	NI	0	1	(2)	1	1			Fp	2
Oleic acid	548		RTECS No		RG2275000					CAS No	112-80-1					
Oleylamine	1862	0	NI	0	NR	4	NI	1	(1)	(3)	3B	3			Fp	3
Oleylamine	550		RTECS No							CAS No						
Olive oil	1090	0	NI	0	R	(2)	NI	(0)	(0)	(1)	1	1			Fp	2
Olive oil	2771		RTECS No		RK4300000					CAS No	8001-25-0					
Orange juice	2375	0	0	0	R	0	0	0	0	(0)	0	0			D	0
Orange juice	3151		RTECS No							CAS No						
Orange juice (not concentrated)	2382	0	0	0	R	0	0	0	0	(0)	0	0			D	0
Orange juice (not concentrated)	3425		RTECS No							CAS No						
Oxatetra-azahydroxyalkanoic acid, substituted with acetic acid / acetoxylethanolamine	2413	1	NI	1	R	1	NI	0	0	0	0	0			D	0
Oxatetra-azahydroxyalkanoic acid, substituted with acetic acid / acetoxylethanolamine	3689		RTECS No							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		RTECS No							CAS No						
Palm acid oil	2307	(0)	NI	(0)	(R)	(0)	NI	0	(0)	(1)	0	1			Fp	2
Palm acid oil	3037		RTECS No							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		RTECS No							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		RTECS No							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		RTECS No							CAS No						

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014
Page 46 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3
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		RTECS No						CAS No							
Palm Mid Fraction	2363	(0)	NI	(0)	(R)	(0)	NI	0	0	(0)	(0)	(0)			Fp	2
Palm mid-fraction	3126		RTECS No						CAS No							
Palm nut oil	1094	0	NI	0	R	1	NI	(0)	(0)	(1)	(0)	(1)			Fp	2
Palm kernel oil	2766		RTECS No						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		RTECS No						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		RTECS No						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		RTECS No						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		RTECS No						CAS No							
Palm olein	2250	0	NI	0	R	0	NI	0	(0)	(0)	0	0			Fp	2
Palm olein	2765		RTECS No						CAS No							
Palm stearin	2251	0	NI	0	R	0	NI	0	(0)	(0)	0	0			Fp	2
Palm stearin	555		RTECS No						CAS No							
Paraffin wax	1086	0	NI	0	R	0	NI	(0)	(0)	(1)	1	1			Fp	2
Paraffin wax	556		RTECS No						CAS No				8002-74-2			
Paraldehyde	1098	0	0	0	NR	0	NI	1	0	0	1	3			D	3
Paraldehyde	557		RTECS No						CAS No				123-63-7			
Pentachloroethane	1099	3	2	2	NI	3	1	1	(1)	1	(1)	(1)	CT		S	3
Pentachloroethane	558		RTECS No						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		RTECS No						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		RTECS No						CAS No							
Pentaethylene hexamine	1103	0	NI	0	NI	4	NI	1	(2)	(3)	3	(3)	S		D	3
Pentaethylenehexamine	560		RTECS No						CAS No				4067-16-7			

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014
Page 47 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3
Pentane	1105	3	NI	3	R	3	NI	0	0	0	1	1			E	2
Pentane (all isomers)	561		RTECS No		RZ9450000				CAS No		109-66-0					
1,5-Pentanedial solution, (5-50%)	1107	0	NI	0	R	3	0	1	0	4	3	3	S		D	3
Glutaraldehyde solutions (50% or less)	362		RTECS No		MA2450000				CAS No		111-30-8					
Pentanoic acid	1109	1	NI	1	NI	2	NI	1	2	(3)	3	3			FD	3
Pentanoic acid	562		RTECS No		YV6100000				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		RTECS No						CAS No							
1-Pentanol	1110	1	1	1	(R)	1	0	1	0	(3)	2	3			FED	3
n-Amyl alcohol	473		RTECS No		SB9800000				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		RTECS No		SA4900000				CAS No		6032-29-7					
Pentasodium triphosphate (*)	2418	Inorg	0	0	Inorg	1	NI	NI	NI	NI	NI	NI			NI	NI
	3694		RTECS No						CAS No							
Pentene (all isomers)	1992	2	NI	2	NI	(2)	NI	(0)	(0)	(0)	(0)	(1)			E	2
Pentene (all isomers)	563		RTECS No						CAS No							
1-Pentene	1114	2	NI	2	NI	(2)	NI	(0)	(0)	0	(0)	(1)			E	2
1-Pentene	2679		RTECS No						CAS No		109-67-1					
2-Pentene	1115	2	NI	2	NI	2	NI	(0)	(0)	(0)	(0)	(1)			E	2
2-Pentene	2678		RTECS No						CAS No		109-68-2					
Petrolatum	2244	0	NI	0	NR	0	NI	0	0	2	1	1			Fp	2
Petrolatum	565		RTECS No						CAS No							
Petroleum wax	1122	0	NI	0	NR	0	NI	0	0	(0)	0	0			Fp	2
Waxes	741		RTECS No		RV0350000				CAS No		8002-74-2					
Phenol	1124	1	2	2	R	3	0	2	2	(3)	3	3		NT	S	3
Phenol	566		RTECS No		SJ3325000				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		RTECS No		CZ7300000				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		RTECS No						CAS No							

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014
Page 48 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3
Phosphoric acid	1138	0	NI	0	Inorg	1	NI	(3)	(3)	3	3	3			D	3
Phosphoric acid	567		RTECS No		TB6300000				CAS No							
Phosphorus (elemental yellow)	1139	Inorg	(3)	(3)	Inorg	6	4	0	0	0	2	1			S	2
Phosphorus, yellow or white	568		RTECS No		TH3500000				CAS No							
Phthalic anhydride (molten)	1146	1	NI	1	R	2	0	1	0	(3)	1	3	S		S	3
Phthalic anhydride (molten)	569		RTECS No		TI3150000				CAS No							
alpha-Pinene	40	4	NI	4	R	4	NI	0	0	0	1	(1)		T	F	3
alpha-Pinene	109		RTECS No		DT7000000				CAS No							
beta-Pinene	41	4	NI	4	(R)	4	NI	0	0	0	1	(1)	S	NT	F	3
beta-Pinene	141		RTECS No		DT5078500				CAS No							
Pine oil	1148	4	NI	4	NR	4	NI	0	0	(1)	(1)	(1)	S	(T)	Fp	3
Pine oil	570		RTECS No		TK5100000				CAS No							
Piperazine, 68% Aqueous	2433	0	NI	0	NR	2	NI	0	0	2	3A	3	SN		SD	3
Piperazine, 68% solution	3748		RTECS No						CAS No							
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		RTECS No						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		RTECS No						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		RTECS No						CAS No							
Polyalkylalkenaminesuccinimide, molybdenum oxysulphide	2379	NI	0	0	NR	0	NI	0	0	(0)	0	0			Fp	2
Polyalkylalkenaminesuccinimide, molybdenum oxysulphide	3422		RTECS No						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		RTECS No						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		RTECS No						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		RTECS No						CAS No							
Poly alkyl methacrylate (C1-C20) (LOA)	1984	(5)	NI	(5)	NR	0	NI	0	0	0	0	0			Fp	2

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014

Page 49 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3	
Polyalkyl (C10-C20) methacrylate	2189		RTECS No					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		RTECS No					CAS No									
Polyaluminium chloride (sol.)	1136	Inorg	0	0	Inorg	0	NI	(0)	(0)	(1)	(0)	(1)			D	1	
Polyaluminium chloride solution	584		RTECS No			BD0549500		CAS No			1327-41-9						
Polybutene	1154	0	NI	0	(NR)	(0)	(0)	(0)	(0)	(0)	(0)	(0)			Fp	2	
Polybutene	585		RTECS No			EM9032000		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		RTECS No					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		RTECS No					CAS No									
Polyether, borated	1863	0	NI	0	NR	3	1	0	(0)	(1)	1	0			D	1	
Polyether, borated	572		RTECS No					CAS No									
Polyether (molecular weight 2000+) (LOA)	1975	0	NI	0	NR	1	NI	0	(0)	(0)	0	0			Fp	2	
Polyether (molecular weight 1350+)	587		RTECS No					CAS No									
Polyethylene amines / paraffin mixtures	1991	(5)	NI	(5)	NR	3	0	0	(1)	(3)	(2)	(3)	S		Fp	3	
Polyethylene polyamines (more than 50% C5 -C20 paraffin oil)	591		RTECS No					CAS No									
Polyethylene glycol	1157	0	NI	0	NR	0	NI	0	0	0	1	1			D	1	
Polyethylene glycol	589		RTECS No			TQ3500000		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		RTECS No			MC9630000		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		RTECS No					CAS No									
Polyethylene polyamines	2367	0	NI	0	NR	3	0	1	0	(3)	2	(3)	S		D	0	
Polyethylene polyamines	3131		RTECS No					CAS No									
Polyferric sulphate solution	338	Inorg	0	0	Inorg	(2)	NI	1	(1)	(3)	3	(3)			D	3	
Polyferric sulphate solution	592		RTECS No					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		RTECS No					CAS No									
Polyglycerol	1511	NI	NI	NI	NI	NI	NI	0	(0)	(0)	(0)	(0)			D	0	

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014

Page 50 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3	
Polyglycerol	594		RTECS No					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		RTECS No					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		RTECS No					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		RTECS No					CAS No									
Polyisobutenyl anhydride adduct	2127	0	NI	0	NR	0	NI	0	0	(1)	0	1			FD	1	
Polyisobutenyl anhydride adduct	2256		RTECS No					CAS No									
Poly(4+)isobutylene	2264	0	NI	0	NR	0	NI	(0)	(0)	(0)	(0)	(0)			Fp	2	
Polyisobutylene (MW≤224)	578		RTECS No					CAS No									
Polymethylene polyphenyl isocyanate	1153	NI	(2)	(2)	NR	0	0	0	0	(2)	2	2	S		S	2	
Polymethylene polyphenyl isocyanate	595		RTECS No			TR0350000		CAS No			9016-87-9						
Polyolefin acid, potassium salt	1895	NI	NI	NI	NR	0	NI	0	0	(0)	0	0			NI	0	
Potassium salt of polyolefin acid	2199		RTECS No					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		RTECS No					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		RTECS No					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		RTECS No					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		RTECS No					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		RTECS No					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		RTECS No					CAS No			98761-78-5						
Polyolefinamine (C28-C250) (LOA)	2107	0	NI	0	NR	2	NI	0	(0)	(2)	2	(1)			Fp	2	
Polyolefinamine (C28-C250)	609		RTECS No					CAS No									
Polyolefinamine (C28-C250) (LOA)	2107	0	NI	0	NR	2	NI	0	(0)	(2)	2	(1)			Fp	2	

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014
Page 51 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3
Polyolefinamine in aromatic solvent	611		RTECS No					CAS No								
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		RTECS No					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		RTECS No					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		RTECS No					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		RTECS No					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		RTECS No					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		RTECS No					CAS No								
Polyoxyethylene sorbitan monooleate	1442	3	NI	3	NI	(3)	NI	0	(0)	(1)	0	1			D	1
Poly(20)oxyethylene sorbitan monooleate	577		RTECS No		WG2932500			CAS No			9005-65-6					
Polyoxypropylene diamine	2352	1	NI	1	NR	1	NI	0	0	(3)	3	3			D	3
	3112		RTECS No					CAS No								
Polypropylene	1512	0	NI	0	NR	(0)	NI	(0)	(0)	(0)	(0)	(0)			F	1
Poly(5+)propylene	579		RTECS No		UD1842000			CAS No			9003-07-0					
Polypropylene glycol	1159	0	NI	0	(NR)	1	NI	1	0	(1)	1	1			D	1
Polypropylene glycol	612		RTECS No		TR6125000			CAS No			25322-69-4					
Polysiloxane	1161	NI	4	4	NI	2	NI	0	(0)	(0)	0	0			F	1
Dimethylpolysiloxane	275		RTECS No					CAS No								
Polysiloxane	1161	NI	4	4	NI	2	NI	0	(0)	(0)	0	0			F	1
Polysiloxane	613		RTECS No					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		RTECS No					CAS No								
Potassium carbonate solution	2465	Inorg	0	0	Inorg	2	NI	0	0	(0)	2	2			D	2
	3928		RTECS No					CAS No								
Potassium chloride brine (less than 26%)	2345	0	0	0	Inorg	0	0	0	(0)	(0)	0	0			D	0

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014
Page 52 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3	
Potassium chloride solution (less than 26%)	3109	RTECS No			CAS No												
Potassium chloride solution	1513	0	0	0	Inorg	1	0	0	(0)	(0)	0	0			D	0	
Potassium chloride solution	614	RTECS No			TS8050000	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	RTECS No			LQ9625000	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	RTECS No			TT2100000	CAS No			1310-58-3								
Potassium oleate	1497	3	NI	3	R	4	NI	(0)	(0)	(1)	1	1			FD	1	
Potassium oleate	617	RTECS No			RK1150000	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	RTECS No			CAS No												
Propanol	1180	0	NI	0	R	0	NI	1	0	0	1	2	R		D	3	
n-Propyl alcohol	488	RTECS No			UH8225000	CAS No			71-23-8								
Propanolamine	1183	0	NI	0	R	2	NI	0	1	(3)	3	3			D	3	
n-Propanolamine	485	RTECS No			UA5600000	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	RTECS No			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	RTECS No			CAS No												
beta-Propiolactone	1184	0	NI	0	R	(2)	NI	2	(2)	4	3B	3	CM		D	3	
beta-Propiolactone	142	RTECS No			RQ7350000	CAS No			57-57-8								
Propionaldehyde	1185	0	NI	0	R	2	NI	1	0	1	2	2			DE	2	
Propionaldehyde	619	RTECS No			UE0350000	CAS No			123-38-6								
Propionic acid	1186	0	NI	0	R	2	NI	0	0	(3)	3B	3			D	3	
Propionic acid	620	RTECS No			UE5950000	CAS No			79-09-4								
Propionic anhydride	1187	0	NI	0	R	2	NI	0	0	(3)	2	3			FD	3	
Propionic anhydride	621	RTECS No			UF9100000	CAS No			123-62-6								
Propionitrile	1188	0	NI	0	NI	0	NI	3	3	4	1	2	R		D	3	
Propionitrile	622	RTECS No			UF9625000	CAS No			107-12-0								
Propyl acetate	1191	1	NI	1	R	2	NI	0	0	0	1	1			ED	1	

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014
Page 53 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3
n-Propyl acetate	487		RTECS No		AJ3675000				CAS No		109-60-4					
Propylamine	1194	0	NI	0	NI	1	NI	2	2	3	3	3			DE	3
n-Propylamine	490		RTECS No		UH9100000				CAS No		107-10-8					
Propyl benzene	1196	NI	NI	NI	NI	3	NI	NI	NI	NI	NI	NI		(T)	FE	NI
Propylbenzene	2686		RTECS No		DA8750000				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		RTECS No		TX4400000				CAS No		540-54-5					
Propylene carbonate	2056	0	NI	0	R	0	NI	0	0	(3)	2	3			D	3
Propylene carbonate	624		RTECS No		FF9650000				CAS No		108-32-7					
Propylene dimer	1201	3	NI	3	R	3	NI	NI	NI	NI	NI	NI			E	2
Propylene dimer	625		RTECS No						CAS No							
1,2-Propylene glycol	1202	0	NI	0	R	0	0	0	0	(1)	0	1			D	1
Propylene glycol	626		RTECS No		TY2000000				CAS No		57-55-6					
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		RTECS No		AI8925000				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		RTECS No						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		RTECS No		UB8886000				CAS No		4169-04-4					
Propylene oxide	76	0	NI	0	R	2	NI	1	1	2	2	3	CMR		DE	3
Propylene oxide	630		RTECS No		TZ2975000				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		RTECS No						CAS No							
Propylene tetramer	2255	NI	4	4	NR	(4)	NI	(0)	(0)	(1)	(1)	(1)			F	1
Propylene tetramer	631		RTECS No						CAS No							
Propylene trimer	1207	5	4	4	NR	3	2	(0)	(0)	(1)	(1)	(1)			FE	2
Propylene trimer	632		RTECS No		UD2794000				CAS No		13987-01-4					
Pyridine	1213	0	NI	0	R	3	0	1	1	2	1	3		NT	D	3
Pyridine	634		RTECS No		UR8400000				CAS No		110-86-1					
Pyridine bases	2131	1	NI	1	R	2	NI	2	1	(3)	3B	3			FED	3

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014

Page 54 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3
Paraldehyde-ammonia reaction product	1989		RTECS No						CAS No							
Pyrolysis gasoline	2271	(4)	(3)	(3)	(R)	(3)	(1)	1	0	(2)	2	2	TCM		FE	3
Pyrolysis gasoline (containing benzene)	1990		RTECS No						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		RTECS No						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		RTECS No						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		RTECS No						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		RTECS No						CAS No							
Rosin	1219	3	NI	3	NR	3	NI	0	0	2	(1)	1	S		S	2
Rosin	635		RTECS No						CAS No				8050-09-7			
Rosin soap (disproportionated solution)	1220	3	NI	3	NR	3	NI	0	NI	NI	NI	NI			S	NI
Rosin soap (disproportionated) solution	636		RTECS No						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		RTECS No		VN2230000				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		RTECS No						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		RTECS No						CAS No							
Silica slurry	1514	Inorg	0	0	Inorg	0	0	(0)	(0)	0	(0)	(0)			S	0
Microsilica slurry	2507		RTECS No						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		RTECS No		AJ4375000				CAS No				127-09-3			
Sodium aluminate (solution)	1234	Inorg	0	0	Inorg	NI	NI	(0)	(0)	(3)	(3)	(3)			D	3
Sodium aluminate solution	641		RTECS No		BD1600000				CAS No				11138-49-1			
Sodium aluminosilicate slurry	1235	Inorg	0	0	Inorg	1	0	0	0	0	1	1			S	1
Sodium aluminosilicate slurry	643		RTECS No						CAS No				1344-00-9			
Sodium benzoate	1475	0	NI	0	R	1	NI	0	(0)	(1)	0	1			D	1

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014
Page 55 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3
Sodium benzoate	644		RTECS No		DH6650000			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		RTECS No					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		RTECS No					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		RTECS No		VZ 315000			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		RTECS No		VZ4050000			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	S		D	2
Sodium chlorate solution (50% or less)	647		RTECS No		FO0525000			CAS No		7775-09-9						
Sodium dichromate solution	487	Inorg	0	0	Inorg	4	1	2	2	4	2	3	CMS		D	3
Sodium dichromate solution (70% or less)	649		RTECS No		HX7700000			CAS No		10588-01-9						
Sodium dodecyl sulphate (*)	2451	0	NI	0	R	3	1	NI	NI	NI	NI	NI			NI	NI
	3869		RTECS No					CAS No								
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		RTECS No					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		RTECS No					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		RTECS No		WE1900000			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		RTECS No		VZ2000000			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		RTECS No		WB4900000			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	S		D	3
Sodium hypochlorite solution (15% or less)	2785		RTECS No		NH3486300			CAS No		7681-52-9						
Sodium hypochlorite solutions containing more than 20% NaOCl	1255	Inorg	0	0	Inorg	5	2	0	0	1	3	3	S		D	3
Sodium hypochlorite solution (Full strength solution)	655		RTECS No		NH3486300			CAS No		7681-52-9						
Sodium methylate (**)	2443	NI	NI	(0)	(R)	(2)	NI	NI	NI	NI	NI	NI	T		DE	NI

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014
Page 56 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3	
Sodium methylate	3822		RTECS No					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		RTECS No					CAS No									
Sodium nitrate	1259	Inorg	0	0	Inorg	0	NI	(0)	(0)	(0)	(1)	(1)			SD	1	
Sodium nitrate	656		RTECS No			WC5600000		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		RTECS No			RA1225000		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		RTECS No					CAS No									
Sodium petroleum sulphonate	1860	0	NI	0	(NR)	2	NI	0	(0)	(2)	1	2	S		S	2	
Sodium petroleum sulphonate	660		RTECS No					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		RTECS No					CAS No									
Sodium silicate (solution)	1262	Inorg	0	0	Inorg	2	NI	1	0	(3)	3	3			D	3	
Sodium silicate solution	661		RTECS No					CAS No			1344-09-8						
Sodium sulphate (solution)	1499	Inorg	0	0	Inorg	0	0	0	(0)	(1)	1	1			SD	1	
Sodium sulphate solutions	662		RTECS No			WE1650000		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		RTECS No			WE1905000		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		RTECS No			WE2150000		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		RTECS No					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		RTECS No			XL2275000		CAS No			540-72-7						
Sorbitan monooleate	2215	(5)	NI	(5)	R	3	NI	0	NI	NI	0	0			Fp	2	
Sorbitan monooleate	2408		RTECS No					CAS No									
Sorbitol	1265	0	NI	0	R	0	NI	0	(0)	(0)	(0)	(0)			D	0	
Sorbitol solution	668		RTECS No			LZ4290000		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	

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014
Page 57 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3
Soyabean oil	3050															
			RTECS No						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		RTECS No						CAS No							
Styrene (monomer)	1273	3	(2)	3	R	3	NI	1	0	2	2	2	CM		FE	3
Styrene monomer	669		RTECS No		WL3675000				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		RTECS No						CAS No							
Sulfurized fat(C14-C20) (LOA)	1853	0	NI	0	NR	1	NI	0	(0)	(1)	0	(1)			FD	1
Sulphurized fat (C14-C20)	2257		RTECS No						CAS No							
Sulfurized 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		RTECS No						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		RTECS No						CAS No							
Sulpholane	1277	0	1	1	NR	2	0	1	0	0	1	2			SD	2
Sulpholane	673		RTECS No		XN0700000				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		RTECS No						CAS No							
Sulphur	906	Inorg	0	0	Inorg	0	NI	0	0	(1)	1	1			S	1
Sulphur (molten)	675		RTECS No		WS4250000				CAS No		7704-34-9					
Sulphuric acid	1280	0	NI	0	Inorg	2	NI	0	(0)	3	3C	3	C		D	3
Sulphuric acid, spent	677		RTECS No		WS5600000				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		RTECS No		WS5600000				CAS No		7664-93-9					
Sulphuric acid	1280	0	NI	0	Inorg	2	NI	0	(0)	3	3C	3	C		D	3
Oleum	549		RTECS No		WS5600000				CAS No		7664-93-9					
Sunflower oil	1283	0	NI	0	R	0	NI	(0)	(0)	(1)	(0)	(1)			Fp	2
Sunflower seed oil	2782		RTECS No						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		RTECS No		KN0875000				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

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014
Page 58 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3
Tall oil acids/linoleic acid dimer/polyalkylenepolyamines/dodecylbenzenesulphonic acid complexes in naphtha/isopropanol	3866															
		RTECS No							CAS No							
Tall oil, crude and distilled	1285	(4)	NI	(4)	(R)	(2)	NI	0	0	(0)	0	0	S		Fp	2
Tall oil (crude and distilled)	678															
									RTECS No					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															
									RTECS No					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															
									RTECS No					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															
									RTECS No					CAS No		
Tall oil pitch	2323	3	NI	3	NR	0	0	0	0	(0)	0	(0)			Fp	2
Tall oil pitch	3051															
									RTECS No					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															
									RTECS No					CAS No		
Tall oil soap, crude	2432	0	NI	0	R	2	0	(0)	(0)	(3)	(3)	(3)	S		Fp	3
Tall oil soap, crude	3735															
									RTECS No					CAS No		
Tallow	1288	0	NI	0	R	0	NI	0	0	(0)	(0)	(0)			Fp	2
Tallow	682															
									RTECS No					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															
									RTECS No					CAS No		
1,1,2,2-Tetrachloroethane	53	2	2	2	NR	3	0	2	0	2	2	2			SD	2
Tetrachloroethane	687															
									RTECS No KI8575000					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															
									RTECS No KX3850000					CAS No 127-18-4		
Tetrachloromethane	1296	2	2	2	NR	3	0	0	0	0	1	1	CT		S	3
Carbon tetrachloride	178															
									RTECS No FG4900000					CAS No 56-23-5		
Tetradecanoic acid (Myristic acid)	1298	5	NI	0	R	0	NI	0	(0)	(1)	(1)	(1)			Fp	2
Fatty acid (saturated C13+)	347															
									RTECS No QH4375000					CAS No 544-63-8		
Tetradecanoic acid (Myristic acid)	1298	5	NI	0	R	0	NI	0	(0)	(1)	(1)	(1)			Fp	2
n-Tetradecanoic acid	491															
									RTECS No QH4375000					CAS No 544-63-8		
Tetraethylene glycol	1301	0	NI	0	NR	0	NI	0	0	0	1	1			D	1

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014
Page 59 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3
Tetraethylene glycol	688		RTECS No	XC2100000		CAS No	112-60-7									
Tetraethylene pentamine	1302	0	NI	0	NR	3	NI	0	2	(3)	3	3	S		D	3
Tetraethylene pentamine	689		RTECS No	KH8585000		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		RTECS No	TP4550000		CAS No	78-00-2									
Tetrahydrofuran	1304	0	NI	0	R	0	NI	0	(0)	0	1	2			DE	2
Tetrahydrofuran	690		RTECS No	LU5950000		CAS No	109-99-9									
Tetrahydronaphthalene	1305	3	3	3	NR	3	NI	0	0	(2)	2	0			F	2
Tetrahydronaphthalene	691		RTECS No	QK3850000		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		RTECS No	DC0465000		CAS No	488-23-3									
Tetrapotassium pyrophosphate	2400	Inorg	0	0	Inorg	1	NI	0	NI	NI	NI	NI			D	NI
Tetrapotassium pyrophosphate	3635		RTECS No			CAS No	7320-34-5									
Thixatrol plus	2210	5	NI	5	R	3	NI	0	0	0	1	1			S	1
Thixatrol Plus	2699		RTECS No			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		RTECS No			CAS No	13463-67-7									
Toluene	330	2	2	2	R	3	0	0	0	0	2	2	ANR	NT	E	3
Toluene	693		RTECS No	XS5250000		CAS No	108-88-3									
Toluene diisocyanate	1315	(3)	1	1	NR	2	NI	0	(0)	4	3	3	SCL		S	3
Toluene diisocyanate	694		RTECS No	CZ6300000		CAS No	584-84-9									
Toluidines	1316	1	1	1	R	4	2	1	0	(2)	2	2	CM		FD	3
o-Toluidine	537		RTECS No			CAS No										
2,4-Tolylenediamine	1317	0	2	2	NR	3	0	2	2	4	2	3	CMS		Fp	3
Toluenediamine	695		RTECS No	XS9625000		CAS No	95-80-7									
Tolyl triazole	2292	1	NI	1	NR	2	0	1	0	(2)	(1)	2			S	2
Tolyl triazole	696		RTECS No			CAS No										
Tributyl phosphate	1319	4	2	2	R	3	0	1	0	2	2	2	S		F	3
Tributyl phosphate	697		RTECS No	TC7700000		CAS No	126-73-8									
1,2,3-Trichlorobenzene	2191	4	4	4	NR	4	2	1	0	(2)	2	2			S	2

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014
Page 60 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3	
1,2,3-Trichlorobenzene (molten)	2288	RTECS No			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	RTECS No			DC2100000	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	RTECS No			KJ2975000	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	RTECS No			KJ3150000	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	RTECS No			KX4550000	CAS No			79-01-6								
Trichloromethane	1328	1	1	1	NR	2	0	2	0	2	1	1	CT		SD	3	
Chloroform	186	RTECS No			FS9100000	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	RTECS No			TZ9275000	CAS No			96-18-4								
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	RTECS No			KJ4000000	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	RTECS No			TD0175000	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	RTECS No			TD0175000	CAS No			1330-78-5								
Tridecane	1333	0	NI	0	NI	0	NI	0	0	(1)	1	0			Fp	2	
Tridecane	701	RTECS No			YD3025000	CAS No			629-50-5								
Tridecanoic acid	1334	5	NI	5	(R)	3	NI	(0)	(0)	(1)	(1)	(1)			Fp	2	
Tridecanoic acid	702	RTECS No			YD3850000	CAS No			638-53-9								
Tridecyl acetate	1768	5	NI	5	NI	0	NI	0	(0)	(2)	2	2			F	2	
Tridecyl acetate	703	RTECS No			CAS No			1072-33-9									
Triethanolamine	1338	0	0	0	R	1	NI	0	0	(2)	1	2			D	2	
Triethanolamine	704	RTECS No			KL9275000	CAS No			102-71-6								
3-(Triethoxysilyl)propylamine	2445	1	1	1	R	1	NI	1	0	(3)	3B	3	S		D	3	
	3824	RTECS No			CAS No			919-30-2									
Triethylamine	1339	1	0	0	R	3	0	1	2	2	2	3			D	3	

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014
Page 61 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3
Triethylamine	706		RTECS No	YE0175000				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		RTECS No	DC2490000				CAS No	25340-18-5							
Triethylene glycol	1341	0	NI	0	R	0	0	0	0	(1)	1	1			D	1
Triethylene glycol	708		RTECS No	YE4550000				CAS No	112-27-6							
Triethylenetetramine	1346	0	NI	0	NR	3	NI	0	2	(3)	3	3	S		D	3
Triethylenetetramine	709		RTECS No	YE6650000				CAS No	112-24-3							
Triethylenetetramine/2-piperazine-1-ylethylamine mixtures (#)	2456	0	NI	0	NR	2	NI	0	2	(3)	3	3	S		D	3
	3872		RTECS No					CAS No								
Triethyl phosphate	1348	0	0	0	NR	1	0	1	0	0	(2)	(2)			D	2
Triethyl phosphate	705		RTECS No	TC7900000				CAS No	78-40-0							
Triethyl phosphite	1349	0	NI	0	R	1	NI	1	0	2	1	2	S		FE	2
Triethyl phosphite	710		RTECS No	TH1130000				CAS No	122-52-1							
Triisopropanolamine	1370	0	0	0	NR	1	0	1	0	0	(2)	3			FD	3
Triisopropanolamine	711		RTECS No	UB8750000				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		RTECS No					CAS No	68937-41-7							
Trimethylacetic acid	1350	1	1	1	R	2	NI	1	1	(2)	2	2			Fp	2
Trimethylacetic acid	714		RTECS No	TO7700000				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		RTECS No	PA0350000				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		RTECS No	DC3300000				CAS No	526-73-8							
2,4,4-Trimethyl hexamethylene diamine	1359	1	NI	1	NI	NI	NI	1	0	(3)	2	3	S		D	3
Trimethylhexamethylenediamine (2,2,4- and 2,4,4-isomers)	718		RTECS No	MO1451000				CAS No	26520-58-0							
Trimethyl hexamethylene diisocyanate	1360	0	NI	0	NI	3	NI	0	NI	NI	NI	NI	S		NI	2
Trimethylhexamethylene diisocyanate (2,2,4- and 2,4,4-isomers)	717		RTECS No	MO1760000				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		RTECS No					CAS No								
Trimethylol propane, propoxylated	2274	0	NI	0	(NR)	1	0	0	0	(1)	0	1			SD	1

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014
Page 62 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3	
Trimethylol propane propoxylated	2870	RTECS No			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	RTECS No			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	RTECS No			UF6000000			CAS No			25264-77-4						
Trimethyl phosphite	1365	0	NI	0	R	NI	NI	NI	NI	NI	NI	NI			S	NI	
Trimethyl phosphite	713	RTECS No			TH1400000			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	RTECS No			YK0350000			CAS No			110-88-3						
Tripropylene glycol	1372	0	0	0	NR	0	NI	0	0	(0)	0	0			D	0	
Tripropylene glycol	720	RTECS No			YK6825000			CAS No			24800-44-0						
Trixylenyl phosphate	1377	5	4	4	NR	4	1	(0)	(1)	(0)	(1)	(1)	R		S	3	
Trixylyl phosphate	721	RTECS No			ZE8320000			CAS No			25155-23-1						
Tung oil	1378	0	NI	0	R	(2)	NI	(0)	(0)	(1)	(0)	(1)			Fp	2	
Tung oil	2784	RTECS No			CAS No												
Turpentine (wood)	1379	4	NI	4	NI	4	NI	0	(0)	1	(2)	2	AS	(T)	D	2	
Turpentine	722	RTECS No			YO8400000			CAS No			8006-64-2						
Undecanoic acid	1381	4	NI	4	(R)	3	NI	(0)	(0)	(2)	1	(2)			Fp	2	
Undecanoic acid	723	RTECS No			YQ2275000			CAS No			112-37-8						
1-Undecanol	1382	4	NI	4	R	4	NI	0	0	(2)	2	(1)			Fp	2	
Undecyl alcohol	724	RTECS No			YQ3155000			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	RTECS No			CAS No			821-95-4									
Urea	1384	0	0	0	R	1	NI	0	0	(1)	1	(1)			D	1	
Urea solution	726	RTECS No			YR6250000			CAS No			57-13-6						
Urea	1384	0	0	0	R	1	NI	0	0	(1)	1	(1)			D	1	
Urea	2627	RTECS No			YR6250000			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	RTECS No			CAS No												
Urea/Ammonium nitrate solution (> 1% aq. ammonia)	2322	0	NI	0	R	3	NI	0	0	(2)	1	2			D	2	

ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles

16 May 2014
Page 63 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3	
Urea/Ammonium nitrate solution	728	RTECS No			CAS No												
Urea/Ammonium nitrate solution (containing < 1% aq. ammonia)	1387	0	NI	0	R	1	2	0	0	(2)	1	2			D	2	
Urea/Ammonium nitrate solution (containing less than 1% free ammonia)	729	RTECS No			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	RTECS No			CAS No												
Urea-formaldehyde resin solution	1388	NI	NI	NI	NI	1	NI	1	1	NI	NI	NI	S		NI	2	
Urea formaldehyde resin solution	725	RTECS No			CAS No												
Vegetable acid oils	2371	0	NI	0	R	0	NI	(0)	(0)	(1)	(1)	(1)			Fp	2	
Vegetable acid oils (m)	3138	RTECS No			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	RTECS No			CAS No												
Vegetable protein solution,hydrolyzed	1398	0	NI	0	R	0	NI	(0)	(0)	(0)	(0)	(0)			D	0	
Vegetable protein solution (hydrolysed)	734	RTECS No			CAS No												
Vinyl acetate	1400	0	NI	0	R	2	NI	1	0	2	1	1	C		ED	3	
Vinyl acetate	735	RTECS No			AK0875000	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	RTECS No			KO0710000	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	RTECS No			KV9275000	CAS No			75-35-4								
Vinyl neodecanoate	1404	5	NI	5	NR	3	NI	0	0	(3)	3	3			F	3	
Vinyl neodecanoate	737	RTECS No			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	RTECS No			WL5075000	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	RTECS No			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	RTECS No			CAS No												
Xylene (mixed isomers)	1408	3	NI	3	NR	3	0	0	0	0	2	2		(T)	FE	2	
Xylenes	743	RTECS No			ZE2275000	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	

**ANNEX 5 - GESAMP/EHS COMPOSITE LIST
GESAMP Hazard Profiles**

16 May 2014
Page 64 of 64

EHS Name TRN Name	EHS TRN	A1a	A1b	A1	A2	B1	B2	C1	C2	C3	D1	D2	D3	E1	E2	E3
Xylenes/ethylbenzene (10% or more) mixture	2337	RTECS No						CAS No								
Xylenols (mixtures)	1422	2	NI	2	R	3	NI	1	2	(3)	3	3		(T)	Fp	3
Xylenol	744	RTECS No			ZE5425000			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	RTECS No						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	RTECS No						CAS No								
Zinc alkenylcarboxamide (LOA)	2053	NI	0	0	NR	0	NI	0	0	(1)	1	(1)			Fp	2
Zinc alkenyl carboxamide	746	RTECS No						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	RTECS No						CAS No								
Zinc bromide solutions	2227	Inorg	4	4	Inorg	3	NI	1	(2)	(3)	3B	3	S		D	3
Zinc bromide solutions	2617	RTECS No						CAS No								
Zinc chloride	1425	Inorg	4	4	Inorg	4	1	(1)	(1)	(3)	(3)	(3)			D	3
Zinc chloride	2869	RTECS No			ZH1400000			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	RTECS No			ZH1400000			CAS No			7646-85-7					

ANNEX 6

**DRAFT AGENDA FOR THE FIFTY- SECOND 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
 - 5 Consolidation of data files
 - Review of existing EHS files
 - Review of alkanes and alkenes (including paraffin and hydrocarbon waxes)
 - 6 Communication and publication
 - GHS classification of floating substances
 - Review of the use of GESAMP hazard profiles to support chemical incident response
 - 7 Any other business
 - Membership review
 - Report on finances
 - Confidentiality agreements and conflict of interest declarations for GESAMP/EHS experts
 - 8 Future work programme and agenda for the next session
 - 9 Consideration and adoption of the report
-