

**DEEP CLEAN**
**Section: 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**

**1.1 Product identifier:** **DEEP CLEAN**  
Substance type: CLP Mixture

**1.2 Relevant identified uses of the substance or mixture and uses advised against:**

Use of the Substance/Mixture : CLEANER AND DEGREASER

Recommended restrictions on use : Reserved for industrial and professional use.

**1.3 Details of the supplier of the safety data sheet:**

**COMPANY IDENTIFICATION**  
Ecolab Ltd.  
PO Box 11; Winnington Avenue  
Northwich, Cheshire., CW8 4DX, United Kingdom  
TEL: + 44 (0)1606 74488

**LOCAL COMPANY IDENTIFICATION**  
Ecolab Ltd.  
PO Box 11; Winnington Avenue  
Northwich, Cheshire., CW8 4DX, United Kingdom  
TEL: + 44 (0)1606 74488

For Product Safety information please contact: msdseame@nalco.com

**1.4 Emergency telephone number:**

Emergency telephone number : Trans-European  
+441618841235  
+32-(0)3-575-5555 Trans-European Address European  
Economic Area HQ

Date of Compilation/Revision: 05.08.2019  
Version Number: 1.0

**Section: 2. HAZARDS IDENTIFICATION**

**2.1 Classification of the substance or mixture**

**Classification (REGULATION (EC) No 1272/2008)**

|                                      |      |
|--------------------------------------|------|
| Skin corrosion, Category 1           | H314 |
| Serious eye damage, Category 1       | H318 |
| Chronic aquatic toxicity, Category 3 | H412 |

**2.2 Label elements**

**Labelling (REGULATION (EC) No 1272/2008)**

Hazard pictograms :



Signal Word : Danger

Hazard Statements : H314 Causes severe skin burns and eye damage.  
H412 Harmful to aquatic life with long lasting effects.

Precautionary Statements : **Prevention:**  
P273 Avoid release to the environment.  
P280 Wear protective gloves/ eye protection/ face

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protection.

**Response:**

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a POISON CENTER/doctor.

Hazardous components which must be listed on the label:

Amines, C12-14 alkyldimethyl, N-oxides

**2.3 Other hazards**

None known.

**Section: 3. COMPOSITION/INFORMATION ON INGREDIENTS****3.2 Mixtures****Hazardous components**

| Chemical Name                                | CAS-No.<br>EC-No.<br>REACH No.              | Classification<br>(REGULATION (EC) No 1272/2008)                                                                                                                                                   | Concentration:<br>[%] |
|----------------------------------------------|---------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| Amines, C12-14 alkyldimethyl, N-oxides       | 308062-28-4<br>01-2119490061-47-0000        | Acute toxicity Category 4; H302<br>Skin irritation Category 2; H315<br>Serious eye damage Category 1; H318<br>Acute aquatic toxicity Category 1; H400<br>Chronic aquatic toxicity Category 2; H411 | 1 - < 2.5             |
| 2,2'-(octadec-9-enylimino)bisethanol         | 25307-17-9<br>246-807-3<br>01-2119510876-35 | Acute toxicity Category 4; H302<br>Skin corrosion Category 1B; H314<br>Serious eye damage Category 1; H318<br>Acute aquatic toxicity Category 1; H400<br>Chronic aquatic toxicity Category 1; H410 | 1 - < 2.5             |
| Didecyl-Dimethyl-Ammonium chloride           | 7173-51-5<br>230-525-2<br>01-2119945987-15  | Acute toxicity Category 4; H302<br>Skin corrosion Category 1B; H314<br>Chronic aquatic toxicity Category 2; H411<br>Acute aquatic toxicity Category 1; H400                                        | 0.5 - < 1             |
| Substances with a workplace exposure limit : |                                             |                                                                                                                                                                                                    |                       |
| Potassium Hydroxide                          | 1310-58-3<br>215-181-3<br>01-2119487136-33  | Acute toxicity Category 4; H302<br>Skin corrosion Category 1A; H314<br>Corrosive to metals Category 1; H290                                                                                        | 0.25 - < 0.5          |
| Isopropanol                                  | 67-63-0<br>200-661-7<br>01-2119457558-25    | Flammable liquids Category 2; H225<br>Eye irritation Category 2; H319<br>Specific target organ toxicity - single exposure Category 3; H336                                                         | 0.1 - < 0.25          |

For the full text of the H-Statements mentioned in this Section, see Section 16.

**Section: 4. FIRST AID MEASURES****4.1 Description of first aid measures**

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- |                            |                                                                                                                                                                                                                    |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| If inhaled                 | : Remove to fresh air.<br>Treat symptomatically.<br>Get medical attention if symptoms occur.                                                                                                                       |
| In case of skin contact    | : Wash off immediately with plenty of water for at least 15 minutes.<br>Use a mild soap if available.<br>Wash clothing before reuse.<br>Thoroughly clean shoes before reuse.<br>Get medical attention immediately. |
| In case of eye contact     | : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.<br>Remove contact lenses, if present and easy to do. Continue rinsing.<br>Get medical attention immediately.            |
| If swallowed               | : Rinse mouth with water.<br>Do NOT induce vomiting.<br>Never give anything by mouth to an unconscious person.<br>If conscious, give 2 glasses of water.<br>Get medical attention immediately.                     |
| Protection of first-aiders | : In event of emergency assess the danger before taking action.<br>Do not put yourself at risk of injury. If in doubt, contact emergency responders. Use personal protective equipment as required.                |

**4.2 Most important symptoms and effects, both acute and delayed**

See Section 11 for more detailed information on health effects and symptoms.

**4.3 Indication of immediate medical attention and special treatment needed**

- |           |                          |
|-----------|--------------------------|
| Treatment | : Treat symptomatically. |
|-----------|--------------------------|

**Section: 5. FIREFIGHTING MEASURES**

**5.1 Extinguishing media**

- |                                |                                                                                                           |
|--------------------------------|-----------------------------------------------------------------------------------------------------------|
| Suitable extinguishing media   | : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Unsuitable extinguishing media | : None known.                                                                                             |

**5.2 Special hazards arising from the substance or mixture**

- |                                      |                                                                                                                                                                                   |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Specific hazards during firefighting | : Not flammable or combustible.                                                                                                                                                   |
| Hazardous combustion products        | : Depending on combustion properties, decomposition products may include following materials:<br>Carbon oxides<br>nitrogen oxides (NOx)<br>Sulphur oxides<br>Oxides of phosphorus |

**5.3 Advice for firefighters**

- |                              |                                      |
|------------------------------|--------------------------------------|
| Special protective equipment | : Use personal protective equipment. |
|------------------------------|--------------------------------------|

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for firefighters

Further information : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. In the event of fire and/or explosion do not breathe fumes.

### Section: 6. ACCIDENTAL RELEASE MEASURES

#### 6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel : Ensure adequate ventilation.  
Keep people away from and upwind of spill/leak.  
Avoid inhalation, ingestion and contact with skin and eyes.  
When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.  
Ensure clean-up is conducted by trained personnel only.  
Refer to protective measures listed in sections 7 and 8.

Advice for emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials.

#### 6.2 Environmental precautions

Environmental precautions : Do not allow contact with soil, surface or ground water.

#### 6.3 Methods and materials for containment and cleaning up

Methods for cleaning up : Stop leak if safe to do so.  
Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).  
Flush away traces with water.  
For large spills, dike spilled material or otherwise contain material to ensure runoff does not reach a waterway.

#### 6.4 Reference to other sections

See Section 1 for emergency contact information.  
For personal protection see section 8.  
See Section 13 for additional waste treatment information.

### Section: 7. HANDLING AND STORAGE

#### 7.1 Precautions for safe handling

Advice on safe handling : Do not ingest. Do not breathe spray, vapour. Do not get in eyes, on skin, or on clothing. Wash hands thoroughly after handling. Use only with adequate ventilation.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling. Provide suitable facilities for quick drenching or flushing of the eyes and body in case of contact or splash hazard.

#### 7.2 Conditions for safe storage, including any incompatibilities

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Requirements for storage areas and containers : Do not store near acids. Keep out of reach of children. Keep container tightly closed. Store in suitable labelled containers.

Suitable material : Keep in properly labelled containers.

Unsuitable material :  
not determined

**7.3 Specific end uses**

Specific use(s) : CLEANER AND DEGREASER

**Section: 8. EXPOSURE CONTROLS/PERSONAL PROTECTION****8.1 Control parameters****Occupational Exposure Limits**

| Components          | CAS-No.   | Value type (Form of exposure) | Control parameters                 | Basis    |
|---------------------|-----------|-------------------------------|------------------------------------|----------|
| Potassium Hydroxide | 1310-58-3 | STEL                          | 2 mg/m <sup>3</sup>                | UKCOSSTD |
| Isopropanol         | 67-63-0   | TWA                           | 400 ppm<br>999 mg/m <sup>3</sup>   | UKCOSSTD |
|                     |           | STEL                          | 500 ppm<br>1,250 mg/m <sup>3</sup> | UKCOSSTD |

**DNEL**

|                     |   |                                                                                                                                          |
|---------------------|---|------------------------------------------------------------------------------------------------------------------------------------------|
| Potassium Hydroxide | : | End Use: Workers<br>Exposure routes: Inhalation<br>Value: 1 mg/m <sup>3</sup>                                                            |
|                     |   | End Use: Consumers<br>Exposure routes: Inhalation<br>Value: 1 mg/m <sup>3</sup>                                                          |
| Isopropanol         | : | End Use: Workers<br>Exposure routes: Dermal<br>Potential health effects: Long-term systemic effects<br>Value: 888 mg/cm <sup>2</sup>     |
|                     |   | End Use: Workers<br>Exposure routes: Inhalation<br>Potential health effects: Long-term systemic effects<br>Value: 500 mg/m <sup>3</sup>  |
|                     |   | End Use: Consumers<br>Exposure routes: Dermal<br>Potential health effects: Long-term systemic effects<br>Value: 319 mg/cm <sup>2</sup>   |
|                     |   | End Use: Consumers<br>Exposure routes: Inhalation<br>Potential health effects: Long-term systemic effects<br>Value: 89 mg/m <sup>3</sup> |
|                     |   | End Use: Consumers<br>Exposure routes: Ingestion<br>Potential health effects: Long-term systemic effects<br>Value: 26 ppm                |

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## PNEC

|             |   |                                               |
|-------------|---|-----------------------------------------------|
| Isopropanol | : | Fresh water<br>Value: 140.9 mg/l              |
|             |   | Marine water<br>Value: 140.9 mg/l             |
|             |   | Intermittent use/release<br>Value: 140.9 mg/l |
|             |   | Fresh water<br>Value: 552 mg/kg               |
|             |   | Marine sediment<br>Value: 552 mg/kg           |
|             |   | Soil<br>Value: 28 mg/kg                       |
|             |   | Sewage treatment plant<br>Value: 2251 mg/l    |
|             |   | Oral<br>Value: 160 mg/kg                      |

**8.2 Exposure controls****Appropriate engineering controls**

Effective exhaust ventilation system.

Maintain air concentrations below occupational exposure standards.

**Individual protection measures**

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Remove and wash contaminated clothing before re-use. Wash face, hands and any exposed skin thoroughly after handling. Provide suitable facilities for quick drenching or flushing of the eyes and body in case of contact or splash hazard.

Eye/face protection (EN 166) : Safety goggles  
Face-shield

Hand protection (EN 374) : Recommended preventive skin protection  
Gloves  
Nitrile rubber  
butyl-rubber  
Breakthrough time: 1 – 4 hours  
Minimum thickness for butyl-rubber 0.7 mm for nitrile rubber 0.4 mm or equivalent (please refer to the gloves manufacturer/distributor for advise).  
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Skin and body protection (EN 14605) : Personal protective equipment comprising: suitable protective gloves, safety goggles and protective clothing including appropriate safety shoes

Respiratory protection (EN 143, 14387) : When respiratory risks cannot be avoided or sufficiently limited by technical means of collective protection or by

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measures, methods or procedures of work organization, consider the use of certified respiratory protection equipment meeting EU requirements (89/656/EEC, (EU) 2016/425), or equivalent, with filter type:A-P

**Environmental exposure controls**

General advice : Consider the provision of containment around storage vessels.

**Section: 9. PHYSICAL AND CHEMICAL PROPERTIES****9.1 Information on basic physical and chemical properties**

|                                         |                                               |
|-----------------------------------------|-----------------------------------------------|
| Appearance                              | : liquid                                      |
| Colour                                  | : clear, pale                                 |
| Odour                                   | : characteristic                              |
| Flash point                             | : > 100 °C                                    |
| pH                                      | : 13, 100 %<br>(20 °C)                        |
| Odour Threshold                         | : no data available                           |
| Melting point/freezing point            | : no data available                           |
| Initial boiling point and boiling range | : no data available                           |
| Evaporation rate                        | : no data available                           |
| Flammability (solid, gas)               | : no data available                           |
| Upper explosion limit                   | : no data available                           |
| Lower explosion limit                   | : no data available                           |
| Vapour pressure                         | : no data available                           |
| Relative vapour density                 | : no data available                           |
| Relative density                        | : 1.01 - 1.03                                 |
| Solubility(ies)                         |                                               |
| Water solubility                        | : soluble in cold water, soluble in hot water |
| Solubility in other solvents            | : no data available                           |
| Partition coefficient: n-octanol/water  | : no data available                           |
| Auto-ignition temperature               | : no data available                           |
| Thermal decomposition                   | : no data available                           |
| Viscosity, dynamic                      | : no data available                           |
| Viscosity, kinematic                    | : no data available                           |
| Explosive properties                    | : no data available                           |
| Oxidizing properties                    | : no data available                           |

**9.2 Other information**

no data available

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**Section: 10. STABILITY AND REACTIVITY**

**10.1 Reactivity**

No dangerous reaction known under conditions of normal use.

**10.2 Chemical stability**

Stable under normal conditions.

**10.3 Possibility of hazardous reactions**

Hazardous reactions : No dangerous reaction known under conditions of normal use.

**10.4 Conditions to avoid**

Conditions to avoid : None known.

**10.5 Incompatible materials**

Materials to avoid : Strong acids

**10.6 Hazardous decomposition products**

Hazardous decomposition products : Depending on combustion properties, decomposition products may include following materials:  
Carbon oxides  
nitrogen oxides (NO<sub>x</sub>)  
Sulphur oxides  
Oxides of phosphorus

**Section: 11. TOXICOLOGICAL INFORMATION**

**11.1 Information on toxicological effects**

Information on likely routes of exposure : Inhalation, Eye contact, Skin contact

**Toxicity**

**Product**

Acute oral toxicity : Acute toxicity estimate : > 2,000 mg/kg  
Acute inhalation toxicity : There is no data available for this product.  
Acute dermal toxicity : There is no data available for this product.  
Skin corrosion/irritation : There is no data available for this product.  
Serious eye damage/eye irritation : There is no data available for this product.  
Respiratory or skin sensitization : There is no data available for this product.  
Carcinogenicity : There is no data available for this product.  
Reproductive effects : There is no data available for this product.



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Germ cell mutagenicity : There is no data available for this product.

Teratogenicity : There is no data available for this product.

STOT - single exposure : There is no data available for this product.

STOT - repeated exposure : There is no data available for this product.

Aspiration toxicity : There is no data available for this product.

**Components**

Acute oral toxicity : Amines, C12-14 alkyl dimethyl, N-oxides  
LD50 rat: 1,064 mg/kg

2,2'-(octadec-9-enylimino)bisethanol  
LD50 rat: 1,260 mg/kg

Didecyl-Dimethyl-Ammonium chloride  
LD50 rat: 329 mg/kg

Potassium Hydroxide  
LD50 rat: 333 mg/kg

Isopropanol  
LD50 rat: 5,840 mg/kg

**Components**

Acute inhalation toxicity : Isopropanol  
LC50 rat: > 30 mg/l  
Exposure time: 4 h  
Test atmosphere: vapour

**Components**

Acute dermal toxicity : Didecyl-Dimethyl-Ammonium chloride  
LD50 rabbit: 2,930 mg/kg

Isopropanol  
LD50 rabbit: 12,870 mg/kg

**Potential Health Effects**

Eyes : Causes serious eye damage.

Skin : Causes severe skin burns.

Ingestion : Causes digestive tract burns.

Inhalation : May cause nose, throat, and lung irritation.

Chronic Exposure : Health injuries are not known or expected under normal use.

**Experience with human exposure**

Eye contact : Redness, Pain, Corrosion

Skin contact : Redness, Pain, Corrosion

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Ingestion : Corrosion, Abdominal pain

Inhalation : Respiratory irritation, Cough

Further information : no data available

**Section: 12. ECOLOGICAL INFORMATION****12.1 Ecotoxicity****Product**

Environmental Effects : Harmful to aquatic life with long lasting effects.

Toxicity to fish : no data available

Toxicity to daphnia and other aquatic invertebrates : no data available

Toxicity to algae : no data available

**Components**

Toxicity to fish : Amines, C12-14 alkyldimethyl, N-oxides  
LC50: 2.67 mg/l

2,2'-(octadec-9-enylimino)bisethanol  
96 h LC50 Danio rerio (zebra fish): 0.1 mg/l

Didecyl-Dimethyl-Ammonium chloride  
96 h LC50 Fish: 1 mg/l

Isopropanol  
96 h LC50 Pimephales promelas (fathead minnow):  
9,640 mg/l

**Components**

Toxicity to daphnia and other aquatic invertebrates : Amines, C12-14 alkyldimethyl, N-oxides  
EC50 Daphnia magna (Water flea): 3.1 mg/l

2,2'-(octadec-9-enylimino)bisethanol  
48 h EC50 Daphnia magna (Water flea): 0.043 mg/l

Isopropanol  
LC50 Daphnia magna (Water flea): > 10,000 mg/l

**Components**

Toxicity to algae : Amines, C12-14 alkyldimethyl, N-oxides  
LC50: 0.143 mg/l  
NOEC: 0.067 mg/l

2,2'-(octadec-9-enylimino)bisethanol  
72 h EC50 Pseudokirchneriella subcapitata  
(microalgae): 0.0538 mg/l

**Components**

Toxicity to bacteria : Isopropanol

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1,050 mg/l

**Components**

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : 2,2'-(octadec-9-enylimino)bisethanol  
21 d EC50: 0.0463 mg/l

**12.2 Persistence and degradability**

**Product**

no data available

**Components**

Biodegradability : Amines, C12-14 alkyldimethyl, N-oxides  
Result: Readily biodegradable.

2,2'-(octadec-9-enylimino)bisethanol  
Result: Readily biodegradable.

Didecyl-Dimethyl-Ammonium chloride  
Result: Eliminated from aquatic environment

Potassium Hydroxide  
Result: Not applicable - inorganic

Isopropanol  
Result: Readily biodegradable.

**12.3 Bioaccumulative potential**

no data available

**12.4 Mobility in soil**

no data available

**12.5 Results of PBT and vPvB assessment**

**Product**

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

**12.6 Other adverse effects**

no data available

**Section: 13. DISPOSAL CONSIDERATIONS**

Dispose of in accordance with the European Directives on waste and hazardous waste. Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.

**13.1 Waste treatment methods**

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- Product : The product should not be allowed to enter drains, water courses or the soil.  
Where possible recycling is preferred to disposal or incineration.  
If recycling is not practicable, dispose of in compliance with local regulations.  
Dispose of wastes in an approved waste disposal facility.
- Contaminated packaging : Dispose of as unused product.  
Empty containers should be taken to an approved waste handling site for recycling or disposal.  
Do not re-use empty containers.
- Guidance for Waste Code selection : Organic wastes containing dangerous substances. If this product is used in any further processes, the final user must redefine and assign the most appropriate European Waste Catalogue Code. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable European (EU Directive 2008/98/EC) and local regulations.

**Section: 14. TRANSPORT INFORMATION**

The shipper/consignor/sender is responsible to ensure that the packaging, labeling, and markings are in compliance with the selected mode of transport.

**Land transport (ADR/ADN/RID)**

- 14.1 UN number: Not applicable.  
14.2 UN proper shipping name: PRODUCT IS NOT REGULATED DURING TRANSPORTATION  
14.3 Transport hazard class(es): Not applicable.  
14.4 Packing group: Not applicable.  
14.5 Environmental hazards: No  
14.6 Special precautions for user: Not applicable.

**Air transport (IATA)**

- 14.1 UN number: Not applicable.  
14.2 UN proper shipping name: PRODUCT IS NOT REGULATED DURING TRANSPORTATION  
14.3 Transport hazard class(es): Not applicable.  
14.4 Packing group: Not applicable.  
14.5 Environmental hazards: No  
14.6 Special precautions for user: Not applicable.

**Sea transport (IMDG/IMO)**

- 14.1 UN number: Not applicable.  
14.2 UN proper shipping name: PRODUCT IS NOT REGULATED DURING TRANSPORTATION  
14.3 Transport hazard class(es): Not applicable.  
14.4 Packing group: Not applicable.  
14.5 Environmental hazards: No  
14.6 Special precautions for user: Not applicable.  
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable.

**DEEP CLEAN****Section: 15. REGULATORY INFORMATION****15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:****INTERNATIONAL CHEMICAL CONTROL LAWS****15.2 Chemical Safety Assessment:**

No Chemical Safety Assessment has been carried out on the product.

**Section: 16. OTHER INFORMATION****Procedure used to derive the classification according to REGULATION (EC) No 1272/2008**

| Classification                   | Justification                       |
|----------------------------------|-------------------------------------|
| Skin corrosion 1, H314           | Based on product data or assessment |
| Serious eye damage 1, H318       | Based on product data or assessment |
| Chronic aquatic toxicity 3, H412 | Calculation method                  |

**Full text of H-Statements**

|      |                                                       |
|------|-------------------------------------------------------|
| H225 | Highly flammable liquid and vapour.                   |
| H290 | May be corrosive to metals.                           |
| H302 | Harmful if swallowed.                                 |
| H314 | Causes severe skin burns and eye damage.              |
| H315 | Causes skin irritation.                               |
| H318 | Causes serious eye damage.                            |
| H319 | Causes serious eye irritation.                        |
| H336 | May cause drowsiness or dizziness.                    |
| H400 | Very toxic to aquatic life.                           |
| H410 | Very toxic to aquatic life with long lasting effects. |
| H411 | Toxic to aquatic life with long lasting effects.      |

**Full text of other abbreviations**

ADN – European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR – European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS – Australian Inventory of Chemical Substances; ASTM – American Society for the Testing of Materials; bw – Body weight; CLP – Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR – Carcinogen, Mutagen or Reproductive Toxicant; DIN – Standard of the German Institute for Standardisation; DSL – Domestic Substances List (Canada); ECHA – European Chemicals Agency; EC-Number – European Community number; ECx – Concentration associated with x% response; ELx – Loading rate associated with x% response; EmS – Emergency Schedule; ENCS – Existing and New Chemical Substances (Japan); ErCx – Concentration associated with x% growth rate response; GHS – Globally Harmonized System; GLP – Good Laboratory Practice; IARC – International Agency for Research on Cancer; IATA – International Air Transport Association; IBC – International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 – Half maximal inhibitory concentration; ICAO – International Civil Aviation Organization; IECSC – Inventory of Existing Chemical Substances in China; IMDG – International Maritime Dangerous Goods; IMO – International Maritime Organization; ISHL – Industrial Safety and Health Law (Japan); ISO – International Organisation for Standardization; KECI – Korea Existing Chemicals Inventory; LC50 – Lethal Concentration to 50 % of a test population; LD50 – Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL – International Convention for the Prevention of Pollution from Ships; n.o.s. – Not Otherwise Specified; NO(A)EC – No Observed (Adverse) Effect Concentration; NO(A)EL – No Observed (Adverse) Effect Level; NOELR – No Observable Effect Loading Rate; NZIoC – New Zealand Inventory of Chemicals; OECD – Organization for Economic Co-operation and Development; OPPTS – Office of Chemical Safety and Pollution Prevention;

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PBT – Persistent, Bioaccumulative and Toxic substance; PICCS – Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR – (Quantitative) Structure Activity Relationship; REACH – Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID – Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT – Self-Accelerating Decomposition Temperature; SDS – Safety Data Sheet; TCSI – Taiwan Chemical Substance Inventory; TRGS – Technical Rule for Hazardous Substances; TSCA – Toxic Substances Control Act (United States); UN – United Nations; vPvB – Very Persistent and Very Bioaccumulative

Sources of key data used to compile the Safety Data Sheet : IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Man, Geneva: World Health Organization, International Agency for Research on Cancer.

The possible key literature references and data sources which may have been used in conjunction with the consideration of expert judgment to compile this Safety Data Sheet: European regulations/directives (including (EC) No. 1907/2006, (EC) No. 1272/2008), supplier data, inter-net, ESIS, IUCLID, ERICards, Non European official regulatory data and other data sources.

Prepared By : Regulatory Affairs

Numbers quoted in the MSDS are given in the format: 1,000,000 = 1 million and 1,000 = 1 thousand. 0.1 = 1 tenth and 0.001 = 1 thousandth

REVISED INFORMATION: Significant changes to regulatory or health information for this revision is indicated by a bar in the left-hand margin of the SDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.