



## Safety Data Sheet

### Section 1. Identification

**Product name** : ALPHA® EF-8300 FLUX  
**Product code** : 151702  
**Product type** : Liquid.  
**Date of issue/Date of revision** : January 23 2020.

| Manufacturer - Supplier                                                                                                                                                      | Telephone no.:                                          | Emergency phone:                                                                                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| Alpha Assembly Solutions Inc.<br>Global Headquarters<br>300 Atrium Drive<br>Somerset, New Jersey 08873                                                                       | Toll Free: (800) 367-5460<br>Main Phone: (908) 791-3000 | DOMESTIC NORTH AMERICA<br>202-464-2554                                                                                 |
| Macdermid Performance Solution Hong Kong Limited / Alpha Assembly Solutions<br>8/F., Paul Y. Centre, 51 Hung To Road,<br>Kwun Tong, Kowloon, Hong Kong                       | 852-31903100                                            | 852-31903100<br>INTERNATIONAL, CALL<br>Carechem 24: +65 3158 1074                                                      |
| MacDermid Performance Solutions Japan K.K.<br>480-28 Higashitoyoda, Hiratsuka-shi,<br>Kanagawa, Japan                                                                        | 81-463-53-3333                                          | 81-463-53-3333<br>INTERNATIONAL, CALL<br>Carechem 24: +65 3158 1074                                                    |
| Alpha Assembly Solutions Korea Limited<br>1Ra 310, Sihwa Industrial Complex, 40,<br>Okgucheonseo-ro, 131 beon-gil, Siheung-Si,<br>Gyeonggi-Do, Korea                         | 82-31-499-1451 Ext 2                                    | 82-31-499-1451 Ext 2<br>INTERNATIONAL, CALL<br>Carechem 24: +65 3158 1074                                              |
| Alpha Assembly Solutions (Shanghai) Trading Co., Ltd.<br>2 floor, 5 Building, No.1151 Lianxi Road,<br>Pudong New Area Shanghai 201204<br>P.R.China                           | 86-21-63900600                                          | 86-532-83889090<br>INTERNATIONAL, CALL<br>Carechem 24: +65 3158 1074                                                   |
| Alpha Assembly Solutions (Taiwan) Limited<br>No.20, Lane 12, Sec.2, Nan-Shan Rd.,<br>Luzhu District, Taoyuan City, 33860 Taiwan                                              | 886-3-3222721                                           | 886-3-3222721<br>INTERNATIONAL, CALL<br>Carechem 24: +65 3158 1074                                                     |
| MacDermid Performance Solutions,<br>Cookson India Private Limited.<br>Developed Plot no 16, North Phase, SIDCO<br>Industrial estate, Ambattur,<br>Chennai - 600098,<br>India | 044-26252666                                            | 044-26252666<br>INTERNATIONAL, CALL<br>Carechem 24: +65 3158 1074                                                      |
| Alpha Assembly Solutions<br>14 Tuas Avenue 10<br>Singapore 639138                                                                                                            | 65 68611977                                             | 65 68611977<br>INTERNATIONAL, CALL<br>Carechem 24: +65 3158 1074                                                       |
| Alpha Assembly Solutions (Shenzhen) Co., Ltd.<br>Tang Xia Yong Village, Songgang Town<br>Baoan District, Shenzhen,<br>Peoples Republic of China<br>Postal Code: 518105       | 86 755 2705 1100                                        | 86 532 83889090<br>INTERNATIONAL, CALL<br>Carechem 24: +65 3158 1074                                                   |
| Alpha Advanced Materials<br>14 Joo Koon Crescent<br>Singapore 629014                                                                                                         | 65 6430 0700                                            | 65 6430 0700<br>INTERNATIONAL, CALL<br>Carechem 24: +65 3158 1074                                                      |
| Active Components (NZ) Ltd (Distributor)<br>2/14 Canaveral Drive<br>Rosedale (0632), Auckland<br>New Zealand                                                                 | Tel: +64 9 443 9500                                     | National Poisons Centre<br>Free Phone: 0800 764 766 (0800 POISON)<br>INTERNATIONAL, CALL<br>Carechem 24: +65 3158 1074 |

Continued on next page

## Section 2. Hazards identification

**Classification of the substance or mixture** : FLAMMABLE LIQUIDS - Category 2  
 ACUTE TOXICITY (oral) - Category 5  
 ACUTE TOXICITY (inhalation) - Category 4  
 SKIN CORROSION/IRRITATION - Category 3  
 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1  
 SKIN SENSITIZATION - Category 1  
 TOXIC TO REPRODUCTION (Fertility) - Category 1B  
 SPECIFIC TARGET ORGAN TOXICITY (Narcotic effects) - Category 3  
 AQUATIC HAZARD (ACUTE) - Category 3  
 AQUATIC HAZARD (LONG-TERM) - Category 2

### GHS label elements

#### **Hazard pictograms**



#### **Signal word**

: Danger

#### **Hazard statements**

: Highly flammable liquid and vapor.  
 Harmful if inhaled.  
 May be harmful if swallowed.  
 Causes serious eye damage.  
 Causes mild skin irritation.  
 May cause an allergic skin reaction.  
 May damage fertility.  
 May cause drowsiness or dizziness.  
 Toxic to aquatic life with long lasting effects.

### Precautionary statements

#### **Prevention**

: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves. Wear protective clothing. Wear eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Avoid breathing vapor. Contaminated work clothing should not be allowed out of the workplace.

#### **Response**

: Collect spillage. IF exposed or concerned: Get medical attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. If skin irritation or rash occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician.

#### **Storage**

: Store locked up.

#### **Disposal**

: Dispose of contents and container in accordance with all local, regional, national and international regulations.

**Other hazards which do not result in classification** : Prolonged or repeated contact may dry skin and cause irritation.

## Section 3. Composition/information on ingredients

**Substance/mixture** : Mixture

## Section 3. Composition/information on ingredients

| Ingredient name                  | %       | CAS number |
|----------------------------------|---------|------------|
| Isopropyl alcohol                | 70-80   | 67-63-0    |
| Proprietary petroleum distillate | 10-20   | -          |
| petroleum distillate             | 1-10    | -          |
| Glycol Ether                     | 1-10    | -          |
| Organic acid                     | 1-10    | -          |
| Rosin/Resin                      | 1-10    | -          |
| Rosin/Resin2                     | 0.1-1.0 | -          |
| diol                             | 0.1-1.0 | -          |
| Ester.                           | 0.1-1.0 | -          |

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

## Section 4. First aid measures

### Description of necessary first aid measures

- Eye contact** : Get medical attention immediately. Call a poison center or physician. Check for and remove any contact lenses. Immediately flush eyes with running water for at least 30 minutes, keeping eyelids open. Chemical burns must be treated promptly by a physician.
- Inhalation** : Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that mists are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Get medical attention immediately. Call a poison center or physician. Wash skin thoroughly with soap and water or use recognized skin cleanser. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 15 minutes. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

### Most important symptoms/effects, acute and delayed

#### Potential acute health effects

- Eye contact** : Causes serious eye damage.
- Inhalation** : Harmful if inhaled. Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.
- Skin contact** : Causes mild skin irritation. Defatting to the skin. May cause an allergic skin reaction.

Continued on next page

## Section 4. First aid measures

**Ingestion** : May be harmful if swallowed. Can cause central nervous system (CNS) depression.

### Over-exposure signs/symptoms

**Eye contact** : Adverse symptoms may include the following:  
pain  
watering  
redness

**Inhalation** : Adverse symptoms may include the following:  
nausea or vomiting  
headache  
drowsiness/fatigue  
dizziness/vertigo  
unconsciousness  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations

**Skin contact** : Adverse symptoms may include the following:  
pain or irritation  
redness  
dryness  
cracking  
blistering may occur  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations

**Ingestion** : Adverse symptoms may include the following:  
stomach pains  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations

### Indication of immediate medical attention and special treatment needed, if necessary

**Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

**Specific treatments** : No specific treatment.

**Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that mists are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### Extinguishing media

**Suitable extinguishing media** : Use dry chemical, CO<sub>2</sub>, water spray (fog) or foam.

**Unsuitable extinguishing media** : Do not use water jet.

**Specific hazards arising from the chemical** : Highly flammable liquid and vapor. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Continued on next page

## Section 5. Fire-fighting measures

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
carbon dioxide  
carbon monoxide
- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

### Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## Section 7. Handling and storage

### Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a

## Section 7. Handling and storage

compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

### Advice on general occupational hygiene

- : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

### Conditions for safe storage, including any incompatibilities

- : Storage temperature: 5 to 30°C (41 to 86°F). Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

| Ingredient name                  | Exposure limits                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Isopropyl alcohol                | <b>ACGIH TLV (United States, 3/2017). Notes: Refers to Appendix A -- Carcinogens. ACGIH 2003 Adoption</b><br>STEL: 400 ppm 15 minutes.<br>TWA: 200 ppm 8 hours.<br><b>ACGIH TLV (United States, 3/2017). Absorbed through skin.</b><br>TWA: 200 mg/m <sup>3</sup> , (as total hydrocarbon vapor) 8 hours.<br><b>ACGIH TLV (United States, 3/2017).</b><br>TWA: 200 ppm 8 hours.<br>TWA: 1050 mg/m <sup>3</sup> 8 hours.<br><b>ACGIH TLV (United States, 3/2017). Skin sensitizer. Inhalation sensitizer.</b> |
| Proprietary petroleum distillate |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| petroleum distillate             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Rosin/Resin                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

| Ingredient name                  | Exposure limits                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Isopropyl alcohol                | <b>TW Minstry of Labor, labor permissible workplace exposure standards, allowable concentration (Taiwan, 6/2014).</b><br>STEL: 1228.75 mg/m <sup>3</sup> 15 minutes.<br>STEL: 500 ppm 15 minutes.<br>TWA: 983 mg/m <sup>3</sup> 8 hours.<br>TWA: 400 ppm 8 hours.<br><b>ACGIH TLV (United States, 3/2017). Absorbed through skin.</b><br>TWA: 200 mg/m <sup>3</sup> , (as total hydrocarbon vapor) 8 hours.<br><b>TW Minstry of Labor, labor permissible workplace exposure standards, allowable concentration (Taiwan, 6/2014).</b><br>STEL: 1312.5 mg/m <sup>3</sup> 15 minutes.<br>STEL: 250 ppm 15 minutes. |
| Proprietary petroleum distillate |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| petroleum distillate             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

Continued on next page



## Section 8. Exposure controls/personal protection

| Rosin/Resin                      | <p>TWA: 1050 mg/m<sup>3</sup> 8 hours.<br/>TWA: 200 ppm 8 hours.<br/><b>ACGIH TLV (United States, 3/2017). Skin sensitizer. Inhalation sensitizer.</b></p>                                                                                                                                                                                                                                              |
|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Ingredient name</b>           | <b>Exposure limits</b>                                                                                                                                                                                                                                                                                                                                                                                  |
| Isopropyl alcohol                | <p><b>GBZ 2.1 (China, 4/2007).</b><br/>PC-STEL: 700 mg/m<sup>3</sup> 15 minutes.<br/>PC-TWA: 350 mg/m<sup>3</sup> 8 hours.<br/><b>ACGIH TLV (United States, 3/2017). Absorbed through skin.</b><br/>TWA: 200 mg/m<sup>3</sup>, (as total hydrocarbon vapor) 8 hours.</p>                                                                                                                                |
| Proprietary petroleum distillate | <p><b>GBZ 2.1 (China, 4/2007).</b><br/>PC-TWA: 500 mg/m<sup>3</sup> 8 hours.<br/><b>ACGIH TLV (United States, 3/2017). Skin sensitizer. Inhalation sensitizer.</b></p>                                                                                                                                                                                                                                  |
| petroleum distillate             |                                                                                                                                                                                                                                                                                                                                                                                                         |
| Rosin/Resin                      |                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Ingredient name</b>           | <b>Exposure limits</b>                                                                                                                                                                                                                                                                                                                                                                                  |
| Isopropyl alcohol                | <p><b>Ministry of Employment and Labor (Republic of Korea, 8/2016).</b><br/>STEL: 400 ppm 15 minutes.<br/>TWA: 200 ppm 8 hours.<br/><b>ACGIH TLV (United States, 3/2017). Absorbed through skin.</b><br/>TWA: 200 mg/m<sup>3</sup>, (as total hydrocarbon vapor) 8 hours.</p>                                                                                                                           |
| Proprietary petroleum distillate | <p><b>Ministry of Employment and Labor (Republic of Korea, 8/2016).</b><br/>TWA: 200 ppm 8 hours.<br/><b>ACGIH TLV (United States, 3/2017). Skin sensitizer. Inhalation sensitizer.</b></p>                                                                                                                                                                                                             |
| petroleum distillate             |                                                                                                                                                                                                                                                                                                                                                                                                         |
| Rosin/Resin                      |                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Ingredient name</b>           | <b>Exposure limits</b>                                                                                                                                                                                                                                                                                                                                                                                  |
| Isopropyl alcohol                | <p><b>DOSH USECHH (Malaysia, 4/2000).</b><br/>TWA: 983 mg/m<sup>3</sup> 8 hours.<br/>TWA: 400 bpj 8 hours.<br/><b>ACGIH TLV (United States, 3/2017). Absorbed through skin.</b><br/>TWA: 200 mg/m<sup>3</sup>, (as total hydrocarbon vapor) 8 hours.</p>                                                                                                                                                |
| Proprietary petroleum distillate | <p><b>DOSH USECHH (Malaysia, 4/2000).</b><br/>TWA: 1050 mg/m<sup>3</sup> 8 hours.<br/>TWA: 200 bpj 8 hours.<br/><b>DOSH USECHH (Malaysia, 4/2000). Skin sensitizer.</b></p>                                                                                                                                                                                                                             |
| petroleum distillate             |                                                                                                                                                                                                                                                                                                                                                                                                         |
| Rosin/Resin                      |                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Ingredient name</b>           | <b>Exposure limits</b>                                                                                                                                                                                                                                                                                                                                                                                  |
| Isopropyl alcohol                | <p><b>Workplace Safety and Health Act (Singapore, 2/2006).</b><br/>PEL (short term): 1230 mg/m<sup>3</sup> 15 minutes.<br/>PEL (short term): 500 ppm 15 minutes.<br/>PEL (long term): 983 mg/m<sup>3</sup> 8 hours.<br/>PEL (long term): 400 ppm 8 hours.<br/><b>ACGIH TLV (United States, 3/2017). Absorbed through skin.</b><br/>TWA: 200 mg/m<sup>3</sup>, (as total hydrocarbon vapor) 8 hours.</p> |
| Proprietary petroleum distillate | <p><b>Workplace Safety and Health Act</b></p>                                                                                                                                                                                                                                                                                                                                                           |
| petroleum distillate             |                                                                                                                                                                                                                                                                                                                                                                                                         |

Continued on next page

## Section 8. Exposure controls/personal protection

Rosin/Resin

(Singapore, 2/2006).

PEL (long term): 1050 mg/m<sup>3</sup> 8 hours.

PEL (long term): 200 ppm 8 hours.

**ACGIH TLV (United States, 3/2017). Skin sensitizer. Inhalation sensitizer.**

### Appropriate engineering controls

- : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

### Environmental exposure controls

- : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

#### Hygiene measures

- : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

#### Eye/face protection

- : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

#### Skin protection

##### Hand protection

- : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

##### Body protection

- : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

##### Other skin protection

- : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

##### Respiratory protection

- : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.



## Section 9. Physical and chemical properties

### Appearance

|                                              |                                                                   |
|----------------------------------------------|-------------------------------------------------------------------|
| Physical state                               | : Liquid.                                                         |
| Color                                        | : Clear., Pale Yellow.                                            |
| Odor                                         | : Alcohol-like.                                                   |
| Odor threshold                               | : Not available.                                                  |
| pH                                           | : Not available.                                                  |
| Melting point                                | : Not available.                                                  |
| Boiling point                                | : Not available.                                                  |
| Flash point                                  | : Closed cup: 11.667°C (53°F)                                     |
| Evaporation rate                             | : Not available.                                                  |
| Flammability (solid, gas)                    | : Not available.                                                  |
| Lower and upper explosive (flammable) limits | : Not available.                                                  |
| Vapor pressure                               | : Not available.                                                  |
| Vapor density                                | : Not available.                                                  |
| Relative density                             | : 0.804                                                           |
| Solubility                                   | : Insoluble in the following materials: cold water and hot water. |
| VOC                                          | 765.6 g/l                                                         |
| Partition coefficient: n-octanol/water       | : Not available.                                                  |
| Auto-ignition temperature                    | : Not available.                                                  |
| Decomposition temperature                    | : Not available.                                                  |
| Viscosity                                    | : Not available.                                                  |

## Section 10. Stability and reactivity

|                                    |                                                                                                                                                                           |
|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Reactivity                         | : No specific test data related to reactivity available for this product or its ingredients.                                                                              |
| Chemical stability                 | : The product is stable.                                                                                                                                                  |
| Possibility of hazardous reactions | : Under normal conditions of storage and use, hazardous reactions will not occur.                                                                                         |
| Conditions to avoid                | : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. |
| Hazardous decomposition products   | : Under normal conditions of storage and use, hazardous decomposition products should not be produced.                                                                    |

## Section 11. Toxicological information

**Routes of entry** : Dermal contact. Eye contact. Inhalation. Ingestion.

### Acute toxicity

| Product/ingredient name | Result                          | Species      | Dose                    | Exposure |
|-------------------------|---------------------------------|--------------|-------------------------|----------|
| Isopropyl alcohol       | LD50 Dermal                     | Rabbit       | 6290 mg/kg              | -        |
|                         | LD50 Oral                       | Rat          | 4.7 g/kg                | -        |
| petroleum distillate    | LC50 Inhalation Gas.            | Rat          | 3200 ppm                | 4 hours  |
|                         | LC50 Inhalation Vapor           | Rat          | 6400 ppm                | 1 hours  |
|                         | LC50 Inhalation Vapor           | Rat          | 17000 mg/m <sup>3</sup> | 4 hours  |
| Glycol Ether            | LD50 Oral                       | Rat - Female | 2600 mg/kg              | -        |
| Organic acid            | LD50 Oral                       | Rat          | 2260 mg/kg              | -        |
| Rosin/Resin             | LD50 Oral                       | Mouse        | 2.2 g/kg                | -        |
|                         | LD50 Oral                       | Rat          | 3 g/kg                  | -        |
| Rosin/Resin2            | LC50 Inhalation Dusts and mists | Rat          | 0.585 mg/l              | 6 hours  |

Continued on next page

## Section 11. Toxicological information

|        |             |            |             |   |
|--------|-------------|------------|-------------|---|
| Ester. | LD50 Dermal | Rabbit     | >2500 mg/kg | - |
|        | LD50 Oral   | Mouse      | >4000 mg/kg | - |
|        | LD50 Oral   | Rat        | >4000 mg/kg | - |
|        | LD50 Oral   | Guinea pig | 12900 mg/kg | - |
|        | LD50 Oral   | Mouse      | 15000 mg/kg | - |
|        | LD50 Oral   | Rat        | 7392 mg/kg  | - |
|        | LD50 Oral   | Rat        | 7392 mg/kg  | - |

### Irritation/Corrosion

| Product/ingredient name | Result                   | Species | Score | Exposure                 | Observation |
|-------------------------|--------------------------|---------|-------|--------------------------|-------------|
| Isopropyl alcohol       | Eyes - Moderate irritant | Rabbit  | -     | 24 hours 100 milligrams  | -           |
|                         | Eyes - Moderate irritant | Rabbit  | -     | 10 milligrams            | -           |
|                         | Eyes - Severe irritant   | Rabbit  | -     | 100 milligrams           | -           |
| petroleum distillate    | Skin - Mild irritant     | Rabbit  | -     | 500 milligrams           | -           |
|                         | Skin - Mild irritant     | Pig     | -     | 24 hours 250 microliters | -           |
|                         | Skin - Moderate irritant | Rat     | -     | 96 hours 300 microliters | -           |
| Organic acid            | Eyes - Severe irritant   | Rabbit  | -     | 750 Micrograms           | -           |

### Sensitization

Not available.

### Mutagenicity

Not available.

### Carcinogenicity

Not available.

### Reproductive toxicity

| Product/ingredient name | Maternal toxicity | Fertility | Development toxin | Species      | Dose             | Exposure                                  |
|-------------------------|-------------------|-----------|-------------------|--------------|------------------|-------------------------------------------|
| Ester.                  | -                 | Positive  | -                 | Rat - Female | Oral: 2000 mg/kg | 3 weeks During Pregnancy; 7 days per week |
|                         | -                 | Positive  | -                 | Rat - Female | Oral: 1000 mg/kg | 3 weeks During Pregnancy; 7 days per week |

### Teratogenicity

| Product/ingredient name | Result          | Species      | Dose      | Exposure                 |
|-------------------------|-----------------|--------------|-----------|--------------------------|
| Ester.                  | Positive - Oral | Rat - Female | 400 mg/kg | 17 days During Pregnancy |

### Specific target organ toxicity

| Name                 | Category   | Route of exposure | Target organs    |
|----------------------|------------|-------------------|------------------|
| Isopropyl alcohol    | Category 3 | Not applicable.   | Narcotic effects |
| petroleum distillate | Category 3 | Not applicable.   | Narcotic effects |

### Specific target organ toxicity (repeated exposure)

Not available.

Continued on next page

## Section 11. Toxicological information

### Aspiration hazard

| Name                                                     | Result                                                           |
|----------------------------------------------------------|------------------------------------------------------------------|
| Proprietary petroleum distillate<br>petroleum distillate | ASPIRATION HAZARD - Category 1<br>ASPIRATION HAZARD - Category 1 |

**Information on the likely routes of exposure** : Not available.

### Potential acute health effects

- Eye contact** : Causes serious eye damage.
- Inhalation** : Harmful if inhaled. Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.
- Skin contact** : Causes mild skin irritation. Defatting to the skin. May cause an allergic skin reaction.
- Ingestion** : May be harmful if swallowed. Can cause central nervous system (CNS) depression.

### Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:  
pain  
watering  
redness
- Inhalation** : Adverse symptoms may include the following:  
nausea or vomiting  
headache  
drowsiness/fatigue  
dizziness/vertigo  
unconsciousness  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:  
pain or irritation  
redness  
dryness  
cracking  
blistering may occur  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations
- Ingestion** : Adverse symptoms may include the following:  
stomach pains  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations

### Delayed and immediate effects and also chronic effects from short and long term exposure

#### Short term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

#### Long term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

#### Potential chronic health effects

Not available.

**Continued on next page**

## Section 11. Toxicological information

|                              |                                                                                                                                                                                                            |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>General</b>               | : Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels. |
| <b>Carcinogenicity</b>       | : No known significant effects or critical hazards.                                                                                                                                                        |
| <b>Mutagenicity</b>          | : No known significant effects or critical hazards.                                                                                                                                                        |
| <b>Teratogenicity</b>        | : No known significant effects or critical hazards.                                                                                                                                                        |
| <b>Developmental effects</b> | : No known significant effects or critical hazards.                                                                                                                                                        |
| <b>Fertility effects</b>     | : May damage fertility.                                                                                                                                                                                    |

### Numerical measures of toxicity

#### Acute toxicity estimates

| Route               | ATE value      |
|---------------------|----------------|
| Oral                | 4413.2 mg/kg   |
| Dermal              | 194493.8 mg/kg |
| Inhalation (gases)  | 4648.5 ppm     |
| Inhalation (vapors) | 24.7 mg/l      |

## Section 12. Ecological information

### Toxicity

| Product/ingredient name          | Result                               | Species                          | Exposure |
|----------------------------------|--------------------------------------|----------------------------------|----------|
| Isopropyl alcohol                | Acute EC50 10100 mg/l Fresh water    | Daphnia - Daphnia magna          | 48 hours |
|                                  | Acute LC50 1400000 µg/l Marine water | Crustaceans - Crangon crangon    | 48 hours |
|                                  | Acute LC50 4200 mg/l Fresh water     | Fish - Rasbora heteromorpha      | 96 hours |
|                                  | Acute LC50 2200 µg/l Fresh water     | Fish - Lepomis macrochirus       | 4 days   |
| Proprietary petroleum distillate |                                      |                                  |          |
| Glycol Ether                     | EC50 315 mg/l                        | Algae                            | 96 hours |
|                                  | EC50 >100 mg/l                       | Daphnia                          | 48 hours |
|                                  | LC50 564 mg/l                        | Fish                             | 96 hours |
| Organic acid                     | Acute EC50 374200 µg/l Fresh water   | Daphnia - Daphnia magna - Larvae | 48 hours |
| Ester.                           | Acute LC50 >0.78 mg/l                | Algae                            | 96 hours |
|                                  | Acute LC50 660 µg/l Fresh water      | Daphnia - Daphnia magna          | 48 hours |
|                                  | Acute LC50 >0.78 mg/l                | Fish                             | 96 hours |
|                                  | Acute LC50 >0.78 mg/l                | Fish                             | 96 hours |
|                                  | Acute LC50 >0.78 mg/l                | Fish                             | 96 hours |

### Persistence and degradability

Not available.

### Bioaccumulative potential

| Product/ingredient name | LogP <sub>ow</sub> | BCF | Potential |
|-------------------------|--------------------|-----|-----------|
| Isopropyl alcohol       | 0.05               | -   | low       |
| petroleum distillate    | 5.65               | 105 | low       |
| Glycol Ether            | 1.896              | -   | low       |
| Organic acid            | -0.59              | -   | low       |
| Rosin/Resin             | 1.9 to 7.7         | -   | high      |
| Ester.                  | 8.94               | 27  | low       |

### Mobility in soil

Continued on next page

## Section 12. Ecological information





**Soil/water partition coefficient (K<sub>oc</sub>)** : Not available.

**Other adverse effects** : No known significant effects or critical hazards.

## Section 13. Disposal considerations

**Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

## Section 14. Transport information

|                                   | UN                                                                                       | IMDG                                                                                                                                                                         | IATA                                                                                                     |
|-----------------------------------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| <b>UN number</b>                  | UN1219                                                                                   | UN1219                                                                                                                                                                       | UN1219                                                                                                   |
| <b>UN proper shipping name</b>    | Isopropanol                                                                              | Isopropanol                                                                                                                                                                  | Isopropanol                                                                                              |
| <b>Transport hazard class(es)</b> | 3<br> | 3<br>  | 3<br>               |
| <b>Packing group</b>              | II                                                                                       | II                                                                                                                                                                           | II                                                                                                       |
| <b>Environmental hazards</b>      | Yes. The environmentally hazardous substance mark is not required.                       | Yes.                                                                                                                                                                         | Yes. The environmentally hazardous substance mark is not required.                                       |
| <b>Additional information</b>     | -                                                                                        | The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.                                                                                        | The environmentally hazardous substance mark may appear if required by other transportation regulations. |

**Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

## Section 15. Regulatory information

### Taiwan

SDS complies with the Regulation of Labeling and Hazard Communication of Hazardous Chemicals

**List of chemicals for which manufacturing or handling is defined as "work specially hazardous to health"** : This product contains substances "Specially hazardous to health": Isopropyl alcohol, 1,4-dioxane.

**List of chemicals reputed to be a "threat of imminent danger"** : This product contains substances considered to be a "Threat of imminent danger": Isopropyl alcohol, petroleum distillate.

**OSHA Article 29** : None of the components are listed.

**OSHA Article 30** : Employers shall not employ a pregnant female laborer to perform any potentially dangerous or harmful work involving this product. (OSHA Art. 30 first part, par 5)

### China

SDS complies with the General Rules for Classification and Hazardous Communication of Chemicals GB-13690-2009, GB-30000 series, and GB/T 16438-2008.

### List of Goods banned for Importing

None of the components are listed.

### Inventory of Hazardous Chemicals

| Ingredient name      | CAS number | Status |
|----------------------|------------|--------|
| 2-Propanol           | 67-63-0    | Listed |
| petroleum distillate | 111-84-2   | Listed |

### List of Goods banned for Exporting

None of the components are listed.

### List of Toxic Chemicals Severely Restricted for Importing & Exporting by China

None of the components are listed.

### Inventory of Highly Toxic Chemicals

None of the components are listed.

### Catalogue of Hazardous Chemicals of Priority Management

None of the components are listed.

### Catalogue of Priority Hazardous Chemicals for Environmental Management

None of the components are listed.

### Other China Regulations

Catalogue of Hazardous Chemicals (2015)  
 Classification & code of dangerous goods (GB 6944-2012)  
 Production Safety Law of the People's Republic of China  
 Law of the People's Republic of China on Prevention and Control of Occupational Diseases  
 Environmental Protection Law of the People's Republic of China  
 Regulation on Work Safety Licenses  
 Classification of transportation packing type of dangerous goods GB/T 15098-2008  
 General rules for classification and hazardous communication of chemicals GB 13690-2009  
 List of Dangerous Goods GB12268-2012  
 Occupational Exposure Limits (OELs) for hazardous chemicals GBZ 2.1-2007  
 Hazardous Chemicals Safety Management Ordinance China (2013 revised)  
 Safety data sheet for chemical products: content & order of sections GB/T 16483-2008  
 Rules for classification and labelling of chemicals GB30000-2013  
 Guidance on the compilation of safety data sheet for chemical products GB/T 17519-2013

### Republic of Korea

#### A. Regulation according to ISHA

Continued on next page



## Section 15. Regulatory information

**ISHA article 37**  
(Harmful substances prohibited from manufacture) : None of the components are listed.

**ISHA article 38**  
(Harmful substances requiring permission) : None of the components are listed.

**Article 2 of Youth Protection Act on Substances Hazardous to Youth** : Not applicable.

### Exposure Limits of Chemical Substances and Physical Factors

The following components have an OEL:

Isopropyl alcohol  
Proprietary petroleum distillate  
petroleum distillate  
Rosin/Resin

**ISHA Enforcement Regs Annex 11-3 (Exposure standards established for harmful factors)** : None of the components are listed.

**ISHA Enforcement Regs Annex 11-4 (Harmful factors subject to Work Environment Measurement)** : The following components are listed: Isopropyl alcohol

**ISHA Enforcement Regs Annex 12-2 (Harmful Factors Subject to Special Health Check-up)** : The following components are listed: Isopropyl alcohol

**Standard of Industrial Safety and Health Annex 12 (Hazardous substances subject to control)** : The following components are listed: Isopropyl alcohol

### B. Regulation according to Chemicals Control Act

**K-Reach Article 20 (Toxic chemicals)** : Not applicable

**K-Reach Article 27 (Prohibited)** : None of the components are listed.

**K-Reach Article 27 (Restricted)** : The following components are listed: Surfactant.

**Existing Chemical Substances Subject to Registration** : None of the components are listed.

**CSCA Article 11 (TRI)** : The following components are listed: 2-Propanol

**CSCA Article 39 (Accident Precaution Chemicals)** : None of the components are listed.

**C. Dangerous Materials Safety Management Act** : Class: Class 4 - Flammable Liquid  
Item: 2. Class 1 petroleums - Water-insoluble liquid  
Threshold: 200 L  
Danger category: II  
Signal word: Contact with sources of ignition prohibited

## Section 15. Regulatory information

**D. Wastes regulation** : Dispose of contents and container in accordance with all local, regional, national and international regulations.

### Singapore - hazardous chemicals under government control

None.

### Japan

#### Fire Service Law

| Category    | Substance name/Type | Danger category | Signal word                | Designated quantity |
|-------------|---------------------|-----------------|----------------------------|---------------------|
| Category IV | Class I petroleum   | II              | Flammable - Keep Fire Away | 200 L               |

**Fire Service Law - Obstructive materials** : Not listed

**Designated combustibles** : Not available.

**Designated quantity** : Not available.

### Maritime Safety Law

#### Notification Regulating Transportation of Dangerous Materials by Sea

None of the components are listed.

### Container class

None of the components are listed.

### ISHL

#### Use of specified chemical substances

None of the components are listed.

### Label requirements

| Ingredient name                  | %         | Status |
|----------------------------------|-----------|--------|
| Propyl alcohol                   | ≥75 - ≤90 | Listed |
| Proprietary petroleum distillate | ≥10 - ≤25 | Listed |
| petroleum distillate             | ≤5.0      | Listed |
| Rosin/Resin                      | ≤3.0      | Listed |

### Chemicals requiring notification

| Ingredient name                  | %         | Status |
|----------------------------------|-----------|--------|
| Propyl alcohol                   | ≥75 - ≤90 | Listed |
| Proprietary petroleum distillate | ≥10 - ≤25 | Listed |
| petroleum distillate             | ≤5.0      | Listed |
| Rosin/Resin                      | ≤3.0      | Listed |

### Carcinogen

None of the components are listed.

### Mutagen

None of the components are listed.

**Corrosive liquid** : Not listed

**ISHL Appendix 1** : Flammable liquid Class 3

**Lead regulation** : Not listed

**Prevention of Tetraalkyl Lead Poisoning** : Not listed

**Harmful Substances Subject to Obtaining Permission for Manufacturing** : Not listed

## Section 15. Regulatory information

**Harmful Substances,  
Prohibited for  
Manufacturing** : Not listed

**Dangerous Substances** : Not listed

**Organic solvents  
poisoning prevention** : Class 2

### Chemical Substances Control Law (CSCL)

| Ingredient name                     | %              | Status              |  |
|-------------------------------------|----------------|---------------------|--|
| Isopropyl alcohol; 2-Propanol       | 70-80          | Priority assessment |  |
| 1,4-Dioxane; 1,4-Diethylene dioxide | 0 - 0.000005   | Priority assessment |  |
| Ethylene oxide; 1,2-Epoxyethane     | 0 - 0.0000025  | Priority assessment |  |
| Aliphatic aldehyde.                 | 0 - 0.00000125 | Priority assessment |  |
| Aldehyde.                           | 0 - 0.00000125 | Priority assessment |  |

### Poisonous and Deleterious Substances

None of the components are listed.

### Pollutant Release and Transfer Registers (PRTR)

None of the components are listed.

**JSOH Carcinogen** : Not listed

**Law Concerning Prevention  
of Pollution of the Ocean  
and Maritime Disaster** : Not available.

**Road law** : Not available.

**List of Specially Controlled  
Industrial Waste** : Not listed

**Occupational Safety and  
Health Law** : Flammable liquid Class 3

### Explosives Control Law

None of the components are listed.

**High Pressure Gas Control  
Law** : Not available.

**Safety, health and  
environmental regulations  
specific for the product** : No known specific national and/or regional regulations applicable to this product (including its ingredients).

### International lists

#### National inventory

**Australia** : Not determined.

**Canada** : All components are listed or exempted.

**China** : Not determined.

**Europe** : All components are listed or exempted.

**Japan** : Not determined.

**Malaysia** : Not determined.

**New Zealand** : Not determined.

**Philippines** : Not determined.

*Continued on next page*

## Section 15. Regulatory information

|                   |                                          |
|-------------------|------------------------------------------|
| Republic of Korea | : Not determined.                        |
| Taiwan            | : Not determined.                        |
| Thailand          | : Not determined.                        |
| Turkey            | : Not determined.                        |
| United States     | : All components are listed or exempted. |
| Viet Nam          | : Not determined.                        |

## Section 16. Other information

### History

|                                |                                                                      |
|--------------------------------|----------------------------------------------------------------------|
| Date of issue/Date of revision | : January 23 2020.                                                   |
| Date of previous issue         | : June 13 2019.                                                      |
| Version                        | : 3.02                                                               |
| Prepared by                    | : Regulatory Affairs Department<br>enthone.msds@macdermidenthone.com |

|                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Key to abbreviations | : ATE = Acute Toxicity Estimate<br>BCF = Bioconcentration Factor<br>GHS = Globally Harmonized System of Classification and Labelling of Chemicals<br>IATA = International Air Transport Association<br>IBC = Intermediate Bulk Container<br>IMDG = International Maritime Dangerous Goods<br>LogPow = logarithm of the octanol/water partition coefficient<br>MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)<br>UN = United Nations |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Procedure used to derive the classification

| Classification             | Justification         |
|----------------------------|-----------------------|
| Flam. Liq. 2, H225         | On basis of test data |
| Acute Tox. 5, H303         | Calculation method    |
| Acute Tox. 4, H332         | Calculation method    |
| Skin Irrit. 3, H316        | Calculation method    |
| Eye Dam. 1, H318           | Calculation method    |
| Skin Sens. 1, H317         | Calculation method    |
| Repr. 1B, H360 (Fertility) | Calculation method    |
| STOT SE 3, H336            | Calculation method    |
| Aquatic Acute 3, H402      | Calculation method    |
| Aquatic Chronic 2, H411    | Calculation method    |

|            |                  |
|------------|------------------|
| References | : Not available. |
|------------|------------------|

Indicates information that has changed from previously issued version.

### Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.