Section 1. Identification

Product name: ALPHA® 615-25 ROSIN FLUX RMA
Product code: 115956
Product type: Liquid.
Date of issue/Date of revision: September 26 2016.

Manufacturer - Supplier | Telephone no.: | Emergency phone:
------------------------|---------------|------------------------
Alpha Assembly Solutions Inc. Global Headquarters | Toll Free: (800) 367-5460 | DOMESTIC NORTH AMERICA 800-424-9300 INTERNATIONAL. CALL +1 703-527-3887 (collect calls accepted) Alpha Chemtrec# 5591
300 Atrium Drive Somerset, New Jersey 08873 | Main Phone: (908) 791-3000 |

ALPHA METALS MEXICO SA DE CV Ave Nafta 800, Parque Industrial STIVA Apodaca NL 66600 Mexico | Tel: +52 81 1156-6602 | Tel: 01 800 022 1400
Tel: +52 55 5559-1588 |

Alpha Assembly Solutions Brasil Soldas Ltda Rio Jaguarão, 1540 - Vila Bunti Manaus Amazonas 69072-055 Brasil | Tel: 55 92 3614-7400 | Tel: 55 92 3614-7423 |

Section 2. Hazards identification

OSHA/HCS status: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture:
- FLAMMABLE LIQUIDS - Category 2
- SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A
- GERM CELL MUTAGENICITY - Category 1B
- CARCINOGENICITY - Category 1B
- SPECIFIC TARGET ORGAN TOXICITY (Narcotic effects) - Category 3

GHS label elements

Hazard pictograms:

Signal word: Danger


Precautionary statements
Section 2. Hazards identification

**Prevention**: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves. Wear eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Use only outdoors or in a well-ventilated area. Avoid breathing vapor. Wash hands thoroughly after handling.

**Response**: IF exposed or concerned: Get medical attention. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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 or shower. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

**Storage**: Store locked up. Store in a well-ventilated place. Keep cool.

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

**Supplemental label elements**: Avoid contact with skin and clothing. Wash thoroughly after handling.

**Hazards not otherwise classified**: Prolonged or repeated contact may dry skin and cause irritation.

Section 3. Composition/information on ingredients

**Substance/mixture**: Mixture

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>%</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isopropyl alcohol</td>
<td>60-70</td>
<td>67-63-0</td>
</tr>
<tr>
<td>petroleum distillate</td>
<td>1-10</td>
<td>-</td>
</tr>
<tr>
<td>Amine</td>
<td>0.1-1.0</td>
<td>-</td>
</tr>
</tbody>
</table>

*A Trade Secret exemption is pending with the HMIRC for one or more ingredients in this product. Registry Number: 9641 on November 7, 2015*

Any concentration shown as a range is to protect confidentiality or is due to batch variation. 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**: Check for and remove any contact lenses. Immediately flush eyes with running water for at least 30 minutes, keeping eyelids open. Get medical attention.

**Inhalation**: 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. Get medical attention. If necessary, call a poison center or physician. 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**: 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. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Continued on next page
Section 4. First aid measures

Ingestion: 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. Get medical attention. If necessary, call a poison center or 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 irritation. |
| Inhaling | Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness. |
| Skin contact | Defatting to the skin. May cause skin dryness and irritation. |
| Ingestion | Can cause central nervous system (CNS) depression. |

Over-exposure signs/symptoms

| Eye contact | Adverse symptoms may include the following: pain or irritation watering redness |
| Inhaling | Adverse symptoms may include the following: nausea or vomiting headache drowsiness/fatigue dizziness/vertigo unconsciousness |
| Skin contact | Adverse symptoms may include the following: irritation dryness cracking |
| Ingestion | No specific data. |

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, CO2, water spray (fog) or foam.

Unsuitable extinguishing media: Do not use water jet.
Section 5. Fire-fighting measures

Specific hazards arising from the chemical: Highly flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.

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. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

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. 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).

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

Continued on next page
Section 7. Handling and storage

Protective measures: Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. 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 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: 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.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
</table>
| Isopropyl alcohol | ACGIH TLV (United States, 4/2014). Notes: Refers to Appendix A -- Carcinogens. ACGIH 2003 Adoption  
STEL: 400 ppm 15 minutes.  
TWA: 200 ppm 8 hours.  
NIOSH REL (United States, 10/2013).  
STEL: 1225 mg/m³ 15 minutes.  
STEL: 500 ppm 15 minutes.  
TWA: 980 mg/m³ 10 hours.  
TWA: 400 ppm 10 hours.  
OSHA PEL (United States, 2/2013).  
TWA: 980 mg/m³ 8 hours.  
TWA: 400 ppm 8 hours. |
| petroleum distillate | ACGIH TLV (United States, 4/2014). Notes: Substances for which the TLV is higher than the OSHA Permissible Exposure Limit (PEL) and/or the NIOSH Recommended Exposure Limit (REL). See CFR 58(124) :36338-33351, June 30, 1993, for revised OSHA PEL.  
TWA: 525 mg/m³ 8 hours.  
TWA: 100 ppm 8 hours.  
NIOSH REL (United States, 10/2013).  
CELL: 1800 mg/m³ 15 minutes.  
TWA: 350 mg/m³ 10 hours.  
OSHA PEL (United States, 2/2013).  
TWA: 2900 mg/m³ 8 hours.  
TWA: 500 ppm 8 hours.  
NIOSH REL (United States, 10/2013).  
TWA: 3 ppm 10 hours.  
TWA: 15 mg/m³ 10 hours. |
| Amine | |
## Section 8. Exposure controls/personal protection

### 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. 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.

#### 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**
- Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

---

NIOSH REL (United States, 6/2001).
- TWA: 15 mg/m³ 10 hours. Form: All forms
- TWA: 3 ppm 10 hours. Form: All forms

ACGIH TLV (United States, 4/2014). Absorbed through skin.
- TWA: 1 mg/m³ 8 hours. Form: Inhalable fraction and vapor

ACGIH TLV (United States, 2/2003). Absorbed through skin.
- Notes: 1994-1995 Adoption
- TWA: 2 mg/m³ 8 hours. Form: All forms
- TWA: 0.46 ppm 8 hours. Form: All forms
**Section 9. Physical and chemical properties**

**Appearance**
- **Physical state**: Liquid.
- **Color**: Brown.
- **Odor**: Alcohol-like.
- **Odor threshold**: Not available.
- **pH**: Not available.
- **Melting point**: Not available.
- **Boiling point**: Not available.
- **Flash point**: Closed cup: 12°C (53.6°F) [Tag Closed Cup]
- **Evaporation rate**: Not available.
- **Flammability (solid, gas)**: Not available.
- **Lower and upper explosive (flammable) limits**: Not available.
- **Vapor pressure**: Not available.
- **Vapor density**: >1 [Air = 1]
- **Relative density**: 0.8424
- **Solubility**: Easily soluble in the following materials: cold water.
- **VOC**: 630.2 g/l
- **Partition coefficient: n-octanol/water**: Not available.
- **Auto-ignition temperature**: 399°C (750.2°F)
- **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. Do not allow vapor to accumulate in low or confined areas.

**Incompatibility with various substances**: Reactive or incompatible with the following materials: oxidizing materials and acids.

**Hazardous decomposition products**: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

**Other Hazardous decomposition products**: carbon oxides (CO, CO₂)

**Hazardous polymerization**: Under normal conditions of storage and use, hazardous polymerization will not occur.

**Section 11. Toxicological information**

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

**Acute toxicity**
### Section 11. Toxicological information

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isopropyl alcohol</td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>6290 mg/kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>4.7 g/kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>petroleum distillate</td>
<td>LC50 Inhalation Vapor</td>
<td>Rat</td>
<td>&gt;5500 mg/m³</td>
<td>4 hours</td>
<td></td>
</tr>
<tr>
<td>Amine</td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>8180 mg/kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Mouse</td>
<td>3300 mg/kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rabbit</td>
<td>2200 mg/kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>680 mg/kg</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Irritation/Corrosion

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Score</th>
<th>Exposure</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isopropyl alcohol</td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 100 milligrams</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>10 milligrams</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Eyes - Severe irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>100 milligrams</td>
<td></td>
</tr>
<tr>
<td>petroleum distillate</td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>500 milligrams</td>
<td></td>
</tr>
<tr>
<td>Amine</td>
<td>Eyes - Mild irritant</td>
<td>Human</td>
<td>-</td>
<td>100 parts per million</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Eyes - Moderate irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500 milligrams</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Eyes - Severe irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 750 Micrograms</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Eyes - Severe irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>5500 milligrams</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500 milligrams</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>50 milligrams</td>
<td></td>
</tr>
</tbody>
</table>

### Sensitization
Not available.

### Mutagenicity
Not available.

### Carcinogenicity
No applicable toxicity data

### Additional information:

#### Classification

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>OSHA</th>
<th>IARC</th>
<th>NTP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isopropyl alcohol</td>
<td>-</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>Amine</td>
<td>-</td>
<td>2B</td>
<td>-</td>
</tr>
</tbody>
</table>

### Reproductive toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Maternal toxicity</th>
<th>Fertility</th>
<th>Development toxin</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isopropyl alcohol</td>
<td>Negative</td>
<td>Positive</td>
<td>Positive</td>
<td>Rat</td>
<td>Oral: 1000 mg/kg</td>
<td>24 hours per day</td>
</tr>
<tr>
<td></td>
<td>Positive</td>
<td>Negative</td>
<td>Positive</td>
<td>Rat - Female</td>
<td>Oral: 1242 mg/kg</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Positive</td>
<td>-</td>
<td>Positive</td>
<td>Rat - Female</td>
<td>Continuous Fixed dose</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Subcutaneous:</td>
<td>9 days</td>
</tr>
</tbody>
</table>

**A Platform Specialty Products Company**
Section 11. Toxicological information

<table>
<thead>
<tr>
<th>Route of exposure</th>
<th>Category</th>
<th>Route of exposure</th>
<th>Target organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral: 2500 ppm</td>
<td>Category 3</td>
<td>Not applicable.</td>
<td>Narcotic effects</td>
</tr>
</tbody>
</table>

**Specific target organ toxicity (repeated exposure)**

<table>
<thead>
<tr>
<th>Name</th>
<th>Category 2</th>
<th>Route of exposure</th>
<th>Target organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amine</td>
<td>Not determined</td>
<td>blood system, kidneys and liver</td>
<td></td>
</tr>
</tbody>
</table>

**Aspiration hazard**

<table>
<thead>
<tr>
<th>Name</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>petroleum distillate</td>
<td>ASPIRATION HAZARD - Category 1</td>
</tr>
</tbody>
</table>

**Information on the likely routes of exposure**

- Routes of entry anticipated: Oral, Dermal, Inhalation.

**Potential acute health effects**

- **Eye contact**: Causes serious eye irritation.
- **Inhalation**: Can cause central nervous system (CNS) depression. May cause drowsiness and dizziness.
- **Skin contact**: Defatting to the skin. May cause skin dryness and irritation.
- **Ingestion**: 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 or irritation
  - watering
  - redness
- **Inhalation**: Adverse symptoms may include the following:
  - nausea or vomiting
  - headache
  - drowsiness/fatigue
  - dizziness/vertigo
  - unconsciousness
- **Skin contact**: Adverse symptoms may include the following:
  - irritation
  - dryness
  - cracking
- **Ingestion**: No specific data.

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

**Short term exposure**

Continued on next page
### Section 11. Toxicological information

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amine</td>
<td>Chronic TD50 Oral</td>
<td>Mouse</td>
<td>1000 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Chronic TD50 Oral</td>
<td>Rat</td>
<td>25 mg/kg</td>
<td>-</td>
</tr>
</tbody>
</table>

**General:** Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.

**Carcinogenicity:** May cause cancer. Risk of cancer depends on duration and level of exposure.

**Mutagenicity:** May cause genetic defects.

**Teratogenicity:** No known significant effects or critical hazards.

**Developmental effects:** No known significant effects or critical hazards.

**Fertility effects:** No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

<table>
<thead>
<tr>
<th>Route</th>
<th>ATE value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>7384.1 mg/kg</td>
</tr>
<tr>
<td>Inhalation (vapors)</td>
<td>30.58 mg/l</td>
</tr>
</tbody>
</table>

### Section 12. Ecological information

#### Toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isopropyl alcohol</td>
<td>Acute LC50 1400000 to 1950000 µg/l</td>
<td>Crustaceans - Crangon crangon</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Marine water</td>
<td>Fish - Rasbora heteromorpha</td>
<td>96 hours</td>
</tr>
<tr>
<td>Amine</td>
<td>Acute LC50 4200 mg/l Fresh water</td>
<td>Algae - Pseudokirchneriella subcapitata</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute EC50 12 mg/l Fresh water</td>
<td>Crustaceans - Ceriodaphnia dubia - Neonate</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 28800 µg/l Fresh water</td>
<td>Daphnia</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 100 mg/l</td>
<td>Daphnia</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 &gt;100 mg/l</td>
<td>Daphnia</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 2150 µg/l Fresh water</td>
<td>Daphnia - Daphnia pulex</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 100 mg/l</td>
<td>Fish</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 &gt;100 mg/l</td>
<td>Fish</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 1370 mg/l</td>
<td>Fish</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 1480 mg/l</td>
<td>Fish</td>
<td>96 hours</td>
</tr>
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</table>

**Persistence and degradability**

Not available.

**Bioaccumulative potential**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>LogPow</th>
<th>BCF</th>
<th>Potential</th>
</tr>
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<tbody>
<tr>
<td>Isopropyl alcohol</td>
<td>0.05</td>
<td>-</td>
<td>low</td>
</tr>
<tr>
<td>petroleum distillate</td>
<td>3.16 to 7.06</td>
<td>-</td>
<td>high</td>
</tr>
<tr>
<td>Amine</td>
<td>-1.43</td>
<td>-</td>
<td>low</td>
</tr>
</tbody>
</table>

**Mobility in soil**

Continued on next page
Section 12. Ecological information

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

<table>
<thead>
<tr>
<th>DOT Classification</th>
<th>TDG Classification</th>
<th>Mexico Classification</th>
<th>UN number</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
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<td>UN1219</td>
<td>UN1219</td>
<td>UN1219</td>
<td>UN1219</td>
</tr>
<tr>
<td>Isopropanol solution</td>
<td>Isopropanol</td>
<td>Isopropanol</td>
<td>Isopropanol</td>
<td>Isopropanol</td>
<td>Isopropanol</td>
</tr>
<tr>
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<td>3</td>
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<tr>
<td>Transport hazard class(es)</td>
<td>Packing group</td>
<td>Environmental hazards</td>
<td>Additional information - DOT Classification</td>
<td>ERG# 129</td>
<td></td>
</tr>
<tr>
<td>Regulatory symbol</td>
<td>II</td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
<td></td>
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<td>DOT Classification</td>
<td>TDG Classification</td>
<td>Mexico Classification</td>
<td>UN number</td>
<td>IMDG</td>
<td>IATA</td>
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<td>UN1219</td>
<td>UN1219</td>
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</tr>
<tr>
<td>Isopropanol solution</td>
<td>Isopropanol</td>
<td>Isopropanol</td>
<td>Isopropanol</td>
<td>Isopropanol</td>
<td>Isopropanol</td>
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<tr>
<td>Transport hazard class(es)</td>
<td>Packing group</td>
<td>Environmental hazards</td>
<td>Additional information - DOT Classification</td>
<td>ERG# 129</td>
<td></td>
</tr>
<tr>
<td>Regulatory symbol</td>
<td>II</td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
<td></td>
</tr>
</tbody>
</table>
| 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

U.S. Federal regulations
- TSCA 5(a)2 proposed significant new use rule (SNUR): No products were found.
- TSCA 5(a)2 final significant new use rule (SNUR): No products were found.
- TSCA 12(b) one-time export notification: No products were found.
- TSCA 12(b) annual export notification: No products were found.

United States inventory (TSCA 8b)
- All components are listed or exempted.

SARA 302/304

Composition/information on ingredients
No products were found.

SARA 311/312

Classification
- Fire hazard
  - Immediate (acute) health hazard
  - Delayed (chronic) health hazard

SARA 313

<table>
<thead>
<tr>
<th>Product name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isopropyl alcohol</td>
<td>67-63-0</td>
<td>60-70</td>
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</tbody>
</table>

Form R - Reporting requirements
Supplier notification
- Isopropyl alcohol
  - 67-63-0
  - 60-70

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

Canada

WHMIS (Canada)
- Class B-2: Flammable liquid
- Class D-2A: Material causing other toxic effects (Very toxic).
- Class D-2B: Material causing other toxic effects (Toxic).

International lists

National inventory
- China: All components are listed or exempted.
- Europe: All components are listed or exempted.
- Japan: All components are listed or exempted.
- Republic of Korea: All components are listed or exempted.
- Taiwan: All components are listed or exempted.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

<table>
<thead>
<tr>
<th>Health</th>
<th>2</th>
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</thead>
<tbody>
<tr>
<td>Flammability</td>
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<tr>
<td>Physical hazards</td>
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</table>

Procedure used to derive the classification

Continued on next page
Section 16. Other information

<table>
<thead>
<tr>
<th>Classification</th>
<th>Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flam. Liq. 2, H225</td>
<td>On basis of test data</td>
</tr>
<tr>
<td>Eye Irrit. 2A, H319</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Muta. 1B, H340</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Carc. 1B, H350</td>
<td>Calculation method</td>
</tr>
<tr>
<td>STOT SE 3, H336</td>
<td>Calculation method</td>
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</tbody>
</table>

History

Date of issue/Date of revision : September 26 2016.
Date of previous issue : September 23 2015.
Version : 3
Prepared by : Regulatory Affairs Department
enthone.msds@macdermidenthone.com

Key to abbreviations

ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
UN = United Nations

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.