

## 1. Product and Company Identification

|                                      |   |
|--------------------------------------|---|
| <b>Product identifier</b>            | <b>Cleanvu (4081-85)</b>  |
| <b>Other means of identification</b> | Not available   |
| <b>Recommended use</b>               | Glass cleaner   |
| <b>Recommended restrictions</b>      | None known.   |
| <b>Manufacturer information</b>      | Nu-Calgon<br>2008 Altom Court<br>St. Louis, MO 63146 US<br>Phone: 314-469-7000 / 800-554-5499<br>Emergency Phone: 1-800-424-9300 (CHEMTREC) |
| <b>Supplier</b>                      | See above.  |

## 2. Hazards Identification

|                                   |                      |               |
|-----------------------------------|----------------------|---------------|
| <b>Physical hazards</b>           | Gases under pressure | Liquefied gas |
| <b>Health hazards</b>             | Not classified.      |               |
| <b>Environmental hazards</b>      | Not classified.      |               |
| <b>WHMIS 2015 defined hazards</b> | Not classified       |               |
| <b>Label elements</b>             |                      |               |



|  |  |
|--|--|
| <b>Signal word</b>   | Warning  |
| <b>Hazard statement</b>  | Contains gas under pressure; may explode if heated.                            |
| <b>Precautionary statement</b>   |  |
| <b>Prevention</b>  | Observe good industrial hygiene practices.                                     |
| <b>Response</b>  | Wash hands after handling.   |
| <b>Storage</b>   | Protect from sunlight. Store in a well-ventilated place.                       |
| <b>Disposal</b>  | Dispose of waste and residues in accordance with local authority requirements. |
| <b>WHMIS 2015: Health Hazard(s) not otherwise classified (HHNOC)</b>   | None known   |
| <b>WHMIS 2015: Physical Hazard(s) not otherwise classified (PHNOC)</b> | None known   |
| <b>Hazard(s) not otherwise classified (HNOC)</b>                       | None known.  |
| <b>Supplemental information</b>  | None.  |

## 3. Composition/Information on Ingredients

**Mixture**

| Chemical name | Common name and synonyms | CAS number | %   |
|---------------|--------------------------|------------|-----|
| Butane        |                          | 106-97-8   | 1-5 |
| Isopropanol   |                          | 67-63-0    | 1-5 |
| Propane       |                          | 74-98-6    | 1-5 |

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

**Composition comments** US GHS: The exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of §1910.1200.

## 4. First Aid Measures

|                     |   |
|---------------------|---|
| <b>Inhalation</b>   | If symptoms develop move victim to fresh air. If symptoms persist, obtain medical attention.      |
| <b>Skin contact</b> | Flush with cool water. Wash with soap and water. Obtain medical attention if irritation persists. |

|   |   |
|---|---|
| <b>Eye contact</b>  | Flush with cool water. Remove contact lenses, if applicable, and continue flushing. Obtain medical attention if irritation persists.  |
| <b>Ingestion</b>  | Rinse mouth. Do not induce vomiting. If vomiting occurs naturally, have victim lean forward to reduce risk of aspiration. Obtain medical attention. Never give anything by mouth if victim is unconscious, or is convulsing.  |
| <b>Most important symptoms/effects, acute and delayed</b>                     | Direct contact with eyes may cause temporary irritation.  |
| <b>Indication of immediate medical attention and special treatment needed</b> | Provide general supportive measures and treat symptomatically.  |
| <b>General information</b>  | If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Avoid contact with eyes and skin. Keep out of reach of children. |

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## 5. Fire Fighting Measures

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| <b>Suitable extinguishing media</b>                                  | Water fog. Foam. Dry chemical powder. Carbon dioxide.   |
| <b>Unsuitable extinguishing media</b>                                | Do not use water jet as an extinguisher, as this will spread the fire.  |
| <b>Specific hazards arising from the chemical</b>                    | During fire, gases hazardous to health may be formed.   |
| <b>Special protective equipment and precautions for firefighters</b> | Self-contained breathing apparatus and full protective clothing must be worn in case of fire.   |
| <b>Fire-fighting equipment/instructions</b>                          | In case of fire: Stop leak if safe to do so. Move containers from fire area if you can do so without risk. Containers should be cooled with water to prevent vapor pressure build up. |
| <b>Specific methods</b>  | Cool containers exposed to flames with water until well after the fire is out.  |
| <b>General fire hazards</b>  | Contents under pressure. Pressurized container may explode when exposed to heat or flame.   |
| <b>Hazardous combustion products</b>                                 | May include and are not limited to: Oxides of carbon.   |

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## 6. Accidental Release Measures

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| <b>Personal precautions, protective equipment and emergency procedures</b> | Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Many gases are heavier than air and will spread along ground and collect in low or confined areas (sewers, basements, tanks). Wear appropriate protective equipment and clothing during clean-up. Emergency personnel need self-contained breathing equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS. |
| <b>Methods and materials for containment and cleaning up</b>               | Refer to attached safety data sheets and/or instructions for use. Stop leak if you can do so without risk. Move the cylinder to a safe and open area if the leak is irreparable. Isolate area until gas has dispersed. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). For waste disposal, see section 13 of the SDS.   |
| <b>Environmental precautions</b>   | Avoid discharge into drains, water courses or onto the ground. Do not discharge into lakes, streams, ponds or public waters.  |

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## 7. Handling and Storage

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|---|---|
| <b>Precautions for safe handling</b>                                | Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Do not smoke while using or until sprayed surface is thoroughly dry. Pressurized container: Do not pierce or burn, even after use. Do not use if spray button is missing or defective. Do not spray on a naked flame or any other incandescent material. Do not cut, weld, solder, drill, grind, or expose containers to heat, flame, sparks, or other sources of ignition. Ground and bond containers when transferring material. Do not re-use empty containers. Use only in well-ventilated areas. Avoid prolonged exposure. Wear appropriate personal protective equipment. Wash thoroughly after handling. Use good industrial hygiene practices in handling this material. When using do not eat or drink. |
| <b>Conditions for safe storage, including any incompatibilities</b> | Contents under pressure. Do not expose to heat or store at temperatures above 120°F/49°C as can may burst. Do not handle or store near an open flame, heat or other sources of ignition. Do not puncture, incinerate or crush. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS). Keep out of reach of children.   |

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## 8. Exposure Controls/Personal Protection

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### Occupational exposure limits

#### Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

| Components            | Type | Value    |
|-----------------------|------|----------|
| Butane (CAS 106-97-8) | TWA  | 1000 ppm |

**Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)**

| Components                | Type | Value                |
|---------------------------|------|----------------------|
| Isopropanol (CAS 67-63-0) | STEL | 984 mg/m3            |
|                           |      | 400 ppm              |
|                           | TWA  | 492 mg/m3<br>200 ppm |
| Propane (CAS 74-98-6)     | TWA  | 1000 ppm             |

**Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)**

| Components                | Type | Value    |
|---------------------------|------|----------|
| Butane (CAS 106-97-8)     | STEL | 750 ppm  |
|                           | TWA  | 600 ppm  |
| Isopropanol (CAS 67-63-0) | STEL | 400 ppm  |
|                           | TWA  | 200 ppm  |
| Propane (CAS 74-98-6)     | TWA  | 1000 ppm |

**Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)**

| Components                | Type | Value    |
|---------------------------|------|----------|
| Butane (CAS 106-97-8)     | STEL | 1000 ppm |
| Isopropanol (CAS 67-63-0) | STEL | 400 ppm  |
|                           | TWA  | 200 ppm  |

**Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)**

| Components                | Type | Value    |
|---------------------------|------|----------|
| Butane (CAS 106-97-8)     | TWA  | 800 ppm  |
| Isopropanol (CAS 67-63-0) | STEL | 400 ppm  |
|                           | TWA  | 200 ppm  |
| Propane (CAS 74-98-6)     | TWA  | 1000 ppm |

**Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment)**

| Components                | Type | Value                |
|---------------------------|------|----------------------|
| Butane (CAS 106-97-8)     | TWA  | 1900 mg/m3           |
|                           |      | 800 ppm              |
| Isopropanol (CAS 67-63-0) | STEL | 1230 mg/m3           |
|                           |      | 500 ppm              |
|                           | TWA  | 983 mg/m3<br>400 ppm |
| Propane (CAS 74-98-6)     | TWA  | 1800 mg/m3           |
|                           |      | 1000 ppm             |

**US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

| Components                | Type | Value      |
|---------------------------|------|------------|
| Isopropanol (CAS 67-63-0) | PEL  | 980 mg/m3  |
|                           |      | 400 ppm    |
| Propane (CAS 74-98-6)     | PEL  | 1800 mg/m3 |
|                           |      | 1000 ppm   |

**US. ACGIH Threshold Limit Values**

| Components                | Type | Value    |
|---------------------------|------|----------|
| Butane (CAS 106-97-8)     | STEL | 1000 ppm |
| Isopropanol (CAS 67-63-0) | STEL | 400 ppm  |
|                           | TWA  | 200 ppm  |

**US. NIOSH: Pocket Guide to Chemical Hazards**

| Components            | Type | Value      |
|-----------------------|------|------------|
| Butane (CAS 106-97-8) | TWA  | 1900 mg/m3 |

**US. NIOSH: Pocket Guide to Chemical Hazards**

| Components                | Type | Value      |
|---------------------------|------|------------|
| Isopropanol (CAS 67-63-0) | STEL | 800 ppm    |
|                           |      | 1225 mg/m3 |
|                           |      | 500 ppm    |
| Propane (CAS 74-98-6)     | TWA  | 980 mg/m3  |
|                           |      | 400 ppm    |
|                           |      | 1800 mg/m3 |
|                           |      | 1000 ppm   |

**Biological limit values**

**ACGIH Biological Exposure Indices**

| Components                | Value   | Determinant | Specimen | Sampling Time |
|---------------------------|---------|-------------|----------|---------------|
| Isopropanol (CAS 67-63-0) | 40 mg/L | Acetone     | Urine    | *             |

\* - For sampling details, please see the source document.

**Exposure guidelines**

**Canada - Alberta OELs: Skin designation**

|                                    |                                   |
|------------------------------------|-----------------------------------|
| 1,2-Ethanediamine (CAS 107-15-3)   | Can be absorbed through the skin. |
| 1,4-Dioxane (CAS 123-91-1)         | Can be absorbed through the skin. |
| 4-ethylmorpholine (CAS 100-74-3)   | Can be absorbed through the skin. |
| Ethanol, 2-methoxy- (CAS 109-86-4) | Can be absorbed through the skin. |
| Morpholine (CAS 110-91-8)          | Can be absorbed through the skin. |

**Canada - British Columbia OELs: Skin designation**

|                                    |                                   |
|------------------------------------|-----------------------------------|
| 1,2-Ethanediamine (CAS 107-15-3)   | Can be absorbed through the skin. |
| 1,4-Dioxane (CAS 123-91-1)         | Can be absorbed through the skin. |
| 4-ethylmorpholine (CAS 100-74-3)   | Can be absorbed through the skin. |
| Ethanol, 2-methoxy- (CAS 109-86-4) | Can be absorbed through the skin. |
| Morpholine (CAS 110-91-8)          | Can be absorbed through the skin. |

**Canada - Manitoba OELs: Skin designation**

|  |                                   |
|--|-----------------------------------|
| 1,2-Ethanediamine (CAS 107-15-3)   | Can be absorbed through the skin. |
| 1,4-Dioxane (CAS 123-91-1)   | Can be absorbed through the skin. |
| 2,6-Octadienal, 3,7-dimethyl- (CAS 5392-40-5) 4-ethylmorpholine (CAS 100-74-3) | Can be absorbed through the skin. |
| Ethanol, 2-methoxy- (CAS 109-86-4)   | Can be absorbed through the skin. |
| Morpholine (CAS 110-91-8)  | Can be absorbed through the skin. |

**Canada - Ontario OELs: Skin designation**

|  |                                   |
|--|-----------------------------------|
| 1,2-Ethanediamine (CAS 107-15-3)   | Can be absorbed through the skin. |
| 1,4-Dioxane (CAS 123-91-1)   | Can be absorbed through the skin. |
| 2,6-Octadienal, 3,7-dimethyl- (CAS 5392-40-5) 4-ethylmorpholine (CAS 100-74-3) | Can be absorbed through the skin. |
| Ethanol, 2-methoxy- (CAS 109-86-4)   | Can be absorbed through the skin. |
| Morpholine (CAS 110-91-8)  | Can be absorbed through the skin. |

**Canada - Quebec OELs: Skin designation**

|                                    |                                   |
|------------------------------------|-----------------------------------|
| 1,2-Ethanediamine (CAS 107-15-3)   | Can be absorbed through the skin. |
| 1,4-Dioxane (CAS 123-91-1)         | Can be absorbed through the skin. |
| 4-ethylmorpholine (CAS 100-74-3)   | Can be absorbed through the skin. |
| Ethanol, 2-methoxy- (CAS 109-86-4) | Can be absorbed through the skin. |
| Morpholine (CAS 110-91-8)          | Can be absorbed through the skin. |

**Canada - Saskatchewan OELs: Skin designation**

|                                    |                                   |
|------------------------------------|-----------------------------------|
| 1,2-Ethanediamine (CAS 107-15-3)   | Can be absorbed through the skin. |
| 1,4-Dioxane (CAS 123-91-1)         | Can be absorbed through the skin. |
| 4-ethylmorpholine (CAS 100-74-3)   | Can be absorbed through the skin. |
| Ethanol, 2-methoxy- (CAS 109-86-4) | Can be absorbed through the skin. |
| Morpholine (CAS 110-91-8)          | Can be absorbed through the skin. |

**US ACGIH Threshold Limit Values: Skin designation**

|  |                                   |
|--|-----------------------------------|
| 1,2-Ethanediamine (CAS 107-15-3)   | Can be absorbed through the skin. |
| 1,4-Dioxane (CAS 123-91-1)   | Can be absorbed through the skin. |
| 2,6-Octadienal, 3,7-dimethyl- (CAS 5392-40-5) 4-ethylmorpholine (CAS 100-74-3) | Can be absorbed through the skin. |
| Ethanol, 2-methoxy- (CAS 109-86-4)   | Can be absorbed through the skin. |
| Morpholine (CAS 110-91-8)  | Can be absorbed through the skin. |

**US. NIOSH: Pocket Guide to Chemical Hazards**

|                                    |                                   |
|------------------------------------|-----------------------------------|
| 4-ethylmorpholine (CAS 100-74-3)   | Can be absorbed through the skin. |
| Ethanol, 2-methoxy- (CAS 109-86-4) | Can be absorbed through the skin. |

|  |                                   |
|--|-----------------------------------|
| Morpholine (CAS 110-91-8)  | Can be absorbed through the skin. |
| <b>US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)</b> |                                   |
| 1,4-Dioxane (CAS 123-91-1)   | Can be absorbed through the skin. |
| 4-ethylmorpholine (CAS 100-74-3)   | Can be absorbed through the skin. |
| Ethanol, 2-methoxy- (CAS 109-86-4)                                       | Can be absorbed through the skin. |
| Morpholine (CAS 110-91-8)  | Can be absorbed through the skin. |

**Appropriate engineering controls** Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection** Wear safety glasses with side shields (or goggles).

**Skin protection**

**Hand protection** Impervious gloves. Confirm with reputable supplier first.

**Other** Wear suitable protective clothing. As required by employer code.

**Respiratory protection** Where exposure guideline levels may be exceeded, use an approved NIOSH respirator. Respirator should be selected by and used under the direction of a trained health and safety professional following requirements found in OSHA's respirator standard (29 CFR 1910.134), CAN/CSA-Z94.4 and ANSI's standard for respiratory protection (Z88.2).

**Thermal hazards** Not applicable.

**General hygiene considerations** When using do not smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. When using do not eat or drink.

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## 9. Physical and Chemical Properties

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|   |   |
|---|---|
| <b>Appearance</b>                                   | Aerosol.                                    |
| <b>Physical state</b>                               | Gas.  |
| <b>Form</b>   | Aerosol.                                    |
| <b>Color</b>  | Off-white.                                  |
| <b>Odor</b>   | Citrus                                      |
| <b>Odor threshold</b>                               | Not available.                              |
| <b>pH</b>   | 9.88 - 10.88                                |
| <b>Melting point/freezing point</b>                 | Not available.                              |
| <b>Initial boiling point and boiling range</b>      | Not available.                              |
| <b>Pour point</b>                                   | Not available.                              |
| <b>Specific gravity</b>                             | 0.9782                                      |
| <b>Partition coefficient (n-octanol/water)</b>      | Not available.                              |
| <b>Flash point</b>                                  | -156.0 °F (-104.4 °C)                       |
| <b>Evaporation rate</b>                             | Not available.                              |
| <b>Flammability (solid, gas)</b>                    | Not available.                              |
| <b>Upper/lower flammability or explosive limits</b> |   |
| <b>Flammability limit - lower (%)</b>               | Not available.                              |
| <b>Flammability limit - upper (%)</b>               | Not available.                              |
| <b>Explosive limit - lower (%)</b>                  | Not available.                              |
| <b>Explosive limit - upper (%)</b>                  | Not available.                              |
| <b>Vapor pressure</b>                               | 120 - 140 psi (130°F)<br>55 - 75 psi (70°F) |
| <b>Vapor density</b>                                | Not available.                              |
| <b>Relative density</b>                             | Not available.                              |
| <b>Solubility(ies)</b>                              | Not available.                              |
| <b>Auto-ignition temperature</b>                    | Not available.                              |
| <b>Decomposition temperature</b>                    | Not available.                              |
| <b>Viscosity</b>                                    | < 25 cps                                    |

**Other information**

|                                  |                |
|----------------------------------|----------------|
| <b>Explosive properties</b>      | Not explosive. |
| <b>Flame extension</b>           | None           |
| <b>Flammability (flash back)</b> | No             |
| <b>Heat of combustion</b>        | 2.8 kJ/g       |
| <b>Oxidizing properties</b>      | Not oxidizing. |

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## 10. Stability and Reactivity

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|   |   |
|---|---|
| <b>Reactivity</b>                         | This product may react with strong oxidizing agents.        |
| <b>Possibility of hazardous reactions</b> | No dangerous reaction known under conditions of normal use. |
| <b>Chemical stability</b>                 | Material is stable under normal conditions.                 |
| <b>Conditions to avoid</b>                | Heat. Do not mix with other chemicals.                      |
| <b>Incompatible materials</b>             | Strong oxidizing agents.                                    |
| <b>Hazardous decomposition products</b>   | May include and are not limited to: Oxides of carbon.       |

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## 11. Toxicological Information

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|---|--|
| <b>Routes of exposure</b>   | Eye, Skin contact, Inhalation, Ingestion.  |
| <b>Information on likely routes of exposure</b>                                     |  |
| <b>Ingestion</b>  | Expected to be a low ingestion hazard. May cause stomach distress, nausea or vomiting. |
| <b>Inhalation</b>   | Prolonged inhalation may be harmful.   |
| <b>Skin contact</b>   | No adverse effects due to skin contact are expected.                                   |
| <b>Eye contact</b>  | Direct contact with eyes may cause temporary irritation.                               |
| <b>Symptoms related to the physical, chemical and toxicological characteristics</b> | Direct contact with eyes may cause temporary irritation.                               |

**Information on toxicological effects****Acute toxicity**

| Components                | Species       | Test Results                                       |
|---------------------------|---------------|--|
| Butane (CAS 106-97-8)     |               |  |
| <b>Acute</b>              |               |  |
| <i>Inhalation</i>         |               |  |
| LC50                      | Mouse         | 680 mg/L, 2 Hours                                  |
|                           | Rat           | 276000 ppm, 4 Hours                                |
|                           |               | 658 mg/l/4h  |
| <i>Oral</i>               |               |  |
| LD50                      | Not available |  |
| Isopropanol (CAS 67-63-0) |               |  |
| <b>Acute</b>              |               |  |
| <i>Dermal</i>             |               |  |
| LD50                      | Rabbit        | 12800 mg/kg, HSDB<br>16.4 ml/kg, 24 Hours, ECHA    |
| <i>Inhalation</i>         |               |  |
| LC50                      | Rat           | > 10000 ppm, 6 Hours, ECHA<br>16970 mg/l/4h, HMIRA |
| <i>Oral</i>               |               |  |
| LD50                      | Dog           | 4797 mg/kg, HSDB                                   |
|                           | Mouse         | 3600 mg/kg, HSDB                                   |
|                           | Rabbit        | 5030 mg/kg, HSDB                                   |
|                           |               | 5 g/kg, HSDB                                       |
|                           | Rat           | 5.8 g/kg, ECHA                                     |

| Components  | Species  | Test Results  |
|---|--|---|
| Propane (CAS 74-98-6)   |  |   |
| <b>Acute</b>  |  |   |
| <i>Dermal</i>   |  |   |
| LD50  | Not available  |   |
| <i>Inhalation</i>   |  |   |
| LC50  | Mouse  | 539600 ppm, 120 Minutes, ECHA<br>520400 ppm, 120 Minutes, ECHA<br>1237 mg/L, 120 Minutes<br>57 %, 120 Minutes, ECHA<br>52 %, 120 Minutes  |
|   | Rat  | > 12000000 ppm, 4 hours<br>> 800000 ppm, 10 Minutes, ECHA<br>> 1464 mg/L, 15 Minutes, HSDB<br>1442738 mg/m3, 10 Minutes, ECHA<br>1354944 mg/m3, 10 Minutes, ECHA<br>570000 ppm, 10 Minutes, ECHA<br>1355 mg/L, 10 Minutes |
| <i>Oral</i>   |  |   |
| LD50  | Not available  |   |
| <b>Skin corrosion/irritation</b>                                      | Prolonged skin contact may cause temporary irritation.   |   |
| <b>Exposure minutes</b>   | Not available.   |   |
| <b>Erythema value</b>   | Not available.   |   |
| <b>Oedema value</b>   | Not available.   |   |
| <b>Serious eye damage/eye irritation</b>                              | Direct contact with eyes may cause temporary irritation.   |   |
| <b>Corneal opacity value</b>  | Not available.   |   |
| <b>Iris lesion value</b>  | Not available.   |   |
| <b>Conjunctival reddening value</b>                                   | Not available.   |   |
| <b>Conjunctival oedema value</b>                                      | Not available.   |   |
| <b>Recover days</b>   | Not available.   |   |
| <b>Respiratory or skin sensitization</b>                              |  |   |
| <b>ACGIH sensitization</b>  |  |   |
| 2,6-Octadienal, 3,7-dimethyl- (CAS 5392-40-5)                         | Dermal sensitization   |   |
| <b>Canada - Alberta OELs: Irritant</b>                                |  |   |
| Phenol, 2,6-bis(1,1-dimethylethyl)-4-methyl- (CAS 128-37-0)           | Irritant   |   |
| <b>Canada - British Columbia OELs: Respiratory or skin sensitiser</b> |  |   |
| 1,2-Ethanediamine (CAS 107-15-3)                                      | Capable of causing respiratory, dermal or conjunctival sensitization.  |   |
| <b>Canada - Manitoba OELs Hazard: Dermal sensitization</b>            |  |   |
| 2,6-Octadienal, 3,7-dimethyl- (CAS 5392-40-5)                         | Dermal sensitization   |   |
| <b>Respiratory sensitization</b>                                      | Not a respiratory sensitizer.  |   |
| <b>Skin sensitization</b>   | This product is not expected to cause skin sensitization.  |   |
| <b>Mutagenicity</b>   | No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic. |   |
| <b>Carcinogenicity</b>  | See below.   |   |
| <b>ACGIH Carcinogens</b>  |  |   |
| 1,4-Dioxane (CAS 123-91-1)  | A3 Confirmed animal carcinogen with unknown relevance to humans.   |   |
| Oxirane (CAS 75-21-8)   | A2 Suspected human carcinogen.   |   |
| <b>Canada - Alberta OELs: Carcinogen category</b>                     |  |   |
| Oxirane (CAS 75-21-8)   | Suspected human carcinogen.  |   |

**Canada - Manitoba OELs: carcinogenicity**

|   |   |
|---|---|
| 1,4-DIOXANE (CAS 123-91-1)  | Confirmed animal carcinogen with unknown relevance to humans. |
| 2-PROPANOL (CAS 67-63-0)  | Not classifiable as a human carcinogen.                       |
| BUTYLATED HYDROXYTOLUENE (BHT), INHALABLE FRACTION AND VAPOR (CAS 128-37-0) | Not classifiable as a human carcinogen.                       |
| CITRAL, INHALABLE FRACTION AND VAPOR (CAS 5392-40-5)                        | Not classifiable as a human carcinogen.                       |
| ETHYLENE OXIDE (CAS 75-21-8)  | Suspected human carcinogen.                                   |
| ETHYLENEDIAMINE (CAS 107-15-3)  | Not classifiable as a human carcinogen.                       |
| MORPHOLINE (CAS 110-91-8)   | Not classifiable as a human carcinogen.                       |

**Canada - Quebec OELs: Carcinogen category**

|                            |  |
|----------------------------|--|
| 1,4-Dioxane (CAS 123-91-1) | Detected carcinogenic effect in animals. |
| Oxirane (CAS 75-21-8)      | Suspected carcinogenic effect in humans. |

**IARC Monographs. Overall Evaluation of Carcinogenicity**

|   |   |
|---|---|
| 1,4-Dioxane (CAS 123-91-1)                                  | Volume 11, Supplement 7, Volume 71 - 2B Possibly carcinogenic to humans.      |
| Morpholine (CAS 110-91-8)                                   | Volume 47, Volume 71 - 3 Not classifiable as to carcinogenicity to humans.    |
| Oxirane (CAS 75-21-8)                                       | Volume 97, Volume 100F 1 Carcinogenic to humans.                              |
| Phenol, 2,6-bis(1,1-dimethylethyl)-4-methyl- (CAS 128-37-0) | Volume 40, Supplement 7 - 3 Not classifiable as to carcinogenicity to humans. |

**US - California Proposition 65 - CRT: Listed date/Carcinogenic substance**

|                            |
|----------------------------|
| 1,4-Dioxane (CAS 123-91-1) |
| Oxirane (CAS 75-21-8)      |

**US NTP Report on Carcinogens: Anticipated carcinogen**

|                            |  |
|----------------------------|--|
| 1,4-Dioxane (CAS 123-91-1) | Reasonably Anticipated to be a Human Carcinogen. |
|----------------------------|--|

**US NTP Report on Carcinogens: Known carcinogen**

|                       |                               |
|-----------------------|-------------------------------|
| Oxirane (CAS 75-21-8) | Known To Be Human Carcinogen. |
|-----------------------|-------------------------------|

**US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

|                       |        |
|-----------------------|--------|
| Oxirane (CAS 75-21-8) | Cancer |
|-----------------------|--------|

|   |  |
|---|--|
| <b>Reproductive toxicity</b>                              | This product is not expected to cause reproductive or developmental effects. |
| <b>Teratogenicity</b>                                     | Not available.   |
| <b>Specific target organ toxicity - single exposure</b>   | Not classified.  |
| <b>Specific target organ toxicity - repeated exposure</b> | Not classified.  |
| <b>Aspiration hazard</b>                                  | Not likely, due to the form of the product.                                  |
| <b>Chronic effects</b>                                    | Prolonged inhalation may be harmful.   |

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**12. Ecological Information**

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|                                      |   |                                |                       |
|--------------------------------------|---|--------------------------------|-----------------------|
| <b>Ecotoxicity</b>                   | See below   |                                |                       |
| <b>Ecotoxicological data</b>         |   |                                |                       |
| <b>Components</b>                    |   | <b>Species</b>                 | <b>Test Results</b>   |
| Isopropanol (CAS 67-63-0)            |   |                                |                       |
| Algae                                | IC50  | Algae                          | 1000 mg/L, 72 Hours   |
| Crustacea                            | EC50  | Daphnia                        | 13299 mg/L, 48 Hours  |
| <b>Aquatic</b>                       |   |                                |                       |
| Fish                                 | LC50  | Bluegill (Lepomis macrochirus) | > 1400 mg/L, 96 hours |
| <b>Persistence and degradability</b> | No data is available on the degradability of this product.                                  |                                |                       |
| <b>Bioaccumulative potential</b>     |   |                                |                       |
| <b>Mobility in soil</b>              | No data available.  |                                |                       |
| <b>Mobility in general</b>           | Not available.  |                                |                       |
| <b>Other adverse effects</b>         | No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation) |                                |                       |

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**13. Disposal Considerations**

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|                                   |   |
|-----------------------------------|---|
| <b>Disposal instructions</b>      | Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Contents under pressure. Do not puncture, incinerate or crush. Dispose of contents/container in accordance with local/regional/national/international regulations. |
| <b>Local disposal regulations</b> | Dispose in accordance with all applicable regulations.  |



|  |  |
|--|--|
| <b>Hazardous waste code</b>                  | The waste code should be assigned in discussion between the user, the producer and the waste disposal company.   |
| <b>Waste from residues / unused products</b> | Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).                           |
| <b>Contaminated packaging</b>                | Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal. Do not re-use empty containers. |

## 14. Transport Information

**Transport of Dangerous Goods (TDG) Proof of Classification** In accordance with Part 2.2.1 (SOR/2014-152) of the Transportation of Dangerous Goods Regulations, we certify that the classification of this product is correct as of the SDS date of issue.

**U.S. Department of Transportation (DOT)**

**Basic shipping requirements:**

**UN number** UN1950  
**Proper shipping name** Aerosols, non-flammable, (each not exceeding 1 L capacity)  
**Hazard class** Limited Quantity - US

**Transportation of Dangerous Goods (TDG - Canada)**

**Basic shipping requirements:**

**UN number** UN1950  
**Proper shipping name** AEROSOLS, non-flammable  
**Hazard class** Limited Quantity - Canada

**IATA/ICAO (Air)**

**Basic shipping requirements:**

**UN number** UN1950  
**Proper shipping name** Aerosols, non-flammable  
**Hazard class** Limited Quantity - IATA

**IMDG (Marine Transport)**

**Basic shipping requirements:**

**UN number** UN1950  
**Proper shipping name** AEROSOLS  
**Hazard class** Limited Quantity - IMDG

**DOT; IMDG; TDG**



**IATA**



## 15. Regulatory Information

**Canadian federal regulations** This product has been classified in accordance with the hazard criteria of the HPR and the SDS contains all the information required by the HPR.

**Canada CEPA Schedule I: Listed substance**

|                                    |         |
|------------------------------------|---------|
| Ethanol, 2-methoxy- (CAS 109-86-4) | Listed. |
| Oxirane (CAS 75-21-8)              | Listed. |

**Canada DSL Challenge Substances: Listed substance**

|                            |         |
|----------------------------|---------|
| 1,4-Dioxane (CAS 123-91-1) | Listed. |
| Butane (CAS 106-97-8)      | Listed. |

**Canada NPRI VOCs with Additional Reporting Requirements: Mass reporting threshold/Identification Number**

|                           |          |
|---------------------------|----------|
| Butane (CAS 106-97-8)     | 1 TONNES |
| Isopropanol (CAS 67-63-0) | 1 TONNES |
| Propane (CAS 74-98-6)     | 1 TONNES |

**Canada Priority Substances List (Second List): Listed substance**

|                                    |         |
|------------------------------------|---------|
| Ethanol, 2-methoxy- (CAS 109-86-4) | Listed. |
| Oxirane (CAS 75-21-8)              | Listed. |

**Canada Prohibition of Certain Toxic Substances: Listed substance**

|                                    |         |
|------------------------------------|---------|
| Ethanol, 2-methoxy- (CAS 109-86-4) | Listed. |
|------------------------------------|---------|

**Export Control List (CEPA 1999, Schedule 3)**

|                                    |   |
|------------------------------------|---|
| Ethanol, 2-methoxy- (CAS 109-86-4) | Restricted substance.                         |
| Oxirane (CAS 75-21-8)              | Substance subject to notification or consent. |

**Greenhouse Gases**

Not listed.

**Precursor Control Regulations**

Not regulated.

**WHMIS 2015 Exemptions**

Not applicable

**US federal regulations**

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

|                                    |  |
|------------------------------------|--|
| Ethanol, 2-methoxy- (CAS 109-86-4) | 1.0 % One-Time Export Notification only. |
| Sodium nitrite (CAS 7632-00-0)     | 1.0 % One-Time Export Notification only. |

**CERCLA Hazardous Substance List (40 CFR 302.4)**

|                                    |         |
|------------------------------------|---------|
| 1,2-Ethanediamine (CAS 107-15-3)   | Listed. |
| 1,4-Dioxane (CAS 123-91-1)         | Listed. |
| 4-ethylmorpholine (CAS 100-74-3)   | Listed. |
| Butane (CAS 106-97-8)              | Listed. |
| Ethanol, 2-methoxy- (CAS 109-86-4) | Listed. |
| Isopropanol (CAS 67-63-0)          | Listed. |
| Morpholine (CAS 110-91-8)          | Listed. |
| Oxirane (CAS 75-21-8)              | Listed. |
| Propane (CAS 74-98-6)              | Listed. |
| Sodium nitrite (CAS 7632-00-0)     | Listed. |

**US EPCRA Section 304 Extremely Haz. Subs. & CERCLA Haz. Subs.: Section 304 EHS reportable quantity**

|                                  |          |
|----------------------------------|----------|
| 1,2-Ethanediamine (CAS 107-15-3) | 5000 LBS |
| Oxirane (CAS 75-21-8)            | 10 LBS   |

**US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

|                       |  |
|-----------------------|--|
| Oxirane (CAS 75-21-8) | Cancer<br>Reproductive toxicity<br>Mutagenicity<br>Central nervous system<br>Skin sensitization<br>Skin irritation<br>Eye irritation<br>respiratory tract irritation<br>Acute toxicity<br>Flammability |
|-----------------------|--|

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

|                          |   |
|--------------------------|---|
| <b>Hazard categories</b> | Immediate Hazard - No<br>Delayed Hazard - No<br>Fire Hazard - No<br>Pressure Hazard - Yes<br>Reactivity Hazard - No |
|--------------------------|---|

|   |    |
|---|----|
| <b>SARA 302 Extremely hazardous substance</b> | No |
|---|----|

|  |    |
|--|----|
| <b>SARA 311/312 Hazardous chemical</b> | No |
|--|----|

**SARA 313 (TRI reporting)**

| Chemical name | CAS number | % by wt. |
|---------------|------------|----------|
| Isopropanol   | 67-63-0    | 1-5      |

**Other federal regulations****Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

|                                    |
|------------------------------------|
| 1,4-Dioxane (CAS 123-91-1)         |
| Ethanol, 2-methoxy- (CAS 109-86-4) |
| Oxirane (CAS 75-21-8)              |

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)**

1,2-Ethanediamine (CAS 107-15-3)  
Butane (CAS 106-97-8)  
Oxirane (CAS 75-21-8)  
Propane (CAS 74-98-6)

**US state regulations**

See below

**US - California Hazardous Substances (Director's): Listed substance**

|   |         |
|---|---------|
| 1,2-Ethanediamine (CAS 107-15-3)                            | Listed. |
| 1,4-Dioxane (CAS 123-91-1)                                  | Listed. |
| 4-ethylmorpholine (CAS 100-74-3)                            | Listed. |
| Butane (CAS 106-97-8)                                       | Listed. |
| Ethanol, 2-methoxy- (CAS 109-86-4)                          | Listed. |
| Isopropanol (CAS 67-63-0)                                   | Listed. |
| Morpholine (CAS 110-91-8)                                   | Listed. |
| Oxirane (CAS 75-21-8)                                       | Listed. |
| Phenol, 2,6-bis(1,1-dimethylethyl)-4-methyl- (CAS 128-37-0) | Listed. |
| Sodium nitrite (CAS 7632-00-0)                              | Listed. |

**US - Illinois Chemical Safety Act: Listed substance**

1,2-Ethanediamine (CAS 107-15-3)  
1,4-Dioxane (CAS 123-91-1)  
4-ethylmorpholine (CAS 100-74-3)  
Butane (CAS 106-97-8)  
Ethanol, 2-methoxy- (CAS 109-86-4)  
Isopropanol (CAS 67-63-0)  
Morpholine (CAS 110-91-8)  
Oxirane (CAS 75-21-8)  
Propane (CAS 74-98-6)  
Sodium nitrite (CAS 7632-00-0)

**US - Louisiana Spill Reporting: Listed substance**

|                                    |         |
|------------------------------------|---------|
| 1,2-Ethanediamine (CAS 107-15-3)   | Listed. |
| 1,4-Dioxane (CAS 123-91-1)         | Listed. |
| 4-ethylmorpholine (CAS 100-74-3)   | Listed. |
| Butane (CAS 106-97-8)              | Listed. |
| Ethanol, 2-methoxy- (CAS 109-86-4) | Listed. |
| Isopropanol (CAS 67-63-0)          | Listed. |
| Morpholine (CAS 110-91-8)          | Listed. |
| Oxirane (CAS 75-21-8)              | Listed. |
| Propane (CAS 74-98-6)              | Listed. |
| Sodium nitrite (CAS 7632-00-0)     | Listed. |

**US - Minnesota Haz Subs: Listed substance**

|   |         |
|---|---------|
| 1,2-Ethanediamine (CAS 107-15-3)                            | Listed. |
| 1,4-Dioxane (CAS 123-91-1)                                  | Listed. |
| 4-ethylmorpholine (CAS 100-74-3)                            | Listed. |
| Butane (CAS 106-97-8)                                       | Listed. |
| Ethanol, 2-methoxy- (CAS 109-86-4)                          | Listed. |
| Isopropanol (CAS 67-63-0)                                   | Listed. |
| Morpholine (CAS 110-91-8)                                   | Listed. |
| Oxirane (CAS 75-21-8)                                       | Listed. |
| Phenol, 2,6-bis(1,1-dimethylethyl)-4-methyl- (CAS 128-37-0) | Listed. |
| Propane (CAS 74-98-6)                                       | Listed. |

**US - New Jersey RTK - Substances: Listed substance**

1,2-Ethanediamine (CAS 107-15-3)  
1,4-Dioxane (CAS 123-91-1)  
4-ethylmorpholine (CAS 100-74-3)  
Butane (CAS 106-97-8)  
Ethanol, 2-methoxy- (CAS 109-86-4)  
Isopropanol (CAS 67-63-0)  
Morpholine (CAS 110-91-8)  
Oxirane (CAS 75-21-8)  
Phenol, 2,6-bis(1,1-dimethylethyl)-4-methyl- (CAS 128-37-0)  
Propane (CAS 74-98-6)  
Sodium nitrite (CAS 7632-00-0)

**US - North Carolina Toxic Air Pollutants: Listed substance**

1,2-Ethanediamine (CAS 107-15-3)  
1,4-Dioxane (CAS 123-91-1)  
Oxirane (CAS 75-21-8)

**US - Pennsylvania RTK - Hazardous Substances: Special hazard**

1,4-Dioxane (CAS 123-91-1)  
Oxirane (CAS 75-21-8)

**US - Texas Effects Screening Levels Hazard Data: Simple asphyxiant**

Propane (CAS 74-98-6)

**US - Texas Effects Screening Levels: Listed substance**

|   |         |
|---|---------|
| 1,2-Ethanediamine (CAS 107-15-3)                            | Listed. |
| 1,4-Dioxane (CAS 123-91-1)                                  | Listed. |
| 2,6-Octadienal, 3,7-dimethyl- (CAS 5392-40-5)               | Listed. |
| 4-ethylmorpholine (CAS 100-74-3)                            | Listed. |
| Butane (CAS 106-97-8)                                       | Listed. |
| Ethanol, 2-methoxy- (CAS 109-86-4)                          | Listed. |
| Isopropanol (CAS 67-63-0)                                   | Listed. |
| Morpholine (CAS 110-91-8)                                   | Listed. |
| Oxirane (CAS 75-21-8)                                       | Listed. |
| Phenol, 2,6-bis(1,1-dimethylethyl)-4-methyl- (CAS 128-37-0) | Listed. |
| Propane (CAS 74-98-6)                                       | Listed. |
| Sodium nitrite (CAS 7632-00-0)                              | Listed. |

**US - Washington Chemical of High Concern to Children: Listed substance**

1,4-Dioxane (CAS 123-91-1)  
Ethanol, 2-methoxy- (CAS 109-86-4)

**US. Massachusetts RTK - Substance List**

1,2-Ethanediamine (CAS 107-15-3)  
1,4-Dioxane (CAS 123-91-1)  
4-ethylmorpholine (CAS 100-74-3)  
Butane (CAS 106-97-8)  
Ethanol, 2-methoxy- (CAS 109-86-4)  
Isopropanol (CAS 67-63-0)  
Morpholine (CAS 110-91-8)  
Oxirane (CAS 75-21-8)  
Phenol, 2,6-bis(1,1-dimethylethyl)-4-methyl- (CAS 128-37-0)  
Propane (CAS 74-98-6)  
Sodium nitrite (CAS 7632-00-0)

**US. New Jersey Worker and Community Right-to-Know Act**

1,2-Ethanediamine (CAS 107-15-3)  
1,4-Dioxane (CAS 123-91-1)  
Butane (CAS 106-97-8)  
Ethanol, 2-methoxy- (CAS 109-86-4)  
Isopropanol (CAS 67-63-0)  
Oxirane (CAS 75-21-8)  
Propane (CAS 74-98-6)  
Sodium nitrite (CAS 7632-00-0)

**US. Pennsylvania Worker and Community Right-to-Know Law**

1,2-Ethanediamine (CAS 107-15-3)  
1,4-Dioxane (CAS 123-91-1)  
4-ethylmorpholine (CAS 100-74-3)  
Butane (CAS 106-97-8)  
Ethanol, 2-methoxy- (CAS 109-86-4)  
Isopropanol (CAS 67-63-0)  
Morpholine (CAS 110-91-8)  
Oxirane (CAS 75-21-8)  
Phenol, 2,6-bis(1,1-dimethylethyl)-4-methyl- (CAS 128-37-0)  
Propane (CAS 74-98-6)  
Sodium nitrite (CAS 7632-00-0)

**US. Rhode Island RTK**

1,2-Ethanediamine (CAS 107-15-3)  
1,4-Dioxane (CAS 123-91-1)  
Butane (CAS 106-97-8)  
Ethanol, 2-methoxy- (CAS 109-86-4)  
Isopropanol (CAS 67-63-0)  
Oxirane (CAS 75-21-8)  
Propane (CAS 74-98-6)  
Sodium nitrite (CAS 7632-00-0)

**US. California Proposition 65**

**US - California Proposition 65 - CRT: Listed date/Carcinogenic substance**

1,4-Dioxane (CAS 123-91-1) Listed: January 1, 1988

|  |                           |
|--|---------------------------|
| Oxirane (CAS 75-21-8)  | Listed: July 1, 1987      |
| <b>US - California Proposition 65 - CRT: Listed date/Developmental toxin</b>       |                           |
| Ethanol, 2-methoxy- (CAS 109-86-4)   | Listed: January 1, 1989   |
| Oxirane (CAS 75-21-8)  | Listed: August 7, 2009    |
| <b>US - California Proposition 65 - CRT: Listed date/Female reproductive toxin</b> |                           |
| Oxirane (CAS 75-21-8)  | Listed: February 27, 1987 |
| <b>US - California Proposition 65 - CRT: Listed date/Male reproductive toxin</b>   |                           |
| Ethanol, 2-methoxy- (CAS 109-86-4)   | Listed: January 1, 1989   |
| Oxirane (CAS 75-21-8)  | Listed: August 7, 2009    |

**Inventory status**

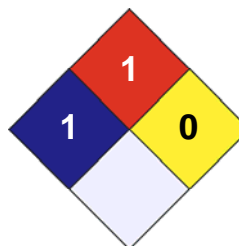
| Country(s) or region        | Inventory name                                | On inventory (yes/no)* |
|-----------------------------|---|------------------------|
| Canada                      | Domestic Substances List (DSL)                | Yes                    |
| Canada                      | Non-Domestic Substances List (NDSL)           | No                     |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory | Yes                    |

\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

**16. Other Information**

| LEGEND   |   |
|----------|---|
| Severe   | 4 |
| Serious  | 3 |
| Moderate | 2 |
| Slight   | 1 |
| Minimal  | 0 |

|                            |     |
|----------------------------|-----|
| <b>HEALTH</b>              | / 1 |
| <b>FLAMMABILITY</b>        | 1   |
| <b>PHYSICAL HAZARD</b>     | 0   |
| <b>PERSONAL PROTECTION</b> | X   |



**Disclaimer**

The information in the sheet was written based on the best knowledge and experience currently available. Information contained herein was obtained from sources considered technically accurate and reliable. While every effort has been made to ensure full disclosure of product hazards, in some cases data is not available and is so stated. Since conditions of actual product use are beyond control of the supplier, it is assumed that users of this material have been fully trained according to the requirements of all applicable legislation and regulatory instruments. No warranty, expressed or implied, is made and supplier will not be liable for any losses, injuries or consequential damages which may result from the use of or reliance on any information contained in this document.

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**Other information** For an updated SDS, please contact the supplier/manufacturer listed on the first page of the document.