

1. Company and Product Identification


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| 1.1 | Identification – Product Name: | Evolution BioClean |
| 1.2 | Other means of identification | NA |
| | Synonym: | NA |
| 1.3 | Recommended Use Of The Chemical and Restrictions On Use: | Cleaning agent |
| 1.4 | Name, Address, And Telephone Number Of The Manufacturer, Or Other Responsible Party: | Clean Print Solutions 16 Mallet Road, Tullamarine, Victoria 3043 Ph: +61 3 5783 2902 Mob: +61416 275 634 |
| | Competent Person email address | NA |
| | 24 Hour Emergency No.: | USA 770-425-3353 800-222-1222 (24-Hr, CHEMTREC) Australia 131 126, NZ 0800 764 766 |

2. HAZARDS IDENTIFICATION

When the concentrate is diluted per label instructions, the resulting solution is COMPLETELY NON-HAZARDOUS.

EMERGENCY OVERVIEW: This product is a clear, yellow liquid with pine odor. Repeated exposure may cause skin dryness or cracking or minor irritation. The product is not flammable. Depending on the duration of over-exposure, breathing vapors may headache or dizziness, respiratory tract irritation. Thermal decomposition of this product may produce irritating vapors and toxic gases (e.g. carbon monoxide and carbon dioxide). Emergency responders must wear personal protective equipment (and have appropriate fire-extinguishing protection) suitable for the situation to which they are responding.

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| | Physical Hazards Summary | Not classifiable |
| | Potential Health Hazards Summary | Skin irritation, Category 2 Serious eye irritation, Category 2A |
| | Potential Ecological Effects Summary | Not classifiable |
| 2.1 | Classification Of Product | |
| | U.S. OSHA classification | Skin irritation, Category 2 Serious eye irritation, Category 2A |
| | Classification as per EC 1272/2008 | Skin irritation, Category 2 Serious eye irritation, Category 2 |

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|------------------------------|--|---|--|----------|---------------------|----------|------------------------|----------|-----------------------------|----------|------------------------------|--|--|--|
| | (CLP/GHS) | | | | | | | | | | | | | |
| | Hazardous Materials Information System (HMIS) Rating | <table border="1"> <tr> <td>Health</td> <td>1</td> </tr> <tr> <td>Flammability</td> <td>0</td> </tr> <tr> <td>Physical Hazard</td> <td>0</td> </tr> <tr> <td>Protective Equipment</td> <td>C</td> </tr> <tr> <td>Chronic Health Hazard</td> <td></td> </tr> </table> | Health | 1 | Flammability | 0 | Physical Hazard | 0 | Protective Equipment | C | Chronic Health Hazard | | | |
| Health | 1 | | | | | | | | | | | | | |
| Flammability | 0 | | | | | | | | | | | | | |
| Physical Hazard | 0 | | | | | | | | | | | | | |
| Protective Equipment | C | | | | | | | | | | | | | |
| Chronic Health Hazard | | | | | | | | | | | | | | |
| 2.2 | Label Elements OSHA/GHS | | | | | | | | | | | | | |
| | Signal Word | WARNING | | | | | | | | | | | | |
| | Hazard Statements | H315 H319 | Causes skin irritation Causes serious eye irritation | | | | | | | | | | | |
| | Precautionary Statements: Prevention | P264 P280 | Wash thoroughly after handling Wear protective gloves/protective clothing/eye protection/face protection | | | | | | | | | | | |
| | Precautionary Statements: Response | P305+P351+P338+P310 P337+P313 P302+P352 P321 P363 | 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 advice/attention IF ON SKIN wash with soap and water Specific treatment: See first aid section on this SDS Wash contaminated clothing before reuse | | | | | | | | | | | |
| | Precautionary statements: Storage | | | | | | | | | | | | | |
| | Precautionary Statements: Disposal | P501 | Dispose of contents/container in accordance with all federal, state and local regulation | | | | | | | | | | | |
| | Hazard pictograms |  | | | | | | | | | | | | |
| 2.3 | Unclassified Hazards | None | | | | | | | | | | | | |
| 2.4 | Ingredients with unknown acute toxicity | None | | | | | | | | | | | | |

3. COMPOSITION and INFORMATION ON INGREDIENTS

| Chemical name CAS # EINECS # | % w/w | US OSHA | GHS/EU CLP |
|--|-------|---|--|
| Proprietary blend of surfactants, fragrances and enzymes | <10% | Flammable liquid, Category 3 Acute toxicity, Oral, Category 4 Acute toxicity, Inhal, Category 4 Acute toxicity, Dermal, Category 4 Skin irritation, Category 2 Eye irritation, Category 2A Aspiration toxicity, Category 1 Acute aquatic toxicity, Category 2 Chronic aquatic toxicity, Category 2 Respiratory sensitization, Category 1 | Flammable liquid, Category 3 (H226) Acute toxicity, Oral, Category 4 (H302) Acute toxicity, Inhal, Category 4 (H332) Acute toxicity, Dermal, Category 4 (H312) Skin irritation, Category 2 (H315) Eye irritation, Category 2 (H319) Aspiration toxicity, Category 1 (H304) Acute aquatic toxicity, Category 2 (H401) Chronic aquatic toxicity, Category 2 (H411) Respiratory sensitization, Category 1 (H334) |
| Proprietary blend of solvents | <20% | Flammable liquid, Category 4 Acute toxicity, Oral, Category 4 Acute toxicity, Inhal, Category 4 Acute toxicity, Dermal, Category 4 Skin irritation, Category 2 Eye irritation, Category 2A | Acute toxicity, Oral, Category 4 (H302) Acute toxicity, Inhal, Category 4 (H332) Acute toxicity, Dermal, Category 4 (H312) Skin irritation, Category 2 (H315) Eye irritation, Category 2 (H319) |
| Ethanolamine (CAS 9007-33-4) | <5% | Flammable liquid, Category 4 Acute toxicity, Oral, Category 4 Acute toxicity, Inhal, Category 4 Acute toxicity, Dermal, Category 4 Skin corrosion, Category 1 Serious eye damage, Category 1 Specific target organ toxicity, Single exposure (Resp), Category 3 Acute aquatic toxicity, Category 2 Chronic aquatic toxicity, Category 3 | Acute toxicity, Oral, Category 4 (H302) Acute toxicity, Inhal, Category 4 (H332) Acute toxicity, Dermal, Category 4 (H312) Skin corrosion, Category 1 (H314) Serious eye damage, Category 1 (H318) Specific target organ toxicity, Single exposure (Resp), Category 3 (H335) Acute aquatic toxicity, Category 2 (H401) Chronic aquatic toxicity, Category 3 (H412) |
| Water | Bulk | Not classifiable | Not classifiable |

See Section 16 for Definitions of Terms Used.

The manufacturer claims Trade Secret Information as defined in 29CFR1910.1200 Appendix E and 29CFR1910.1200(i). All hazards have been accounted for in this product's hazard classification.

4. FIRST-AID MEASURES

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| 4.1 | Description of Necessary Measures | |
| | Skin exposure: | If this product contaminates the skin, immediately begin decontamination with running water. Remove exposed or contaminated clothing, taking care not to contaminate eyes. Victim should seek immediate medical attention if any adverse exposure symptoms develop or irritation persists. |
| | Eye exposure: | If this product enters the eyes, open victim's eyes while under gently running water. Use sufficient force to open eyelids. Have victim "roll" eyes. Minimum flushing is for 15 minutes. Seek medical attention immediately. |
| | Inhalation: | If this product is inhaled, remove victim to fresh air and place in a position comfortable for breathing. If necessary, use artificial respiration to support vital functions. Remove or cover gross contamination to avoid exposure to rescuers. |
| | Ingestion: | If this product is swallowed, CALL POISON CENTER or PHYSICIAN FOR MOST CURRENT INFORMATION. DO NOT INDUCE VOMITING. Have victim rinse mouth with water, if conscious. Never induce vomiting or give a diluent (e.g., water) to someone who is unconscious, having convulsions, or unable to swallow. If contaminated individual is convulsing, maintain an open airway and obtain immediate medical attention. |
| 4.2 | Most Important Symptoms/Effects: | Immediate: Symptoms of skin and eye contact may include redness and irritation. Ingestion may cause stomach pains, cramps, and gastritis. |

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| | | Delayed: Prolonged or repeated skin overexposure to this product may cause dermatitis (dry, red skin). |
| 4.3 | Indication Of Immediate Medical Attention And Special Treatment Needed, If Necessary: | None known. TARGET ORGANS: Acute: Eyes and Skin |
| Victims of chemical exposure must be taken for medical attention if any adverse effects occur. Rescuers should be taken for medical attention if necessary. Take a copy of label and SDS to physician or health professional with victim. | | |

5. FIRE-FIGHTING MEASURES

| | | | | | | | | | | | | | | | |
|-------------|---|--|--|-------------|-----|----------------|-----|------|-----|--------------|-----|-------|-----|-------|--|
| | Flammable properties | Not classifiable as flammable | <div style="text-align: center;"> <p>NFPA RATING FLAMMABILITY</p> <p>HEALTH 1 0 REACTIVITY</p> <p>OTHER See Section 16 for definitions of ratings</p> </div> | | | | | | | | | | | | |
| | | Flash Point °C (°F): > 200 °F (> 93.3 °C) | | | | | | | | | | | | | |
| | | Autoignition Temperature °C (°F): Not evaluated | | | | | | | | | | | | | |
| | | Flammable Limits (in air by volume, %): Not evaluated | | | | | | | | | | | | | |
| 5.1 | Suitable And Unsuitable Extinguishing Media: | <p>This material should not contribute to the intensity of a fire. Use extinguishing material suitable for ordinary combustibles.</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 30%;">Water spray</td> <td style="width: 10%;">YES</td> <td style="width: 30%;">Carbon dioxide</td> <td style="width: 10%;">YES</td> </tr> <tr> <td>Foam</td> <td>YES</td> <td>Dry chemical</td> <td>YES</td> </tr> <tr> <td>Halon</td> <td>YES</td> <td>Other</td> <td></td> </tr> </table> | | Water spray | YES | Carbon dioxide | YES | Foam | YES | Dry chemical | YES | Halon | YES | Other | |
| Water spray | YES | Carbon dioxide | YES | | | | | | | | | | | | |
| Foam | YES | Dry chemical | YES | | | | | | | | | | | | |
| Halon | YES | Other | | | | | | | | | | | | | |
| 5.2 | Specific Hazards Arising From Chemical: | <p>When involved in a fire, this material may decompose and produce irritating fumes and toxic gases (e.g., carbon monoxide, carbon dioxide)</p> <p><u>Explosion Sensitivity to Mechanical Impact:</u> None.</p> <p><u>Explosion Sensitivity to Static Discharge:</u> Vapors are not expected to ignite</p> | | | | | | | | | | | | | |
| 5.3 | Special Protective Equipment And Precautions For Fire-Fighters: | <p>Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Move containers from fire area if it can be done without risk to personnel. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.</p> | | | | | | | | | | | | | |

6. ACCIDENTAL RELEASE MEASURES

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| 6.1 | Personal Precautions | Uncontrolled releases should be responded to only by trained personnel using pre-planned procedures. Proper protective equipment should be used. In case of a spill, clear the affected area and protect people. |
| | Protective equipment | For small releases (< 20 liters, 5 gallons), clean up spilled liquid wearing gloves, goggles, face shield, and suitable body protection. Absorb with earth, sand or |

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| | | other non-combustible material and transfer to containers for proper disposal. The minimum Personal Protective Equipment recommended for response to non-incident releases (more than 20 liters or 5 gallons) should be: triple-gloves (neoprene gloves over nitrile gloves), chemical resistant suit and boots. Prevent further leak/release if it is safe to do so. Do not let the product enter drains. |
| | Emergency procedures | Eliminate all ignition sources. Stop leak if you can do so without risk. |
| 6.2 | Methods and Materials for Containment and Cleaning Up | Use absorbent material for cleaning up spills. Collect spilled material for proper disposal. Decontaminate the area thoroughly. Place all spill residues in a suitable container. Dispose of in accordance with applicable U.S. Federal, State, or local procedures, or appropriate local standards (see Section 13, Disposal Considerations). |

7. HANDLING and STORAGE

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| 7.1 | Precautions for Safe Handling | <p>All employees who handle this material should be trained to handle it safely. Open containers carefully on a stable surface. Ensure all connections are tight before transfer. Empty containers may contain residual liquid; therefore, empty containers should be handled with care. Keep away from ignition sources; no smoking.</p> <p>As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product. Do not eat or drink while handling this material. Remove contaminated clothing promptly.</p> <p>During equipment maintenance follow practices indicated in Section 6 (Accidental Release Measures) to decontaminate equipment or clean-up small spills. Make certain that application equipment is locked and tagged-out safely if necessary. Collect all rinsates and residual material and dispose of according to applicable U.S. Federal, State, or local procedures or appropriate local standards.</p> |
| 7.2 | Conditions For Safe Storage | <p>Keep containers tightly closed. Store individual containers out of direct sunlight. Tanks should be stored away from intense heat or direct sunlight. Avoid freezing. Store away from incompatible materials. Storage and use areas should be covered with impervious materials. Keep container tightly closed when not in use. If appropriate, post warning signs in storage and use areas. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged.</p> |
| | Incompatibilities | Oxidizers, strong oxidizing acids. |

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

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|-----|--|-----------|-------|---|-------------|------------------|-------------|-------------|-------|
| 8.1 | Control Parameters | | | | | | | | |
| | CHEMICAL NAME | CAS # | % w/w | EXPOSURE LIMITS IN AIR | | | | | |
| | | | | ACGIH-TLV | | OSHA-PEL (NIOSH) | | | OTHER |
| | | | | TWA ppm | STEL ppm | TWA ppm | STEL ppm | IDLH ppm | ppm |
| | Proprietary blend of surfactants, fragrances and enzymes | NA | <10% | NA | NA | NA(NA) | NA(NA) | NA | |
| | Proprietary blend of solvents | NA | <20% | NA | NA | NA(NA) | NA(NA) | NA | |
| | Ethanolamine | 9007-33-4 | <5% | 3 | 6 | 3(3) | NA(6) | NA | |
| | No occupational exposure limits have been established for this product. Efforts should be made to limit exposure to prevent injury | | | None of the other components contribute significant additional hazards at the concentration present in this product. All pertinent hazard information has been provided in this document, per the requirements of the Federal Occupational Safety and Health Administration Standard (29 CFR 1910.1200), U.S. State equivalent Standards and Canadian Workplace Hazardous Materials Identification System Standards (CPR 4). | | | | | |
| 8.2 | Appropriate Engineering Controls. | | | Use with adequate ventilation to ensure exposure levels are maintained below the limits provided in this Section or as low as reasonably achievable. Ensure eyewash/safety shower stations are available near areas where this product is used. | | | | | |
| 8.3 | Personal Protective Equipment | | | None needed under normal conditions of use. Use NIOSH approved respirators if ventilation is inadequate to control mists or vapor. If respiratory protection is needed, use only protection authorized in the U.S. Federal OSHA Standard (29 CFR 1910.134), applicable U.S. State regulations, or the applicable local standards. Oxygen levels below 19.5% are considered IDLH by OSHA. In such atmospheres, use of a full-face piece pressure/demand SCBA or a full-face piece, supplied air respirator with auxiliary self-contained air supply is required under OSHA's Respiratory Protection Standard (29 CFR 1910.134-1998). | | | | | |
| | Respiratory protection: | | | | | | | | |
| | Eye protection: | | | Use approved safety goggles or safety glasses, as described in OSHA 29 CFR 1910.133. Splash goggles with a face shield may be needed if splash hazards exist. | | | | | |
| | Hand protection: | | | Wear chemical impervious gloves (e.g., Solvex™, Neoprene, Nitrile). | | | | | |
| | Body protection: | | | None normally needed. If needed, use body protection appropriate for task (e.g., Tyvek suit, rubber apron) to protect from splashes and sprays. Nomex coveralls are recommended for handling bulk product. | | | | | |

9. PHYSICAL and CHEMICAL PROPERTIES

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|--|---|--|------------------|
| Appearance | This product is a clear, yellow liquid. | | |
| Odor | Pine-like | Odor Threshold | NE |
| Melting Point °C (°F) | Not evaluated | pH | 11.5@77F |
| Initial Boiling Point °C (°F) | Not evaluated | Boiling Point Range °C (°F) | Not evaluated |
| Flammability | Not flammable | Evaporation Rate (n-butyl acetate = 1) | Not evaluated |
| Vapor Density (air = 1) | Not evaluated | Vapor Pressure mm Hg @ 20°C: | Not evaluated |
| Solubility (in water) | Soluble | Relative density (water = 1) | 1.0 |
| Viscosity | Not evaluated | Oil-Water Partition Coefficient | NE |
| VOC | 11.6g/L (0.097lb/gal) | HAP | 0/L (0.00lb/gal) |
| How To Detect This Substance (Warning Properties): | Pine like odor. | | |

10. STABILITY and REACTIVITY

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|------|------------------------------------|--|
| 10.1 | Reactivity | Not considered reactive. |
| 10.2 | Chemical Stability | Stable under normal use and storage. |
| 10.3 | Possibility of hazardous reactions | Hazardous polymerization will not occur. |
| 10.4 | Conditions to avoid | Avoid mixing with incompatible materials. |
| 10.5 | Incompatible Materials | Strong oxidizers, Strong acids. |
| 10.6 | Hazardous Decomposition Products | Thermal decomposition of this product may generate carbon monoxide and carbon dioxide. |

11. TOXICOLOGICAL INFORMATION

11.1 Toxicology Information

Note: This product has not been evaluated for its toxicity as a whole.

| Component | Oral LD ₅₀ (mg/kg) | Dermal LD ₅₀ (mg/kg) | Inhalation LC ₅₀ (mg/m ³) | Skin Irritation | Serious eye damage |
|--|----------------------------------|------------------------------------|--|--------------------|-----------------------|
| Proprietary blend of surfactants, fragrances and enzymes | No data available | No data available | No data available | YES | Irritation |
| Proprietary blend of solvents | No data available | No data available | No data available | YES | Irritation |
| Ethanolamine | 1089 mg/kg (Rat) | 1015 mg/kg (Rabbit) | No data available | YES | YES |

11.2: Carcinogenicity (IARC, ACGIH, NTP, OSHA)

None of the components are listed as carcinogenic by IARC, ACGIH, NTP or OSHA

11.3: Reproductive toxicity:

None of the components of this product are listed as reproductive toxins on the California Proposition 65 List.

12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

12.1 Ecological Information

Note: This product has not been evaluated for its ecologic impact as a whole.

| Component | Toxicity to fish | Toxicity to daphnia | Bioaccumulation | Solubility | Biodegradability |
|--|------------------------------|------------------------|-------------------|-------------------|-----------------------|
| Proprietary blend of surfactants, fragrances and enzymes | No data available | No data available | No data available | No data available | Readily biodegradable |
| Proprietary blend of solvents | No data available | No data available | Not expected | Soluble | Readily biodegradable |
| Ethanolamine | 150 mg/L (LC50, 96 hr, carp) | 65 mg/L (EC 50, 48 hr) | No data available | Soluble | Readily biodegradable |

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|------|----------------------------------|--|
| 12.2 | Persistence and Degradability | This product is expected to be readily biodegradable |
| 12.3 | Bioaccumulative Potential | This product is not expected to bioaccumulate |
| 12.4 | Mobility in Soil | When spilled onto soil, this product is expected to evaporate slowly. |
| 12.5 | Other Adverse Ecological Effects | This product may be harmful to aquatic life if large volumes of it are released into an aquatic environment. |

13. DISPOSAL CONSIDERATIONS

| | |
|---|---|
| Preparing Wastes of this Product for Disposal | Waste disposal must be in accordance with appropriate U.S. Federal, State, and local regulations or with local regulations. |
| Disposal of Contaminated Packaging | Cleaned containers can be recycled or disposed of as non-contaminated waste, if authorized by your local authorities. Dispose of containers as required by local regulations. |
| U.S. EPA Waste Number | |

14. TRANSPORT INFORMATION

THIS MATERIAL IS HAZARDOUS AS DEFINED BY 49 CFR 172.101 BY THE U.S. DEPARTMENT OF TRANSPORTATION. ALWAYS CONSULT LATEST REGULATIONS PRIOR TO SHIPPING FOR CHANGES!

US Domestic

| | | |
|------|---|---------------------|
| 14.1 | UN Number | Not dangerous goods |
| 14.2 | UN Proper Shipping Name | |
| 14.3 | Transport Hazard Class(es) | |
| | Transport label(s) required | |
| 14.4 | Packing Group | |
| 14.5 | Marine Pollutant | |
| | NA Emergency Response Guide Number (2012) | |
| | Reportable Quantity (RQ) | |

International Air Transport Association

| | | |
|------|-----------------------------|---------------------|
| 14.6 | UN Number | Not dangerous goods |
| | UN Proper Shipping Name | |
| | Transport Hazard Class(es) | |
| | Transport label(s) required | |
| | Packing Group | |
| | Marine Pollutant | |
| | Packaging Instructions | |

International Maritime Organization

| | | |
|------|---|---------------------|
| 14.7 | UN Number | Not dangerous goods |
| | UN Proper Shipping Name | |
| | Transport Hazard Class(es) | |
| | Transport label(s) required | |
| | Packing Group | |
| | Marine Pollutant | |
| | NA Emergency Response Guide Number (2012) | |

15. SAFETY, HEALTH and ENVIRONMENTAL REGULATIONS SPECIFIC FOR THE PRODUCT

| PROGRAM | Evolution Bioclean |
|--|--------------------|
| | |
| Clean Air Act Hazardous Air Pollutants | YES |
| Safe Drinking Water Act | NO |
| RCRA F, K, P, U or D-lists | NO |
| SARA 302 EHS RQ | NO |
| SARA 302 EHS TPQ | NO |
| CERCLA RQ (lbs) | NO |
| SARA 313 LISTED | NO |
| SARA 311/312 ACUTE | NO |
| SARA 311/312 CHRONIC | NO |

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|---|--------|
| SARA 311/312 FIRE | NO |
| SARA 311/312 PRESSURE | NO |
| SARA 311/312 REACTIVITY | NO |
| EPA EXTREMELY HAZARDOUS SUBSTANCE | NO |
| | |
| PEL | NO |
| PSM | NO |
| | |
| DHS CFATS STQ (Flammable Release) | NO |
| | |
| DEA Controlled Substances | NO |
| DSL | NOTE 1 |
| NDSL | NOTE 1 |
| REACH Pre-registered List | NOTE 1 |
| TSCA (Public) | NOTE 1 |
| European Inventory of Existing Commercial Chemical Substances (EINECS) | NO |
| EU No-Longer Polymers List (NLP) | NO |
| EEC Classification Packaging, and Labeling of Dangerous Substances(Annex 1) | NO |
| Philippines | NE |
| Japan | NE |
| Australia | NOTE 2 |
| Korea | NE |
| China | NE |
| New Zealand Inventory of Chemicals | NE |

NOTE 1: Some components of this product are listed in the Canadian DSL/NDSL, REACH and US TSCA publicly available list.

NOTE 2: Not hazardous under NOHSC:1008(2004), 3rd Edition.

16. OTHER INFORMATION

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| 16.1 | Original Preparation | 14 November 2016 |
| 16.2 | Revision History | 1.1: 2 July 2017 |
| 16.3 | Prepared by | Christopher Bright 2/530 Boundary Road Derrimut |
| 16.4 | Date of Printing | June 4, 2019 |

DEFINITIONS OF TERMS

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|------|---|---|
| 16.5 | A large number of abbreviations and acronyms appear on a MSDS. Some of these which are commonly used include the following: | |
| | Section 2 | GHS: Global Harmonization System OSHA: U.S. Occupational Safety and Health Administration. CLP: Classification and Packaging WHMIS: Workplace Hazardous Materials Information System STOT: Specific Target Organ Toxicity |
| | Section 3 | CAS #: Chemical Abstract Service index number EINECS #: European Chemical Substances Information System index number |
| | Section 5 | NFPA: Nation Fire Protection Association Health Hazard: 0 (material that on exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials); 1 (materials that on exposure under fire conditions could cause irritation or minor residual injury); 2 (materials that on intense or continued exposure under fire conditions could cause temporary incapacitation or possible residual injury); 3 (materials that can on short exposure could cause serious temporary or residual injury); 4 (materials that under very short exposure could cause death or major residual injury). Flammability Hazard Reactivity Hazard: Refer to definitions for "Hazardous Materials Identification System". Flash Point: Minimum temperature at which a liquid gives off sufficient vapors to form an ignitable mixture with air. Autoignition Temperature: The minimum temperature required to initiate combustion in air with no other source of ignition. LEL: The lowest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source. UEL: The highest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source. |
| | Section 8 | ACGIH - American Conference of Governmental Industrial Hygienists, a professional association which establishes exposure limits. TLV - Threshold Limit Value - an airborne concentration of a substance which represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour Time Weighted Average (TWA), the 15-minute Short Term Exposure Limit, and the instantaneous Ceiling Level (C). Skin absorption effects must also be considered PEL - Permissible Exposure Limit - This exposure value means exactly the same as a TLV, except that it is enforceable by OSHA. The OSHA Permissible Exposure Limits are based in the 1989 PELs and the June, 1993 Air Contaminants Rule (<u>Federal Register</u> : 58: 35338-35351 and 58: 40191). Both the current PELs and the vacated PELs are indicated. The phrase, "Vacated 1989 PEL," is placed next to the PEL which was vacated by Court Order. IDLH - Immediately Dangerous to Life and Health - This level represents a concentration from which one can escape within 30-minutes without suffering escape-preventing or permanent injury. The DFG - MAK is the Republic of Germany's Maximum Exposure Level, similar to the U.S. PEL. NIOSH is the National Institute of Occupational Safety and Health, which is the research arm of the U.S. Occupational Safety and Health Administration (OSHA). NIOSH issues exposure guidelines called Recommended Exposure Levels (RELs) . When no exposure guidelines are established, an entry of NE (Not Established) is made for reference. |
| | Section 11 | LD₅₀ : Lethal Dose (solids & liquids) which kills 50% of the exposed animals; LC₅₀ : Lethal Concentration (gases) which kills 50% of the exposed animals; ppm: Concentration expressed in parts of material per million parts of air or water; mg/m³ : Concentration expressed in weight of substance per volume of air; mg/kg: Quantity of material, by weight, administered to a test subject, based on their body weight in kg IARC - the International Agency for Research on Cancer; NTP - the National Toxicology Program, RTECS - the Registry of Toxic Effects of Chemical Substances, OSHA and CAL/OSHA. IARC and NTP rate chemicals on a scale of decreasing potential to cause human cancer with rankings from 1 to 4. Subrankings (2A, 2B, etc.) are also used. TDLo, the lowest dose to cause a symptom and TCLo the lowest concentration to cause a symptom; TDo, LDLo, and LDo, or TC, TCo, LCLo, and LCo, the lowest dose (or concentration) to cause lethal or toxic effects. BEI - Biological Exposure Indices, represent the levels of determinants which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV. |
| | Section 12 | LC₅₀: The lowest concentration in water which kills 50% of the test subjects. EC₅₀: The Effect Concentration in water at which 50% of the test species if affected. |
| | Section 13 | US EPA Hazardous Waste Codes: refer to 40 CFR 261.20 |
| | Section 14 | DOT: US Department of Transportation IATA: International Air Transport Association IMO: International Maritime Organization MARPOL: International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978 IBC Code : Merchant Shipping Code |

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| | Section 15 | RCRA: US Resource Conservation and Recovery Act SARA: US Superfund Amendments and Reauthorization Act PSM: US OSHA Process Safety Management CFATS: US Department of Homeland Security Chemical Facility Anti-terrorism Standard DSL: Canadian Domestic Substances List NDSL: Canadian Non-Domestic Substances List REACH: European Registration, Evaluation, Authorization and Restriction of Chemicals list TSCA: US Toxic Substances Control Act |
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H Phrases

H225: Highly flammable liquid and vapor

H226: Flammable liquid and vapor

H304: May be fatal if swallowed and enters airways

H314: Causes severe skin burns and eye damage

H315: Causes skin irritation

H317: May cause an allergic skin reaction

H318: Causes serious eye damage

H335: May cause respiratory irritation

H401: Toxic to aquatic life

H402: Harmful to aquatic life

H412: Harmful to aquatic life with long lasting effects