# SAFETY DATA SHEET

## 1. Identification

**Material name:** DURAL 50 LM 2:1 PART B 5 GL PL  
**Material:** TB53333505

**Recommended use and restriction on use**  
**Recommended use:** Curative  
**Restrictions on use:** Not known.

**Manufacturer/Importer/Supplier/Distributor Information**  
EUCLID CHEMICAL COMPANY  
19218 REDWOOD ROAD  
CLEVELAND OH 44110  
US

**Contact person:** EH&S Department  
**Telephone:** 216-531-9222  
**Emergency telephone number:** 1-800-424-9300 (US); 1-613-996-6666 (Canada)

## 2. Hazard(s) identification

**Hazard Classification**

**Health Hazards**
- Acute toxicity (Oral) Category 4  
- Acute toxicity (Inhalation - vapor) Category 4  
- Acute toxicity (Inhalation - dust and mist) Category 4  
- Skin Corrosion/Irritation Category 1B  
- Serious Eye Damage/Eye Irritation Category 1  
- Skin sensitizer Category 1  
- Toxic to reproduction Category 2

**Unknown toxicity - Health**
- Acute toxicity, oral 5.7 %  
- Acute toxicity, dermal 9.63 %  
- Acute toxicity, inhalation, vapor 77.77 %  
- Acute toxicity, inhalation, dust or mist 76.41 %

**Environmental Hazards**
- Acute hazards to the aquatic environment Category 1  
- Chronic hazards to the aquatic environment Category 2
Unknown toxicity - Environment

Acute hazards to the aquatic environment 8.49 %
Chronic hazards to the aquatic environment 8.49 %

Label Elements

Hazard Symbol:

Signal Word: Danger

Hazard Statement: Harmful if swallowed or if inhaled.
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.
Suspected of damaging fertility or the unborn child.
Very toxic to aquatic life.
Toxic to aquatic life with long lasting effects.

Precautionary Statements

Prevention: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapors/spray. Wash face, hands and any exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves/ protective clothing/ eye protection/ face protection. Use personal protective equipment as required.

Response: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Call a POISON CENTER or doctor/ physician if you feel unwell. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical advice/attention. Specific treatment (see supplemental first aid instructions on this label). IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF exposed or concerned: Get medical advice/attention. Collect spillage.

Storage: Store locked up.

Disposal: Dispose of contents/ container to an approved facility in accordance with local, regional, national and international regulations.
Hazard(s) not otherwise classified (HNOC): None.

3. Composition/information on ingredients

Mixtures

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>CAS number</th>
<th>Content in percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poly(oxypropylene) diamine</td>
<td>9046-10-0</td>
<td>25 - &lt;50%</td>
</tr>
<tr>
<td>Benzyl alcohol</td>
<td>100-51-6</td>
<td>10 - &lt;25%</td>
</tr>
<tr>
<td>Diethylenetriamine</td>
<td>111-40-0</td>
<td>5 - &lt;10%</td>
</tr>
<tr>
<td>1,2-Cyclohexanediame</td>
<td>694-83-7</td>
<td>5 - &lt;10%</td>
</tr>
<tr>
<td>4-Nonylphenol</td>
<td>84852-15-3</td>
<td>5 - &lt;10%</td>
</tr>
<tr>
<td>Bisphenol A</td>
<td>80-05-7</td>
<td>3 - &lt;5%</td>
</tr>
<tr>
<td>4-tert-Butylphenol</td>
<td>98-54-4</td>
<td>2.5 - &lt;5%</td>
</tr>
<tr>
<td>2-Methyl-1,5-pentanediame</td>
<td>15520-10-2</td>
<td>1 - &lt;5%</td>
</tr>
<tr>
<td>m-Xylenediamine</td>
<td>1477-55-0</td>
<td>1 - &lt;3%</td>
</tr>
<tr>
<td>1,3-Cyclohexanediethanamine</td>
<td>2579-20-6</td>
<td>1 - &lt;3%</td>
</tr>
<tr>
<td>N-Aminooethylpiperazine</td>
<td>140-31-8</td>
<td>0.1 - &lt;1%</td>
</tr>
</tbody>
</table>

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

4. First-aid measures

Description of necessary first-aid measures

Inhalation: Call a physician or poison control center immediately. If breathing stops, provide artificial respiration. Move to fresh air. If breathing is difficult, give oxygen.

Skin Contact: Call a physician or poison control center immediately. Destroy or thoroughly clean contaminated shoes. Immediately remove contaminated clothing and shoes and wash skin with soap and plenty of water. If skin irritation or an allergic skin reaction develops, get medical attention.

Eye contact: Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Call a physician or poison control center immediately.

Ingestion: Rinse mouth. Call a physician or poison control center immediately. Never give liquid to an unconscious person. Do not induce vomiting without advice from poison control center.

Personal Protection for First-aid Responders: Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Most important symptoms/effects, acute and delayed

Symptoms: Prolonged or repeated contact with skin may cause redness, itching, irritation and eczema/chapping. Extreme irritation of eyes and mucous membranes, including burning and tearing.
Hazards: No data available.

Indication of immediate medical attention and special treatment needed

Treatment: Symptoms may be delayed.

5. Fire-fighting measures

General Fire Hazards: No unusual fire or explosion hazards noted.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media: Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical: During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for fire-fighters

Special fire-fighting procedures: No data available.

Special protective equipment for fire-fighters: Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: See Section 8 of the SDS for Personal Protective Equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep unauthorized personnel away.

Accidental release measures: In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

Methods and material for containment and cleaning up: Dam and absorb spillages with sand, earth or other non-combustible material. Collect spillage in containers, seal securely and deliver for disposal according to local regulations.

Environmental Precautions: Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so. Avoid release to the environment.

7. Handling and storage

Handling

Technical measures (e.g. Local and general ventilation): Observe good industrial hygiene practices. Observe occupational exposure limits and minimize the risk of inhalation of vapors and mist. Mechanical ventilation or local exhaust ventilation may be required.
Safe handling advice: Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Do not taste or swallow. Wash hands thoroughly after handling. Do not get in eyes. Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Use personal protective equipment as required. Do not get in eyes, on skin, on clothing. Avoid contact with eyes, skin, and clothing.

Contact avoidance measures: No data available.

Hygiene measures: Observe good industrial hygiene practices. Do not eat, drink or smoke when using the product. Wash hands after handling. Do not get in eyes. Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Wash contaminated clothing before reuse. Do not get this material in contact with skin. Wash hands before breaks and immediately after handling the product. Contaminated work clothing should not be allowed out of the workplace. Avoid contact with skin.

Storage

Safe storage conditions: Store locked up.

Safe packaging materials: No data available.

8. Exposure controls/personal protection

Control Parameters

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Type</th>
<th>Exposure Limit Values</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diethylenetriamine</td>
<td>TWA</td>
<td>1 ppm</td>
<td>US. ACGIH Threshold Limit Values, as amended (2008)</td>
</tr>
<tr>
<td>m-Xylenediamine</td>
<td>Ceiling</td>
<td>0.018 ppm</td>
<td>US. ACGIH Threshold Limit Values, as amended (01 2022)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Type</th>
<th>Exposure Limit Values</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diethylenetriamine</td>
<td>TWA</td>
<td>1 ppm</td>
<td>Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (07 2007)</td>
</tr>
<tr>
<td>Diethylenetriamine</td>
<td>TWA</td>
<td>1 ppm</td>
<td>Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (11 2010)</td>
</tr>
<tr>
<td>Diethylenetriamine</td>
<td>TWA</td>
<td>1 ppm 4.2 mg/m3</td>
<td>Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (05 2017)</td>
</tr>
<tr>
<td>Chemical name</td>
<td>Type</td>
<td>Exposure Limit Values</td>
<td>Source</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------</td>
<td>-----------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
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</tr>
<tr>
<td>Diethylenetriamine</td>
<td>TWA</td>
<td>1 ppm 4.2 mg/m³</td>
<td>Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (09 2017)</td>
</tr>
<tr>
<td>m-Xylenediamine</td>
<td>CEILING</td>
<td>0.1 mg/m³</td>
<td>Canada. British Columbia OELs: Table of Exposure Limits for Chemical Biological Substances (Workers Compensation Board); as amended (07 2007)</td>
</tr>
<tr>
<td>m-Xylenediamine</td>
<td>CEV</td>
<td>0.1 mg/m³</td>
<td>Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (01 2020)</td>
</tr>
<tr>
<td>m-Xylenediamine</td>
<td>CEILING</td>
<td>0.1 mg/m³</td>
<td>Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (03 2020)</td>
</tr>
</tbody>
</table>

**Appropriate Engineering Controls**

Observe good industrial hygiene practices. Observe occupational exposure limits and minimize the risk of inhalation of vapors and mist. Mechanical ventilation or local exhaust ventilation may be required.

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

**Eye/face protection:**

Wear a full-face respirator, if needed. Wear safety glasses with side shields (or goggles) and a face shield.

**Skin Protection**

**Hand Protection:**

Additional Information: Use suitable protective gloves if risk of skin contact.

**Skin and Body Protection:**

Wear suitable protective clothing. Wear chemical-resistant gloves, footwear, and protective clothing appropriate for the risk of exposure. Contact health and safety professional or manufacturer for specific information.

**Respiratory Protection:**

In case of inadequate ventilation use suitable respirator. Seek advice from local supervisor.

**Hygiene measures:**

Observe good industrial hygiene practices. Do not eat, drink or smoke when using the product. Wash hands after handling. Do not get in eyes. Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Wash contaminated clothing before reuse. Do not get this material in contact with skin. Wash hands before breaks and immediately after handling the product. Contaminated work clothing should not be allowed out of the workplace. Avoid contact with skin.

**9. Physical and chemical properties**
**Appearance**

<table>
<thead>
<tr>
<th>Physical state:</th>
<th>liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form:</td>
<td>liquid</td>
</tr>
<tr>
<td>Color:</td>
<td>Amber</td>
</tr>
<tr>
<td>Odor:</td>
<td>Mild pungent</td>
</tr>
<tr>
<td>Odor threshold:</td>
<td>No data available.</td>
</tr>
<tr>
<td>pH:</td>
<td>No data available.</td>
</tr>
<tr>
<td>Melting point/freezing point:</td>
<td>No data available.</td>
</tr>
<tr>
<td>Initial boiling point and boiling range:</td>
<td>No data available.</td>
</tr>
<tr>
<td>Flash Point:</td>
<td>&gt; 93 °C &gt; 200 °F (Setaflash Closed Cup)</td>
</tr>
<tr>
<td>Evaporation rate:</td>
<td>Slower than Ether</td>
</tr>
<tr>
<td>Flammability (solid, gas):</td>
<td>No</td>
</tr>
<tr>
<td>Upper/lower limit on flammability or explosive limits</td>
<td></td>
</tr>
<tr>
<td>Flammability limit - upper (%):</td>
<td>No data available.</td>
</tr>
<tr>
<td>Flammability limit - lower (%):</td>
<td>No data available.</td>
</tr>
<tr>
<td>Explosive limit - upper:</td>
<td>No data available.</td>
</tr>
<tr>
<td>Explosive limit - lower:</td>
<td>No data available.</td>
</tr>
<tr>
<td>Vapor pressure:</td>
<td>No data available.</td>
</tr>
<tr>
<td>Vapor density:</td>
<td>Vapors are heavier than air and may travel along the floor and in the bottom of containers.</td>
</tr>
<tr>
<td>Relative density:</td>
<td>1.01</td>
</tr>
<tr>
<td>Solubility(ies)</td>
<td></td>
</tr>
<tr>
<td>Solubility in water:</td>
<td>Practically Insoluble</td>
</tr>
<tr>
<td>Solubility (other):</td>
<td>No data available.</td>
</tr>
<tr>
<td>Partition coefficient (n-octanol/water):</td>
<td>No data available.</td>
</tr>
<tr>
<td>Auto-ignition temperature:</td>
<td>No data available.</td>
</tr>
<tr>
<td>Decomposition temperature:</td>
<td>No data available.</td>
</tr>
<tr>
<td>Viscosity:</td>
<td>No data available.</td>
</tr>
</tbody>
</table>

**10. Stability and reactivity**

| Reactivity: | No data available. |
| Chemical Stability: | Material is stable under normal conditions. |
| Possibility of hazardous reactions: | No data available. |
| Conditions to avoid: | Avoid heat or contamination. |
| Incompatible Materials: | Avoid contact with acids. |
| Hazardous Decomposition Products: | Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapors. |

**11. Toxicological information**
Information on likely routes of exposure

Inhalation: In high concentrations, vapors, fumes or mists may irritate nose, throat and mucus membranes.

Skin Contact: May be harmful in contact with skin. Causes severe skin burns. May cause an allergic skin reaction.

Eye contact: Causes serious eye damage.

Ingestion: Harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation: No data available.

Skin Contact: No data available.

Eye contact: No data available.

Ingestion: No data available.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral
Product: ATEmix: 1,563.31 mg/kg

Dermal
Product: ATEmix: 2,580.58 mg/kg

Inhalation
Product: ATEmix: 11.02 mg/l
ATEmix: 3.62 mg/l

Repeated dose toxicity
Product: No data available.

Skin Corrosion/Irritation
Product: No data available.

Specified substance(s):
Poly(oxypropylene) diamine in vivo (Rabbit): Corrosive, 48 - 72 h

Benzyl alcohol in vivo (Rabbit): Slightly irritating

4-Nonylphenol in vivo (Rabbit): Irritating, 1 - 8 d

4-tert-Butylphenol in vivo (Rabbit): Not Classified, 7 - 10 d

m-Xylenediamine in vivo (Mouse): Corrosive, 4 h

1,3-Cyclohexanedimethaneamine in vivo (Rabbit): Corrosive, 1 h

N-Aminoethylpiperazine in vivo (Rabbit): Severe damage to the belly, 24 h

**Serious Eye Damage/Eye Irritation**
*Product:* No data available.

**Specified substance(s):**

Poly(oxypropylene) diamine Rabbit, 24 h: Corrosive

1,2-Cyclohexanediamine Rabbit, 24 - 72 h: Category 1

4-Nonylphenol Rabbit, 24 - 72 h: Corrosive

4-tert-Butylphenol Rabbit, 24 - 72 h: Category 1

2-Methyl-1,5-pentanediamine Rabbit, 24 - 72 h: Category 1

**Respiratory or Skin Sensitization**
*Product:* No data available.

**Carcinogenicity**
*Product:* No data available.

**IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:**
No carcinogenic components identified

**US. National Toxicology Program (NTP) Report on Carcinogens:**
No carcinogenic components identified

**US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053), as amended:**
No carcinogenic components identified
Germ Cell Mutagenicity

**In vitro**

Product: No data available.

**In vivo**

Product: No data available.

Reproductive toxicity

Product: Suspected of damaging fertility or the unborn child.

Specific Target Organ Toxicity - **Single Exposure**

Product: No data available.

Specific Target Organ Toxicity - **Repeated Exposure**

Product: No data available.

Aspiration Hazard

Product: No data available.

Other effects: No data available.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

**Fish**

Product: No data available.

**Specified substance(s):**

<table>
<thead>
<tr>
<th>Substance</th>
<th>LC 50 (Cyprinodon variegatus, 96 h)</th>
<th>LC 50 (Pimephales promelas, 96 h)</th>
<th>LC 50 (Poecilia reticulata, 96 h)</th>
<th>LC 50 (Pimephales promelas, 96 h): 1.825 mg/l</th>
<th>EC 50 (Pimephales promelas, 96 h)</th>
<th>LC 50 (Fathead minnow (Pimephales promelas), 96 h): 4.71 - 5.62 mg/l</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poly(oxypropylene) diamine</td>
<td>772.14 mg/l Experimental result, Key study</td>
<td>460 mg/l Experimental result, Key study</td>
<td>0.43 g/l Experimental result, Key study</td>
<td>Read-across based on grouping of substances (category approach), Key study</td>
<td>96 µg/l Experimental result, Key study</td>
<td>4.71 - 5.62 mg/l Read-across based on grouping of substances (category approach), Key study</td>
</tr>
<tr>
<td>Benzyl alcohol</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diethylenetriamine</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1,2-Cyclohexanediamine</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-Nonylphenol</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bisphenol A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-tert-Butylphenol</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Substance</td>
<td>LC 50 (species, duration)</td>
<td>Study Details</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>---------------------------</td>
<td>---------------------------------------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-Methyl-1,5-pentanediamine</td>
<td>130 mg/l, 48 h</td>
<td>Experimental result, Supporting study</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>m-Xylenediamine</td>
<td>87.6 mg/l, 96 h</td>
<td>Experimental result, Key study</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1,3-Cyclohexanedimethanamine</td>
<td>130 mg/l, 96 h</td>
<td>Experimental result, Key study</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N-Aminoethylpiperazine</td>
<td>2,190 mg/l, 96 h</td>
<td>Experimental result, Key study</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Aquatic Invertebrates**

Product: No data available.

**Specified substance(s):**

<table>
<thead>
<tr>
<th>Substance</th>
<th>EC 50 (species, duration)</th>
<th>Study Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poly(oxypropylene)diamine</td>
<td>80 mg/l, 48 h</td>
<td>Experimental result, Key study</td>
</tr>
<tr>
<td>Benzyl alcohol</td>
<td>230 mg/l, 48 h</td>
<td>Experimental result, Key study</td>
</tr>
<tr>
<td>Diethylenetriamine</td>
<td>16 mg/l, 48 h</td>
<td>Experimental result, Key study</td>
</tr>
<tr>
<td>1,2-Cyclohexanediamine</td>
<td>19.8 mg/l, 48 h</td>
<td>Experimental result, Key study Read-across based on grouping of substances (category approach)</td>
</tr>
<tr>
<td>4-Nonylphenol</td>
<td>84.4 µg/l, 48 h</td>
<td>Experimental result, Key study</td>
</tr>
<tr>
<td>Bisphenol A</td>
<td>10.2 mg/l, 48 h</td>
<td>Experimental result, Key study</td>
</tr>
<tr>
<td>4-tert-Butylphenol</td>
<td>4.8 mg/l, 48 h</td>
<td>Experimental result, Key study</td>
</tr>
<tr>
<td>2-Methyl-1,5-pentanediamine</td>
<td>19.8 mg/l, 48 h</td>
<td>Experimental result Read-across based on grouping of substances (category approach), Key study</td>
</tr>
<tr>
<td>m-Xylenediamine</td>
<td>15.2 mg/l, 48 h</td>
<td>Experimental result, Key study</td>
</tr>
<tr>
<td>1,3-Cyclohexanedimethanamine</td>
<td>33.1 mg/l, 48 h</td>
<td>Experimental result, Key study</td>
</tr>
<tr>
<td>N-Aminoethylpiperazine</td>
<td>58 mg/l, 48 h</td>
<td>Experimental result, Key study</td>
</tr>
</tbody>
</table>

**Chronic hazards to the aquatic environment:**
Fish
Product: No data available.

Specified substance(s):
- Diethylenetriamine: NOAEL (Gasterosteus aculeatus): > 10 mg/l experimental result Experimental result, Key study
- 4-Nonylphenol: NOAEL (Oncorhynchus mykiss): 0.006 mg/l experimental result Experimental result, Key study
- Bisphenol A: NOAEL (Pimephales promelas): 640 µg/l experimental result Experimental result, Key study
- 4-tert-Butylphenol: NOAEL (Pimephales promelas): 10 µg/l experimental result Experimental result, Key study

Aquatic Invertebrates
Product: No data available.

Specified substance(s):
- Benzyl alcohol: NOAEL (Daphnia magna): 51 mg/l experimental result Experimental result, Key study
- Diethylenetriamine: NOAEL (Daphnia magna): 5.6 mg/l experimental result Experimental result, Key study
- 1,2-Cyclohexanediarnine: NOAEL (Daphnia magna): 4.16 mg/l read-across based on grouping of substances (category approach) Read-across based on grouping of substances (category approach), Key study
- 4-Nonylphenol: NOAEL (Daphnia magna): 0.024 mg/l experimental result Experimental result, Key study
- Bisphenol A: NOAEL (Daphnia magna): 1 mg/l experimental result Experimental result, Supporting study
- 4-tert-Butylphenol: NOAEL (Daphnia magna): 0.73 mg/l experimental result Experimental result, Key study
- 2-Methyl-1,5-pentanediarnine: NOAEL (Daphnia magna): 4.16 mg/l read-across based on grouping of substances (category approach) Read-across based on grouping of substances (category approach), Key study
- m-Xylenediamine: NOAEL (Daphnia magna): 4.7 mg/l experimental result Experimental result, Key study

Toxicity to Aquatic Plants
Product: No data available.

Persistence and Degradability

Biodegradation
Product: No data available.

Specified substance(s):
Benzyl alcohol 97 % (21 d) Detected in water. Experimental result, Key study
Diethylenetriamine 87 % Detected in water. Experimental result, Key study
1,2-Cyclohexanediamine 100 % Detected in water. Experimental result, Key study
4-Nonylphenol 48.2 % (35 d) Detected in water. Experimental result, Key study
Bisphenol A 89 % (28 d) Detected in water. Experimental result, Key study
4-tert-Butylphenol 60 % (28 d) Detected in water. Experimental result, Key study
2-Methyl-1,5-pentanediamine 100 % Detected in water. Experimental result, Key study
m-Xylenediamine 49 % (28 d) Detected in water. Experimental result, Key study
1,3-Cyclohexanediimethanamine 29 % (28 d) Detected in water. Experimental result, Key study

BOD/COD Ratio
Product: No data available.

Bioaccumulative potential
Bioconcentration Factor (BCF)
Product: No data available.

Specified substance(s):
Diethylenetriamine Cyprinus carpio, Bioconcentration Factor (BCF): > 2.8 - 6.3 Aquatic sediment Experimental result, Key study
4-Nonylphenol Pimephales promelas, Bioconcentration Factor (BCF): 740 Aquatic sediment Experimental result, Key study
Bisphenol A Cyprinus carpio, Bioconcentration Factor (BCF): 20 - 67 Aquatic sediment Experimental result, Key study
4-tert-Butylphenol Cyprinus carpio, Bioconcentration Factor (BCF): 44 - 48 Aquatic sediment Experimental result, Key study

Partition Coefficient n-octanol / water (log Kow)
Product: No data available.

Specified substance(s):
Benzyl alcohol Log Kow: 1.10
Bisphenol A Log Kow: 3.32
N-Aminoethylpiperazine Log Kow: -1.57

Mobility in soil: No data available.
Other adverse effects: Very toxic to aquatic organisms. Toxic to aquatic life with long lasting effects.

13. Disposal considerations

Disposal methods: Dispose of waste at an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Contaminated Packaging: No data available.

14. Transport information

TDG:
UN1760, CORROSIVE LIQUID, N.O.S. (Alkaline Amine), 8, PG III

CFR / DOT:
UN1760, Corrosive liquids, n.o.s. (Alkaline Amine), 8, PG III

IMDG:
UN1760, CORROSIVE LIQUID, N.O.S. (Alkaline Amine), 8, PG III

Further Information:
The above shipping description may not be accurate for all container sizes and all modes of transportation. Please refer to Bill of Lading.

15. Regulatory information

US Federal Regulations
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Chemical Identity | Reportable quantity
--- | ---
4-Nonylphenol | De minimis concentration: TSCA 5(a)(2)% One-Time Export Notification only.

US. Toxic Substances Control Act (TSCA) Section 5(a)(2) Final Significant New Use Rules (SNURs) (40 CFR 721, Subpt E)
None present or none present in regulated quantities.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053), as amended
None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):

Chemical Identity | Reportable quantity
--- | ---
Ethylene diamine | 5000 lbs.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
Immediate (Acute) Health Hazards
Delayed (Chronic) Health Hazard
Acute toxicity (any route or exposure)
Skin Corrosion or Irritation
Serious eye damage or eye irritation
Respiratory or Skin Sensitization
Reproductive toxicity

US. EPCRA (SARA Title III) Section 304 Extremely Hazardous Substances Reporting Quantities and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Hazardous Substances
Not Regulated.

US. EPCRA (SARA Title III Section 313 Toxic Chemical Release Inventory (TRI) Reporting

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>% by weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-Nonylphenol</td>
<td>1.0%</td>
</tr>
<tr>
<td>Bisphenol A</td>
<td>1.0%</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Reportable quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylene diamine</td>
<td>lbs</td>
</tr>
</tbody>
</table>

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)
None present or none present in regulated quantities.

US State Regulations
US. California Proposition 65

WARNING
Reproductive Harm - www.P65Warnings.ca.gov

International regulations

Montreal protocol
Not applicable

Stockholm convention
Not applicable

Rotterdam convention
Not applicable

Kyoto protocol
Not applicable

VOC:
Regulatory VOC (less water and exempt solvent) : 249 g/l
VOC Method 310 : 24.61 %
Inventory Status:

- **Australia Industrial Chem. Act (AIIC):** One or more components in this product are not listed on or exempt from the Inventory.

- **Canada DSL Inventory List:** One or more components in this product are not listed on or exempt from the Inventory.

- **Canada NDSL Inventory:** One or more components in this product are not listed on or exempt from the Inventory.

- **Ontario Inventory:** One or more components in this product are not listed on or exempt from the Inventory.

- **China Inv. Existing Chemical Substances:** One or more components in this product are not listed on or exempt from the Inventory.

- **Japan (ENCS) List:** One or more components in this product are not listed on or exempt from the Inventory.

- **Japan ISHL Listing:** One or more components in this product are not listed on or exempt from the Inventory.

- **Japan Pharmacopoeia Listing:** One or more components in this product are not listed on or exempt from the Inventory.

- **Korea Existing Chemicals Inv. (KECI):** One or more components in this product are not listed on or exempt from the Inventory.

- **Mexico INSQ:** One or more components in this product are not listed on or exempt from the Inventory.

- **New Zealand Inventory of Chemicals:** One or more components in this product are not listed on or exempt from the Inventory.

- **Philippines PICCS:** One or more components in this product are not listed on or exempt from the Inventory.

- **Taiwan Chemical Substance Inventory:** One or more components in this product are not listed on or exempt from the Inventory.
<table>
<thead>
<tr>
<th>Region/Inventory</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>US TSCA Inventory:</td>
<td>All components in this product are listed on or exempt from the Inventory.</td>
</tr>
<tr>
<td>Switzerland New Subs Notified/Registered:</td>
<td>One or more components in this product are not listed on or exempt from the Inventory.</td>
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<tr>
<td>Thailand DIW Existing Chemical Inv. List:</td>
<td>One or more components in this product are not listed on or exempt from the Inventory.</td>
</tr>
<tr>
<td>Vietnam National Chemical Inventory:</td>
<td>One or more components in this product are not listed on or exempt from the Inventory.</td>
</tr>
<tr>
<td>EC Inventory:</td>
<td>One or more components in this product are not listed on or exempt from the Inventory.</td>
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16. Other information, including date of preparation or last revision

<table>
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<tr>
<th>Revision Date:</th>
<th>08/18/2023</th>
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<tr>
<td>Version #:</td>
<td>4.0</td>
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<tr>
<td>Further Information:</td>
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<tr>
<td>Disclaimer:</td>
<td>For Industrial Use Only. Keep out of Reach of Children. The hazard information herein is offered solely for the consideration of the user, subject to their own investigation of compliance with applicable regulations, including the safe use of the product under every foreseeable condition.</td>
</tr>
</tbody>
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