This is a kit that contains the following components:
DURAL EPOXY PRIMER PART A
DURAL EPOXY PRIMER 1:1 PART B, DURAL EPOXY PRIMER PART B
SAFETY DATA SHEET

1. Identification

Product identifier: DURAL EPOXY PRIMER PART A
Product Code: TD2358104

Recommended use and restriction on use
   Recommended use: Sealant
   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
   Serious Eye Damage/Eye Irritation Category 2B
   Skin sensitizer Category 1

Unknown toxicity - Health
   Acute toxicity, oral 42.32 %
   Acute toxicity, dermal 42.62 %
   Acute toxicity, inhalation, vapor 100 %
   Acute toxicity, inhalation, dust or mist 99.69 %

Unknown toxicity - Environment
   Acute hazards to the aquatic environment 100 %
   Chronic hazards to the aquatic environment 100 %

Label Elements

Hazard Symbol:
Signal Word: Warning

Hazard Statement: Causes eye irritation. May cause an allergic skin reaction.

Precautionary Statements

Prevention: Wash thoroughly after handling. Avoid breathing dust/fume/gas/mist/vapors/spray. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves/protective clothing/eye protection/face protection.

Response: 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 plenty of water. If skin irritation or rash occurs: Get medical advice/attention. Specific treatment (see on this label). Wash contaminated clothing before reuse.

Disposal: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

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>Bisphenol A Polyglycidyl Ether Resin</td>
<td>25068-38-6</td>
<td>40 - 70%</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

Ingestion: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.

Inhalation: Move to fresh air.

Skin Contact: If skin irritation occurs: Get medical advice/attention. 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: Any material that contacts the eye should be washed out immediately with water. If easy to do, remove contact lenses. If eye irritation persists: Get medical advice/attention.

Most important symptoms/effects, acute and delayed

Symptoms: No data available.
Hazards: No data available.

Indication of immediate medical attention and special treatment needed

Treatment: No data available.

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 firefighters

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.

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.

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

Environmental Precautions: Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so.
7. Handling and storage

Precautions for safe handling: Avoid contact with eyes. Wash hands thoroughly after handling. Avoid contact with eyes, skin, and clothing. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities: Store away from incompatible materials. Store in original tightly closed container.

8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits
None of the components have assigned exposure limits.
None of the components have assigned exposure limits.

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

General information:
Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. Supplementary local exhaust ventilation, closed systems, or respiratory and eye protection may be needed in special circumstances, such as poorly ventilated spaces, heating, evaporation of liquids from large surfaces, spraying of mists, mechanical generation of dusts, drying of solids, etc.

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

Skin Protection
Hand Protection:
Use suitable protective gloves if risk of skin contact.

Other:
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. Contaminated work clothing should not be allowed out of the workplace. Avoid contact with skin.

9. Physical and chemical properties

Appearance

Physical state: liquid
Form: liquid
**10. Stability and reactivity**

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reactivity</td>
<td>No data available.</td>
</tr>
<tr>
<td>Chemical Stability</td>
<td>Material is stable under normal conditions.</td>
</tr>
<tr>
<td>Possibility of hazardous reactions</td>
<td>No data available.</td>
</tr>
<tr>
<td>Conditions to avoid</td>
<td>Avoid heat or contamination.</td>
</tr>
<tr>
<td>Incompatible Materials</td>
<td>No data available.</td>
</tr>
<tr>
<td>Hazardous Decomposition Products</td>
<td>Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapors.</td>
</tr>
</tbody>
</table>

**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 mild skin irritation. May cause an allergic skin reaction.

Eye contact: Causes eye irritation.

Ingestion: May be ingested by accident. Ingestion may cause irritation and malaise.

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: Not classified for acute toxicity based on available data.

Specified substance(s):
Bisphenol A Polyglycidyl Ether Resin
LD 50 (Rat): > 2,000 mg/kg

Dermal
Product: ATEmix: 2,898.4 mg/kg

Inhalation
Product: Not classified for acute toxicity based on available data.

Repeated dose toxicity
Product: No data available.

Skin Corrosion/Irritation
Product: No data available.

Specified substance(s):
Bisphenol A Polyglycidyl Ether Resin
Irritating.

in vivo (Rabbit): Slightly irritating Experimental result, Key study

Serious Eye Damage/Eye Irritation
Product: No data available.
Specified substance(s):

Bisphenol A
Polyglycidyl Ether Resin

Strongly irritating.
Rabbit, 24 hrs: Slightly irritating

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

No carcinogenic components identified

Germ Cell Mutagenicity

In vitro
Product: No data available.

In vivo
Product: No data available.

Reproductive toxicity
Product: No data available.

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):
Bisphenol A Polyglycidyl Ether Resin
LC 50 (Oncorhynchus mykiss, 96 h): 2 mg/l Experimental result, Key study

Aquatic Invertebrates
Product: No data available.

Specified substance(s):
Bisphenol A Polyglycidyl Ether Resin
EC 50 (Daphnia magna, 48 h): 1.8 mg/l Experimental result, Key study

Chronic hazards to the aquatic environment:

Fish
Product: No data available.

Aquatic Invertebrates
Product: No data available.

Specified substance(s):
Bisphenol A Polyglycidyl Ether Resin
NOEC (Daphnia magna, 21 d): 0.3 mg/l Experimental result, Key study

Toxicity to Aquatic Plants
Product: No data available.

Persistence and Degradability

Biodegradation
Product: No data available.

BOD/COD Ratio
Product: No data available.

Bioaccumulative potential
Bioconcentration Factor (BCF)
Product: No data available.
Bisphenol A Polyglycidyl Ether Resin

Bioconcentration Factor (BCF): 31 Aquatic sediment QSAR, Key study

Partition Coefficient n-octanol / water (log Kow)

Product: No data available.

Specified substance(s):

Bisphenol A Polyglycidyl Ether Resin

Log Kow: 2.64 - 3.78 25 °C Yes Experimental result, Key study

Mobility in soil: No data available.

Other adverse effects: No data available.

13. Disposal considerations

Disposal instructions: 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:

Not Regulated

CFR / DOT:

Not Regulated

IMDG:

Not Regulated

15. Regulatory information

US Federal Regulations
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
None present or none present in regulated quantities.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
None present or none present in regulated quantities.
CERCLA Hazardous Substance List (40 CFR 302.4):

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Reportable quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methanol</td>
<td>5000 lbs.</td>
</tr>
</tbody>
</table>

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
Immediate (Acute) Health Hazards

SARA 302 Extremely Hazardous Substance
None present or none present in regulated quantities.

SARA 304 Emergency Release Notification

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Reportable quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methanol</td>
<td>5000 lbs.</td>
</tr>
</tbody>
</table>

SARA 311/312 Hazardous Chemical

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Threshold Planning Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bisphenol A Polyglycidyl Ether Resin</td>
<td>10000 lbs</td>
</tr>
</tbody>
</table>

SARA 313 (TRI Reporting)
None present or none present in regulated quantities.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)
None present or none present in regulated quantities.

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
For more information go to www.P65Warnings.ca.gov.

US. New Jersey Worker and Community Right-to-Know Act
No ingredient regulated by NJ Right-to-Know Law present.

US. Massachusetts RTK - Substance List
No ingredient regulated by MA Right-to-Know Law present.

US. Pennsylvania RTK - Hazardous Substances
No ingredient regulated by PA Right-to-Know Law present.

US. Rhode Island RTK
No ingredient regulated by RI Right-to-Know Law present.

International regulations

Montreal protocol
Not applicable

Stockholm convention
Rotterdam convention
Not applicable

Kyoto protocol
Not applicable

VOC: When appropriately mixed with the other part, product has a VOC less water and exempt solvent of: 97 g/l

Regulatory VOC (less water and exempt solvent) : 0 g/l
VOC Method 310 : 0.00 %
Inventory Status:

Australia AICS: All components in this product are listed on or exempt from the Inventory.

Canada DSL Inventory List: All components in this product are listed on or exempt from the Inventory.

EINECS, ELINCS or NLP: One or more components in this product are not listed on or exempt from the Inventory.

Japan (ENCS) List: All components in this product are listed on or exempt from the Inventory.

China Inv. Existing Chemical Substances: All components in this product are listed on or exempt from the Inventory.

Korea Existing Chemicals Inv. (KECI): All components in this product are 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.

Philippines PICCS: All components in this product are listed on or exempt from the Inventory.

US TSCA Inventory: All components in this product are listed on or exempt from the Inventory.

New Zealand Inventory of Chemicals: All components in this product are listed on or exempt from the Inventory.

Japan ISHL Listing: All components in this product are 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.

16. Other information, including date of preparation or last revision

Revision Date: 09/21/2018
Version #: 2.0
Further Information: No data available.
Disclaimer: 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.
# SAFETY DATA SHEET

## 1. Identification

**Product identifier:** DURAL EPOXY PRIMER 1:1 PART B, DURAL EPOXY PRIMER PART B  
**Product Code:** TD2358104

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

**Manufacturer/Import/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 (Inhalation - vapor)** Category 4
- **Skin Corrosion/Irritation** Category 1A
- **Serious Eye Damage/Eye Irritation** Category 1
- **Skin sensitizer** Category 1
- **Toxic to reproduction** Category 2
- **Specific Target Organ Toxicity - Repeated Exposure** Category 1

#### Unknown toxicity - Health

- **Acute toxicity, oral** 4.27 %
- **Acute toxicity, dermal** 33.07 %
- **Acute toxicity, inhalation, vapor** 73.83 %
- **Acute toxicity, inhalation, dust or mist** 83.69 %

#### Environmental Hazards

- **Acute hazards to the aquatic environment** Category 1

### Unknown toxicity - Environment
Acute hazards to the aquatic environment 52.86 %
Chronic hazards to the aquatic environment 89.62 %

Environmental Hazards
Acute hazards to the aquatic environment

Category 1

Hazard Symbol:

Signal Word: Danger

Hazard Statement:
Harmful if inhaled.
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.
Suspected of damaging fertility or the unborn child.
Causes damage to organs through prolonged or repeated exposure.
Very toxic to aquatic life.

Precautionary Statements

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

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

Storage: Store locked up.

Disposal: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

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>4-Nonylphenol</td>
<td>84852-15-3</td>
<td>25 - &lt;50%</td>
</tr>
<tr>
<td>Benzyl alcohol</td>
<td>100-51-6</td>
<td>10 - &lt;20%</td>
</tr>
<tr>
<td>Proprietary mixed cycloaliphatic amines in SAP 12837 (Ancamide 2353)</td>
<td>Trade Secret</td>
<td>10 - &lt;20%</td>
</tr>
<tr>
<td>Heavy aromatic naphtha</td>
<td>64742-94-5</td>
<td>5 - &lt;10%</td>
</tr>
<tr>
<td>Proprietary tertiary amine in SAP 12837 (Ancamide 2353)</td>
<td>Trade Secret</td>
<td>1 - &lt;5%</td>
</tr>
<tr>
<td>Triethylenetetramine</td>
<td>112-24-3</td>
<td>1 - &lt;5%</td>
</tr>
<tr>
<td>Tris(dimethylaminomethyl)phenol</td>
<td>90-72-2</td>
<td>1 - &lt;3%</td>
</tr>
<tr>
<td>Phenol</td>
<td>108-95-2</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

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.

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.

Most important symptoms/effects, acute and delayed
Symptoms: No data available.

Hazards: No data available.

Indication of immediate medical attention and special treatment needed

Treatment: No data available.

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 firefighters

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.

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.

Notification Procedures: In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable 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

Precautions for safe handling: 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. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities: Store locked up.

8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Type</th>
<th>Exposure Limit Values</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heavy aromatic naphtha - Non-aerosol. - as total hydrocarbon vapor</td>
<td>TWA</td>
<td>200 mg/m3</td>
<td>US. ACGIH Threshold Limit Values (03 2014)</td>
</tr>
<tr>
<td>Phenol</td>
<td>TWA</td>
<td>5 ppm</td>
<td>US. ACGIH Threshold Limit Values (2011)</td>
</tr>
<tr>
<td></td>
<td>PEL</td>
<td>5 ppm</td>
<td>19 mg/m3</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>Heavy aromatic naphtha - Non-aerosol. - as total hydrocarbon vapor</td>
<td>TWA</td>
<td>200 mg/m3</td>
<td>Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/87, as amended) (05 2013)</td>
</tr>
<tr>
<td>Heavy aromatic naphtha - Non-aerosol. - as total hydrocarbon vapor</td>
<td>TWA</td>
<td>200 mg/m3</td>
<td>Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)</td>
</tr>
<tr>
<td>Heavy aromatic naphtha</td>
<td>TWA</td>
<td>525 mg/m3</td>
<td>Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)</td>
</tr>
<tr>
<td>Triethylenetetramine</td>
<td>TWA</td>
<td>0.5 ppm</td>
<td>3 mg/m3</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>
<tr>
<td>Heavy aromatic naphtha - Non-aerosol. - as total hydrocarbon vapor</td>
<td>TWA</td>
<td>200 mg/m³</td>
<td>Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (05 2013)</td>
</tr>
<tr>
<td>Heavy aromatic naphtha - Non-aerosol. - as total hydrocarbon vapor</td>
<td>TWA</td>
<td>200 mg/m³</td>
<td>Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)</td>
</tr>
<tr>
<td>Heavy aromatic naphtha</td>
<td>TWA</td>
<td>525 mg/m³</td>
<td>Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)</td>
</tr>
<tr>
<td>Triethylenetetramine</td>
<td>TWA</td>
<td>0.5 ppm</td>
<td>3 mg/m³</td>
</tr>
<tr>
<td>Phenol</td>
<td>TWA</td>
<td>5 ppm</td>
<td>Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)</td>
</tr>
<tr>
<td>Phenol</td>
<td>TWA</td>
<td>5 ppm</td>
<td>Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)</td>
</tr>
<tr>
<td>Phenol</td>
<td>TWA</td>
<td>5 ppm</td>
<td>19 mg/m³</td>
</tr>
</tbody>
</table>

**Biological Limit Values**

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Exposure Limit Values</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenol (Phenol with hydrolysis: Sampling time: End of shift.)</td>
<td>250 mg/g (Creatinine in urine)</td>
<td>ACGIH BEI (03 2013)</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.

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

**General information:**

Provide easy access to water supply and eye wash facilities. 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.

**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:**

Use suitable protective gloves if risk of skin contact.

**Other:**

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: Do not get in eyes. Observe good industrial hygiene practices. 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

<table>
<thead>
<tr>
<th><strong>Appearance</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Physical state:</strong></td>
<td>liquid</td>
</tr>
<tr>
<td><strong>Form:</strong></td>
<td>liquid</td>
</tr>
<tr>
<td><strong>Color:</strong></td>
<td>Amber</td>
</tr>
<tr>
<td><strong>Odor:</strong></td>
<td>Mild pungent</td>
</tr>
<tr>
<td><strong>Odor threshold:</strong></td>
<td>No data available.</td>
</tr>
<tr>
<td><strong>pH:</strong></td>
<td>No data available.</td>
</tr>
<tr>
<td><strong>Melting point/freezing point:</strong></td>
<td>No data available.</td>
</tr>
<tr>
<td><strong>Initial boiling point and boiling range:</strong></td>
<td>No data available.</td>
</tr>
<tr>
<td><strong>Flash Point:</strong></td>
<td>&gt; 93 °C &gt; 200 °F(Setaflash Closed Cup)</td>
</tr>
<tr>
<td><strong>Evaporation rate:</strong></td>
<td>Slower than Ether</td>
</tr>
<tr>
<td><strong>Flammability (solid, gas):</strong></td>
<td>No</td>
</tr>
<tr>
<td><strong>Upper/lower limit on flammability or explosive limits</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Flammability limit - upper (%):</strong></td>
<td>No data available.</td>
</tr>
<tr>
<td><strong>Flammability limit - lower (%):</strong></td>
<td>No data available.</td>
</tr>
<tr>
<td><strong>Explosive limit - upper (%):</strong></td>
<td>No data available.</td>
</tr>
<tr>
<td><strong>Explosive limit - lower (%):</strong></td>
<td>No data available.</td>
</tr>
<tr>
<td><strong>Vapor pressure:</strong></td>
<td>No data available.</td>
</tr>
<tr>
<td><strong>Vapor density:</strong></td>
<td>Vapors are heavier than air and may travel along the floor and in the bottom of containers.</td>
</tr>
<tr>
<td><strong>Relative density:</strong></td>
<td>0.992</td>
</tr>
<tr>
<td><strong>Solubility(ies)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Solubility in water:</strong></td>
<td>Practically Insoluble</td>
</tr>
<tr>
<td><strong>Solubility (other):</strong></td>
<td>No data available.</td>
</tr>
<tr>
<td><strong>Partition coefficient (n-octanol/water):</strong></td>
<td>No data available.</td>
</tr>
<tr>
<td><strong>Auto-ignition temperature:</strong></td>
<td>No data available.</td>
</tr>
<tr>
<td><strong>Decomposition temperature:</strong></td>
<td>No data available.</td>
</tr>
<tr>
<td><strong>Viscosity:</strong></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: Causes severe skin burns. May cause an allergic skin reaction.
Eye contact: Causes serious eye damage.
Ingestion: May be 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: 3,094.6 mg/kg
Dermal Product: ATEmix: 383,606.2 mg/kg
Inhalation Product: ATEmix: 17.65 mg/l

Repeated dose toxicity Product: No data available.

Skin Corrosion/Irritation Product: No data available.

Specified substance(s):
4-Nonylphenol  in vivo (Rabbit): Category 1B  Experimental result, Weight of Evidence study

Benzyl alcohol  in vivo (Rabbit): Not irritant  Experimental result, Key study

Heavy aromatic naphtha  in vivo (Rabbit): Irritating  Experimental result, Key study

Tris(dimethylaminomethyl)phenol  in vivo (Rabbit): Corrosive  Experimental result, Key study

Phenol  in vivo (Rabbit): Corrosive  Experimental result, Supporting study

**Serious Eye Damage/Eye Irritation**
- **Product:** No data available.
- **Specified substance(s):**
  - 4-Nonylphenol  Rabbit, 24 - 72 hrs: Corrosive
  - Heavy aromatic naphtha  Rabbit, 24 - 72 hrs: Not irritating
  - Tris(dimethylaminomethyl)phenol  Rabbit, 3 d: Corrosive

**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 1910.1001-1050):**
- 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):
4-Nonylphenol LC 50 (Fathead minnow (Pimephales promelas), 96 h): 0.13825 mg/l Mortality
Benzyl alcohol LC 50 (Fathead minnow (Pimephales promelas), 96 h): 460 mg/l Mortality
Phenol LC 50 (Rainbow trout, donaldson trout (Oncorhynchus mykiss), 96 h): 8.9 mg/l Mortality

Aquatic Invertebrates
Product: No data available.

Specified substance(s):
Benzyl alcohol EC 50 (Daphnia magna, 48 h): 230 mg/l Experimental result, Key study
Triethylenetetramine LC 50 (Water flea (Daphnia magna), 48 h): 33.9 mg/l Intoxication
Phenol LC 50 (Water flea (Ceriodaphnia dubia), 48 h): 3.1 mg/l Mortality

Chronic hazards to the aquatic environment:

Fish
Product: No data available.

Specified substance(s):
4-Nonylphenol NOAEL (Oncorhynchus mykiss, 91 d): 0.006 mg/l Experimental result, Key study
study

Heavy aromatic naphtha

NOAEL (Oncorhynchus mykiss, 28 d): 0.098 mg/l QSAR QSAR, Key study

Phenol

NOAEL (Cirrhus mrigala, 60 d): 0.077 mg/l Experimental result, Key study

Aquatic Invertebrates

Product: No data available.

Toxicity to Aquatic Plants

Product: No data available.

Specified substance(s):

Phenol

LC 50 (Duckweed (Lemna minor), 72 h): 1,500 mg/l Mortality

Persistence and Degradability

Biodegradation

Product: No data available.

BOD/COD Ratio

Product: No data available.

Bioaccumulative potential

Bioconcentration Factor (BCF)

Product: No data available.

Specified substance(s):

4-Nonylphenol

Fathead minnow (Pimephales promelas), Bioconcentration Factor (BCF): 988 (Flow through)

Phenol

Green algae (Oedogonium), Bioconcentration Factor (BCF): 42 (Static)

Partition Coefficient n-octanol / water (log Kow)

Product: No data available.

Specified substance(s):

Benzyl alcohol

Log Kow: 1.10

Phenol

Log Kow: 1.46

Mobility in soil: No data available.

Other adverse effects: Very toxic to aquatic organisms.

13. Disposal considerations

Disposal instructions: 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, Nonylphenol), 8, PG III, MARINE POLLUTANT

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)

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Reportable quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-Nonylphenol</td>
<td>De minimis concentration: TSCA 5(a)(2)% One-Time Export Notification only.</td>
</tr>
</tbody>
</table>

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

None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Reportable quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenol</td>
<td>1000 lbs.</td>
</tr>
</tbody>
</table>

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
Specific target organ toxicity (single or repeated exposure)
SARA 302 Extremely Hazardous Substance

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Reportable quantity</th>
<th>Threshold Planning Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenol</td>
<td>1000 lbs.</td>
<td>-- --</td>
</tr>
</tbody>
</table>

SARA 304 Emergency Release Notification

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Reportable quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenol</td>
<td>1000 lbs.</td>
</tr>
</tbody>
</table>

SARA 311/312 Hazardous Chemical

<table>
<thead>
<tr>
<th>Chemical Identity</th>
<th>Threshold Planning Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenol</td>
<td>500 lbs</td>
</tr>
<tr>
<td>4-Nonylphenol</td>
<td>10000 lbs</td>
</tr>
<tr>
<td>Benzyl alcohol</td>
<td>10000 lbs</td>
</tr>
<tr>
<td>Proprietary mixed cycloaliphatic amines in SAP 12837 (Ancamide 2353)</td>
<td>10000 lbs</td>
</tr>
<tr>
<td>Heavy aromatic naphtha</td>
<td>10000 lbs</td>
</tr>
<tr>
<td>Proprietary tertiary amine in SAP 12837 (Ancamide 2353)</td>
<td>10000 lbs</td>
</tr>
<tr>
<td>Triethylenetetramine</td>
<td>10000 lbs</td>
</tr>
<tr>
<td>Tris(dimethylaminomethyl)phenol</td>
<td>10000 lbs</td>
</tr>
</tbody>
</table>

SARA 313 (TRI Reporting)

<table>
<thead>
<tr>
<th>Chemical Identity</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-Nonylphenol</td>
</tr>
</tbody>
</table>

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)
None present or none present in regulated quantities.

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
No ingredient regulated by CA Prop 65 present.

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

<table>
<thead>
<tr>
<th>Chemical Identity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heavy aromatic naphtha</td>
</tr>
<tr>
<td>Triethylenetetramine</td>
</tr>
<tr>
<td>Phenol</td>
</tr>
</tbody>
</table>

US. Massachusetts RTK - Substance List

<table>
<thead>
<tr>
<th>Chemical Identity</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-Nonylphenol</td>
</tr>
<tr>
<td>Benzyl alcohol</td>
</tr>
<tr>
<td>Heavy aromatic naphtha</td>
</tr>
<tr>
<td>Triethylenetetramine</td>
</tr>
<tr>
<td>Phenol</td>
</tr>
</tbody>
</table>
US. Pennsylvania RTK - Hazardous Substances

Chemical Identity
4-Nonylphenol
Benzyl alcohol
Heavy aromatic naphtha
Triethylenetetramine

US. Rhode Island RTK

Chemical Identity
Heavy aromatic naphtha

International regulations

Montreal protocol
Not applicable

Stockholm convention
Not applicable

Rotterdam convention
Not applicable

Kyoto protocol
Not applicable

VOC: When appropriately mixed with the other part, product has a VOC less water and exempt solvent of:
97 g/l

Regulatory VOC (less water and exempt solvent) : 687 g/l

VOC Method 310 : 55.81 %
Inventory Status:

Australia AICS: 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.

EINECS, ELINCS or NLP: 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.

China Inv. Existing Chemical Substances: 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.

Canada NDSL Inventory: 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.

US TSCA Inventory: 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.

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.

16. Other information, including date of preparation or last revision

Revision Date: 09/21/2018
Version #: 2.0
Further Information: No data available.
Disclaimer: 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.