1. Identification of the Substance / Preparation

**Product identifier**
EMSHEILD SSW

**Other identifier or names**
SecuritySeal SSW

**UN ID number**
None

**Manufacturer Address**
EMSEAL LLC
9-111 Royal Group Crescent
Woodbridge, ON L4H 1X9 Canada

**Company Phone**
(508) 836-0280 M-F 9am - 5pm

**Emergency Phone**
CHEMTREC (800) 424-9300 (24 Hours)

2. Hazardous Indentification

**Hazardous Classification**
This product is not classified as hazardous when used as intended.

**Signal Word**
None

**Pictograms**
None

**Emergency Overview:**
No emergency requirements.

3. Composition / Information on Ingredients

SecuritySeal SSW is composed of polyurethane foam impregnated with a proprietary solid inorganic fire retardant bonded to a fully cured polyurethane sealant. It is classified as Non-Hazardous.

**NOTE:** Polyurethane facing is fully cured. The composition of the polyurethane in its liquid state is comprised of the following:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS #</th>
<th>% by Weight</th>
<th>GHS Classification</th>
<th>Hazard Statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcium Carbonate, Synthetic</td>
<td>471-34-1</td>
<td>20.0-50.0</td>
<td>SELF CLASSIFICATION</td>
<td>Classification: Not Applicable</td>
</tr>
<tr>
<td>Proprietary Polyoxyalkylene Polymer</td>
<td></td>
<td>25.0-40.0</td>
<td>SELF CLASSIFICATION</td>
<td>Classification: Not Applicable</td>
</tr>
<tr>
<td>Diisononyl Phthalate</td>
<td>68515-43-5</td>
<td>1.0-20.0</td>
<td>SELF CLASSIFICATION</td>
<td>Classification: Not Applicable</td>
</tr>
<tr>
<td>Dialkyl Phthalate</td>
<td>68648-93-1</td>
<td>0.0-19.0</td>
<td>SELF CLASSIFICATION</td>
<td>Classification: Not Applicable</td>
</tr>
<tr>
<td>Proprietary Silica</td>
<td></td>
<td>1.0-5.0</td>
<td>SELF CLASSIFICATION</td>
<td>Classification: Not Applicable</td>
</tr>
<tr>
<td>Stearic Acid</td>
<td>57-11-4</td>
<td>1.0-5.0</td>
<td>SELF CLASSIFICATION</td>
<td>Classification: Not Applicable</td>
</tr>
<tr>
<td>Proprietary Pigment</td>
<td></td>
<td>1.0-2.0</td>
<td>SELF CLASSIFICATION</td>
<td>Classification: Not Applicable</td>
</tr>
</tbody>
</table>

Water and other components.

Each of the other components is present in less than 1 percent concentration (0.1% concentration for potential carcinogens, reproductive toxins, respiratory tract sensitizers, and mutagens).
4. First Aid Measures

4.1 EYES: Flush with water for at least 15 minutes, and call physician if problems persist.
4.2 SKIN: Product may leave a sticky residue, and mild irritation if prolonged exposure. Scrub with soapy water until adhesive is removed.
4.3 INGESTION: Do not eat – call physician if ingested.

5. Fire-fighting Measures

5.2 FLAMMABILITY: Slight. The material composition does not support combustion.
5.2 FLASH POINT: Unknown.
5.3 AUTO-IGNITION TEMPERATURE: Unknown.
5.4 EXTINGUISHING MEDIA: Large volumes of water, or ABC chemical may be appropriate for initial control or small volumes of impregnated foam.
5.5 HAZARDOUS DECOMPOSITION PRODUCTS: Carbon di/mon oxides will be formed as well as other noxious and toxic fumes upon combustion – do not breathe combustion products.

6. Accidental Release Measures

If material is unusable pick up pieces and dispose of in accordance with local regulations; material and all components are non-toxic and normal landfill will most often be acceptable.

7. Handling and Storage

Store in original packaging below 35°C. There are no special handling instructions.

8. Exposure Controls / Personal Protection

8.1 RESPIRATORY PROTECTION: Not required
8.2 EYE PROTECTION: Not required
8.3 SKIN PROTECTION: Gloves of any material are suitable if desired, but not required. No other protection is required.

9. Physical and Chemical Properties

9.1 APPEARANCE: Dark grey / charcoal colored foam and white or gray polyurethane face with product identifying packaging.
9.2 ODOR: Slight characteristic odor.
9.3 PERCENT SOLIDS BY WEIGHT: 100%
9.4 PHYSICAL STATE: Solid
9.5 PERCENT VOLATILE: <1% wt/wt
9.6 DENSITY: 0.4g/cm³
9.7 DECOMPOSITION: > 300°C
9.8 SOLUBILITY IN WATER: None
10. Stability and Reactivity

Stable under normal conditions – avoid temperatures in excess of 300°C, strong acids and bases, and open flame.

11. Toxicological Information

Unknown.

12. Ecological Information

Unknown

13. Disposal Considerations

No known hazard. Dispose of in accordance with local regulations; material and all components are non-toxic and disposal in normal landfill will most often be acceptable.

14. Transportation Information

Not hazardous – safe for non-hazardous shipping.

15. Regulatory Information

Unknown.

16. Other Information

No other information provided.
Safety Data Sheet

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Version Number: 26.00
Supercedes Date: 08/18/13

SECTION 1: Identification

1.1. Product identifier
3M Brand Fire Barrier CP-25WB+

Product Identification Numbers

1.2. Recommended use and restrictions on use

Recommended use
Fire Protection, Used as Firestop in buildings.

1.3. Supplier's details

MANUFACTURER: 3M
DIVISION: Industrial Adhesives and Tapes Division
ADDRESS: 3M Center, St. Paul, MN 55144-1000, USA
Telephone: 1-888-3M HELPS (1-888-364-3577)

1.4. Emergency telephone number
1-800-364-3577 or (651) 737-6501 (24 hours)

SECTION 2: Hazard identification

2.1. Hazard classification
Serious Eye Damage/Irritation: Category 2B.

2.2. Label elements
Signal word
Warning

Symbols
Not applicable

Pictograms
Not applicable

Hazard Statements
Causes eye irritation.

Precautionary Statements

General:
Keep out of reach of children.

Prevention:
Wash thoroughly after handling.

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.

2.3. Hazards not otherwise classified
None.

25% of the mixture consists of ingredients of unknown acute dermal toxicity.

### SECTION 3: Composition/information on ingredients

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>C.A.S. No.</th>
<th>% by Wt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc Borate 2335</td>
<td>138265-88-0</td>
<td>10 - 30 Trade Secret *</td>
</tr>
<tr>
<td>Polymer (NJTS Reg. No. 04499600-7270)</td>
<td>Trade Secret*</td>
<td>10 - 30 Trade Secret *</td>
</tr>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>10 - 30 Trade Secret *</td>
</tr>
<tr>
<td>Sodium Silicate</td>
<td>1344-09-8</td>
<td>10 - 30 Trade Secret *</td>
</tr>
<tr>
<td>Ethylhexyldiphenyl phosphate</td>
<td>1241-94-7</td>
<td>3 - 7 Trade Secret *</td>
</tr>
<tr>
<td>Oxide glass chemicals</td>
<td>65997-17-3</td>
<td>1 - 5 Trade Secret *</td>
</tr>
<tr>
<td>Iron oxide</td>
<td>1309-37-1</td>
<td>1 - 5 Trade Secret *</td>
</tr>
<tr>
<td>Polyethylene Glycol</td>
<td>25322-68-3</td>
<td>1 - 5 Trade Secret *</td>
</tr>
<tr>
<td>Triphenyl phosphate</td>
<td>115-86-6</td>
<td>&lt; 1.0 Trade Secret *</td>
</tr>
<tr>
<td>Di-2-ethylhexylphenyl phosphate</td>
<td>16368-97-1</td>
<td>&lt; 1.0 Trade Secret *</td>
</tr>
<tr>
<td>Polyoxymethylene monoctylphenyl ether</td>
<td>9036-19-5</td>
<td>&lt; 1.0 Trade Secret *</td>
</tr>
<tr>
<td>3(2H)-Isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2H)-isothiazolone</td>
<td>55965-84-9</td>
<td>&lt; 0.001 Trade Secret *</td>
</tr>
</tbody>
</table>

NJTS or NJTSRN: New Jersey Trade Secret Registry Number.

*The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret.

### SECTION 4: First aid measures

4.1. Description of first aid measures

**Inhalation:**
Remove person to fresh air. If you feel unwell, get medical attention.

**Skin Contact:**
Wash with soap and water. If signs/symptoms develop, get medical attention.

**Eye Contact:**
Flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. If signs/symptoms persist, get medical attention.
If Swallowed:
Rinse mouth. If you feel unwell, get medical attention.

4.2. Most important symptoms and effects, both acute and delayed
See Section 11.1. Information on toxicological effects.

4.3. Indication of any immediate medical attention and special treatment required
Not applicable

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media
Non-combustible. Use a fire fighting agent suitable for surrounding fire.

5.2. Special hazards arising from the substance or mixture
None inherent in this product.

5.3. Special protective actions for fire-fighters
No special protective actions for fire-fighters are anticipated.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Evacuate area. Ventilate the area with fresh air. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

6.2. Environmental precautions
Avoid release to the environment.

6.3. Methods and material for containment and cleaning up
Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue. Seal the container. Dispose of collected material as soon as possible.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Avoid eye contact. Keep out of reach of children. Avoid breathing dust/fume/gas/mist/vapors/spray. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Avoid release to the environment.

7.2. Conditions for safe storage including any incompatibilities
Keep cool. Store away from heat. Store away from areas where product may come into contact with food or pharmaceuticals. Store in a dry place.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>C.A.S. No.</th>
<th>Agency</th>
<th>Limit type</th>
<th>Additional Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triphenyl phosphate</td>
<td>115-86-6</td>
<td>ACGIH</td>
<td>TWA;3 mg/m3</td>
<td></td>
</tr>
<tr>
<td>Triphenyl phosphate</td>
<td>115-86-6</td>
<td>OSHA</td>
<td>TWA;3 mg/m3</td>
<td></td>
</tr>
</tbody>
</table>
Iron oxide 1309-37-1 ACGIH TWA( respirable fraction): 5 mg/m³
Iron oxide 1309-37-1 OSHA TWA( as fume): 10 mg/m³
ROUGE 1309-37-1 OSHA TWA( as total dust): 15 mg/m³; TWA ( respirable fraction): 5 mg/m³
Polyethylene Glycol 25322-68-3 AIHA TWA (as particulate): 10 mg/m³
Oxide glass chemicals 65997-17-3 Manufacturer determined TWA (as dust): 10 mg/m³

ACGIH: American Conference of Governmental Industrial Hygienists
AIHA: American Industrial Hygiene Association
CMRG: Chemical Manufacturer's Recommended Guidelines
OSHA: United States Department of Labor - Occupational Safety and Health Administration
TWA: Time-Weighted-Average
STEL: Short Term Exposure Limit
CEIL: Ceiling

8.2. Exposure controls

8.2.1. Engineering controls
Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment.

8.2.2. Personal protective equipment (PPE)

Eye/face protection
Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:
Indirect Vented Goggles

Skin/hand protection
Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, temperature, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing.
Gloves made from the following material(s) are recommended: Butyl Rubber, Neoprene, Nitrile Rubber

Respiratory protection
An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:
Half facepiece or full facepiece air-purifying respirator suitable for particulates

For questions about suitability for a specific application, consult with your respirator manufacturer.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties
General Physical Form: Solid
Specific Physical Form: Paste
Odor, Color, Grade: Red with negligible odor
Odor threshold  
No Data Available

Melting point  
No Data Available

Flash Point  
No flash point

Flammability (solid, gas)  
Not Classified
Flammable Limits(LEL)  
Not Applicable
Flammable Limits(UEL)  
Not Applicable

Specific Gravity  
1.35 [Ref Std: WATER=1]

Solubility in Water  
Complete
Solubility- non-water  
No Data Available

Autoignition temperature  
Not Applicable
Decomposition temperature  
No Data Available

Volatile Organic Compounds  
< 1 g/l
VOC Less H2O & Exempt Solvents  
< 1 g/l

**SECTION 10: Stability and reactivity**

10.1. Reactivity  
This material is considered to be non reactive under normal use conditions.

10.2. Chemical stability  
Stable.

10.3. Possibility of hazardous reactions  
Hazardous polymerization will not occur.

10.4. Conditions to avoid  
None known.

10.5. Incompatible materials  
None known.

10.6. Hazardous decomposition products

<table>
<thead>
<tr>
<th>Substance</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon monoxide</td>
<td>Not Specified</td>
</tr>
<tr>
<td>Carbon dioxide</td>
<td>Not Specified</td>
</tr>
<tr>
<td>Oxides of Phosphorus</td>
<td>Not Specified</td>
</tr>
</tbody>
</table>

**SECTION 11: Toxicological information**

The information below may not be consistent with the material classification in Section 2 if specific ingredient
classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

11.1. Information on Toxicological effects

Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation:
Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Skin Contact:
Mild Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, and dryness.

Eye Contact:
Moderate Eye Irritation: Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Ingestion:
May be harmful if swallowed.
Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

Toxicological Data
If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

### Acute Toxicity

<table>
<thead>
<tr>
<th>Name</th>
<th>Route</th>
<th>Species</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall product</td>
<td>Dermal</td>
<td>No data available; calculated ATE &gt; 5,000 mg/kg</td>
<td></td>
</tr>
<tr>
<td>Overall product</td>
<td>Ingestion</td>
<td>No data available; calculated ATE 2,000 - 5,000 mg/kg</td>
<td></td>
</tr>
<tr>
<td>Polymer (NJTS Reg. No. 04499600-7270)</td>
<td>Ingestion</td>
<td>Rat</td>
<td>LD50 &gt; 2,000 mg/kg</td>
</tr>
<tr>
<td>Zinc Borate 2335</td>
<td>Dermal</td>
<td>Rabbit</td>
<td>LD50 &gt; 10,000 mg/kg</td>
</tr>
<tr>
<td>Zinc Borate 2335</td>
<td>Ingestion</td>
<td>Rat</td>
<td>LD50 &gt; 10,000 mg/kg</td>
</tr>
<tr>
<td>Sodium Silicate</td>
<td>Dermal</td>
<td>Rabbit</td>
<td>LD50 &gt; 4,640 mg/kg</td>
</tr>
<tr>
<td>Sodium Silicate</td>
<td>Ingestion</td>
<td>Rat</td>
<td>LD50 500 mg/kg</td>
</tr>
<tr>
<td>Ethylhexylphosphine phosphate</td>
<td>Dermal</td>
<td>Rabbit</td>
<td>LD50 &gt; 7,940 mg/kg</td>
</tr>
<tr>
<td>Ethylhexylphosphine phosphate</td>
<td>Ingestion</td>
<td>Rat</td>
<td>LD50 &gt; 24,000 mg/kg</td>
</tr>
<tr>
<td>Iron oxide</td>
<td>Dermal</td>
<td>Not available</td>
<td>LD50 3,100 mg/kg</td>
</tr>
<tr>
<td>Iron oxide</td>
<td>Ingestion</td>
<td>Not available</td>
<td>LD50 3,700 mg/kg</td>
</tr>
<tr>
<td>Polyethylene Glycol</td>
<td>Dermal</td>
<td>Rabbit</td>
<td>LD50 &gt; 20,000 mg/kg</td>
</tr>
<tr>
<td>Polyethylene Glycol</td>
<td>Ingestion</td>
<td>Rat</td>
<td>LD50 32,770 mg/kg</td>
</tr>
<tr>
<td>Oxide glass chemicals</td>
<td>Dermal</td>
<td>LD50 estimated to be &gt; 5,000 mg/kg</td>
<td></td>
</tr>
<tr>
<td>Oxide glass chemicals</td>
<td>Ingestion</td>
<td>LD50 estimated to be 2,000 - 5,000 mg/kg</td>
<td></td>
</tr>
<tr>
<td>Polyoxyethylene monoacylphenyl ether</td>
<td>Dermal</td>
<td>Rabbit</td>
<td>LD50 &gt; 3,000 mg/kg</td>
</tr>
<tr>
<td>Polyoxyethylene monoacylphenyl ether</td>
<td>Ingestion</td>
<td>Rat</td>
<td>LD50 &gt; 500 mg/kg</td>
</tr>
<tr>
<td>Triphenyl phosphate</td>
<td>Dermal</td>
<td>Rabbit</td>
<td>LD50 &gt; 7,900 mg/kg</td>
</tr>
<tr>
<td>Triphenyl phosphate</td>
<td>Inhalation-Dust/Mist (4 hours)</td>
<td>Rat</td>
<td>LC50 &gt; 50 mg/l</td>
</tr>
<tr>
<td>Triphenyl phosphate</td>
<td>Ingestion</td>
<td>Rat</td>
<td>LD50 &gt; 3,000 mg/kg</td>
</tr>
<tr>
<td>3(2H)-Isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2H)-isothiazolone</td>
<td>Dermal</td>
<td>Rabbit</td>
<td>LD50 &gt; 87 mg/kg</td>
</tr>
<tr>
<td>3(2H)-Isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2H)-isothiazolone</td>
<td>Inhalation-Dust/Mist (4 hours)</td>
<td>Rat</td>
<td>LC50 0.33 mg/l</td>
</tr>
</tbody>
</table>
**skin corrosion/irritation**

<table>
<thead>
<tr>
<th>Name</th>
<th>species</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polymer (njts reg. no. 04499600-7270)</td>
<td>Rabbit</td>
<td>minimal irritation</td>
</tr>
<tr>
<td>Sodium Silicate</td>
<td>Rabbit</td>
<td>corrosive</td>
</tr>
<tr>
<td>Iron oxide</td>
<td>Rabbit</td>
<td>no significant irritation</td>
</tr>
<tr>
<td>Polyethylene Glycol</td>
<td>Rabbit</td>
<td>minimal irritation</td>
</tr>
<tr>
<td>Oxide glass chemicals</td>
<td>Rabbit</td>
<td>no significant irritation</td>
</tr>
<tr>
<td>3(2h)-isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2h)-isothiazolone</td>
<td>Rabbit</td>
<td>corrosive</td>
</tr>
</tbody>
</table>

**Serious eye damage/irritation**

<table>
<thead>
<tr>
<th>Name</th>
<th>species</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polymer (njts reg. no. 04499600-7270)</td>
<td>Rabbit</td>
<td>Mild irritant</td>
</tr>
<tr>
<td>Sodium Silicate</td>
<td>Rabbit</td>
<td>Corrosive</td>
</tr>
<tr>
<td>Iron oxide</td>
<td>Rabbit</td>
<td>No significant irritation</td>
</tr>
<tr>
<td>Polyethylene Glycol</td>
<td>Rabbit</td>
<td>Mild irritant</td>
</tr>
<tr>
<td>Oxide glass chemicals</td>
<td>Rabbit</td>
<td>No significant irritation</td>
</tr>
<tr>
<td>3(2h)-isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2h)-isothiazolone</td>
<td>Rabbit</td>
<td>Corrosive</td>
</tr>
</tbody>
</table>

**skin sensitization**

<table>
<thead>
<tr>
<th>Name</th>
<th>species</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Silicate</td>
<td>Mouse</td>
<td>Not sensitizing</td>
</tr>
<tr>
<td>Iron oxide</td>
<td>Human</td>
<td>Some positive data exist, but the data are not sufficient for classification</td>
</tr>
<tr>
<td>Polyethylene Glycol</td>
<td>Guinea pig</td>
<td>Not sensitizing</td>
</tr>
<tr>
<td>3(2h)-isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2h)-isothiazolone</td>
<td>Human and animal</td>
<td>Sensitizing</td>
</tr>
</tbody>
</table>

**photosensitization**

<table>
<thead>
<tr>
<th>Name</th>
<th>species</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>3(2h)-isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2h)-isothiazolone</td>
<td>Human and animal</td>
<td>Not sensitizing</td>
</tr>
</tbody>
</table>

**Respiratory Sensitization**

<table>
<thead>
<tr>
<th>Name</th>
<th>species</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germ Cell Mutagenicity</td>
<td>Route</td>
<td>Value</td>
</tr>
<tr>
<td>Sodium Silicate</td>
<td>In vitro</td>
<td>Not mutagenic</td>
</tr>
<tr>
<td>Iron oxide</td>
<td>In vitro</td>
<td>Not mutagenic</td>
</tr>
<tr>
<td>Polyethylene Glycol</td>
<td>In vitro</td>
<td>Not mutagenic</td>
</tr>
<tr>
<td>Oxide glass chemicals</td>
<td>In vitro</td>
<td>Some positive data exist, but the data are not sufficient for classification</td>
</tr>
<tr>
<td>3(2h)-isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2h)-isothiazolone</td>
<td>In vivo</td>
<td>Not mutagenic</td>
</tr>
<tr>
<td>3(2h)-isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2h)-isothiazolone</td>
<td>In vitro</td>
<td>Some positive data exist, but the data are not sufficient for classification</td>
</tr>
</tbody>
</table>

**Carcinogenicity**

<table>
<thead>
<tr>
<th>Name</th>
<th>Route</th>
<th>species</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron oxide</td>
<td>Inhalation</td>
<td>Human</td>
<td>Some positive data exist, but the data are not sufficient for classification</td>
</tr>
</tbody>
</table>
### Reproductive Toxicity

#### Reproductive and/or Developmental Effects

<table>
<thead>
<tr>
<th>Name</th>
<th>Route</th>
<th>Value</th>
<th>Species</th>
<th>Test Result</th>
<th>Exposure Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Silicate</td>
<td>Ingestion</td>
<td>Some positive developmental data exist, but the data are not sufficient for classification</td>
<td>Mouse</td>
<td>NOAEL 200 mg/kg/day</td>
<td>during gestation</td>
</tr>
<tr>
<td>Polyethylene Glycol</td>
<td>Ingestion</td>
<td>Not toxic to female reproduction</td>
<td>Rat</td>
<td>NOAEL 1,125 mg/kg/day</td>
<td>during gestation</td>
</tr>
<tr>
<td>Polyethylene Glycol</td>
<td>Ingestion</td>
<td>Not toxic to male reproduction</td>
<td>Rat</td>
<td>NOAEL 5699 +/- 1341 mg/kg/day</td>
<td>5 days</td>
</tr>
<tr>
<td>Polyethylene Glycol</td>
<td>Not Specified</td>
<td>Some positive reproductive/developmental data exist, but the data are not sufficient for classification</td>
<td>NOEL</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>3(2H)-Isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2H)-isothiazolone</td>
<td>Ingestion</td>
<td>Not toxic to female reproduction</td>
<td>Rat</td>
<td>NOAEL 10 mg/kg/day</td>
<td>2 generation</td>
</tr>
<tr>
<td>3(2H)-Isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2H)-isothiazolone</td>
<td>Ingestion</td>
<td>Not toxic to male reproduction</td>
<td>Rat</td>
<td>NOAEL 10 mg/kg/day</td>
<td>2 generation</td>
</tr>
<tr>
<td>3(2H)-Isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2H)-isothiazolone</td>
<td>Ingestion</td>
<td>Not toxic to development</td>
<td>Rat</td>
<td>NOAEL 15 mg/kg/day</td>
<td>during organogenesis</td>
</tr>
</tbody>
</table>

#### Target Organ(s)

**Specific Target Organ Toxicity - single exposure**

<table>
<thead>
<tr>
<th>Name</th>
<th>Route</th>
<th>Target Organ(s)</th>
<th>Value</th>
<th>Species</th>
<th>Test Result</th>
<th>Exposure Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Silicate</td>
<td>Inhalation</td>
<td>respiratory irritation</td>
<td>May cause respiratory irritation</td>
<td>official classification</td>
<td>NOAEL Not available</td>
<td></td>
</tr>
<tr>
<td>Polyethylene Glycol</td>
<td>Inhalation</td>
<td>respiratory irritation</td>
<td>Some positive data exist, but the data are not sufficient for classification</td>
<td>Rat</td>
<td>NOAEL 1.008 mg/l</td>
<td>2 weeks</td>
</tr>
<tr>
<td>3(2H)-Isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2H)-isothiazolone</td>
<td>Inhalation</td>
<td>respiratory irritation</td>
<td>Some positive data exist, but the data are not sufficient for classification</td>
<td>similar health hazards</td>
<td>NOAEL Not available</td>
<td></td>
</tr>
</tbody>
</table>

**Specific Target Organ Toxicity - repeated exposure**

<table>
<thead>
<tr>
<th>Name</th>
<th>Route</th>
<th>Target Organ(s)</th>
<th>Value</th>
<th>Species</th>
<th>Test Result</th>
<th>Exposure Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Silicate</td>
<td>Ingestion</td>
<td>kidney and/or bladder</td>
<td>Some positive data exist, but the data are not sufficient for classification</td>
<td>Dog</td>
<td>LOAEL 2,400 mg/kg/day</td>
<td>4 weeks</td>
</tr>
<tr>
<td>Sodium Silicate</td>
<td>Ingestion</td>
<td>endocrine system</td>
<td>Some positive data exist, but the data are not sufficient for classification</td>
<td>Rat</td>
<td>NOAEL 804 mg/kg/day</td>
<td>3 months</td>
</tr>
<tr>
<td>Sodium Silicate</td>
<td>Ingestion</td>
<td>blood</td>
<td>All data are negative</td>
<td>Rat</td>
<td>NOAEL 804</td>
<td>3 months</td>
</tr>
<tr>
<td>Sodium Silicate</td>
<td>Ingestion</td>
<td>heart</td>
<td>liver</td>
<td>All data are negative</td>
<td>Rat</td>
<td>NOAEL 1,259 mg/kg/day</td>
</tr>
<tr>
<td>----------------</td>
<td>-----------</td>
<td>-------</td>
<td>-------</td>
<td>-----------------------</td>
<td>-----</td>
<td>----------------------</td>
</tr>
<tr>
<td>Iron oxide</td>
<td>Inhalation</td>
<td>pulmonary fibrosis</td>
<td>pneumoconiosis</td>
<td>Some positive data exist, but the data are not sufficient for classification</td>
<td>Human</td>
<td>NOAEL Not available</td>
</tr>
<tr>
<td>Polyethylene Glycol</td>
<td>Inhalation</td>
<td>respiratory system</td>
<td></td>
<td>Some positive data exist, but the data are not sufficient for classification</td>
<td>Rat</td>
<td>NOAEL 1.008 mg/l</td>
</tr>
<tr>
<td>Polyethylene Glycol</td>
<td>Ingestion</td>
<td>kidney and/or bladder</td>
<td></td>
<td>Some positive data exist, but the data are not sufficient for classification</td>
<td>Rat</td>
<td>NOAEL 5,640 mg/kg/day</td>
</tr>
<tr>
<td>Polyethylene Glycol</td>
<td>Ingestion</td>
<td>heart</td>
<td>endocrine system</td>
<td>hematopoietic system</td>
<td>liver</td>
<td>nervous system</td>
</tr>
<tr>
<td>Oxide glass chemicals</td>
<td>Inhalation</td>
<td>respiratory system</td>
<td></td>
<td>Some positive data exist, but the data are not sufficient for classification</td>
<td>Human</td>
<td>NOAEL not available</td>
</tr>
</tbody>
</table>

### Aspiration Hazard

<table>
<thead>
<tr>
<th>Name</th>
<th>Value</th>
</tr>
</thead>
</table>

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

### SECTION 12: Ecological information

#### Ecotoxicological information

<table>
<thead>
<tr>
<th>Test Organism</th>
<th>Test Type</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water flea, Daphnia magna</td>
<td>48 hours Aquatic Toxicity - Acute</td>
<td>27 mg/l</td>
</tr>
<tr>
<td>Green algae, Pseudokirchneriella subcapitata</td>
<td>72 hours Aquatic Toxicity - Chronic</td>
<td>2.6 mg/l</td>
</tr>
</tbody>
</table>

Please contact the address or phone number listed on the first page of the SDS for additional ecotoxicological information on this material and/or its components.

#### Chemical fate information

Please contact the address or phone number listed on the first page of the SDS for additional chemical fate information on this material and/or its components.

### SECTION 13: Disposal considerations

13.1. Disposal methods

Dispose of contents/container in accordance with the local/regional/national/international regulations.

Dispose of waste product in a permitted industrial waste facility. As a disposal alternative, incinerate in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

EPA Hazardous Waste Number (RCRA): Not regulated

### SECTION 14: Transport Information
For Transport Information, please visit [http://3M.com/Transportinfo](http://3M.com/Transportinfo) or call 1-800-364-3577 or 651-737-6501.

**SECTION 15: Regulatory information**

**15.1. US Federal Regulations**
Contact 3M for more information.

311/312 Hazard Categories:

- Fire Hazard - No
- Pressure Hazard - No
- Reactivity Hazard - No
- Immediate Hazard - Yes
- Delayed Hazard - No

Section 313 Toxic Chemicals subject to the reporting requirements of that section and 40 CFR part 372 (EPCRA):

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>C.A.S. No</th>
<th>% by Wt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc Borate 2335 (ZINC COMPOUNDS)</td>
<td>138265-88-0</td>
<td>10 - 30</td>
</tr>
</tbody>
</table>

**15.2. State Regulations**

**15.3. Chemical Inventories**
The components of this material are in compliance with the provisions of Australia National Industrial Chemical Notification and Assessment Scheme (NICNAS). Certain restrictions may apply. Contact the selling division for additional information.

The components of this product are in compliance with the new substance notification requirements of CEPA.

The components of this material are in compliance with the China "Measures on Environmental Management of New Chemical Substance". Certain restrictions may apply. Contact the selling division for additional information.

The components of this material are in compliance with the provisions of the Korean Toxic Chemical Control Law. Certain restrictions may apply. Contact the selling division for additional information.

The components of this product are in compliance with the chemical notification requirements of TSCA.

**15.4. International Regulations**

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

**SECTION 16: Other information**

**NFPA Hazard Classification**

- Health: 1
- Flammability: 1
- Instability: 0
- Special Hazards: None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

**HMIS Hazard Classification**
Health: 2  Flammability: 1  Physical Hazard: 0  Personal Protection: X - See PPE section.

Hazardous Material Identification System (HMIS® III) hazard ratings are designed to inform employees of chemical hazards in the workplace. These ratings are based on the inherent properties of the material under expected conditions of normal use and are not intended for use in emergency situations. HMIS® III ratings are to be used with a fully implemented HMIS® III program. HMIS® is a registered mark of the American Coatings Association (ACA).

<table>
<thead>
<tr>
<th>Document Group:</th>
<th>09-5451-1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Issue Date:</td>
<td>06/20/14</td>
</tr>
<tr>
<td>Version Number:</td>
<td>26.00</td>
</tr>
<tr>
<td>Supersedes Date:</td>
<td>08/18/13</td>
</tr>
</tbody>
</table>

DISCLAIMER: The information in this Safety Data Sheet (SDS) is believed to be correct as of the date issued. 3M MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR COURSE OF PERFORMANCE OR USAGE OF TRADE. User is responsible for determining whether the 3M product is fit for a particular purpose and suitable for user's method of use or application. Given the variety of factors that can affect the use and application of a 3M product, some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate the 3M product to determine whether it is fit for a particular purpose and suitable for user's method of use or application.

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3M USA SDSs are available at www.3M.com
1. Identification of the Substance/Preparation and of the Company/Undertaking

Product Identifier

Product name EPOXY ADHESIVE PART A

Other Means of Identification

Product Code NOMAD-PARTA
Product Technology Epoxy A side
None
Epoxy A side. FOR INDUSTRIAL USE ONLY.
Restrictions on use: Do not use this product for any use other than intended

Manufacturer Address
Northern Manufacturing
120 Carrier Drive
Toronto, ON, Canada
M9W 5R1

Company Phone Number 416-740-2090 (8AM - 5PM EST) (M-F)
Emergency Telephone Chemtrec 1-800-424-9300 (24 Hours)

2. Hazards Identification

Classification

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS). This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

<table>
<thead>
<tr>
<th>Substance</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin corrosion/irritation</td>
<td>2</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>2</td>
</tr>
<tr>
<td>Skin sensitization</td>
<td>1</td>
</tr>
</tbody>
</table>

EMERGENCY OVERVIEW

WARNING

Hazard Statements
Causes skin irritation
Causes serious eye irritation
May cause an allergic skin reaction
Appearance  Viscous  Off white  Physical State  Paste  Odor  Mild

Precautionary Statements - Prevention
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves, protective clothing, eye protection, face protection
Avoid breathing dust, fumes, or vapors
Contaminated work clothing should not be allowed out of the workplace

Precautionary Statements - Response
Call a POISON CENTER or doctor/physician if you feel unwell
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 soap and water
Take off contaminated clothing and wash before reuse
If skin irritation or rash occurs: Get medical advice/attention

Precautionary Statements - Storage
Store in a well-ventilated place. Keep container tightly closed

Precautionary Statements - Disposal
Dispose of contents/container in accordance with local/regional/international regulations

Hazards Not Otherwise Classified (HNOC)

Other Information
Toxic to aquatic life with long lasting effects
61.69% of the mixture consists of ingredient(s) of unknown toxicity

3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No</th>
<th>Weight-%</th>
<th>Trade secret</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bisphenol A diglycidyl ether resin</td>
<td>25068-38-6</td>
<td>20 - 40</td>
<td>*</td>
</tr>
<tr>
<td>Proprietary resin</td>
<td>Proprietary</td>
<td>1 - 10</td>
<td>*</td>
</tr>
</tbody>
</table>

* The exact percentage (concentration) of composition may have been withheld as a trade secret.

4. First Aid Measures

FIRST AID MEASURES

General Advice
Use first aid treatment according to the nature of the injury. For further assistance, contact your local Poison Control Center. In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

Eye Contact
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If eye irritation persists: Get medical advice/attention.
Skin Contact
Wash off immediately with plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.

Inhalation
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

Ingestion
Not an expected route of exposure. If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

Self-Protection of the First Aider
First Aider: Pay attention to self-protection. Use personal protective equipment as required.

Most Important Symptoms and Effects, Both Acute and Delayed
Symptoms
No information available.

Indication of Any Immediate Medical Attention and Special Treatment Needed
Note to Physicians
Treat symptomatically.

5. Fire-Fighting Measures

Suitable Extinguishing Media
Use CO2, dry chemical, or foam

Unsuitable Extinguishing Media
Caution: Use of water spray when fighting fire may be inefficient.

Specific Hazards Arising From the Chemical
Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water ways. Dike for water control.

Hazardous Combustion Products
Irritating or toxic substances may be emitted upon burning, combustion or decomposition. See Section 10 Hazardous Decomposition Products for additional information.

Explosion Data
Sensitivity to Mechanical Impact
None.

Sensitivity to Static Discharge
None.

Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures

Personal Precautions
Ventilate affected area. Extremely slippery when spilled.

Other Information
Use personal protective equipment as required.

For Emergency Responders
Use personal protective equipment as required.

Environmental Precautions

Environmental Precautions
See Section 12 for additional Ecological Information. Do not allow into any sewer, on the ground or into any body of water.

Methods and Material for Containment and Cleaning Up
Methods for Containment
Prevent further leakage or spillage if safe to do so.

Methods for cleaning up
Pick up and transfer to properly labeled containers.

7. Handling and Storage

Precautions for Safe Handling
Handle in accordance with good industrial hygiene and safety practice.

Conditions for Safe Storage, Including any Incompatibilities

Storage Conditions
Keep containers tightly closed in a dry, cool and well-ventilated place. Store and handle away from heat, flames and oxidizing materials.

Incompatible Materials

8. Exposure Controls/Personal Protection

Control Parameters

Exposure Guidelines

Appropriate Engineering Controls

Engineering Controls
Showers
Eyewash stations
Ventilation systems

Individual Protection Measures, Such As Personal Protective Equipment

Eye/Face Protection
Splash Goggles.

Skin and Body Protection
Wear protective gloves and protective clothing.

Respiratory Protection
If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations
Handle in accordance with good industrial hygiene and safety practice.

9. Physical and Chemical Properties

Information on Basic Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Remarks • Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Paste</td>
<td></td>
</tr>
<tr>
<td>Appearance</td>
<td>Viscous</td>
<td></td>
</tr>
<tr>
<td>Color</td>
<td>Off white</td>
<td></td>
</tr>
<tr>
<td>Odor</td>
<td>Mild</td>
<td></td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Melting Point/Freezing Point</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Boiling Point/Boiling Range</td>
<td>&gt; 250 °C</td>
<td></td>
</tr>
<tr>
<td>Flash Point</td>
<td>&gt; 220 °C</td>
<td></td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Flammability (Solid, Gas)</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Flammability Limits in Air</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper Flammability Limits</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Lower Flammability Limit</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Vapor Density</td>
<td>No information available</td>
<td></td>
</tr>
</tbody>
</table>
Specific Gravity 1.68
Water Solubility Negligible
Solubility in Other Solvents No information available
Partition Coefficient No information available
Autoignition Temperature No information available
Decomposition Temperature No information available
Kinematic Viscosity 464286 cSt
Dynamic Viscosity 780000 cps @ 25°C
Explosive Properties Not an explosive
Oxidizing Properties No information available

Other Information
Softening Point No information available
Molecular Weight No information available
VOC Content (%) No information available
Density 14.0 pounds/gallon
Bulk Density No information available

10. Stability and Reactivity

Reactivity
No data available

Chemical Stability
Stable under recommended storage conditions.
Possibility of Hazardous Reactions
Hazardous polymerization does not occur.

Conditions to Avoid
Keep out of reach of children. Extremes of temperature and direct sunlight. Mixture with or exposure to incompatible materials.
Incompatible Materials
Hazardous Decomposition Products

11. Toxicological Information

Information on Likely Routes of Exposure

Product Information The product has not been tested

Inhalation Remove to fresh air.
Eye Contact Vapor may cause irritation. Avoid contact with eyes. Contact with eyes may cause irritation.
Skin Contact Avoid contact with skin. May cause irritation. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.

Ingestion Not an expected route of exposure. May be harmful if swallowed.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Oral LD50 (Rat)</th>
<th>Dermal LD50 (Rabbit)</th>
<th>Inhalation LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bisphenol A diglycidyl ether resin 25068-38-6</td>
<td>= 11400 mg/kg (Rat)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Proprietary resin</td>
<td>= 4500 mg/kg (Rat)</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Information on toxicological effects
No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

- **Skin corrosion/irritation**: Irritating to skin.
- **Serious eye damage/eye irritation**: Irritating to eyes.
- **Irritation, Sensitization**: Irritating to eyes and skin.
- **Germ Cell Mutagenicity**: May cause sensitization of susceptible persons.
- **Carcinogenicity**: This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.
- **Reproductive Toxicity**: No information available.
- **STOT - Single Exposure, STOT - Repeated Exposure**: No information available.
- **Chronic Toxicity**: Repeated or prolonged skin contact may cause skin irritation and/or dermatitis and sensitization of susceptible persons.
- **Aspiration Hazard**: No information available.

**Numerical Measures of Toxicity - Product Information**

- **Unknown Acute Toxicity**: 61.69% of the mixture consists of ingredient(s) of unknown toxicity
- **Ecotoxicity**: No information available
  - 66.27998% of the mixture consists of components(s) of unknown hazards to the aquatic environment
- **Persistence and Degradability**: No information available
- **Other Adverse Effects**: No information available

**12. Ecological Information**

- **Ecotoxicity**: No information available
- **Persistence and Degradability**: No information available
- **Other Adverse Effects**: No information available

**13. Disposal Considerations**

- **Waste Treatment Methods**
  - **Disposal of Wastes**: Disposal should be in accordance with applicable regional, national and local laws and regulations.
  - **Contaminated Packaging**: Do not reuse container.

**14. Transport Information**

- **DOT**: Not regulated
- **ICAO (air)**
- **IATA**
EPOXY ADHESIVE PARTA

UN/ID no
Proper Shipping Name
Hazard Class
Packing group
Special Provisions

UN/ID no
Proper Shipping Name
Hazard Class
Packing group
Special Provisions

IMDG

International Inventories
TSCA
All components of this product are either exempt or included on the TSCA Inventory in compliance with the Toxic Substances Control Act.

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

US Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Acute Health Hazard: Yes
Chronic Health Hazard: Yes
Fire Hazard: No
Sudden Release of Pressure Hazard: No
Reactive Hazard: No

CWA (Clean Water Act)
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

US State Regulations

The following chemicals may be contained in this product in de minimis amounts not required for listing in section 3. However, these chemicals do appear on some state Right-to-Know (RTK) and/or other hazardous substance lists. Please check your state's listings for more information.

California Proposition 65
This product contains the following Proposition 65 chemicals:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>California Proposition 65</th>
</tr>
</thead>
<tbody>
<tr>
<td>Titanium dioxide - 13463-67-7</td>
<td>Carcinogen</td>
</tr>
<tr>
<td>Glycidyl phenyl ether - 122-60-1</td>
<td>Carcinogen, Male Reproductive</td>
</tr>
<tr>
<td>Epichlorohydrin - 106-89-8</td>
<td>Carcinogen</td>
</tr>
<tr>
<td>Silicon dioxide - 14808-60-7</td>
<td>Carcinogen</td>
</tr>
</tbody>
</table>

**U.S. State Right-to-Know Regulations**

This product does not contain any substances regulated by state right-to-know regulations.

**U.S. EPA Label Information**

**EPA Pesticide Registration Number** Not applicable

**16. Other Information**

<table>
<thead>
<tr>
<th>HMIS</th>
<th>Health Hazards</th>
<th>Flammability</th>
<th>Physical Hazards</th>
<th>Personal Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>X</td>
</tr>
</tbody>
</table>

Prepared by Compliance
Issue Date 29-Jun-2015
Revision Date 31-Jul-2015

Revision note

No information available

**Disclaimer**

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet
1. Identification of the Substance/Preparation and of the Company/Undertaking

Product identifier
Product Name EPOXY ADHESIVE PART B

Other means of identification
Product Code(s) NOMAD-PART B
Product Technology Epoxy B side
None
Curing chemical. FOR INDUSTRIAL USE ONLY.
Restrictions on use: Do not use this product for any use other than intended

Manufacturer Address
Northern Manufacturing
120 Carrier Drive
Toronto, ON, Canada
M9W 5R1

Company Phone Number 978-683-9411 (8AM - 5PM EST) (M-F)
Emergency Telephone Chemtrec 1-800-424-9300 (24 Hours)

2. Hazards Identification

Classification
GHS Classification in accordance with 29 CFR 1910 (OSHA HCS). This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

<table>
<thead>
<tr>
<th>Hazard</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity - Oral</td>
<td>Category 4</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Category 2</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>Category 1</td>
</tr>
<tr>
<td>Respiratory sensitization</td>
<td>Category 1</td>
</tr>
<tr>
<td>Skin sensitization</td>
<td>Category 1</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>Category 2</td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td>Category 2</td>
</tr>
</tbody>
</table>

Emergency Overview

DANGER

Hazard statements
Harmful if swallowed
Causes skin irritation
Causes serious eye damage
May cause allergy or asthma symptoms or breathing difficulties if inhaled
May cause an allergic skin reaction
Suspected of causing genetic defects
Suspected of damaging fertility or the unborn child

Precautionary Statements - Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Avoid breathing dust, fumes, or vapors
In case of inadequate ventilation wear respiratory protection
Contaminated work clothing should not be allowed out of the workplace
Wear protective gloves

Precautionary Statements - Response
IF exposed or concerned: Get medical advice/attention
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTER or doctor/physician
IF ON SKIN: Wash with plenty of soap and water
Take off contaminated clothing and wash before reuse
If skin irritation or rash occurs: Get medical advice/attention
If INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing
If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth

Precautionary Statements - Storage
Store locked up
Store in a well-ventilated place. Keep container tightly closed

Precautionary Statements - Disposal
Dispose of contents/container in accordance with local/regional/international regulations

Hazards Not Otherwise Classified (HNOC)

Other Information
May be harmful in contact with skin. Very toxic to aquatic life with long lasting effects, Toxic to aquatic life
89.596% of the mixture consists of ingredient(s) of unknown toxicity

3. Composition/Information on Ingredients

Substance

Chemical Family  Epoxy B Side

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS No.</th>
<th>Weight-%</th>
<th>Trade secret</th>
</tr>
</thead>
<tbody>
<tr>
<td>N-Aminoethylpiperazine</td>
<td>140-31-8</td>
<td>1 - 3</td>
<td>*</td>
</tr>
</tbody>
</table>
4. First Aid Measures

**Description of first aid measures**

**General advice**
Use first aid treatment according to the nature of the injury. For further assistance, contact your local Poison Control Center. In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

**Eye contact**
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician if irritation persists.

**Skin contact**
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. If symptoms persist, call a physician. Wash contaminated clothing before reuse.

**Inhalation**
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If breathing is irregular or stopped, administer artificial respiration. Administer oxygen if breathing is difficult. If symptoms persist, call a physician.

**Ingestion**
IF SWALLOWED:. Rinse mouth. Do NOT induce vomiting. Call a physician or Poison Control Center immediately.

**Self-protection of the first aider**
First Aider: Pay attention to self-protection. Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

**Most important symptoms and effects, both acute and delayed**

**Symptoms**
May cause allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

**Indication of any immediate medical attention and special treatment needed**

**Note to physicians**
Treat symptomatically.

5. Fire-Fighting Measures

**Suitable Extinguishing Media**
Foam, Dry Chemical, Carbon Dioxide (CO2);

**Unsuitable extinguishing media**
Caution: Use of water spray when fighting fire may be inefficient.

**Specific hazards arising from the chemical**
Incomplete combustion and thermolysis may produce gases of varying toxicity such as carbon monoxide, carbon dioxide, various hydrocarbons, aldehydes and soot. These may be highly dangerous if inhaled in confined spaces or at high concentration. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water ways. Dike for water control.

**Hazardous combustion products**
Irritating or toxic substances may be emitted upon burning, combustion or decomposition. See Section 10 Hazardous Decomposition Products for additional information.

**Explosion data**

**Sensitivity to Mechanical Impact**
None.
Sensitivity to Static Discharge  None.

Protective equipment and precautions for firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

Personal precautions  Ensure adequate ventilation, especially in confined areas.

Other Information  Use personal protective equipment as required.

For Emergency Responders  Use personal protective equipment as required.

Environmental precautions

Environmental precautions  Do not allow into any sewer, on the ground or into any body of water. See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment  Prevent further leakage or spillage if safe to do so.

Methods for cleaning up  Pick up and transfer to properly labeled containers.

7. Handling and Storage

Precautions for safe handling

Advice on safe handling  Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Storage Conditions  Keep containers tightly closed in a dry, cool and well-ventilated place.

Incompatible materials  Acids; Bases; Strong oxidizing agents; Product slowly corrodes copper, aluminum, zinc and galvanized surfaces. Reaction with peroxides may result in violent decomposition of peroxide.

8. Exposure Controls/Personal Protection

Control parameters

Exposure Limits  The following ingredients are the only ingredients of the product above the cut-off level (or level that contributes to the hazard classification of the mixture) which have an exposure limit applicable in the region for which this safety data sheet is intended or other recommended limit. At this time, the other relevant constituents have no known exposure limits from the sources listed here.

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diethylenetriamine</td>
<td>TWA: 1 ppm</td>
<td>(vacated) TWA: 1 ppm</td>
<td>TWA: 1 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(vacated) TWA: 4 mg/m^3</td>
<td>TWA: 4 mg/m^3</td>
</tr>
<tr>
<td>111-40-0</td>
<td>S*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1,2-Ethlenediamine</td>
<td>TWA: 10 ppm</td>
<td>TWA: 10 ppm</td>
<td>IDLH: 1000 ppm</td>
</tr>
<tr>
<td>107-15-3</td>
<td>S*</td>
<td>TWA: 25 mg/m^3</td>
<td>TWA: 10 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(vacated) TWA: 10 ppm</td>
<td>TWA: 20 mg/m^3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(vacated) TWA: 25 mg/m^3</td>
<td></td>
</tr>
</tbody>
</table>

Appropriate engineering controls

Engineering controls  Showers
                      Eyewash stations
                      Ventilation systems
Individual protection measures, such as personal protective equipment

Eye/face protection  Splash Goggles. Avoid contact with eyes.

Skin and body protection Wear protective gloves and protective clothing.

Respiratory protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General hygiene considerations Handle in accordance with good industrial hygiene and safety practice.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Remarks/Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Paste</td>
<td></td>
</tr>
<tr>
<td>Appearance</td>
<td>Viscous</td>
<td></td>
</tr>
<tr>
<td>Color</td>
<td>Black</td>
<td></td>
</tr>
<tr>
<td>Odor</td>
<td>Mild amine odor</td>
<td></td>
</tr>
<tr>
<td>Odor threshold</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Melting point / freezing point</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Boiling point / boiling range</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Flash point</td>
<td>&gt; 110 °C</td>
<td></td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Flammability Limit in Air</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper flammability limit:</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Lower flammability limit:</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Vapor density</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Relative density</td>
<td>1.96</td>
<td></td>
</tr>
<tr>
<td>Water solubility</td>
<td>Negligible</td>
<td></td>
</tr>
<tr>
<td>Solubility in other solvents</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Partition coefficient</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Kinematic viscosity</td>
<td>N/A cSt</td>
<td></td>
</tr>
<tr>
<td>Dynamic viscosity</td>
<td>N/A cps @ 25° C</td>
<td></td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Not an explosive</td>
<td></td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

Other Information

Softening point                  | N/A             |
Molecular weight                 | N/A             |
VOC Content (%)                  | N/A             |
Liquid Density                   | 16.3 pounds/gallon|
Bulk density                     | N/A             |

10. Stability and Reactivity

Reactivity

No data available

Chemical stability
Stable under recommended storage conditions.
EPOXY ADHESIVE PART B

Possibility of hazardous reactions
None under normal processing.

Conditions to avoid

Incompatible materials
Acids; Bases; Strong oxidizing agents; Product slowly corrodes copper, aluminum, zinc and galvanized surfaces. Reaction with peroxides may result in violent decomposition of peroxide.

Hazardous decomposition products
Carbon oxides; Nitrogen oxides (NOx). Thermal decomposition can lead to release of toxic/corrosive gases and vapors. Nitric acid. Ammonia. Flammable hydrocarbon fragments.

11. Toxicological Information

Information on likely routes of exposure

Product Information
The product has not been tested.

Inhalation
Remove to fresh air.

Eye contact
Avoid contact with eyes. Irritating to eyes.

Skin contact
Avoid contact with skin. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.

Component Information

Ingestion
Not an expected route of exposure. Do NOT taste or swallow. Harmful if swallowed. Caution - This preparation contains a substance not yet fully tested.

Information on toxicological effects

N/A.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation
Irritating to skin. Repeated or prolonged contact may cause skin irritation and dermatitis.

Serious eye damage/eye irritation
Irritating to eyes.

Irritation
Irritating to eyes and skin.

Sensitization
May cause sensitization by inhalation and skin contact.

Germ cell mutagenicity
Contains a known or suspected mutagen.

Carcinogenicity
This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

Reproductive toxicity
Category 2: Substances which should be regarded as if they impair fertility in humans.

STOT - single exposure
N/A.

STOT - repeated exposure
N/A.

Chronic Toxicity
Repeated or prolonged skin contact may cause skin irritation and/or dermatitis and sensitization of susceptible persons. Contains a known or suspected reproductive toxin. May cause harm to the unborn child. May produce an allergic reaction.

Target organ effects
Eyes, Skin, Blood.

Numerical measures of toxicity - Product Information

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>ATEmix (oral)</th>
<th>ATEmix (dermal)</th>
<th>Inhalation LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>N-Aminoethylpiperazine 140-31-8</td>
<td>= 2140 µL/kg ( Rat )</td>
<td>= 880 µL/kg ( Rabbit )</td>
<td>-</td>
</tr>
<tr>
<td>Bisphenol A 80-05-7</td>
<td>= 3300 mg/kg ( Rat )</td>
<td>= 3 mL/kg ( Rabbit )</td>
<td>&gt; 0.17 mg/L ( Rat ) 6 h</td>
</tr>
<tr>
<td>Diethylenetriamine 111-40-0</td>
<td>= 1080 mg/kg ( Rat )</td>
<td>= 672 mg/kg ( Rabbit )</td>
<td>= 70 mg/L ( Rat ) 4 h</td>
</tr>
<tr>
<td>Phenol, 4-nonyl-, branched 84852-15-3</td>
<td>= 1300 mg/kg ( Rat )</td>
<td>= 2031 mg/kg ( Rabbit )</td>
<td>-</td>
</tr>
<tr>
<td>4-tert-Butylphenol 98-54-4</td>
<td>= 3250 µL/kg ( Rat )</td>
<td>= 2318 mg/kg ( Rabbit )</td>
<td>-</td>
</tr>
<tr>
<td>1,2-Ethylenediamine 107-15-3</td>
<td>= 637 mg/kg ( Rat )</td>
<td>= 560 mg/kg ( Rabbit )</td>
<td>-</td>
</tr>
</tbody>
</table>
Unknown acute toxicity
89.596% of the mixture consists of ingredient(s) of unknown toxicity

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral) 1,441.00 mg/kg
ATEmix (dermal) 2,197.00 mg/kg
ATEmix (inhalation-dust/mist) 694.00 mg/l

12. Ecological Information

Ecotoxicity

Very toxic to aquatic life with long lasting effects
91.108% of the mixture consists of component(s) of unknown hazards to the aquatic environment

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Algae/aquatic plants</th>
<th>Fish</th>
<th>Crustacea</th>
</tr>
</thead>
<tbody>
<tr>
<td>N-Aminoethylpiperazine 140-31-8</td>
<td>495: 72 h Pseudokirchneriella subcapitata mg/L EC50</td>
<td>100: 96 h Oncorhynchus mykiss mg/L LC50 semi-static 1950 - 2460: 96 h Pimephales promelas mg/L LC50 flow-through 1000: 96 h Poecilia reticulata mg/L LC50 semi-static</td>
<td>32: 48 h Daphnia magna mg/L EC50</td>
</tr>
<tr>
<td>Bisphenol A 80-05-7</td>
<td>2.5: 96 h Pseudokirchneriella subcapitata mg/L EC50</td>
<td>9.9: 96 h Brachydianio rério mg/L LC50 static 4.0 - 5.5: 96 h Pimephales promelas mg/L LC50 static 4: 96 h Oncorhynchus mykiss mg/L LC50 3.6 - 5.4: 96 h Pimephales promelas mg/L LC50</td>
<td>9.2 - 11.4: 48 h Daphnia magna mg/L EC50 Static 3.9: 48 h Daphnia magna mg/L EC50 10.2: 48 h Daphnia magna mg/L EC50</td>
</tr>
<tr>
<td>Diethylenetriamine 111-40-0</td>
<td>345.6: 96 h Pseudokirchneriella subcapitata mg/L EC50 592: 96 h Desmodesmus subspicatus mg/L EC50 1164: 72 h Pseudokirchneriella subcapitata mg/L EC50</td>
<td>1014: 96 h Poecilia reticulata mg/L LC50 semi-static 430: 96 h Leuciscus idus mg/L LC50 semi-static 248: 96 h Poecilia reticulata mg/L LC50 static</td>
<td>37: 24 h Daphnia magna mg/L EC50 16: 48 h Daphnia magna mg/L EC50</td>
</tr>
<tr>
<td>Phenol, 4-nonyl-, branched 84852-15-3</td>
<td>0.16 - 0.72: 72 h Pseudokirchneriella subcapitata mg/L EC50 static 0.36 - 0.48: 72 h Pseudokirchneriella subcapitata mg/L EC50 static 1.3: 72 h Desmodesmus subspicatus mg/L EC50</td>
<td>0.135: 96 h Pimephales promelas mg/L LC50 flow-through 0.1351: 96 h Leopomis macrochirus mg/L LC50 flow-through</td>
<td>0.14: 48 h Daphnia magna mg/L EC50</td>
</tr>
<tr>
<td>4-tert-Butylphenol 98-54-4</td>
<td>11.2: 72 h Desmodesmus subspicatus mg/L EC50</td>
<td>6.9: 96 h Cyprinus carpio mg/L LC50 static 4.71 - 5.62: 96 h Pimephales promelas mg/L LC50 flow-through</td>
<td>3.4 - 4.5: 48 h Daphnia magna mg/L EC50 Static 3.9: 48 h Daphnia magna mg/L EC50</td>
</tr>
<tr>
<td>1,2-Ethylene diamine 107-15-3</td>
<td>151: 96 h Pseudokirchneriella subcapitata mg/L EC50 645: 72 h Pseudokirchneriella subcapitata mg/L EC50</td>
<td>115.7: 96 h Pimephales promelas mg/L LC50 semi-static 191 - 254: 96 h Pimephales promelas mg/L LC50 flow-through 98.6 - 131.6: 96 h Pimephales promelas mg/L LC50 static 180 - 560: 96 h Poecilia reticulata mg/L LC50 semi-static</td>
<td>17: 48 h Daphnia magna mg/L EC50</td>
</tr>
</tbody>
</table>

Persistence and degradability

N/A

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Partition coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>N-Aminoethylpiperazine 140-31-8</td>
<td>-1.48</td>
</tr>
<tr>
<td>Bisphenol A 80-05-7</td>
<td>2.2</td>
</tr>
<tr>
<td>Diethylenetriamine 111-40-0</td>
<td>-1.3</td>
</tr>
<tr>
<td>4-tert-Butylphenol 98-54-4</td>
<td>2.44</td>
</tr>
<tr>
<td>1,2-Ethylene diamine 107-15-3</td>
<td>-1.221</td>
</tr>
</tbody>
</table>

Other adverse effects
13. Disposal Considerations

Waste treatment methods

Disposal of Wastes
Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging
Do not reuse container.

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>California Hazardous Waste Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diethylenetriamine</td>
<td>Toxic</td>
</tr>
<tr>
<td>111-40-0</td>
<td></td>
</tr>
<tr>
<td>1,2-Ethlenediamine</td>
<td>Toxic</td>
</tr>
<tr>
<td>107-15-3</td>
<td></td>
</tr>
</tbody>
</table>

14. Transport Information

DOT
Not regulated

ICAO (air)
Not regulated

IATA
Not regulated

IMDG
Not regulated

15. Regulatory Information

International Inventories

TSCA
All components of this product are either exempt or included on the TSCA Inventory in compliance with the Toxic Substances Control Act.

Legend:
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

US Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS No.</th>
<th>Weight-%</th>
<th>SARA 313 - Threshold Values %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bisphenol A - 80-05-7</td>
<td>80-05-7</td>
<td>1 - 3</td>
<td>1.0</td>
</tr>
<tr>
<td>Phenol, 4-nonyl-, branched - 84852-15-3</td>
<td>84852-15-3</td>
<td>&lt;1.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

SARA 311/312 Hazard Categories

Acute Health Hazard
Yes

Chronic Health Hazard
Yes

Fire Hazard
No

Sudden Release of Pressure Hazard
No

Reactive Hazard
No
CWA (Clean Water Act)
This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CWA - Reportable Quantities</th>
<th>CWA - Toxic Pollutants</th>
<th>CWA - Priority Pollutants</th>
<th>CWA - Hazardous Substances</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,2-Ethlenediamine</td>
<td>5000 lb</td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

CERCLA
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Hazardous Substances RQs</th>
<th>CERCLA/SARA RQ</th>
<th>Reportable Quantity (RQ)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,2-Ethlenediamine</td>
<td>5000 lb</td>
<td>5000 lb</td>
<td>RQ 5000 lb final RQ</td>
</tr>
</tbody>
</table>

US State Regulations
The following chemicals may be contained in this product in de minimis amounts not required for listing in section 3. However, these chemicals do appear on some state Right-to-Know (RTK) and/or other hazardous substance lists. Please check your state's listings for more information.

California Proposition 65
This product contains the following Proposition 65 chemicals

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>California Proposition 65</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bisphenol A - 80-05-7</td>
<td>Female Reproductive</td>
</tr>
<tr>
<td>ethanol - 64-17-5</td>
<td>Carcinogen</td>
</tr>
<tr>
<td>Diethylenetriamine</td>
<td></td>
</tr>
<tr>
<td>111-40-0</td>
<td></td>
</tr>
<tr>
<td>1,2-Ethlenediamine</td>
<td></td>
</tr>
<tr>
<td>107-15-3</td>
<td></td>
</tr>
</tbody>
</table>

U.S. State Right-to-Know Regulations

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>New Jersey</th>
<th>Massachusetts</th>
<th>Pennsylvania</th>
</tr>
</thead>
<tbody>
<tr>
<td>N-Aminoethypiperazine</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>140-31-8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bisphenol A</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>80-05-7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diethylenetriamine</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>111-40-0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1,2-Ethlenediamine</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>107-15-3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

U.S. EPA Label Information

EPA Pesticide Registration Number  Not applicable

16. Other Information

<table>
<thead>
<tr>
<th>NFPA</th>
<th>Health hazards</th>
<th>Flammability</th>
<th>Instability</th>
<th>Physical and chemical properties</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>N/A</td>
<td>N/A</td>
<td>Personal Protection X</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HMIS</th>
<th>Health hazards</th>
<th>Flammability</th>
<th>Physical hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2*</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

Chronic Hazard Star Legend *= Chronic Health Hazard

Prepared By       Key Polymer Corp Compliance
Issuing Date      05-Aug-2016
Revision Date     17-Aug-2016

Revision Note

N/A

Disclaimer
The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief.
at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet
SAFETY DATA SHEET

DynaFlex™ SC

1. PRODUCT IDENTIFICATION

IDENTIFICATION of the SUBSTANCE or PREPARATION:

<table>
<thead>
<tr>
<th>TRADE NAME (AS LABELED):</th>
<th>DynaFlex™ SC</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRODUCT DESCRIPTION:</td>
<td>Silyl Terminated Polyurethane Sealant</td>
</tr>
<tr>
<td>CHEMICAL NAME/CLASS:</td>
<td>Silyl Terminated Polyurethane</td>
</tr>
<tr>
<td>SYNONYMS:</td>
<td>None</td>
</tr>
<tr>
<td>RELEVANT USE:</td>
<td>Aliphatic Urethane Sealant/Caulking Compound</td>
</tr>
<tr>
<td>USES ADVISED AGAINST:</td>
<td>Other Than Relevant Use</td>
</tr>
</tbody>
</table>

COMPANY/UNDERTAKING IDENTIFICATION:

| SUPPLIER/MANUFACTURER’S NAME: | Pecora Corporation |
| ADDRESS:                       | 165 Wambold Road, Harleysville, PA 19438 |
| EMERGENCY PHONE:               | 800-424-9300 (CHEMTREC, 24-hours) |
| BUSINESS PHONE:                | 215-723-6051 (Mon–Fri, 8 AM–5 PM ET) |

PREPARATION DATE: July 2011

REVISION DATE: April 8, 2014

This product is sold for commercial use. This MSDS has been developed to address safety concerns of those individuals working with bulk quantities of this material, as well as those of potential users of this product in industrial/occupational settings. All United States Occupational Safety and Health Administration Standard (29 CFR 1910.1200), U.S. State equivalent Standards, and Canadian WHMIS [Controlled Products Regulations] and the Global Harmonization Standard required information is included in appropriate sections based on the U.S. ANSI Z400.1-2010 format. This product has been classified in accordance with the hazard criteria of the countries listed above.

2. HAZARD IDENTIFICATION

GLOBAL HARMONIZATION LABELING AND CLASSIFICATION: This product has been classified per GHS Standards.

- **Classification:** Acute Oral Toxicity Cat. 5, Eye Irritation Cat. 2B, Skin Irritation Cat. 3, Skin Sensitization Cat. 1, Respiratory Sensitization Cat. 1, STOT (Inhalation-Respiratory Irritation) SE Cat. 3, Aquatic Chronic Toxicity Cat. 4
- **Signal Word:** Warning
- **Hazard Statement Codes:** H303, H316, H320, H317, H334, H413
- **Hazard Symbols/Pictogram:** GHS07

EMERGENCY OVERVIEW:

- **PHYSICAL DESCRIPTION:** This product is a smooth paste with a slight odor and comes in several colors, including TruWhite and Limestone.
- **HEALTH HAZARDS:** CAUTION! May cause eye, skin, and respiratory tract irritation, especially if exposure is prolonged. May be harmful if ingested. May cause skin and respiratory sensitization in susceptible individuals.
- **FLAMMABILITY HAZARD:** This product is combustible and can ignite if exposed to high temperature or direct flame.
- **REACTIVITY HAZARD:** This product is not reactive.
- **ENVIRONMENTAL HAZARD:** This product has not been tested for environmental impact. This product contains a trace compound that can cause chronic aquatic toxicity.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM (HMIS®)

<table>
<thead>
<tr>
<th>Health</th>
<th>2*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammability</td>
<td>1</td>
</tr>
<tr>
<td>Physical Hazard</td>
<td>0</td>
</tr>
</tbody>
</table>

See Section 16 for definitions of ratings

- 0 = Minimal
- 3 = Serious
- 1 = Slight
- 4 = Severe
- 2 = Moderate
- * = Chronic

HMIS® is a registered trademark of the National Paint and Coatings Association.

CANADIAN WHMIS CLASSIFICATION: Class D2B. See Section 15 (Regulatory Information) for all classification details.

U.S. OSHA REGULATORY STATUS: This material has a classification under the Global Harmonization Standard, as applied under OSHA regulations, as given earlier in this Section.
3. MATERIAL IDENTIFICATION

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS #</th>
<th>W/W%</th>
<th>GHS Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcium Carbonate, Synthetic</td>
<td>471-34-1</td>
<td>20.0-50.0</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Proprietary Polyoxyalkylene Polymer</td>
<td>68515-43-5</td>
<td>1.0-20.0</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Dioniynyl Phthalate</td>
<td>68648-93-1</td>
<td>0.0-19.0</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Proprietary Silica</td>
<td>57-11-4</td>
<td>1.0-5.0</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Stearic Acid</td>
<td></td>
<td>1.0-5.0</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>proprietary White Pigment</td>
<td></td>
<td>1.0-2.0</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Isophorone Disocyanate</td>
<td>4098-71-9</td>
<td>0.1-0.5</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

Other components. Each of the other components is present in less than 1 percent concentration (0.1% concentration for potential carcinogens, reproductive toxins, respiratory tract sensitizers, and mutagens).

See Section 16 for full text of classification

4. FIRST-AID MEASURES

PROTECTION OF FIRST AID RESPONDERS: Rescuers should not attempt to retrieve victims of exposure to this material without adequate personal protective equipment. Rescuers should be taken for medical attention, if necessary.

DESCRIPTION OF FIRST AID MEASURES: Remove victim(s) to fresh air, as quickly as possible. Only trained personnel should administer oxygen and/or cardio-pulmonary resuscitation, if necessary. Remove and isolate contaminated clothing and shoes. Seek immediate medical attention. Take copy of label and MSDS to physician or other health professional with victim(s).行政

INHALATION: If dusts of this material are inhaled, remove victim to fresh air. If necessary, use artificial respiration to support vital functions.

SKIN EXPOSURE: If the material contaminates the skin, immediately begin decontamination with running water. Minimum flushing is for 20 minutes. Do not interrupt flushing. Remove exposed or contaminated clothing, taking care not to contaminate eyes. Victim must seek immediate medical attention.

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 20 minutes. Do not interrupt flushing.

INGESTION: If this material is swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION. DO NOT INDUCE VOMITING, unless directly by medical personnel. Have victim rinse mouth with water or give several cupfuls of water, if conscious. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or unable to swallow. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain an open airway and prevent aspiration.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Dermatitis or other pre-existing skin disorders may be aggravated by overexposure to this product.

INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT IF NEEDED: Treat symptoms and eliminate overexposure.

5. FIRE-FIGHTING MEASURES

FLASH POINT: > 93.2°C (> 200°F)

FLAMMABLE LIMITS IN AIR: Unknown.

EXTINGUISHING MEDIA:

SUITABLE EXTINGUISHING MEDIA: Use extinguishing material suitable to the surrounding fire, including foam, halon, carbon dioxide and dry chemical.

UNSUITABLE EXTINGUISHING MEDIA: None known.

PROTECTION OF FIREFIGHTERS:

SPECIAL HAZARDS ARISING FROM THE SUBSTANCE: This product is combustible and can be ignited when exposed to its flashpoint. Not sensitive to mechanical impact under normal conditions. Not sensitive to static charge under normal conditions. Closed containers may develop pressure and rupture in event of fire.

SPECIAL PROTECTIVE ACTIONS FOR FIRE-FIGHTERS: 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.
6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS AND EMERGENCY PROCEDURES: An accidental release can result in a fire if exposed to ignition source. Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. Use only non-sparking tools and equipment during the response. The atmosphere must at least 19.5 percent Oxygen before non-emergency personnel can be allowed in the area without Self-Contained Breathing Apparatus and fire protection.

PERSONAL PROTECTIVE EQUIPMENT: Responders should wear the level of protection appropriate to the type of chemical released, the amount of the material spilled, and the location where the incident has occurred.

Small Spills: For releases of 1 drum or less, Level D Protective Equipment (gloves, chemical resistant apron, boots, and eye protection) should be worn.

Large Spills: Minimum Personal Protective Equipment should be rubber gloves, rubber boots, face shield, and Tyvek suit. Minimum level of personal protective equipment for releases in which the level of oxygen is less than 19.5% or is unknown must be Level B: triple-gloves (rubber gloves and nitrile gloves over latex gloves), chemical resistant suit, fire-retardant clothing and boots, hard hat, and Self-Contained Breathing Apparatus.

METHODS FOR CLEAN-UP AND CONTAINMENT:

All Spills: Access to the spill area should be restricted. Spread should be limited by gently covering the spill with polypads. Scrape up or pick-up spilled material, placing in suitable containers. Absorb any residual on appropriate material, such as sand. All contaminated absorbents and other materials should be placed in an appropriate container and seal. Do not mix with wastes from other materials. Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations). Dispose of recovered material and report spill per regulatory requirements. Remove all residue before decontamination of spill area. Clean spill area with soap and copious amounts of water.

ENVIRONMENTAL PRECAUTIONS: Minimize use of water to prevent environmental contamination. Prevent spill or rinsate from contaminating storm drains, sewers, soil or groundwater. Place all spill residues in a suitable container and seal. Do not discharge effluent containing this product into streams, ponds, estuaries, oceans or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance, contact your State Water Board or Regional Office of the EPA.

OTHER INFORMATION: U.S. regulations may require reporting of spills of this material that reach surface waters if a sheen is formed. If necessary, the toll-free phone number for the US Coast Guard National Response Center is 1-800-424-8802.

REFERENCE TO OTHER SECTIONS: See information in Section 8 (Exposure Controls – Personal Protection) and Section 13 (Disposal Considerations) for additional information.

7. HANDLING and STORAGE

PRECAUTIONS FOR SAFE HANDLING: 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. Avoid contact with eyes, skin, and clothing. Avoid breathing fumes, dusts, vapors or mist. Do not taste or swallow. Use only with adequate ventilation. Keep away from heat and flame. In the event of a spill, follow practices indicated in Section 6: ACCIDENTAL RELEASE MEASURES.

CONDITIONS FOR SAFE STORAGE: This product is stable under ordinary conditions of handling, use and storage. Store containers in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Store away from incompatible materials (see Section 10: STABILITY AND REACTIVITY). Keep container tightly closed when not in use. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged. To prolong shelf life, store at temperatures below 26°C (80°F).

PRODUCT END USE: This product is used as a sealant. Follow all industry standards for use of this product.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

EXPOSURE LIMITS/CONTROL PARAMETERS:

VENTILATION AND ENGINEERING CONTROLS: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided below.

OCCUPATIONAL/WORKPLACE EXPOSURE LIMITS/GUIDELINES:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS #</th>
<th>Guideline</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcium Carbonate, Synthetic</td>
<td>471-34-1</td>
<td>OSHA PEL TWA</td>
<td>15 mg/m³ total dust</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NIOSH REL TWA</td>
<td>5 mg/m³ respirable fraction</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10 mg/m³ total dust</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5 mg/m³ respirable fraction</td>
</tr>
<tr>
<td>Dialkyl Phthalate</td>
<td>68648-93-1</td>
<td>NE</td>
<td>NE</td>
</tr>
<tr>
<td>Disocymonol Phthalate</td>
<td>68515-43-5</td>
<td>NE</td>
<td>NE</td>
</tr>
<tr>
<td>Isophorone Disocyanate</td>
<td>4098-71-9</td>
<td>ACGIH TLV TWA</td>
<td>0.003 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OSHA PEL TWA</td>
<td>0.005 ppm (vacated 1989 PEL)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OSHA PEL STEL</td>
<td>0.02 ppm [skin] (vacated 1989 PEL)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NIOSH REL TWA</td>
<td>0.005 ppm [skin]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NIOSH REL STEL</td>
<td>0.02 ppm [skin]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DFG MAK TWA</td>
<td>0.005 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DFG MAK PEAK</td>
<td>1xMAC 15 minute average value, 1-hr interval, 4 per shift</td>
</tr>
<tr>
<td>Proprietary Polyoxyalkylene Polymer</td>
<td>NE</td>
<td>NE</td>
<td>NE</td>
</tr>
<tr>
<td>Proprietary White Pigment</td>
<td>NE</td>
<td>NE</td>
<td>NE</td>
</tr>
<tr>
<td>Proprietary Silica</td>
<td>NE</td>
<td>NE</td>
<td>NE</td>
</tr>
<tr>
<td>Stearic Acid</td>
<td>57-11-4</td>
<td>NE</td>
<td>NE</td>
</tr>
</tbody>
</table>

NE = Not Established. See Section 16 for Definitions of Terms Used.
8. EXPOSURE CONTROLS - PERSONAL PROTECTION (Continued)


EYE/FACE PROTECTION: Use approved safety goggles or safety glasses. If necessary, refer to appropriate regulations and standards.

SKIN PROTECTION: Wear chemical impervious gloves (e.g., Nitrile or Neoprene). Use triple gloves for spill response. If necessary, refer to appropriate regulations and standards.

BODY PROTECTION: Use body protection appropriate for task (e.g., lab coat, coveralls, Tyvek suit). If necessary, refer to the OSHA Technical Manual (Section VII: Personal Protective Equipment) or appropriate Standards of Canada. If a hazard of injury to the feet exists due to falling objects, rolling objects, where objects may pierce the soles of the feet or where employee’s feet may be exposed to electrical hazards, use foot protection, as described in appropriate regulations and standards.

RESPIRATORY PROTECTION: If mists or sprays from this product are created during use, use appropriate respiratory protection. If necessary, use only respiratory protection authorized in appropriate regulations. Oxygen levels below 19.5% are considered IDLH by OSHA. In such atmospheres, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under appropriate regulations and standards. The following NIOSH respiratory equipment guidelines for components that present an inhalation hazard are presented for additional assistance in respiratory protective equipment selection.

ISOPHORONE DIISOCYANATE

CONCENTRATION: 
- 0.05 ppm: Use Supplied-Air Respirator (SAR).
- 0.125 ppm: Use SAR operated in a continuous-flow mode.
- 0.25 ppm: Use Self-Contained Breathing Apparatus (SCBA) with a full facepiece or any SAR with a full facepiece.
- 1 ppm: Use SAR that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.

Emergency or Planned Entry into Unknown Concentrations or IDLH Conditions: Any SCBA that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode, or any SAR that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary SCBA operated in pressure-demand or other positive-pressure mode.

Escape: Any Air-Purifying, Full-Facepiece Respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister, or any appropriate escape-type, SCBA.

9. PHYSICAL and CHEMICAL PROPERTIES

FORM: Smooth paste.

MOLECULAR WEIGHT: Mixture.

ODOR: Mild

SPECIFIC GRAVITY: 1.3-1.4

RELATIVE VAPOR DENSITY (air = 1): Heavier than air.

SOLUBILITIES: Not available.

MELTING/FREEZING POINT: Not available.

VOC (less water and exempt): <20 g/L

FLASH POINT: > 93.2°C (> 200°F)

pH: Not available.

FLAMMABLE LIMITS (in air by volume, %): Lower: Not established; Upper: Not established.

HOW TO DETECT THIS SUBSTANCE (IDENTIFYING PROPERTIES): The appearance of this product may act as an identifying property in the event of an accidental release.

10. STABILITY and REACTIVITY

CHEMICAL STABILITY: Stable under normal circumstances of use and handling.

CONDITIONS TO AVOID: Avoid contact with incompatible chemicals and exposure to extreme temperatures.

INCOMPATIBLE MATERIALS: This product is not compatible with strong acids and oxidizers and may have some incompatibility with aluminum, ammonium salts and mercury/hydrogen mixtures.

HAZARDOUS DECOMPOSITION PRODUCTS: Combustion: Thermal decomposition of this product can generate formaldehyde, carbon oxides, nitrogen oxides, hydrogen cyanide, isocyanates and isocyanic acid. Hydrolysis: Not known.

POSSIBILITY OF HAZARDOUS REACTIONS/POLYMERIZATION: This product is not expected to undergo hazardous polymerization, decomposition, condensation, or self-reactivity as this product contains stabilizers. Product slowly cures upon contact with moisture in air.

11. TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS: The most significant routes of occupational overexposure are inhalation and contact with skin and eyes. The symptoms of overexposure to this product are as follows:

CONTACT WITH SKIN or EYES: Contact may mildly irritate the skin and cause redness and discomfort. Prolonged or repeated skin contact may cause dermatitis (dry, red skin). Eye contact may cause redness, pain, and tearing.

SKIN ABSORPTION: The components of this product are not known to be absorbed through intact skin. Skin contact may cause sensitization and allergic reaction in susceptible individuals. Symptoms may include redness, itching and rash.

INGESTION: If the product is swallowed, it may mildly irritate the mouth, throat, and other tissues of the gastro-intestinal system and may cause nausea, vomiting, and diarrhea.
11. TOXICOLOGICAL INFORMATION (Continued)

INHALATION: Overexposure to vapors of this product generated during curing, or dusts of this product generated during use after curing may mildly irritate the respiratory tract and cause coughing and sneezing. Vapors or fumes when used in an enclosed space, if heated or during curing may cause irritation of the respiratory system. Symptoms include nose irritation, dry or sore or burning throat, runny nose, shortness of breath, dizziness, incoordination. Inhalation may cause respiratory sensitization and allergic reaction.

INJECTION: Accidental injection of this product (e.g. puncture with a contaminated object) may cause burning, redness, and swelling in addition to the wound.

TARGET ORGANS: Acute: Skin, eyes, central nervous system. Chronic: Skin, respiratory system.

CHRONIC EFFECTS: Prolonged or repeated skin contact may cause dermatitis (dry, red skin), sensitization to the skin and respiratory system or adverse liver or kidney effects.

TOXICITY DATA: There are currently no toxicity data available for this product; the following toxicology information is available for components greater than 1% in concentration.

CALCULUM CARBONATE, SYNTHETIC:
- Standard Draize Test (Skin-Rabbit) 500 mg/24 hours: Moderate
- Standard Draize Test (Eye-Rabbit) 750 µg/24 hours: Severe
- TDLo (Oral-Human) 4.08 gm/kg/30 days- intermittent: Vascular: BP elevation not characterized in autonomic section; Gastrointestinal: changes in structure or function of endocorine pancreas; Biochemical: Metabolism (Intermediary); effect on inflammation or mediation of inflammation
- LDLo (Oral-Rat) 60 mg/kg
- TDLo (Oral-Rat) 60 mg/kg: Gastrointestinal: hypermotility, diarrhea, other changes
- TDLo (Oral-Rat) 10 mg/kg: Biochemical: Metabolism (Intermediary): effect on inflammation or mediation of inflammation

DIISONONYL PHthalATE:
- TDLo (Oral-Rat) 52.5 gm/kg: multi-generations: Reproductive: Paternal Effects: other effects on male; Maternal Effects: other effects

STEARIC ACID (continued):
- LDLo (Intravenous-Mouse) 23 mg/kg: Behavioral: convulsions or effect on seizure threshold; Lungs, Thorax, or Respiration: other changes
- LDLo (Oral-Rat) 4640 mg/kg
- TDLo (Oral-Rat) 313 gm/kg/30 weeks- continuous: Related to Chronic Data: death
- TDLo (Oral-Rat) 8400 gm/kg/24 weeks- intermittent: Biochemical: Metabolism (Intermediary): lipids including transport
- TDLo (Oral-Rat) 31,500 mg/kg/30 weeks- continuous: Related to Chronic Data: death
- TDLo (Oral-Rat) 157.5 gm/kg/6 weeks- intermittent: Blood: change in clotting factors, changes in serum composition (e.g. TP, bilirubin, cholesterol); Biochemical: Metabolism (Intermediary): lipids including transport
- TDLo (Oral-Mouse) 252 gm/kg/3 weeks- intermittent: Nutritional and Gross Metabolic: weight loss or decreased weight gain
- TDLo (Oral-Mouse) 1260 gm/kg/3 weeks- intermittent: Nutritional and Gross Metabolic: weight loss or decreased weight gain; Related to Chronic Data: death
- TDLo (Intramuscular-Rat) 31,500 mg/kg/30 weeks- continuous: Behavioral: food intake (animal); Lungs, Thorax, or Respiration: other changes; Related to Chronic Data: death
- TDLo (Implant-Mouse) 400 mg/kg; Tumorigenic: equivocal tumorigenic agent by RTECS criteria: Kidney/Urinary/Gastrointestinal: tumors
- DNA Damage (Human Liver) 10 mg/L/20 hours

PROPRIETARY SILICA:
- TCLU (Inhalation-Rat) 30 mg/kg/6 hours/4 weeks- intermittent: Lungs, Thorax, or Respiration: other changes; Blood: hemorrhage; Related to Chronic Data: death

CARCINOGENIC POTENTIAL: The following table summarizes the carcinogenicity listing for the components of this product.

<table>
<thead>
<tr>
<th>CHEMICAL</th>
<th>EPA</th>
<th>IARC</th>
<th>NTP</th>
<th>NIOSH</th>
<th>ACGIH</th>
<th>OSHA</th>
<th>PROP 65</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcium Carbonate (Synthetic)</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Dialkyl Phthalate</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Diisononyl Phthalate</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Isophorone Disocyanate</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Proprietary Silica</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Stearic Acid</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

IRRITANTY OF PRODUCT: This product may mildly irritate contaminated tissue, especially if contact is prolonged. Eye irritation may be more pronounced.

SENSITIZATION TO THE PRODUCT: This product contains diisocyanate compounds, which are known human skin and respiratory sensitizers. Exposure can cause allergic reactions. Cross-sensitization between different isocyanates may occur.

Respiratory Sensitization: Initial symptoms of respiratory reactions may appear to be a cold or mild hay fever. However, severe asthmatic symptoms can develop and include wheezing, chest tightness, shortness of breath, difficulty breathing and/or coughing. Fever, chills, general feelings of discomfort, headache, and fatigue can also occur. Symptoms may occur immediately upon exposure (within an hour), several hours after exposure or both, and/or at night. Typically, the asthma improves with removal from exposure (e.g. weekends or vacations) and returns, in some cases, in the form of an “acute attack”, on renewed exposure. Sensitized people who continue to work with diisocyanates may develop symptoms sooner after each exposure. The number and severity of symptoms may increase. Death has occurred in sensitized individuals accidentally exposed to relatively low concentrations of diisocyanates. Following removal from exposure, some sensitized workers may continue to show a slow decline in lung function and have persistent respiratory symptoms such as asthmatic symptoms, chronic bronchiitis and hypersensitivity for months or years. Exposure to isocyanates is likely to aggravate existing respiratory disease, such as chronic bronchitis, and emphysema.

Skin Sensitization: Repeated skin contact with diisocyanates has caused skin sensitization in humans, although the condition is not common. Once a person is sensitized, contact with even a small amount can cause outbreaks of dermatitis with symptoms such as redness, rash, itching and swelling. This can spread from the hands or arms to the face and body. Some people who have inhaled diisocyanate developed extensive skin rashes can last weeks.

TOXICOLOGICAL SYNERGISTIC PRODUCTS: None known.

REPRODUCTIVE TOXICITY INFORMATION: This product has not been tested for reproductive toxicity.

MUTAGENICITY/EMBRYOTOXICITY/TERATOGENICITY/REPRODUCTIVE TOXICITY: No information available.

BIOLOGICAL EXPOSURES INDICES (BEI): There are no BEI’s established for any component of this product at this time.
12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

MOBILITY: This product has not been tested for mobility in soil.

PERSISTENCE AND BIODEGRADABILITY: This product has not been tested for persistence or biodegradability.

BIO-ACCUMULATION POTENTIAL: This product has not been tested for bio-accumulation potential.

ECOTOXICITY: This product has not been tested for aquatic or animal toxicity. Although no data are not available, under the Global Harmonization Standard, the Isophorone Diisocyanate component is classified as having chronic aquatic toxicity.

OTHER ADVERSE EFFECTS: This material is not expected to have any ozone depletion potential.

ENVIRONMENTAL EXPOSURE CONTROLS: Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways.

13. DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL: As supplied, this product would not be a hazardous waste as defined by U.S. federal regulation (40 CFR 261) if discarded or disposed. State and local regulations may differ from federal regulations. The generator of the waste is responsible for proper waste determination and management.

U.S. EPA WASTE NUMBER: Not applicable.

14. TRANSPORTATION INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION: This product is NOT classified as Dangerous Goods, per U.S. DOT regulations, under 49 CFR 172.101.

TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: This product is NOT classified as Dangerous Goods, per regulations of Transport Canada.

INTERNATIONAL AIR TRANSPORT ASSOCIATION SHIPPING INFORMATION (IATA): This product is NOT classified as dangerous goods, per the International Air Transport Association.

INTERNATIONAL MARITIME ORGANIZATION SHIPPING INFORMATION (IMO): This product is not classified as dangerous goods, per the International Maritime Organization.

15. REGULATORY INFORMATION

ADDITIONAL U.S. REGULATIONS:

U.S. SARA REPORTING REQUIREMENTS: The following components of this product are subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act.

<table>
<thead>
<tr>
<th>CHEMICAL</th>
<th>SECTION 302 EHS (TPQ) (40 CFR 355, Appendix A)</th>
<th>SECTION 304 RQ (40 CFR Table 302.4)</th>
<th>SECTION 313 TRI (threshold) (40 CFR 372.65)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isophorone Diisocyanate</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

U.S. SARA 302 EXTREMELY HAZARDOUS THRESHOLD PLANNING QUANTITY (TPQ): Isophorone Diisocyanate: 500 lb (227 kg)

U.S. SARA 304 EXTREMELY HAZARDOUS REPORTABLE QUANTITY (RQ): Isophorone Diisocyanate: 500 lb (227 kg)

U.S. SARA HAZARD CATEGORIES (SECTION 311/312, 40 CFR 370-21): ACUTE: Yes; CHRONIC: Yes; FIRE: No; REACTIVE: No;

SUDDEN RELEASE: No

U.S. TSCA INVENTORY STATUS: All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

U.S. CERCLA REPORTABLE QUANTITY (RO): Not applicable.

U.S. CLEAN AIR ACT (CA 112r) THRESHOLD QUANTITY (TQ): Not applicable.

OTHER U.S. FEDERAL REGULATIONS: Not applicable.

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65): No component of this product is found on the Proposition 65 List of chemicals known to the state to cause cancer.

ADDITIONAL CANADIAN REGULATIONS:

CANADIAN DSL/NDISL INVENTORY STATUS: The components of this product are listed on the DSL Inventory.

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) PRIORITIES SUBSTANCES LISTS: No component of this product is on the CEPA Priorities Substances Lists.

CANADIAN WHMIS REGULATIONS: This product is classified as a Controlled Product, Hazard Class D2B (Immediate Acute Toxicity/Irritation & Sensitization) as per the Controlled Product Regulations.

ADDITIONAL MEXICAN REGULATIONS:

MEXICAN WORKPLACE REGULATIONS (NOM-018-STPS-2000): This product is not classified as hazardous.

16. OTHER INFORMATION

WARNINGS (per ANSI Z129.1): CAUTION! MAY CAUSE EYE, SKIN, AND RESPIRATORY TRACT IRRITATION, ESPECIALLY IF EXPOSURE IS PROLONGED. MAY CAUSE SKIN AND RESPIRATORY SENSITIZATION AND ALLERGIC REACTION IN SUSCEPTIBLE INDIVIDUALS. CONTAINS TRACE COMPOUND THAT MAY CAUSE CHRONIC AQUATIC ADVERSE EFFECTS. COMBUSTIBLE – CAN IGNITE IF EXPOSED TO DIRECT FLAME. Avoid contact with eyes, skin, and clothing. Avoid breathing fumes, dusts, vapors or mist. Do not taste or swallow. Wash thoroughly after handling. Keep container tightly closed. Use only with adequate ventilation. Keep away from heat and flame. Wear gloves, eye protection, respiratory protection, and appropriate body protection.
16. OTHER INFORMATION (Continued)

**WARNINGS (continued):**

**FIRST-AID:** In case of contact, immediately flush skin and eyes with plenty of water. Remove contaminated clothing and shoes. Get medical attention if irritation develops or persists. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If swallowed, do not induce vomiting. Get medical attention.

**IN CASE OF FIRE:** Use water fog, foam, dry chemical, or CO₂.

**IN CASE OF SPILL:** Absorb spilled product with polyponds or other suitable absorbing material. Place all spill residue in an appropriate container and seal. Dispose of in accordance with U.S. Federal, State, and local hazardous waste disposal regulations and those of Canada.

**GLOBAL HARMONIZATION LABELING AND CLASSIFICATION:**

- **Classification:** Acute Oral Toxicity Category 5, Eye Irritation Category 2B, Skin Irritation Category 3, Skin Sensitization Category 1, Respiratory Sensitization Category 1, Aquatic Chronic Toxicity Category 4
- **Signal Word:** Warning
- **Hazard Statements:**
  - H303: May be harmful if ingested.
  - H316: Causes mild skin irritation.
  - H320: Causes eye irritation.
  - H317: May cause an allergic skin reaction.
  - H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
  - H413: May be harmful to aquatic life with long-lasting effects.

**Precautionary Statements:**

- **Response:** P332 + P313: If skin irritation occurs, get medical attention. P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. P337 + P313: If eye irritation persists: Get medical advice/attention. P302 + P352: IF ON SKIN: Wash with plenty of soap and water. P333 + P313: If rash or irritation occurs: Get medical advice/attention. P362 + P364: Take off contaminated clothing and wash it before reuse. P304 + P340: If inhaled, remove victim to fresh air and keep at rest in a position comfortable for breathing. P342 + P311: If experiencing respiratory symptoms: Call a POISON CENTER or doctor. P321: Specific treatment (remove from exposure and treat symptoms).
- **Storage:** P403 + P233: Store in a well-ventilated place. Keep container tightly closed.
- **Disposal:** P501: Dispose of contents/containers in accordance with all local, regional, national and international regulations.

**Hazard Symbols/Pictogram:** GHS07

**DISCLAIMER OF EXPLAINED AND IMPLIED WARRANTIES**

The information presented in this Material Safety Data Sheet is presented in good faith based on data believed to be accurate as of the date this Material Safety Data Sheet was prepared. HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THE INFORMATION PROVIDED ABOVE, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE. In no case shall the descriptions, information, data or designs provided be considered a part of our terms and conditions of sale.

All materials may present hazards and should be used with caution. Because many factors may affect processing or application/use, we recommend that you make tests to determine the suitability of a product for your particular purpose prior to use. No responsibility is assumed for any damage or injury resulting from abnormal use or from any failure to adhere to recommended practices or applicable federal, state, or local laws or regulations. The information provided above, and the product, are furnished on the condition that the person receiving them shall make their own determination as to the suitability of the product for their particular purpose and on the condition that they assume the risk of their use. In no case shall the description, information, or the product, the safety of this product, or the hazards related to its use, be implied unless otherwise specified that shall not be exceeded at any time during a working day.

**REFERENCES AND DATA SOURCES:** Contact the supplier for information.

**METHODS OF EVALUATING INFORMATION FOR THE PURPOSE OF CLASSIFICATION:** Bridging principles were used to classify this product.

**DEFINITIONS OF TERMS**

A large number of abbreviations and acronyms appear on a MSDS. Some of these, which are commonly used, include the following:

**KEY ACRONYMS:**

- **CEMTREC:** Chemical Transportation Emergency Center, a 24-hour emergency information and/or emergency assistance to emergency responders.
- **CEILING LEVEL:** The concentration that shall not be exceeded during any part of the working exposure.
- **DFG MAK:** Federal Republic of Germany Maximum Concentration Values in the workplace.
- **DFG MAK Germ Cell Mutagen Categories:** 1: Germ cell mutagens that have been shown to increase the mutant frequency in the progeny of exposed mammals. 2A: Substances that have been shown to induce genetic damage in germ cells of human or animals, which produce mutagenic effects in somatic cells of mammals. 3: Somatic cells in vivo and have been shown to cause germ cell mutations because of their genotoxic effects in mammalian somatic cell in vivo; in exceptional cases, substances for which there are no in vivo data, but that are clearly mutagenic in vitro and structurally related to known in vivo mutagens. 4: Not applicable (Category 4 carcinogenic substances with primary targets other than DNA [e.g. purely aneugenic substances] if research results make this seem sensible.)
- **DEG MAK Germ Cell Mutagen Category:** A risk of damage to the developing embryo or fetus has been unequivocally demonstrated. Exposure of pregnant women can lead to damage of the developing organism, even when MAK and BAT (Biological Tolerance Value for Working Materials) values are observed. Group A: Currently available information indicates a risk of damage to the developing embryo or fetus must be considered to be probable. Damage to the developing organism cannot be excluded when pregnant women are exposed, even when MAK and BAT values are observed. Group B: There is no reason to fear a risk of damage to the developing embryo or fetus when MAK and BAT values are observed. Group C: There is no set of specifications that the group A–C is not yet possible because, although the data available may indicate a trend, they are not sufficient for final evaluation.
- **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.
- **LOQ:** Limit of Quantitation.
- **NE:** Not Established. When no exposure guidelines are established, an entry of NE is made for reference.
- **NIC:** Notice of Intended Change.

**KEY ACRONYMS (continued):**

- **NIOSH CEILING:** The exposure that shall not be exceeded during any part of the workday. If continuous monitoring is not feasible, the ceiling shall be assumed as a 15-minute TWA exposure (unless otherwise specified) that shall not be exceeded at any time during a working day.
- **NIOSH RELs:** NIOSH’s Recommended Exposure Limits.
- **PEL:** OSHA’s Permissible Exposure Limits. 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 (Federal Register: 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 that was vacated.
- **STEL:** Short Term Exposure Limit, usually a 15-minute time-weighted average (TWA) exposure that should not be exceeded at any time during a working day, even if the 8-hour TWA is within the TLV-TWA, PEL-TWA or REL-TWA.
- **TLV:** Threshold Limit Value. An airborne concentration of a substance that 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.
- **TWA:** Time Weighted Average exposure concentration for a conventional 8-hr (TLV), PEL) or up to a 10-hr (REL) workday and a 40-hr workweek.

**HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS:** This rating system was developed by the National Paint and Coating Association and has been adopted by industry to identify the degree of chemical hazards.

**HEALTH HAZARD:** 0 Minimal Hazard. No significant health risk. Irritation of skin or eyes only anticipated. Skin Irritation: Essentially non-irritating. Mechanical irritation may occur. PEL or Draize = 0. Eye Irritation: Essentially non-irritating, minimal effects clearing in < 24 hours. Mechanical irritation may occur. Draize = 0. Oral Toxicity LD₅₀: Rat > 5000 mg/kg. Dermal Toxicity LD₅₀: Rat or Rabbit > 2000 mg/kg. Inhalation Toxicity 4-hrs LC₅₀: Rat > 20 mg/L. 1 Slight Hazard: Minor reversible injury may occur; may irritate the stomach if swallowed; may defat the skin and exacerbate existing dermatitis. Skin Irritation: Slightly or mildly irritating; PEL or Draize > 0 < 5. Eye Irritation: Slightly to mildly irritating, but reversible within 7 days. Drazie > 0 ≥ 25. Oral Toxicity LD₅₀: Rat > 500–5000 mg/kg. Dermal Toxicity LD₅₀: Rat or Rabbit > 1000–2000 mg/kg. Inhalation Toxicity LC₅₀: 4-hrs Rat > 20 mg/L. 2 Moderate Hazard: Temporary or transitory injury may occur; prolonged exposure may affect the CNS. Skin Irritation: Moderately irritating; primary irritant; sensitizer. PEL or Draize ≥ 5, with no destruction of dermal tissue. Eye Irritation: Moderately to severely irritating; reversible cornalian opacity; corneal involvement or irritation clearing in 8–21 days. Draize = 26–100, with reversible effects. Oral Toxicity LD₅₀: Rat ≥ 50–500 mg/kg. Dermal Toxicity LD₅₀: Rat or Rabbit > 200–1000 mg/kg. Inhalation Toxicity LC₅₀: 4-hrs Rat > 0.5–2 mg/L.
DEFINITIONS OF TERMS (Continued)

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS (continued):

**HEALTH HAZARD** (continued): 3 Serious Hazard: Major injury unless prompt action is taken and medical treatment is given; high level of toxicity; corrosive. Skin Irritation: Severely irritating and/or corrosive: may cause destruction of dermal tissue, skin burn, and dermal necrosis. Ph/PI: Drai > 5.8, with destruction of tissue. Eye Irritation: Corrosive, irreversible destruction of ocular tissue; corneal involvement or irritation persisting for more than 21 days. Drai > 80 with effects irreversible or incapacitating for > 48 hours. Pyrexia: Ph/PI: Drai > 80 with a mean burning time less than or equal to the mean burning time of a 1:1 nitric acid (65%)/cellulose mixture. Inhalation Toxicity LC50 4 hr Rat: > 0.05 – 0.05 mg/L. 4.4 Severe Hazard: Life threatening; major or permanent damage may result from single or repeated exposures; extremely toxic; irreversible or incapacitating for > 48 hours. Pyrexia: Ph/PI: Drai > 55 with a mean burning time of a 2-3 potassium bromate/cellulose mixture. Inhalation Toxicity LC50 4 hr Rat or Rabbit ≤ 20 mg/kg. Inhalation Toxicity LC50 4 hr Rat: > 20 – 200 mg/kg. Inhalation Toxicity LC50 4 hr Rat or Rabbit: > 20 mg/kg.

**FLAMMABILITY HAZARD** 6 Minimal Hazard: Materials that will not burn in air when exposed to a temperature of 185°C (365°F) for a period of 5 minutes. 1 Slight Hazard: Materials that must be pre-heated before ignition can occur. Material requires considerable pre-heating; under all ambient temperature and pressure conditions. 2 Pyrophoric: Materials that will ignite almost immediately when exposed to ambient conditions; must be preheated; must be handled with care. 3 Flash and Fire Points by Cleveland Open Cup Tests and Criteria: Any material that, either in concentration tested, exhibits a mean burning time of less than or equal to the mean burning time of a 1:1 nitric acid (65%)/cellulose mixture and the criteria for Packing Group I and II are not met. Unstable Reactives: Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure and have a high potential (or high risk) to cause significant heat generation or explosion. 4 Flammable: Any material that, either in concentration tested, exhibits a mean burning time less than or equal to the mean burning time of a 3:2 potassium bromate/cellulose mixture. Inhalation Toxicity LC50 4 hr Rat or Rabbit ≤ 20 mg/kg. Inhalation Toxicity LC50 4 hr Rat: > 20 – 200 mg/kg. Inhalation Toxicity LC50 4 hr Rat or Rabbit: > 20 mg/kg.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS (continued):

**PHYSICAL HAZARD** (continued): 4 Water Reactivity: Materials that react explosively with water without requiring heat or confinement. Organic Peroxides: Materials that are readily capable of decomposition or explosion under specified temperature and pressure conditions. Division 1.2 combustible. 5 Other Reactivity: Explosive substances that have a mass explosion hazard or have a projection hazard. A mass explosion is one that affects almost the entire load instantaneously. Compressed Gases: Materials falling within Division 2.1 or 2.2 which give off flammable vapors. Explosive: Division 2.1 and 2.2 explosives. Explosive substances that have a mass explosion hazard or have a projection hazard. 6 Sedimented: Substances that are inherently noncombustible or nonignitable, including dry materials.
DEFINITIONS OF TERMS (Continued):

FLAMMABILITY HAZARD (continued): Materials that on account of their physical form or environmental conditions can form explosive mixtures with air and are readily dispersed in air. Flammable or combustible dusts with representative diameter less than 420 microns (40 mesh). Materials that burn with extreme rapidity, usually by reason of self-contained oxygen (e.g. dry nitrocellulose and many organic peroxides). Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent.

Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air and will burn readily. Flammable gases. Flammable cryogenic materials. Any liquid or gaseous materials that is liquid while under pressure and has a flash point below 22.8°C (73°F) and a boiling point below 37.8°C (100°F) (i.e. Class IA liquids). Materials that ignite when exposed to air. Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent.

Autoignition Temperature: The lowest temperature of a solid, liquid, or gas required to initiate or sustain combustion in air. This temperature is considered to be autoignition if the spontaneous exotherm continues unabated even though all external heat sources are removed. This temperature is determined at specific pressures and is in accordance with the standard autoignition temperature test procedures. Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 0.01 W/mL and below 10 W/mL. Materials that readily undergo violent chemical change at elevated temperatures and pressures. Materials that have an instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) below 0.01 W/mL.

Materials that readily undergo violent chemical change at elevated temperatures and pressures. Materials that have an instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 10 W/mL and below 100 W/mL. Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 100 W/mL and below 1000 W/mL. Materials that are sensitive to localized thermal or mechanical shock at normal temperatures and pressures. Materials that are sensitive to localized thermal or mechanical shock at normal temperatures and pressures. Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) of 100 W/mL or greater.

FLAMMABILITY LIMITS IN AIR: The lower flammable limit (LFL) is the lowest concentration of a flammable vapor or gas/air mixture that will ignite and burn with a flame. The upper flammable limit (UFL) is the highest concentration of a flammable vapor or gas/air mixture that will ignite and burn with a flame.

TOXICOLOGICAL INFORMATION:

Human and Animal Toxicology: Possible health hazards as derived from human data, animal studies, or from the results of studies with similar compounds are presented. LD₅₀: Lethal Dose (solids & liquids) that kills 50% of the exposed animals. LC₅₀: Lethal Concentration (gases) that 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. mugs: Quantity of material, by weight, administered to a test subject, based on their body weight in kg. TL₅₀: Lowest dose to cause a symptom. TCL₅₀: Lowest concentration to cause a symptom. TD₅₀, LD₅₀, and LC₅₀ or TC, TCₙ, LCₙ and LCₙ: Lowest dose (or concentration) to cause lethal or toxic effects. Cancer Information: IARC: International Agency for Research on Cancer. NTP: National Toxicology Program. RTECS: Registry of Toxic Effects of Chemical Substances. 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. Other Information: BEI: NCI 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.

REPRODUCTIVE INFORMATION: A mutagen is a chemical that causes permanent changes to genetic material (DNA) such that the changes will propagate through generational lines. An embryotoxicity is a chemical that causes damage to a developing embryo (i.e. within the first eight weeks of pregnancy in humans), but the damage does not propagate across generational lines. A teratogen is a chemical that causes damage to a developing fetus, but the damage does not propagate across generational lines. A reproductive toxin is any substance that interferes in any way with the reproductive process.

ECOLOGICAL INFORMATION:

EC: Effect concentration in water. BCF: Bioconcentration Factor, which is used to determine if a substance will concentrate in life forms that consume contaminated plant or animal matter. TLo: Toxicological Limit for Water. 

REGULATORY INFORMATION: This section explains the impact of various laws and regulations on the material.

CANADA: