EMSEAL Safety Data Sheet
Product Package

DFR System
1. Identification of the Substance / Preparation

<table>
<thead>
<tr>
<th>Product identifier</th>
<th>Emshield DFR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other identifier or names</td>
<td>DFR, DFR2, DFR3</td>
</tr>
<tr>
<td>UN ID number</td>
<td>None</td>
</tr>
<tr>
<td>Manufacturer Address</td>
<td>EMSEAL LLC 111 Royal Group Crescent Woodbridge, Ontario L4H 1X9 Canada</td>
</tr>
<tr>
<td>Company Phone</td>
<td>(508) 836-0280 M-F 9am - 5pm</td>
</tr>
<tr>
<td>Emergency Phone</td>
<td>CHEMTREC (800) 424-9300 (24 Hours)</td>
</tr>
</tbody>
</table>

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

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

**NOTE:** Silicone facing is fully cured. The composition of the silicone 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>
</tr>
</thead>
<tbody>
<tr>
<td>Polydimethyl Siloxane Diol</td>
<td>70131-67-8 3</td>
<td>0.0–60.0</td>
<td>SELF CLASSIFICATION Classification: Not Applicable</td>
</tr>
<tr>
<td>Calcium Carbonate (Limestone)</td>
<td>1317-65-3</td>
<td>10.0–40.0</td>
<td>SELF CLASSIFICATION Classification: Not Applicable</td>
</tr>
<tr>
<td>Synthetic Calcium Carbonate</td>
<td>371-34-1</td>
<td>10.0–40.0</td>
<td>SELF CLASSIFICATION Classification: Not Applicable</td>
</tr>
<tr>
<td>Phenyl Oximino Silane</td>
<td>34036-80-1</td>
<td>1.0–5.0</td>
<td>Classification: STOT RE Cat. 2, Skin Sensitization Cat. 1, Aquatic, Chronic Toxicity Cat. 3 Hazard Statement Codes: H373, H317, H412</td>
</tr>
<tr>
<td>Silicon Dioxide, Fumed</td>
<td>112945-52-5</td>
<td>1.0–5.0</td>
<td>SELF CLASSIFICATION Classification: Not Applicable</td>
</tr>
<tr>
<td>Mineral Spirits</td>
<td>8052-41-3</td>
<td>0.0-1.0</td>
<td>Classification: Carcinogenic Cat. 1B, Mutagenic Cat. 1B, Aspiration Hazard Cat. 1 Hazard Statement Codes: H350, H340, H304</td>
</tr>
<tr>
<td>Quartz</td>
<td>14808-60-7</td>
<td>Trace</td>
<td>SELF CLASSIFICATION Classification: Carcinogenic Cat. 1B Hazard Statement Codes: H350</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). Classification: Not Applicable
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 breath 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 colored silicone 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

Northern Manufacturing Construction Grade Epoxy Part A

Revision Date 12/05/2019

Print Date 12/05/2019

1. Identification

Product name : Northern Manufacturing Construction Grade Epoxy Part A

Supplier : Northern Manufacturing
111 Royal Group Crescent, Unit NM
Woodbridge, ON L4H 1X9 Canada

Telephone : 416-740-2090 (8AM - 5PM EST) (M-F)

Emergency telephone : Chemtrec 1-800-424-9300 (24 Hours)

Recommended use of the chemical and restrictions on use : For further information, refer to product data sheet.

2. Hazards identification

GHS Classification

Skin irritation, Category 2 H315: Causes skin irritation.
Eye irritation, Category 2A H319: Causes serious eye irritation.
Skin sensitization, Category 1 H317: May cause an allergic skin reaction.
Carcinogenicity, Category 1A (Inhalation) H350i: May cause cancer by inhalation.
Specific target organ systemic toxicity - single exposure, Category 3, Respiratory system H335: May cause respiratory irritation.
Specific target organ systemic toxicity - repeated exposure, Category 1, Lungs H372: Causes damage to organs through prolonged or repeated exposure.

GHS label elements

Hazard pictograms :

Signal Word : Danger

Hazard Statements :
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H350i May cause cancer by inhalation.
H372 Causes damage to organs (Lungs) through prolonged or repeated exposure.
Precautionary Statements:

**Prevention:**
- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P260 Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
- P264 Wash skin thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P271 Use only outdoors or in a well-ventilated area.
- P272 Contaminated work clothing must not be allowed out of the workplace.
- P280 Wear protective gloves/ eye protection/ face protection.
- P281 Use personal protective equipment as required.

**Response:**
- P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
- P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P308 + P313 IF exposed or concerned: Get medical advice/ attention.
- P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
- P337 + P313 If eye irritation persists: Get medical advice/ attention.
- P362 Take off contaminated clothing and wash before reuse.

**Storage:**
- P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
- P405 Store locked up.

**Disposal:**
- P501 Dispose of contents/ container to an approved waste disposal plant.

See Section 11 for more detailed information on health effects and symptoms.
There are no hazards not otherwise classified that have been identified during the classification process.
There are no ingredients with unknown acute toxicity used in a mixture at a concentration >= 1%.

### 3. Composition/information on ingredients

#### Hazardous ingredients

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>Concentration (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quartz (SiO2)</td>
<td>14808-60-7</td>
<td>&gt;= 25 - &lt; 50 %</td>
</tr>
<tr>
<td>bisphenol-A-(epichlorhydrin) epoxy resin</td>
<td>25068-38-6</td>
<td>&gt;= 10 - &lt; 20 %</td>
</tr>
<tr>
<td>oxirane, mono(C12-14-alkyloxy)methyl</td>
<td>derivatives</td>
<td>68609-97-2</td>
</tr>
</tbody>
</table>
There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4. First aid measures

If inhaled:
- Move to fresh air.
- Consult a physician after significant exposure.

In case of skin contact:
- Take off contaminated clothing and shoes immediately.
- Wash off with soap and plenty of water.
- If symptoms persist, call a physician.

In case of eye contact:
- Immediately flush eye(s) with plenty of water.
- Remove contact lenses.
- Keep eye wide open while rinsing.
- If eye irritation persists, consult a specialist.

If swallowed:
- Clean mouth with water and drink afterwards plenty of water.
- Do not induce vomiting without medical advice.
- Do not give milk or alcoholic beverages.
- Never give anything by mouth to an unconscious person.
- Obtain medical attention.

Most important symptoms and effects, both acute and delayed:
- Irritant effects
- Sensitizing effects
- Carcinogenic effects

- Cough
- Respiratory disorder
- Allergic reactions
- Excessive lachrymation
- Erythema
- Dermatitis
- See Section 11 for more detailed information on health effects and symptoms.

- Causes skin irritation.
- May cause an allergic skin reaction.
- Causes serious eye irritation.
- May cause respiratory irritation.
- May cause cancer by inhalation.
- Causes damage to organs through prolonged or repeated exposure.

Protection of first-aiders:
- Move out of dangerous area.
- Consult a physician.
- Show this material safety data sheet to the doctor in attendance.

Notes to physician:
- Treat symptomatically.
5. Fire-fighting measures

Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Specific extinguishing methods : Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Special protective equipment for fire-fighters : In the event of fire, wear self-contained breathing apparatus.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures : Use personal protective equipment. Deny access to unprotected persons.

Environmental precautions : Do not flush into surface water or sanitary sewer system. If the product contaminates rivers and lakes or drains inform respective authorities. Local authorities should be advised if significant spillages cannot be contained.

Methods and materials for containment and cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

7. Handling and storage

Advice on safe handling : Avoid exceeding the given occupational exposure limits (see section 8). Do not get in eyes, on skin, or on clothing. For personal protection see section 8. Persons with a history of skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used. Smoking, eating and drinking should be prohibited in the application area. Follow standard hygiene measures when handling chemical products.

Conditions for safe storage : Prevent unauthorized access. Store in original container. Keep in a well-ventilated place. Observe label precautions. Store in accordance with local regulations.

Materials to avoid : No data available
8. Exposure controls/personal protection

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Basis **</th>
<th>Value</th>
<th>Exposure limit(s)* / Form of exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quartz (SiO2)</td>
<td>14808-60-7</td>
<td>OSHA Z-3</td>
<td>TWA</td>
<td>10 mg/m³ / %SiO₂+2 respirable</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>OSHA Z-3</td>
<td>TWA</td>
<td>250 mppcf / %SiO₂+5 respirable</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OSHA P0</td>
<td>TWA</td>
<td>0.1 mg/m³ Respirable fraction</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ACGIH</td>
<td>TWA</td>
<td>0.025 mg/m³ Respirable fraction</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OSHA Z-1</td>
<td>TWA</td>
<td>0.05 mg/m³ Respirable dust</td>
</tr>
</tbody>
</table>

*The above mentioned values are in accordance with the legislation in effect at the date of the release of this safety data sheet.

**Basis
ACGIH. Threshold Limit Values (TLV)
OSHA P0. Table Z-1, Limit for Air Contaminant (1989 Vacated Values)
OSHA P1. Permissible Exposure Limits (PEL), Table Z-1, Limit for Air Contaminant
OSHA P2. Permissible Exposure Limits (PEL), Table Z-2
OSHA Z3. Table Z-3, Mineral Dust

Engineering measures : Use of adequate ventilation should be sufficient to control worker exposure to airborne contaminants. If the use of this product generates dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

Personal protective equipment
Respiratory protection : Use a properly fitted NIOSH approved air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.
Hand protection

Remarks: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Eye protection

Remarks: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary.

Skin and body protection

Remarks: Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.

Hygiene measures

Remarks: Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. Remove contaminated clothing and protective equipment before entering eating areas. Wash thoroughly after handling.

9. Physical and chemical properties

Appearance: paste
Color: white
Odor: aromatic
Odor Threshold: No data available
Flash point: > 212 °F (> 100 °C)
Ignition temperature: No data available
Decomposition temperature: No data available
Lower explosion limit (Vol%): No data available
Upper explosion limit (Vol%): No data available
Flammability (solid, gas): No data available
Oxidizing properties: No data available
pH: Note: Not applicable
Melting point/range / Freezing point: No data available
Boiling point/boiling range: No data available
Vapor pressure: 0.01 mmHg (0.01 hpa)
Density: 1.99 g/cm³
10. Stability and reactivity

Reactivity : No dangerous reaction known under conditions of normal use.

Chemical stability : The product is chemically stable.

Possibility of hazardous reactions : Stable under recommended storage conditions.

Conditions to avoid : No data available

Incompatible materials : No data available

11. Toxicological information

Acute toxicity
Not classified based on available information.

Components:

bisphenol-A-(epichlorhydrin) epoxy resin:
Acute oral toxicity : LD50 Oral (Rat): > 5,000 mg/kg
Acute dermal toxicity : LD50 Dermal (Rabbit): > 20,000 mg/kg

Skin corrosion/irritation
Causes skin irritation.

Serious eye damage/eye irritation
Causes serious eye irritation.

Respiratory or skin sensitization
Skin sensitization: May cause an allergic skin reaction.
Respiratory sensitization: Not classified based on available information.
Germ cell mutagenicity
Not classified based on available information.

Reproductive toxicity
Not classified based on available information.

STOT-single exposure
May cause respiratory irritation.

STOT-repeated exposure
Causes damage to organs (Lungs) through prolonged or repeated exposure. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Aspiration toxicity
Not classified based on available information.

Carcinogenicity
May cause cancer by inhalation.

IARC
Group 1: Carcinogenic to humans
Quartz (SiO2) 14808-60-7
Group 2B: Possibly carcinogenic to humans
titanium dioxide 13463-67-7

NTP
Known to be human carcinogen
Quartz (SiO2) 14808-60-7

Titanium dioxide (13463-67-7)

In lifetime inhalation studies of rats, airborne respirable-size titanium dioxide particles have been shown to cause an increase in lung tumors at concentrations associated with substantial particle lung burdens and consequential pulmonary overload and inflammation. The potential for these adverse health effects appears to be closely related to the particle size and the amount of the exposed surface area that comes into contact with the lung. However, tests with other laboratory animals such as mice and hamsters, indicate that rats are significantly more susceptible to the pulmonary overload and inflammation that cause lung cancer. Epidemiology studies do not suggest an increased risk of cancer in humans from occupational exposure to titanium dioxide. Titanium dioxide has been characterized by IARC as possibly carcinogenic to humans (Group 2B) through inhalation (not ingestion). It has not been characterized as a potential carcinogen by either NTP or OSHA.

12. Ecological information

Other information
Do not empty into drains; dispose of this material and its container in a safe way. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Component:

bisphenol-A-
(epichlorhydrin) epoxy 25068-38-6 Toxicity to fish:
LC50
13. Disposal considerations

Disposal methods
- Waste from residues: Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.
- Contaminated packaging: Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT
Not dangerous goods

IATA
Not dangerous goods

IMDG
Not dangerous goods

Special precautions for user
No data available

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable

15. Regulatory information

TSCA list
All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.

EPCRA - Emergency Planning and Community Right-to-Know

CERCLA Reportable Quantity
This material does not contain any components with a CERCLA RQ.
Safety Data Sheet

Northern Manufacturing Construction Grade Epoxy Part A

Revision Date 12/05/2019
Print Date 12/05/2019

SARA304 Reportable Quantity
This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards
Chronic Health Hazard
Skin corrosion or irritation
Serious eye damage or eye irritation
Respiratory or skin sensitization
Carcinogenicity
Specific target organ toxicity (single or repeated exposure)

SARA 302
This material does not contain any components with a section 302 EHS TPQ.

SARA 313
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act

Ozone-Depletion Potential
This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

California Prop 65
⚠️ WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov

16. Other information

HMIS Classification

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Physical Hazard</th>
<th>Personal Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>1</td>
<td>0</td>
<td>X</td>
</tr>
</tbody>
</table>

Caution: HMIS® rating is based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® rating is not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® rating is to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). Please note HMIS® attempts to convey full health warning information to all employees.
Safety Data Sheet

Northern Manufacturing Construction Grade Epoxy Part A

Revision Date 12/05/2019

Material number: 577437
Safety Data Sheet

Northern Manufacturing Construction Grade Epoxy Part B

1. Identification

Product name : Northern Manufacturing Construction Grade Epoxy Part B

Supplier : Northern Manufacturing
111 Royal Group Crescent, Unit NM
Woodbridge, ON L4H 1X9 Canada

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

Recommended use of the chemical and restrictions on use : For further information, refer to product data sheet.

2. Hazards identification

GHS Classification

Skin corrosion, Category 1B H314: Causes severe skin burns and eye damage.
Serious eye damage, Category 1 H318: Causes serious eye damage.
Skin sensitization, Category 1 H317: May cause an allergic skin reaction.
Carcinogenicity, Category 1A (Inhalation) H350i: May cause cancer by inhalation.
Specific target organ systemic toxicity - single exposure, Category 3, Respiratory system H335: May cause respiratory irritation.
Specific target organ systemic toxicity - repeated exposure, Category 1, Lungs H372: Causes damage to organs through prolonged or repeated exposure.

GHS label elements

Hazard pictograms : 

Signal Word : Danger

Hazard Statements : H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H335 May cause respiratory irritation.
H350i May cause cancer by inhalation.
H372 Causes damage to organs (Lungs) through prolonged or repeated exposure.
Precautionary Statements:

Prevention:
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing must not be allowed out of the workplace.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P281 Use personal protective equipment as required.

Response:
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P310 Immediately call a POISON CENTER/doctor.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P363 Wash contaminated clothing before reuse.

Storage:
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.

Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Warning:
Reports have associated repeated and prolonged exposure to some of the chemicals in this product with permanent brain, liver, kidney and nervous system damage. Intentional misuse by deliberate concentration and inhalation of vapors may be harmful or fatal.

See Section 11 for more detailed information on health effects and symptoms.
There are no hazards not otherwise classified that have been identified during the classification process.
There are no ingredients with unknown acute toxicity used in a mixture at a concentration >= 1%.

3. Composition/information on ingredients

Hazardous ingredients
4. First aid measures

If inhaled: Move to fresh air. Consult a physician after significant exposure.

In case of skin contact: Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.

In case of eye contact: Small amounts splashed into eyes can cause irreversible tissue damage and blindness. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Continue rinsing eyes during transport to hospital. Remove contact lenses. Keep eye wide open while rinsing.

If swallowed: Clean mouth with water and drink afterwards plenty of water. Do not induce vomiting without medical advice. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. Take victim immediately to hospital.

Most important symptoms and effects, both acute and delayed: Health injuries may be delayed. Corrosive effects. Irritant effects. Sensitizing effects. Carcinogenic effects.

Cough
Respiratory disorder
Allergic reactions
Dermatitis

See Section 11 for more detailed information on health effects and symptoms.

May cause an allergic skin reaction. Causes serious eye damage.
May cause respiratory irritation.  
May cause cancer by inhalation.  
Causes damage to organs through prolonged or repeated exposure.  
Causes severe burns.  

**Protection of first-aiders:**  
Move out of dangerous area.  
Consult a physician.  
Show this material safety data sheet to the doctor in attendance.  

**Notes to physician:**  
Treat symptomatically.  

### 5. Fire-fighting measures

**Suitable extinguishing media:**  
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.  

**Specific extinguishing methods:**  
Collect contaminated fire extinguishing water separately. This must not be discharged into drains.  
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.  

**Special protective equipment for fire-fighters:**  
In the event of fire, wear self-contained breathing apparatus.  

### 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures:**  
Use personal protective equipment.  
Deny access to unprotected persons.  

**Environmental precautions:**  
Do not flush into surface water or sanitary sewer system.  
If the product contaminates rivers and lakes or drains inform respective authorities.  
Local authorities should be advised if significant spillages cannot be contained.  

**Methods and materials for containment and cleaning up:**  
Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).  
Keep in suitable, closed containers for disposal.  

### 7. Handling and storage

**Advice on safe handling:**  
Avoid exceeding the given occupational exposure limits (see section 8).  
Do not get in eyes, on skin, or on clothing.  
For personal protection see section 8.  
Persons with a history of skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.
Smoking, eating and drinking should be prohibited in the application area.
Follow standard hygiene measures when handling chemical products.

Conditions for safe storage:
- Prevent unauthorized access.
- Store in original container.
- Keep in a well-ventilated place.
- Observe label precautions.
- Store in accordance with local regulations.

Materials to avoid:
- No data available

8. Exposure controls/personal protection

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Basis **</th>
<th>Value</th>
<th>Exposure limit(s)* / Form of exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quartz (SiO2)</td>
<td>14808-60-7</td>
<td>OSHA Z-3</td>
<td>TWA</td>
<td>10 mg/m3 / %SiO2+2 respirable</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OSHA Z-3</td>
<td>TWA</td>
<td>250 mppcf / %SiO2+5 respirable</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OSHA P0</td>
<td>TWA</td>
<td>0.1 mg/m3 Respirable fraction</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ACGIH</td>
<td>TWA</td>
<td>0.025 mg/m3 Respirable fraction</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OSHA Z-1</td>
<td>TWA</td>
<td>0.05 mg/m3 Respirable dust</td>
</tr>
<tr>
<td>m-phenylenebis(methylamine)</td>
<td>1477-55-0</td>
<td>ACGIH</td>
<td>C</td>
<td>0.1 mg/m3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OSHA P0</td>
<td>C</td>
<td>0.1 mg/m3</td>
</tr>
</tbody>
</table>

*The above mentioned values are in accordance with the legislation in effect at the date of the release of this safety data sheet.

**Basis**
ACGIH. Threshold Limit Values (TLV)
OSHA P0. Table Z-1, Limit for Air Contaminant (1989 Vacated Values)
OSHA P1. Permissible Exposure Limits (PEL), Table Z-1, Limit for Air Contaminant
OSHA P2. Permissible Exposure Limits (PEL), Table Z-2
OSHA Z3. Table Z-3, Mineral Dust
Safety Data Sheet

Northern Manufacturing Construction Grade Epoxy Part B

Engineering measures: Use of adequate ventilation should be sufficient to control worker exposure to airborne contaminants. If the use of this product generates dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

Personal protective equipment

Respiratory protection: Use a properly fitted NIOSH approved air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.

Hand protection

Remarks: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Eye protection: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary.

Skin and body protection: Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.

Hygiene measures: Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. Remove contaminated clothing and protective equipment before entering eating areas. Wash thoroughly after handling.

9. Physical and chemical properties

Appearance: paste
Color: dark gray
Odor: amine-like
Odor Threshold: No data available
Flash point: > 212 °F (> 100 °C)
Ignition temperature: No data available
Decomposition temperature: No data available
Conditions to avoid:

No data available

Incompatible materials:

No data available

Safety Data Sheet
Northern Manufacturing Construction Grade Epoxy Part B

Revision Date 12/05/2019
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- Lower explosion limit (Vol%) : No data available
- Upper explosion limit (Vol%) : No data available
- Flammability (solid, gas) : No data available
- Oxidizing properties : No data available
- pH : Note: Not applicable
- Melting point/range / Freezing point : No data available
- Boiling point/boiling range : No data available
- Vapor pressure : 0.01 mmHg (0.01 hpa)
- Density : 2.01 g/cm³
- Water solubility : Note: slightly soluble
- Partition coefficient: n-octanol/water : No data available
- Viscosity, dynamic : No data available
- Viscosity, kinematic : > 20.5 mm²/s
- Relative vapor density : No data available
- Evaporation rate : No data available
- Burning rate : No data available
- Volatile organic compounds (VOC) content : 5 g/l A+B Combined

10. Stability and reactivity

- Reactivity : No dangerous reaction known under conditions of normal use.
- Chemical stability : The product is chemically stable.
- Possibility of hazardous reactions : Stable under recommended storage conditions.
- Conditions to avoid : No data available
- Incompatible materials : No data available

11. Toxicological information

Acute toxicity
Not classified based on available information.

**Components:**

**m-phenylenebis(methylamine):**
- Acute oral toxicity: LD50 Oral (Rat): 930 mg/kg
- Acute inhalation toxicity: LC50 (Rat): 1.34 mg/l
  - Exposure time: 4 h
  - Test atmosphere: dust/mist
- Acute dermal toxicity: LD50 Dermal (Rat): > 3,100 mg/kg

**Benzyl alcohol:**
- Acute oral toxicity: LD50 Oral (Rat): 1,620 mg/kg
- Acute inhalation toxicity: LC50 (Rat): > 4.178 mg/l
  - Exposure time: 4 h
  - Test atmosphere: dust/mist

**salicylic acid:**
- Acute oral toxicity: LD50 Oral (Rat): 891 mg/kg
- Acute dermal toxicity: LD50 Dermal (Rat): > 2,000 mg/kg

**triethylenetetramine:**
- Acute oral toxicity: LD50 Oral (Rat): 1,716 mg/kg
- Acute dermal toxicity: LD50 Dermal (Rabbit): 1,465 mg/kg

**Skin corrosion/irritation**
Causes severe burns.

**Serious eye damage/eye irritation**
Causes serious eye damage.

**Respiratory or skin sensitization**
Skin sensitization: May cause an allergic skin reaction.
Respiratory sensitization: Not classified based on available information.

**Germ cell mutagenicity**
Not classified based on available information.

**Reproductive toxicity**
Not classified based on available information.

**STOT-single exposure**
May cause respiratory irritation.

**STOT-repeated exposure**
Causes damage to organs (Lungs) through prolonged or repeated exposure.
Reports have associated repeated and prolonged exposure to some of the chemicals in this product with permanent brain, liver, kidney and nervous system damage. Intentional misuse by deliberate concentration and inhalation of vapors may be harmful or fatal.
Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
### Aspiration toxicity
Not classified based on available information.

### Carcinogenicity
May cause cancer by inhalation.

<table>
<thead>
<tr>
<th>IARC</th>
<th>Quartz (SiO2) 14808-60-7</th>
</tr>
</thead>
<tbody>
<tr>
<td>NTP</td>
<td>Known to be human carcinogen</td>
</tr>
</tbody>
</table>

#### Component:

1. **m-phenylenediamine (m-phenylenediamine)**
   - **Toxicity to fish:**
     - **LC50**
     - Species: *Oryzias latipes* (Japanese medaka)
     - Dose: > 10 - 100 mg/l
     - Exposure time: 96 h
   - **Toxicity to daphnia and other aquatic invertebrates:**
     - **EC50**
     - Species: *Daphnia magna* (Water flea)
     - Dose: > 10 - 100 mg/l
     - Exposure time: 48 h

2. **Benzyl alcohol 100-51-6**
   - **Toxicity to fish:**
     - **LC50**
     - Species: Fish
     - Dose: > 100 mg/l
     - Exposure time: 96 h
   - **Toxicity to daphnia and other aquatic invertebrates:**
     - **EC50**
     - Species: *Daphnia magna* (Water flea)
     - Dose: > 100 mg/l
     - Exposure time: 48 h

3. **Triethylenetetramine 112-24-3**
   - **Toxicity to fish:**
     - **LC50**
     - Species: *Pimephales promelas* (fathead minnow)
     - Dose: > 100 mg/l
     - Exposure time: 96 h
   - **Toxicity to daphnia and other aquatic invertebrates:**
     - **EC50**
     - Species: *Daphnia*
     - Dose: 10 - 100 mg/l
     - Exposure time: 48 h
   - **Toxicity to algae:**
     - **EC50**
13. Disposal considerations

Disposal methods
Waste from residues: Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

Contaminated packaging: Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT
UN number 1760
Description of the goods Corrosive liquids, n.o.s.
(N'-(3-aminopropyl)-N,N-dimethylpropane-1,3-diamine, m-phenylenebis(methylamine))
Class 8
Packing group III
Labels 8
Emergency Response 154
Guidebook Number

IATA
UN number 1760
Description of the goods Corrosive liquid, n.o.s.
(N'-(3-aminopropyl)-N,N-dimethylpropane-1,3-diamine, m-phenylenebis(methylamine))
Class 8
Packing group III
Labels 8
Packing instruction (cargo aircraft) 856
Packing instruction (passenger aircraft) Y841

IMDG
UN number 1760
Description of the goods CORROSIVE LIQUID, N.O.S.
(N'-(3-aminopropyl)-N,N-dimethylpropane-1,3-diamine, m-phenylenebis(methylamine))
Safety Data Sheet

Northern Manufacturing Construction Grade Epoxy Part B

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Class 8
Packing group III
Labels 8
EmS Number 1 F-A
EmS Number 2 S-B

Marine pollutant no

DOT: For Limited Quantity exceptions reference 49 CFR 173.154 (b)
IMDG: For Limited Quantity special provisions reference IMDG Code Chapter 3.4

Special precautions for user
No data available

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable

15. Regulatory information

TSCA list: All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.

EPCRA - Emergency Planning and Community Right-to-Know

CERCLA Reportable Quantity
This material does not contain any components with a CERCLA RQ.

SARA304 Reportable Quantity
This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards: Chronic Health Hazard
Skin corrosion or irritation
Serious eye damage or eye irritation
Respiratory or skin sensitization
Carcinogenicity
Specific target organ toxicity (single or repeated exposure)

SARA 302: This material does not contain any components with a section 302 EHS TPQ.

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act
Ozone-Depletion Potential

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

California Prop 65

⚠️ WARNING: Cancer – www.P65Warnings.ca.gov

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16. Other information

**HMIS Classification**

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Physical Hazard</th>
<th>Personal Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>* 3</td>
<td>1</td>
<td>0</td>
<td>X</td>
</tr>
</tbody>
</table>

**Caution:** HMIS® rating is based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® rating is not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® rating is to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). Please note HMIS® attempts to convey full health warning information to all employees.

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Revision Date 12/05/2019

Material number: 579211
1. Identification

Product name : Sikasil® WS-295

Supplier : Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
USA
www.sikausa.com

Telephone : (201) 933-8800
Telefax : (201) 804-1076
E-mail address : ehs@sika-corp.com
Emergency telephone : CHEMTREC: 800-424-9300
INTERNATIONAL: 703-527-3887

Recommended use of the chemical and restrictions on use : For further information, refer to product data sheet.

2. Hazards identification

GHS Classification

- Flammable liquids, Category 4
  H227: Combustible liquid.
- Eye irritation, Category 2A
  H319: Causes serious eye irritation.
- Skin sensitization, Category 1
  H317: May cause an allergic skin reaction.
- Reproductive toxicity, Category 2
  H361f: Suspected of damaging fertility.
- Specific target organ systemic toxicity - repeated exposure, Category 2 (Oral)
  H373: May cause damage to organs through prolonged or repeated exposure if swallowed.

GHS label elements

Hazard pictograms : ![Warning](image)

Signal Word : Warning

Hazard Statements : H227 Combustible liquid.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H361f Suspected of damaging fertility.
H373 May cause damage to organs through prolonged or repeated exposure if swallowed.

Precautionary Statements : Prevention:
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read
and understood.
P210 Keep away from heat/sparks/open flames/hot surfaces.
No smoking.
P260 Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
P264 Wash skin thoroughly after handling.
P272 Contaminated work clothing must not be allowed out of the workplace.
P280 Wear protective gloves/ eye protection/ face protection.
P281 Use personal protective equipment as required.

Response:
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P363 Wash contaminated clothing before reuse.
P370 + P378 In case of fire: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment for extinction.

Storage:
P403 + P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.

Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

See Section 11 for more detailed information on health effects and symptoms.
There are no hazards not otherwise classified that have been identified during the classification process.
There are no ingredients with unknown acute toxicity used in a mixture at a concentration >= 1%.

3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Hazardous ingredients</th>
<th>CAS-No.</th>
<th>Concentration (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-butanone-O.O',O''-(phenylsilylidyne)trioxime</td>
<td>34036-80-1</td>
<td>&gt;= 2 - &lt; 5 %</td>
</tr>
<tr>
<td>butan-2-one-O.O',O''-(methylsilylidyne)trioxime</td>
<td>22984-54-9</td>
<td>&gt;= 1 - &lt; 2 %</td>
</tr>
<tr>
<td>N-(2-aminoethyl)-N'-(3-(trimethoxysilyl)propyl)ethylenediamine</td>
<td>35141-30-1</td>
<td>&gt;= 1 - &lt; 2 %</td>
</tr>
<tr>
<td>octamethylcyclotetrasiloxane</td>
<td>556-67-2</td>
<td>&lt; 1 %</td>
</tr>
</tbody>
</table>

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.
4. First aid measures

If inhaled: Move to fresh air. Consult a physician after significant exposure.

In case of skin contact: Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. If symptoms persist, call a physician.

In case of eye contact: Immediately flush eye(s) with plenty of water. Remove contact lenses. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.

If swallowed: Clean mouth with water and drink afterwards plenty of water. Do not induce vomiting without medical advice. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. Obtain medical attention.

Most important symptoms and effects, both acute and delayed: irritant effects sensitizing effects

Allergic reactions
Excessive lachrymation
See Section 11 for more detailed information on health effects and symptoms.

May cause an allergic skin reaction.
Causes serious eye irritation.
Suspected of damaging fertility.
May cause damage to organs through prolonged or repeated exposure if swallowed.

Protection of first-aiders: Move out of dangerous area. Consult a physician. Show this material safety data sheet to the doctor in attendance.

Notes to physician: Treat symptomatically.

5. Fire-fighting measures

Suitable extinguishing media: Carbon dioxide (CO2)

Unsuitable extinguishing media: Water

Specific extinguishing methods: Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Special protective equipment for fire-fighters: In the event of fire, wear self-contained breathing apparatus.
6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. Deny access to unprotected persons.

Environmental precautions: Do not flush into surface water or sanitary sewer system. Local authorities should be advised if significant spillages cannot be contained.

Methods and materials for containment and cleaning up: Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

7. Handling and storage

Advice on safe handling: Do not breathe vapors or spray mist. Avoid exceeding the given occupational exposure limits (see section 8). Do not get in eyes, on skin, or on clothing. For personal protection see section 8. Persons with a history of skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used. Smoking, eating and drinking should be prohibited in the application area. Follow standard hygiene measures when handling chemical products.

Conditions for safe storage: Store in original container. Keep in a well-ventilated place. Observe label precautions. Store in accordance with local regulations.

Materials to avoid: No data available

8. Exposure controls/personal protection

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Basis **</th>
<th>Value</th>
<th>Exposure limit(s)*</th>
<th>Form of exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>calcium carbonate</td>
<td>471-34-1</td>
<td>CAL PEL</td>
<td>PEL</td>
<td>10 mg/m³</td>
<td>Total dust</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5 mg/m³</td>
<td>respirable dust fraction</td>
</tr>
</tbody>
</table>
*The above mentioned values are in accordance with the legislation in effect at the date of the release of this safety data sheet.

**Basis**
ACGIH: Threshold Limit Values (TLV)
OSHA P0. Table Z-1, Limit for Air Contaminant (1989 Vacated Values)
OSHA P1. Permissible Exposure Limits (PEL), Table Z-1, Limit for Air Contaminant
OSHA P2. Permissible Exposure Limits (PEL), Table Z-2
OSHA Z3. Table Z-3, Mineral Dust

Engineering measures: Use of adequate ventilation should be sufficient to control worker exposure to airborne contaminants. If the use of this product generates dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits.

Personal protective equipment
Respiratory protection: Use a properly fitted NIOSH approved air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.

Hand protection
Remarks: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Eye protection: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary.

Skin and body protection: Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.

Hygiene measures: Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. Remove respiratory and skin/eye protection only after vapors have been cleared from the area. Remove contaminated clothing and protective equipment before entering eating areas. Wash thoroughly after handling.
### 9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>paste</td>
</tr>
<tr>
<td>Color</td>
<td>various</td>
</tr>
<tr>
<td>Odor</td>
<td>mild musty</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>185 °F (85 °C)</td>
</tr>
<tr>
<td>Ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Lower explosion limit (Vol%)</td>
<td>No data available</td>
</tr>
<tr>
<td>Upper explosion limit (Vol%)</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>Note: Not applicable</td>
</tr>
<tr>
<td>Melting point/range / Freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point/boiling range</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>0.01 mmHg (0.01 hpa)</td>
</tr>
<tr>
<td>Density</td>
<td>ca.1.12 g/cm³ at 73 °F (23 °C)</td>
</tr>
<tr>
<td>Water solubility</td>
<td>Note: insoluble</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>&gt; 20.5 mm²/s at 104 °F (40 °C)</td>
</tr>
<tr>
<td>Relative vapor density</td>
<td>No data available</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available</td>
</tr>
<tr>
<td>Burning rate</td>
<td>No data available</td>
</tr>
<tr>
<td>Volatile organic compounds (VOC) content</td>
<td>37 g/l</td>
</tr>
</tbody>
</table>

|
10. Stability and reactivity

- Reactivity: No dangerous reaction known under conditions of normal use.
- Chemical stability: The product is chemically stable.
- Possibility of hazardous reactions: Stable under recommended storage conditions.
- Conditions to avoid: Extremes of temperature and direct sunlight.
- Incompatible materials: No data available

11. Toxicological information

**Acute toxicity**
Not classified based on available information.

**Ingredients:**

- **N-(2-aminoethyl)-N’-[3-(trimethoxysilyl)propyl]ethylenediamine:**
  - Acute oral toxicity: LD50 Oral (Rat): 7,758 mg/kg
  - Acute dermal toxicity: LD50 Dermal (Rat): 16,640 mg/kg

- **octamethylcyclotetrasiloxane:**
  - Acute inhalation toxicity: LC50 (Rat): 36 mg/l
    - Exposure time: 4 h
    - Test atmosphere: vapor

**Skin corrosion/irritation**
Not classified based on available information.

**Serious eye damage/eye irritation**
Causes serious eye irritation.

**Respiratory or skin sensitization**
Skin sensitization: May cause an allergic skin reaction.
Respiratory sensitization: Not classified based on available information.

**Germ cell mutagenicity**
Not classified based on available information.

**Reproductive toxicity**
Suspected of damaging fertility.

**STOT-single exposure**
Not classified based on available information.

**STOT-repeated exposure**
May cause damage to organs through prolonged or repeated exposure if swallowed.
Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

**Aspiration toxicity**
Not classified based on available information.
Carcinogenicity
Not classified based on available information.  
IARC Group 2B: Possibly carcinogenic to humans  
titanium dioxide 13463-67-7  
Carbon black 1333-86-4  
NTP Not applicable  

Carbon black (1333-86-4)  

Animal Toxicity: 
Rat, oral, duration 2 year 
Effect: no tumors  

Mouse, oral, duration 2 years 
Effect: no tumors  

Mouse, dermal, duration 18 months 
Effect: no skin tumors  

Rat, inhalation, duration 2 years 
Target organ: lungs 
Effect: inflammation, fibrosis, tumors  

Note: Tumors in the rat lung are considered to be related to the "particle overload phenomenon" rather than to a specific chemical effect of carbon black itself in the lung. These effects in rats have been reported in many studies on other poorly soluble inorganic particles and appear to be rat specific. Tumors have not been observed in other species (i.e., mouse and hamster) for carbon black or other poorly soluble particles under similar circumstances and study conditions.  

Mortality studies (human data): A study on carbon black production workers in the UK (Sorahan, 2001) found an increased risk of lung cancer in two of the five plant studied; however, the increase was not related to the dose of carbon black. Thus, the authors did not consider the increased risk in lung cancer to be due to carbon black exposure. A German study of carbon black workers at one plant (Morfeld, 2006; Buechte, 2006) found a similar increase in lung cancer risk but, like the Sorohan, 2001 (UK study) found no association with carbon black exposure. A large US study of 18 plants showed a reduction in lung cancer risk in carbon black production workers (DEll, 2006). Based upon these studies, the February 2006 Working Group at the International Agency for Research on Cancer (IARC) concluded that the human evidence for carcinogenicity was inadequate (IARC, 2010).  

Since the IARC evaluation of carbon black, Sorahan and Harrington (2007) have re-analyzed the UK study data using an alternative exposure hypothesis and found a positive association with carbon black exposure in two of the five plants. The same exposure hypothesis was applied by Morfeld and McConney (2009) to the German cohort; in contrast, they found no association between carbon black exposure and lung cancer risk and, thus, no support for the alternative exposure hypothesis used by Sorahan and Harrington.  

Overall, as a result of these detailed investigations, no causative link between carbon black exposure and cancer risk in humans has been demonstrated.  

IARC CANCER CLASSIFICATION: In 2006 IARC re-affirmed its 1995 finding that there is "inadequate evidence" from human health studies to assess whether carbon black causes cancer in humans. IARC concluded that there is "sufficient evidence" in experimental animal studies for the carcinogenicity of carbon black. IARC's overall evaluation is that carbon black is "possibly carcinogenic to humans" (Group 2B)”. This conclusion was based on IARC's
guidelines, which generally require such a classification if one species exhibits carcinogenicity in two or more animal studies (IARC, 2010).

Solvent extracts of carbon black were used in one study of rats in which skin tumors were found after dermal application and several studies of mice in which sarcomas were found following subcutaneous injection. IARC concluded that there was "sufficient evidence" that carbon black extracts can cause cancer in animals (Group 2B).

ICGIH CANCER CLASSIFICATION: Confirmed Animal Carcinogen with Unknown Relevance to Humans (Category A3 Carcinogen).

ASSESSMENT: Applying the guidelines of self-classification under the Globally Harmonized System of Classification and Labeling of Chemicals, carbon black is not classified as a carcinogen. Lung tumors are induced in rats as a result of repeated exposure to inert, poorly soluble particles like carbon black and other poorly soluble particles. Rats tumors are a result of a secondary non-genotoxic mechanism that has questionable relevance for classification in humans. In support of this opinion, the CLP Guidance for Specific Target Organ Toxicity - Repeated Exposure (STOT-RE), cites lung overload under mechanisms not relevant to humans. Human health studies show that exposure to carbon black does not increase the risk to carcinogenicity.

Titanium dioxide (13463-67-7)

In lifetime inhalation studies of rats, airborne respirable-size titanium dioxide particles have seen shown to cause an increase in lung tumors at concentrations associated with substantial particle lung burdens and consequential pulmonary overload and inflammation. The potential for these adverse health effects appears to be closely related to the particle size and the amount of the exposed surface area that comes into contact with the lung. However, tests with other laboratory animals such as mice and hamsters, indicate that rats are significantly more susceptible to the pulmonary overload and inflammation that cause lung cancer. Epidemiology studies do no suggest an increased risk of cancer in humans from occupational exposure to titanium dioxide. Titanium dioxide has been characterized by IARC as possibly carcinogenic to humans (Group 2B) through inhalation (not ingestion). It has not been characterized as a potential carcinogen by either NTP or OSHA.

12. Ecological information

Other information

- Do not empty into drains; dispose of this material and its container in a safe way.
- Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

13. Disposal considerations

Disposal methods

Waste from residues

- Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional
local authority requirements.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT
Not dangerous goods

IATA
Not dangerous goods

IMDG
Not dangerous goods

Special precautions for user
No data available

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable

15. Regulatory information

TSCA list : All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.

EPCRA - Emergency Planning and Community Right-to-Know

CERCLA Reportable Quantity
This material does not contain any components with a CERCLA RQ.

SARA304 Reportable Quantity
This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Fire Hazard
Acute Health Hazard
Chronic Health Hazard

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act
Ozone-Depletion Potential  This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

California Prop 65  WARNING! This product contains a chemical known in the State of California to cause cancer.

WARNING: This product contains a chemical known in the State of California to cause birth defects or other reproductive harm.

16. Other information

HMIS Classification

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

Caution: HMIS® rating is based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® rating is not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® rating is to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). Please note HMIS® attempts to convey full health warning information to all employees.

Notes to Reader

The information contained in this Safety Data Sheet applies only to the actual Sika Corporation ("Sika") product identified and described herein. This information is not intended to address, nor does it address the use or application of the identified Sika product in combination with any other material, product or process. All of the information set forth herein is based on technical data regarding the identified product that Sika believes to be reliable as of the date hereof. Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's current Product Data Sheet, product label and Safety Data Sheet for each Sika product, which are available at web site and/or telephone number listed in Section 1 of this SDS.

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All sales of Sika products are subject to its current terms and conditions of sale available at www.sikausa.com or 201-933-8800.

Revision Date 01/26/2017
Material number: 481215
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</td>
</tr>
<tr>
<td>Polymer (NJTS Reg. No. 04499600-7270)</td>
<td>Trade Secret*</td>
<td>10 - 30</td>
</tr>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td>10 - 30</td>
</tr>
<tr>
<td>Sodium Silicate</td>
<td>1344-09-8</td>
<td>10 - 30</td>
</tr>
<tr>
<td>Ethylhexyldiphenyl phosphate</td>
<td>1241-94-7</td>
<td>3 - 7</td>
</tr>
<tr>
<td>Oxide glass chemicals</td>
<td>65997-17-3</td>
<td>1 - 5</td>
</tr>
<tr>
<td>Iron oxide</td>
<td>1309-37-1</td>
<td>1 - 5</td>
</tr>
<tr>
<td>Polyethylene Glycol</td>
<td>25322-68-3</td>
<td>1 - 5</td>
</tr>
<tr>
<td>Triphenyl phosphate</td>
<td>115-86-6</td>
<td>&lt; 1.0</td>
</tr>
<tr>
<td>Di-2-ethylhexylphenyl phosphate</td>
<td>16368-97-1</td>
<td>&lt; 1.0</td>
</tr>
<tr>
<td>Polyoxyethylene monoctylphenyl ether</td>
<td>9036-19-5</td>
<td>&lt; 1.0</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</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

Occupational exposure limits

<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, frequency and duration, 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></td>
<td>No data available; calculated ATE &gt; 5,000 mg/kg</td>
</tr>
<tr>
<td>Overall product</td>
<td>Ingestion</td>
<td></td>
<td>No data available; calculated ATE 2,000 - 5,000 mg/kg</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>Ethylhexyldiphenyl phosphate</td>
<td>Dermal</td>
<td>Rabbit</td>
<td>LD50 &gt; 7,404 mg/kg</td>
</tr>
<tr>
<td>Ethylhexyldiphenyl 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></td>
<td>LD50 3,100 mg/kg</td>
</tr>
<tr>
<td>Iron oxide</td>
<td>Ingestion</td>
<td></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></td>
<td>LD50 estimated to be &gt; 5,000 mg/kg</td>
</tr>
<tr>
<td>Oxide glass chemicals</td>
<td>Ingestion</td>
<td></td>
<td>LD50 estimated to be 2,000 - 5,000 mg/kg</td>
</tr>
<tr>
<td>Polyoxyethylene monoocrylphenyl ether</td>
<td>Dermal</td>
<td>Rabbit</td>
<td>LD50 &gt; 3,000 mg/kg</td>
</tr>
<tr>
<td>Polyoxyethylene monoocrylphenyl 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>Ingestion</td>
<td>Rat</td>
<td>LC50 = 50 mg/l</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>3(2H)-isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2H)-isothiazolone</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 87 mg/kg</td>
</tr>
</tbody>
</table>
### 3(2H)-Isothiazolone, 5-chloro-2-methyl-, mixt. with 2-methyl-3(2H)-isothiazolone

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Route</th>
<th>Species</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ingestion</td>
<td>Rod</td>
<td>Rat</td>
<td>LD50 (40 \text{ mg/kg})</td>
</tr>
</tbody>
</table>

ATE = acute toxicity estimate

#### 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></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></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>Minimal irritation</td>
</tr>
<tr>
<td>Oxide glass chemicals</td>
<td></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>
</table>

#### Germ Cell Mutagenicity

<table>
<thead>
<tr>
<th>Name</th>
<th>Route</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium Silicate</td>
<td>In Vitro</td>
<td>Not mutagenic</td>
</tr>
<tr>
<td>Sodium Silicate</td>
<td>In vivo</td>
<td>Not mutagenic</td>
</tr>
<tr>
<td>Iron oxide</td>
<td>In Vivo</td>
<td>Not mutagenic</td>
</tr>
<tr>
<td>Polyethylene Glycol</td>
<td>In Vitro</td>
<td>Not mutagenic</td>
</tr>
<tr>
<td>Polyethylene Glycol</td>
<td>In vivo</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</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 N/A</td>
<td></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>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>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>Polyethylene Glycol</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>Rat</td>
<td>NOAEL 5,640 mg/kg/day</td>
<td>13 weeks</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>Some positive data exist, but the data are not sufficient for classification</td>
<td>Human</td>
<td>NOAEL not available</td>
<td>occupational exposure</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 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>
<th>Version Number:</th>
<th>26.00</th>
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<tr>
<td>Issue Date:</td>
<td>06/20/14</td>
<td>Supersedes Date:</td>
<td>08/18/13</td>
</tr>
</tbody>
</table>

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