EMSEAL Safety Data Sheet
Product Package

BEJS System
1. Identification of the Substance / Preparation

Product identifier: BEJS
Other identifier or names: BEJS System, BEJS Foam
UN ID number: None
Manufacturer Address: EMSEAL LLC
111 Royal Group Crescent
Woodbridge, Ontario L4H 1X9 Canada
Company Phone: (508) 836-0280 M-F 9am - 5pm
Emergency Phone: CHEMTREC (800) 424-9300 (24 Hours)

Preparation Date: March 15, 2015
Revision Date: March 14, 2019

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

EMSEAL BEJS is composed of polyurethane foam impregnated with a proprietary solid acrylic polymer 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 Hazard Statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polydimethyl Siloxane Diol</td>
<td>70131-67-8</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>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>Phenyl Oximino Silane</td>
<td>34036-80-1</td>
<td>1.0–5.0</td>
<td>Classification: Not Applicable</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>
<tr>
<td></td>
<td>14464-46-1</td>
<td></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. Material can support an open flame or smoldering ignition. The foam can melt while burning which can contribute fire to spread.

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/mo 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 nontoxic 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

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

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

GHS label elements

Hazard pictograms : [Image]

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.
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>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 Contaminat (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: 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: 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 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 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:

<table>
<thead>
<tr>
<th>Component</th>
<th>Code</th>
<th>Toxicity to fish</th>
</tr>
</thead>
<tbody>
<tr>
<td>bisphenol-A- (epichlorhydrin) epoxy</td>
<td>25068-38-6</td>
<td>LC50</td>
</tr>
</tbody>
</table>

8 / 11
resin

Species: Oncorhynchus mykiss (rainbow trout)
Dose: 2 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates:
EC50
Species: Daphnia magna (Water flea)
Dose: 1.8 mg/l
Exposure time: 48 h

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 09/17/2018  Print Date 10/18/2018

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></th>
<th>Health</th>
<th>Flammability</th>
<th>Physical Hazard</th>
<th>Personal Protection</th>
</tr>
</thead>
</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
Safety Data Sheet

Northern Manufacturing Construction Grade Epoxy Part A

Revision Date 09/17/2018

Material number: 577437
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**
Safety Data Sheet

Northern Manufacturing Construction Grade Epoxy Part B

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

<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>N'-(3-aminopropyl)-N,N-dimethylpropane-1,3-diamine</td>
<td>10563-29-8</td>
<td>&gt;= 3 - &lt; 5 %</td>
</tr>
<tr>
<td>m-phenylenediamine</td>
<td>1477-55-0</td>
<td>&gt;= 1 - &lt; 2 %</td>
</tr>
<tr>
<td>Benzyl alcohol</td>
<td>100-51-6</td>
<td>&gt;= 1 - &lt; 2 %</td>
</tr>
<tr>
<td>salicylic acid</td>
<td>69-72-7</td>
<td>&gt;= 1 - &lt; 2 %</td>
</tr>
<tr>
<td>triethylenetetramine</td>
<td>112-24-3</td>
<td>&gt;= 0.1 - &lt; 1 %</td>
</tr>
</tbody>
</table>

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></td>
<td></td>
<td>OSHA Z-3 TWA</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>m-phenylenebis(methylamine)</td>
<td>1477-55-0</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></td>
<td></td>
<td></td>
<td></td>
<td>ACGIH C</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
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
### 10. Stability and reactivity

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reactivity</td>
<td>No dangerous reaction known under conditions of normal use.</td>
</tr>
<tr>
<td>Chemical stability</td>
<td>The product is chemically stable.</td>
</tr>
<tr>
<td>Possibility of hazardous reactions</td>
<td>Stable under recommended storage conditions.</td>
</tr>
<tr>
<td>Conditions to avoid</td>
<td>No data available</td>
</tr>
<tr>
<td>Incompatible materials</td>
<td>No data available</td>
</tr>
</tbody>
</table>

### 11. Toxicological information

**Acute toxicity**
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.
IARC
Group 1: Carcinogenic to humans
Quartz (SiO2) 14808-60-7
NTP
Quartz (SiO2) 14808-60-7

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:
m-phenylenebis(methylamine) 1477-55-0
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

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

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): 852
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

Revision Date 09/17/2018       Print Date 10/18/2018

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
Safety Data Sheet

Northern Manufacturing Construction Grade Epoxy Part B

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

16. Other information

<table>
<thead>
<tr>
<th>HMIS Classification</th>
<th>Health</th>
<th>Flammability</th>
<th>Physical Hazard</th>
<th>Personal Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>*</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.

Revision Date 09/17/2018

Material number: 579211
1. Identification

Product name : Sikasil®-728 NS
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.
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 - repeated exposure, Category 2 H373: May cause damage to organs through prolonged or repeated exposure.

GHS label elements
Hazard pictograms :

Signal Word : Danger

Hazard Statements : H227 Combustible liquid.
H317 May cause an allergic skin reaction.
H350i May cause cancer by inhalation.
H373 May cause damage to organs 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.
P210 Keep away from heat/sparks/open flames/hot surfaces.
No smoking.
P260 Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
P272 Contaminated work clothing must not be allowed out of the workplace.
P280 Wear protective gloves.
P281 Use personal protective equipment as required.
**Response:**
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P333 + P313 If skin irritation or rash occurs: 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

**Hazardous ingredients**

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>Concentration (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>butan-2-one O,O',O''-(methylsilylidine)trioxime</td>
<td>22984-54-9</td>
<td>&gt;= 2 - &lt; 5 %</td>
</tr>
<tr>
<td>Butan-2-one O,O',O'',O'''silanetetrayl-tetraoxime</td>
<td>34206-40-1</td>
<td>&gt;= 0.1 - &lt; 1 %</td>
</tr>
<tr>
<td>Quartz (SiO2)</td>
<td>14808-60-7</td>
<td>&gt;= 0.1 - &lt; 1 %</td>
</tr>
<tr>
<td>N-(2-aminoethyl)-N'-[3-(trimethoxysilyl)propyl]ethylenediamine</td>
<td>35141-30-1</td>
<td>&gt;= 0.1 - &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:
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:
sensitizing effects
Allergic reactions
See Section 11 for more detailed information on health effects and symptoms.
carcinogenic effects
May cause an allergic skin reaction.
May cause cancer by inhalation.
May cause 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:
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.
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: 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: 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>
</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 Contaminat (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
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

Skin corrosion/irritation
Not classified based on available information.

Serious eye damage/eye irritation
Not classified based on available information.

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
Not classified based on available information.

STOT-repeated exposure
May cause damage to organs 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
Carbon black 1333-86-4
NTP
Known to be human carcinogen
Quartz (SiO2) 14808-60-7

Carbon black (1333-86-4)

Animal Toxicity:
Rat, oral, duration 2 years
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 plants 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; Buechse, 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 McCunney (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.

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### 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 : Flammable (gases, aerosols, liquids, or solids)
Chronic Health Hazard
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
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
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