1. Identification of the Substance / Preparation

Product identifier | QuietJoint
Other identifier or names | QuietJoint 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)

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 QuietJoint 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>
</tr>
</thead>
<tbody>
<tr>
<td>Titanium Dioxide</td>
<td>13463-67-7</td>
<td>1 - 5</td>
</tr>
<tr>
<td>Methylvinyl bis(N-thylacetamido) silane</td>
<td>87855-59-2</td>
<td>1 - 5</td>
</tr>
<tr>
<td>Antimony nickel titanium oxide yellow</td>
<td>8007-18-9</td>
<td>1 - 5</td>
</tr>
<tr>
<td>Dimethyl, methylhydrogen siloxane, dehydrogenated reaction with hydroxydiethylamine</td>
<td>68952-53-4</td>
<td>1 - 5</td>
</tr>
<tr>
<td>Carbon black</td>
<td>1333-86-4</td>
<td>0.1 - 1</td>
</tr>
<tr>
<td>Quartz</td>
<td>14808-60-7</td>
<td>0.1 - 1</td>
</tr>
<tr>
<td>Cobalt titinate green spinel</td>
<td>68186-85-6</td>
<td>0.1 - 1</td>
</tr>
<tr>
<td>N-ethylacetamide</td>
<td>625-50-3</td>
<td>0.1 - 1</td>
</tr>
<tr>
<td>Octamethylcyclotetrasiloxane</td>
<td>556-67-2</td>
<td>0.1 - 1</td>
</tr>
</tbody>
</table>
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/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.
Product Safety Data Sheet

Silicone Information

This product contains ONE of the following silicones:

Sikasil® WS-295

DOWSIL™ 790 (refers to Gray -- applicable for any color)

Pecora 890 NST™
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 : 

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>Chemical name</th>
<th>CAS-No.</th>
<th>Concentration (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-butanone-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)* / 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 Total dust</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5 mg/m³ 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**
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 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.

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
11. 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).

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>*</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
SAFETY DATA SHEET
THE DOW CHEMICAL COMPANY

Product name: DOWSIL™ 790 Silicone Building Sealant Gray

THE DOW CHEMICAL COMPANY encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. IDENTIFICATION

Product name: DOWSIL™ 790 Silicone Building Sealant Gray

Recommended use of the chemical and restrictions on use
Identified uses: Adhesive, binding agents

COMPANY IDENTIFICATION
THE DOW CHEMICAL COMPANY
2030 WILLARD H DOW CENTER
MIDLAND MI 48674-0000
UNITED STATES

Customer Information Number: 800-258-2436
SDSQuestion@dow.com

EMERGENCY TELEPHONE NUMBER
24-Hour Emergency Contact: CHEMTREC +1 800-424-9300
Local Emergency Contact: 800-424-9300

2. HAZARDS IDENTIFICATION

Hazard classification
This material is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.
Eye irritation - Category 2A
Reproductive toxicity - Category 2

Label elements
Hazard pictograms

Signal word: WARNING!
Hazard
Causes serious eye irritation. 
Suspected of damaging fertility or the unborn child.

Precautionary statements
Prevention
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wash skin thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF exposed or concerned: Get medical advice/ attention.
If eye irritation persists: Get medical advice/ attention.

Storage
Store locked up.

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

Other hazards
No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature: Silicone elastomer
This product is a mixture.

<table>
<thead>
<tr>
<th>Component</th>
<th>CASRN</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limestone</td>
<td>1317-65-3</td>
<td>&gt;= 50.0 - &lt; 60.0 %</td>
</tr>
<tr>
<td>Methylvinyl bis(N-ethylacetamido)silane</td>
<td>87855-59-2</td>
<td>&gt;= 1.0 - &lt; 3.0 %</td>
</tr>
<tr>
<td>Dimethyl, methylhydrogen siloxane, dehydrogenated, reaction with</td>
<td>68952-53-4</td>
<td>&gt;= 1.0 - &lt; 5.0 %</td>
</tr>
<tr>
<td>hydroxydiethylamine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Magnesium carbonate</td>
<td>546-93-0</td>
<td>&gt;= 1.0 - &lt; 5.0 %</td>
</tr>
<tr>
<td>N-ethylacetamide</td>
<td>625-50-3</td>
<td>&gt;= 0.1 - &lt; 1.0 %</td>
</tr>
<tr>
<td>Octamethyl Cyclotetrasiloxane</td>
<td>556-67-2</td>
<td>&gt;= 0.1 - &lt; 1.0 %</td>
</tr>
</tbody>
</table>
Impurities in methylvinylbis(N-ethylacetamido)silane Not available $\geq 0.1 - < 1.0 \%$

4. FIRST AID MEASURES

Description of first aid measures

General advice:
First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air; if effects occur, consult a physician.

Skin contact: Remove material from skin immediately by washing with soap and plenty of water. Remove contaminated clothing and shoes while washing. Seek medical attention if irritation persists. Wash clothing before reuse. Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands.

Eye contact: Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist. Suitable emergency eye wash facility should be available in work area.

Ingestion: No emergency medical treatment necessary.

Most important symptoms and effects, both acute and delayed: Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed

Notes to physician: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIREFIGHTING MEASURES

Suitable extinguishing media: Water spray Alcohol-resistant foam Carbon dioxide (CO2) Dry chemical

Unsuitable extinguishing media: None known.

Special hazards arising from the substance or mixture

Hazardous combustion products: Carbon oxides Silicon oxides Nitrogen oxides (NOx)

Unusual Fire and Explosion Hazards: Exposure to combustion products may be a hazard to health.
Advice for firefighters
Fire Fighting Procedures: Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray to cool unopened containers. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Remove undamaged containers from fire area if it is safe to do so. Evacuate area.

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

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. Follow safe handling advice and personal protective equipment recommendations.

Environmental precautions: Discharge into the environment must be avoided. Prevent further leakage or spillage if safe to do so. Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.

Methods and materials for containment and cleaning up: Wipe up or scrape up and contain for salvage or disposal. Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable. For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, Sections 13 and 15 of this SDS provide information regarding certain local or national requirements. See sections: 7, 8, 11, 12 and 13.

7. HANDLING AND STORAGE

Precautions for safe handling: Do not get on skin or clothing. Do not swallow. Do not get in eyes. Take care to prevent spills, waste and minimize release to the environment. Handle in accordance with good industrial hygiene and safety practice. Use only with adequate ventilation. See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.

Conditions for safe storage: Keep in properly labelled containers. Store locked up. Store in accordance with the particular national regulations.

Do not store with the following product types: Strong oxidizing agents.

Unsuitable materials for containers: None known.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters
If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

<table>
<thead>
<tr>
<th>Component</th>
<th>Regulation</th>
<th>Type of listing</th>
<th>Value/Notation</th>
</tr>
</thead>
</table>

---
Although some of the components of this product may have exposure guidelines, no exposure would be expected under normal handling conditions due to the physical state of the material.

**Exposure controls**

**Engineering controls:** Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

**Individual protection measures**

**Eye/face protection:** Use safety glasses (with side shields).

**Skin protection**

**Hand protection:** Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Butyl rubber. Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl alcohol ("PVA"). Polyvinyl chloride ("PVC" or "vinyl"). Viton. Examples of acceptable glove barrier materials include: Natural rubber ("latex"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

**Other protection:** Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

**Respiratory protection:** Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions, no respiratory protection should be needed; however, if handling at elevated temperatures without sufficient ventilation, use an approved air-purifying respirator.

The following should be effective types of air-purifying respirators: Organic vapor cartridge.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th></th>
<th>OSHA Z-1</th>
<th>TWA total dust</th>
<th>15 mg/m3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limestone</td>
<td>OSHA Z-1</td>
<td>TWA respirable fraction</td>
<td>5 mg/m3</td>
</tr>
<tr>
<td>Magnesium carbonate</td>
<td>OSHA Z-1</td>
<td>TWA total dust</td>
<td>15 mg/m3</td>
</tr>
<tr>
<td>Octamethyl Cyclotetrasiloxane</td>
<td>US WEEL</td>
<td>TWA</td>
<td>10 ppm</td>
</tr>
</tbody>
</table>

**Appearance**

- **Physical state:** paste
- **Color:** grey
10. STABILITY AND REACTIVITY

Reactivity: Not classified as a reactivity hazard.

Chemical stability: Stable under normal conditions.

Possibility of hazardous reactions: Can react with strong oxidizing agents.

Conditions to avoid: None known.

Incompatible materials: Oxidizing agents
11. TOXICOLOGICAL INFORMATION

Toxicological information appears in this section when such data is available.

Acute toxicity

Acute oral toxicity
Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

As product: Single dose oral LD50 has not been determined.

Based on information for component(s):
LD50, Rat, > 5,000 mg/kg Estimated.

Acute dermal toxicity
Prolonged skin contact is unlikely to result in absorption of harmful amounts.

As product: The dermal LD50 has not been determined.

Based on information for component(s):
LD50, > 2,000 mg/kg Estimated.

Acute inhalation toxicity
Brief exposure (minutes) is not likely to cause adverse effects. Vapor from heated material may cause respiratory irritation.
As product: The LC50 has not been determined.

Skin corrosion/irritation
Brief contact may cause slight skin irritation with local redness.

Serious eye damage/eye irritation
May cause slight eye irritation.

Sensitization
For skin sensitization:
Contains component(s) which have caused allergic skin sensitization in guinea pigs.

For respiratory sensitization:
No relevant information found.

Specific Target Organ Systemic Toxicity (Single Exposure)
Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Specific Target Organ Systemic Toxicity (Repeated Exposure)
For this family of materials:
Based on available data, repeated exposures are not anticipated to cause significant adverse effects.

Carcinogenicity
For this family of materials: Did not cause cancer in long-term animal studies which used routes of exposure considered relevant to industrial handling. Positive results have been reported in other studies using routes of exposure not relevant to industrial handling. Both the National Toxicology Program (NTP) Third Annual Report on Carcinogens and the International Agency for Research on Cancer (IARC) Monographs cite limited evidence for carcinogenicity to humans of certain nickel compounds, and sufficient evidence for carcinogenicity to animals. However, both state that it is not possible to specify which specific nickel compounds might be carcinogenic to humans. Nickel Antimony Titanium Yellow Rutile is not listed in the groups of compounds thought to be carcinogenic to either humans or animals.

**Teratogenicity**
Contains component(s) which did not cause birth defects or any other fetal effects in lab animals.

**Reproductive toxicity**
Contains component(s) which did not interfere with reproduction in animal studies.

**Mutagenicity**
Contains a component(s) which were negative in in vitro genetic toxicity studies.

**Aspiration Hazard**
Based on physical properties, not likely to be an aspiration hazard.

**COMPONENTS INFLUENCING TOXICOLOGY:**

**Limestone**
Acute inhalation toxicity
The LC50 has not been determined.

**Methylvinyl bis(N-ethylacetamido)silane**
Acute inhalation toxicity
The LC50 has not been determined.

**Dimethyl, methylhydrogen siloxane, dehydrogenated, reaction with hydroxydiethylamine**
Acute inhalation toxicity
The LC50 has not been determined.

**Magnesium carbonate**
Acute inhalation toxicity
The LC50 has not been determined.

**N-ethylacetamide**
Acute inhalation toxicity
Based on data from similar materials LC0, Rat, 8 Hour, vapour, 2.19 mg/l

**Octamethyl Cyclotetrasiloxane**
Acute inhalation toxicity
LC50, Rat, male and female, 4 Hour, dust/mist, 36 mg/l OECD Test Guideline 403
12. ECOLOGICAL INFORMATION

Ecotoxicological information appears in this section when such data is available.

Toxicity

**Limestone**

**Acute toxicity to fish**
Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).
LC50, Oncorhynchus mykiss (rainbow trout), 96 Hour, > 10,000 mg/l

**Acute toxicity to aquatic invertebrates**
EC50, Daphnia magna (Water flea), 48 Hour, > 1,000 mg/l

**Acute toxicity to algae/aquatic plants**
EC50, Desmodesmus subspicatus (green algae), 72 Hour, > 200 mg/l

**Methylvinyl bis(N-ethylacetamido)silane**

**Acute toxicity to fish**
Material is slightly toxic to aquatic organisms on an acute basis (LC50/EC50 between 10 and 100 mg/L in the most sensitive species tested).
LC50, Danio rerio (zebra fish), 96 Hour, > 100 mg/l
LC50, Oncorhynchus mykiss (rainbow trout), 96 Hour, > 100 mg/l, OECD Test Guideline 203
NOEC, Oncorhynchus mykiss (rainbow trout), 96 Hour, 50 mg/l

**Acute toxicity to aquatic invertebrates**
EC50, Daphnia magna (Water flea), 48 Hour, 69 mg/l, OECD Test Guideline 202

**Acute toxicity to algae/aquatic plants**
EC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, > 100 mg/l, OECD Test Guideline 201
NOEC, Pseudokirchneriella subcapitata (green algae), 72 Hour, 100 mg/l

**Dimethyl, methylhydrogen siloxane, dehydrogenated, reaction with hydroxydiethylamine**

**Acute toxicity to fish**
No relevant data found.

**Magnesium carbonate**

**Acute toxicity to fish**
Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

**Acute toxicity to algae/aquatic plants**
For similar material(s):
EC50, Desmodesmus subspicatus (green algae), static test, 72 Hour, Growth inhibition, > 100 mg/l, OECD Test Guideline 201
For similar material(s):
NOEC, Desmodesmus subspicatus (green algae), static test, 100 mg/l
N-ethylacetamide

**Acute toxicity to fish**
Based on data from similar materials
LC50, Leuciscus idus (Golden orfe), 96 Hour, 3,390 mg/l, DIN 38412
Material is practically non-toxic to aquatic organisms on an acute basis
(LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

**Acute toxicity to aquatic invertebrates**
Based on data from similar materials
EC50, Daphnia magna (Water flea), 48 Hour, > 580 mg/l, DIN 38412

**Acute toxicity to algae/aquatic plants**
Based on data from similar materials
EC50, Desmodesmus subspicatus (green algae), 96 Hour, > 500 mg/l

**Toxicity to bacteria**
Based on data from similar materials
EC10, Pseudomonas putida, 17 Hour, > 10,000 mg/l, DIN 38 412 Part 8

Octamethyl Cyclotetrasiloxane

**Acute toxicity to fish**
Not expected to be acutely toxic to aquatic organisms.
No toxicity at the limit of solubility
LC50, Oncorhynchus mykiss (rainbow trout), flow-through, 96 Hour, > 0.022 mg/l
No toxicity at the limit of solubility
LC50, Cyprinodon variegatus (sheepshead minnow), flow-through, 14 d, > 0.0063 mg/l

**Acute toxicity to aquatic invertebrates**
No toxicity at the limit of solubility
EC50, Mysidopsis bahia (opossum shrimp), flow-through test, 96 Hour, > 0.0091 mg/l
No toxicity at the limit of solubility
EC50, Daphnia magna (Water flea), flow-through test, 48 Hour, > 0.015 mg/l

**Acute toxicity to algae/aquatic plants**
No toxicity at the limit of solubility
EcC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, Growth rate, > 0.022 mg/l

**Chronic toxicity to fish**
No toxicity at the limit of solubility
NOEC, Oncorhynchus mykiss (rainbow trout), 93 d, >= 0.0044 mg/l

**Chronic toxicity to aquatic invertebrates**
No toxicity at the limit of solubility
NOEC, Daphnia magna (Water flea), 21 d, >= 0.0079 mg/l

**Persistence and degradability**

**Limestone**

**Biodegradability:** No relevant data found.

**Methylvinyl bis(N-ethylacetamido)silane**
Biodegradability: Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.
Biodegradation: 62.66 %
Method: OECD Test Guideline 301B

**Dimethyl, methylhydrogen siloxane, dehydrogenated, reaction with hydroxydiethylamine**

Biodegradability: Based on data from similar materials
The product is not biodegradable.

**Magnesium carbonate**

Biodegradability: No relevant data found.

**N-ethylacetamide**

Biodegradability: Material is ultimately biodegradable (reaches > 70% mineralization in OECD test(s) for inherent biodegradability).
Based on data from similar materials
Biodegradation: 100 %
Exposure time: 6 d

**Octamethyl Cyclotetrasiloxane**

Biodegradability: Material is expected to biodegrade very slowly (in the environment). Fails to pass OECD/EEC tests for ready biodegradability.
10-day Window: Not applicable
Biodegradation: 3.7 %
Exposure time: 28 d
Method: OECD Test Guideline 310

Stability in Water (1/2-life)
Hydrolysis, DT50, 69.3 - 144 Hour, pH 7, Half-life Temperature 24.6 °C, OECD Test Guideline 111

Photodegradation
Atmospheric half-life: 16 d
Method: Estimated.

Bioaccumulative potential

**Limestone**

Bioaccumulation: No relevant data found.

**Methylyvinyl bis(N-ethylacetamido)silane**

Bioaccumulation: No relevant data found.

**Dimethyl, methylhydrogen siloxane, dehydrogenated, reaction with hydroxydiethylamine**

Bioaccumulation: No relevant data found.

**Magnesium carbonate**

Bioaccumulation: No relevant data found.

**N-ethylacetamide**
Bioaccumulation: No relevant data found.

Octamethyl Cyclotetrasiloxane
Bioaccumulation: Bioconcentration potential is high (BCF > 3000 or Log Pow between 5 and 7).
Partition coefficient: n-octanol/water (log Pow): 6.49 Measured
Bioconcentration factor (BCF): 12,400 Pimephales promelas (fathead minnow) Measured

Mobility in soil

Limestone
No relevant data found.

Methylvinyl bis(N-ethylacetamido)silane
No relevant data found.

Dimethyl, methylhydrogen siloxane, dehydrogenated, reaction with hydroxydiethylamine
No relevant data found.

Magnesium carbonate
No relevant data found.

N-ethylacetamide
No relevant data found.

Octamethyl Cyclotetrasiloxane
Expected to be relatively immobile in soil (Koc > 5000).

13. DISPOSAL CONSIDERATIONS

Disposal methods: DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Recycler. Reclaimer. Incinerator or other thermal destruction device. For additional information, refer to: Handling & Storage Information, MSDS Section 7 Stability & Reactivity Information, MSDS Section 10 Regulatory Information, MSDS Section 15

Treatment and disposal methods of used packaging: Empty containers should be recycled or otherwise disposed of by an approved waste management facility. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. Do not re-use containers for any purpose.
14. TRANSPORT INFORMATION

DOT
Not regulated for transport

Classification for SEA transport (IMO-IMDG):
- Transport in bulk
  Not regulated for transport
- According to Annex I or II of MARPOL 73/78 and the IBC or IGC Code
  Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):
Not regulated for transport

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312
- Serious eye damage or eye irritation
- Reproductive toxicity

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 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.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) Section 103
This material does not contain any components with a CERCLA RQ. Calculated RQ exceeds reasonably attainable upper limit.

<table>
<thead>
<tr>
<th>Components</th>
<th>CASRN</th>
<th>RQ (RCRA Code)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diethylamine</td>
<td>109-89-7</td>
<td>100 lbs RQ</td>
</tr>
</tbody>
</table>

Pennsylvania Worker and Community Right-To-Know Act:
The following chemicals are listed because of the additional requirements of Pennsylvania law:

<table>
<thead>
<tr>
<th>Components</th>
<th>CASRN</th>
</tr>
</thead>
</table>
Limestone 1317-65-3
Polydimethylsiloxane hydroxy-terminated 70131-67-8
Cobalt titanite green spinel 68186-85-6
Aluminium 7429-90-5

California Prop. 65
WARNING: This product can expose you to chemicals including Quartz, Carbon black, Titanium dioxide, Cobalt titanite green spinel, which is/are known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

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

16. OTHER INFORMATION

Hazard Rating System

<table>
<thead>
<tr>
<th>NFPA</th>
<th>Health</th>
<th>Flammability</th>
<th>Instability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

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

* = Chronic Effects (See Hazards Identification)

Revision
Identification Number: 4110835 / A001 / Issue Date: 02/08/2018 / Version: 7.0
Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

<table>
<thead>
<tr>
<th>OSHA Z-1</th>
<th>USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants</th>
</tr>
</thead>
<tbody>
<tr>
<td>TWA</td>
<td>8-hour time weighted average</td>
</tr>
<tr>
<td>US WEEL</td>
<td>USA. Workplace Environmental Exposure Levels (WEEL)</td>
</tr>
</tbody>
</table>

Full text of other abbreviations
AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International
Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50% of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Information Source and References
This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

THE DOW CHEMICAL COMPANY urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.
SAFETY DATA SHEET

1. PRODUCT IDENTIFICATION

<table>
<thead>
<tr>
<th>TRADE NAME (AS LABELED):</th>
<th>Pecora 890 NST Non-Staining Technology™</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRODUCT DESCRIPTION:</td>
<td>Non-Staining, Ultra Low-Modulus Silicone Sealant</td>
</tr>
<tr>
<td>CHEMICAL NAME/CLASS:</td>
<td>Polydimethylsiloxane Silicone</td>
</tr>
<tr>
<td>SYNONYMS:</td>
<td>890 NST</td>
</tr>
<tr>
<td>RELEVANT USE:</td>
<td>Non-Staining Silicone Sealant/Caulking Compound</td>
</tr>
<tr>
<td>USES ADVISED AGAINST:</td>
<td>Other Than Relevant Use</td>
</tr>
</tbody>
</table>

COMPANY/UNDERTAKING IDENTIFICATION:

<table>
<thead>
<tr>
<th>SUPPLIER/MANUFACTURER'S NAME:</th>
<th>Pecora Corporation</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADDRESS:</td>
<td>165 Wambold Road, Harleysville, PA 19438</td>
</tr>
<tr>
<td>EMERGENCY PHONE:</td>
<td>800-424-9300 (CHEMTREC, 24-hours)</td>
</tr>
<tr>
<td>BUSINESS PHONE:</td>
<td>215-723-6051 (Mon–Fri, 8 AM–5 PM ET)</td>
</tr>
<tr>
<td>PREPARATION DATE:</td>
<td>May 2005</td>
</tr>
<tr>
<td>REVISION DATE:</td>
<td>March 13, 2017</td>
</tr>
</tbody>
</table>

This product is sold for commercial use. This SDS has been developed to address safety concerns of those individuals working with bulk quantities of this material, as well as those of potential users of this product in industrial/occupational settings. ALL United States Occupational Safety and Health Administration Standard (29 CFR 1910.1200), U.S. State equivalent Standards, Canadian WHMIS 2015 and the Global Harmonization: required information is included in appropriate sections based on the Global Harmonization Standard format. This product has been classified in accordance with the hazard criteria of the countries listed above and the SDS contains all the information required by the Canadian WHMIS 2015 [HPR-GHS], the Global Harmonization Standard and OSHA 1910.120.

2. HAZARD IDENTIFICATION


Classification: Reproductive Toxicity Cat. 2, Acute Oral Toxicity Cat. 5, Eye Irritation Cat. 2B, Skin Irritation Cat. 3, Skin Sensitization Cat. 1, Aquatic Chronic Toxicity Cat. 4

Signal Word: Warning

Hazard Statement Codes: H361fd, H303, H316, H320, H317, H413


Hazard Symbols/Pictogram: GHS07, GHS08

EMERGENCY OVERVIEW:

Physical Description: This product is a smooth paste with a slightly medicinal odor and comes in various colors, including Black, Tru-White, Aluminum Stone, Translucent, and Bronze.

Health Hazards: WARNING! Contains trace compound that may cause adverse effects on fertility (based on animal data). May cause eye, skin, and respiratory tract irritation, especially if exposure is prolonged. May be harmful if ingested. May cause skin sensitization in susceptible individuals.

Flammability Hazard: This product is combustible and can ignite if exposed to high temperature or direct flame.

Reactivity Hazard: This product is not reactive.

Environmental Hazard: This product has not been tested for environmental impact. This product contains a compound that can cause chronic aquatic toxicity.

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM (HMIS®)

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

See Section 16 for definitions of ratings

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

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

CANADIAN WHMIS (HPR-GHS) 2015 CLASSIFICATION AND SYMBOLS: See Section 16 for in Classification and Symbols under HPR-GHS 2015.

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

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS #</th>
<th>W/W%</th>
<th>LABEL ELEMENTS</th>
<th>HARMONISED CLASSIFICATION AND LABELLING (CLP00)</th>
<th>ADDITIONAL SELF-CLASSIFICATION</th>
<th>ADDITIONAL MFG CLASSIFICATION</th>
<th>HARMONISED CLASSIFICATION - ANNEX VI OF REGULATION (EC) NO 1272/2008 (CLP REGULATION)</th>
<th>CLASSIFICATION BASED ON MFG SDS</th>
<th>HAZARD CLASSIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proprietary Polydimethyl Siloxane Mixture Contains the following compound</td>
<td>30.0-60.0</td>
<td>NOTIFIED CLASSIFICATION</td>
<td>Classification: Eye Irritation Cat. 2A</td>
<td>Hazard Statement Codes: H319</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Octamethylcyclotetrasiloxane</td>
<td>556-67-2</td>
<td>&gt;= 0.01 to &lt; 0.5</td>
<td>HARMONISED CLASSIFICATION AND LABELLING (CLP00)</td>
<td>Classification: Reproductive Toxicity Cat. 2, Aquatic Chronic Toxicity Cat. 4</td>
<td>Hazard Statement Codes: H361F, H413</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calcium Carbonate (Limestone)</td>
<td>1317-65-3</td>
<td>15.0-40.0</td>
<td>NOTIFIED CLASSIFICATION</td>
<td>Classification: Skin Irritation Cat. 2</td>
<td>Hazard Statement Codes: H315</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proprietary Crosslinker</td>
<td>3.0-7.0</td>
<td>NOTIFIED CLASSIFICATION</td>
<td>Classification: Skin Sensitization Cat. 1B</td>
<td>Hazard Statement Codes: H317</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proprietary Silicon Dioxide, Fumed</td>
<td>3.0-7.0</td>
<td>SELF CLASSIFICATION</td>
<td>Classification: Not Applicable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mineral Spirits (contains less than 0.1% benzene)</td>
<td>2.0-5.0</td>
<td>HARMONISED CLASSIFICATION - ANNEX VI OF REGULATION (EC) NO 1272/2008 (CLP REGULATION)</td>
<td>Classification: Aspiration Hazard Cat. 1</td>
<td>Hazard Statement Codes: H304</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proprietary Amine Cross-Linker</td>
<td>0.2-0.4</td>
<td>NOTIFIED CLASSIFICATION</td>
<td>Classification: Acute Dermal Toxicity Cat. 4, Skin Corrosion Cat. 1B, Skin Sensitization Cat. 1A, Aquatic Acute Toxicity Cat. 2, Aquatic Chronic Cat. 2</td>
<td>Hazard Statement Codes: H227, H336, H411</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The following is component information for some of the individual pigmented colors of this product:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS #</th>
<th>W/W%</th>
<th>LABEL ELEMENTS</th>
<th>HARMONISED CLASSIFICATION AND LABELLING (CLP00)</th>
<th>ADDITIONAL SELF-CLASSIFICATION</th>
<th>ADDITIONAL MFG CLASSIFICATION</th>
<th>HARMONISED CLASSIFICATION - ANNEX VI OF REGULATION (EC) NO 1272/2008 (CLP REGULATION)</th>
<th>CLASSIFICATION BASED ON MFG SDS</th>
<th>HAZARD CLASSIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Titanium Dioxide</td>
<td>13463-67-7</td>
<td>0.0-1.1</td>
<td>SELF-CLASSIFICATION</td>
<td>Classification: Carcinogenic Cat. 2</td>
<td>Hazard Statement Codes: H351i</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brown Iron Oxide Pigment</td>
<td>Mixture</td>
<td>0.0-0.9</td>
<td>SELF-CLASSIFICATION BASED ON MFG SDS</td>
<td>Classification: Skin Irritation Cat. 2, STOT (Inhalation-Respiratory Irritation) SE Cat. 3</td>
<td>Hazard Statement Codes: H315, H335</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carbon Black</td>
<td>1333-86-4</td>
<td>0.0-0.8</td>
<td>NOTIFIED CLASSIFICATION</td>
<td>Classification: Carcinogenic Cat. 2</td>
<td>Hazard Statement Codes: H351i</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Red Iron Oxide Pigment</td>
<td>Mixture</td>
<td>0.0-0.5</td>
<td>SELF-CLASSIFICATION BASED ON MFG SDS</td>
<td>Classification: Skin Irritation Cat. 2, STOT (Inhalation-Respiratory Irritation) SE Cat. 3</td>
<td>Hazard Statement Codes: H315, H335</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>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 sensitzers, and mutagens).</td>
<td>Balance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

4. FIRST-AID MEASURES

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

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

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

Eye Exposure: If this product enters the eyes, open victim's eyes while under gently running water. Use sufficient force to open eyelids. Have victim "roll" eyes. Minimum flushing is for 20 minutes. Do not interrupt flushing.

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

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

INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT IF NEEDED: Treat symptoms and eliminate exposure.
5. FIRE-FIGHTING MEASURES

FLASH POINT: > 140°C (> 300°F)  AUTOIGNITION: Unknown.
FLAMMABLE LIMITS IN AIR: Unknown.

EXTINGUISHING MEDIA:
Suitable Extinguishing Media: Use extinguishing material suitable to the surrounding fire, including foam, halon, carbon dioxide and dry chemical.
Unsuitable Extinguishing Media: None known.

PROTECTION OF FIREFIGHTERS:
Special Hazards Arising From the Substance: This product is combustible and can be ignited when exposed to its flashpoint. Not sensitive to mechanical impact under normal conditions. Not sensitive to static discharge under normal conditions. Closed containers may develop pressure and rupture in event of fire.
Special Protective Actions For Fire-Fighters: Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Move containers from fire area if it can be done without risk to personnel. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

6. ACCIDENTAL RELEASE MEASURES

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

PERSONAL PROTECTIVE EQUIPMENT: Responders should wear the level of protection appropriate to the type of chemical released, the amount of the material spilled, and the location where the incident has occurred.
Small Spills: For releases of 1 drum or less, Level D Protective Equipment (gloves, chemical resistant apron, boots, and eye protection) should be worn.
Large Spills: Minimum Personal Protective Equipment should be rubber gloves, rubber boots, face shield, and Tyvek suit. Minimum level of personal protective equipment for releases in which the level of oxygen is less than 19.5% or is unknown must be Level B: triple-gloves (rubber gloves and nitrile gloves over latex gloves), chemical resistant suit, fire-retardant clothing and boots, hard hat, and Self-Contained Breathing Apparatus.

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

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

OTHER INFORMATION: U.S. regulations may require reporting of spills of this material that reach surface waters if a sheen is formed. If necessary, the toll-free phone number for the US Coast Guard National Response Center is 1-800-424-8802.
REFERENCE TO OTHER SECTIONS: See information in Section 8 (Exposure Controls – Personal Protection) and Section 13 (Disposal Considerations) for additional information.

7. HANDLING and STORAGE

PRECAUTIONS FOR SAFE HANDLING: As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product. Do not eat or drink while handling this material. Avoid contact with eyes, skin, and clothing. Avoid breathing fumes, dusts, vapors or mist. Do not taste or swallow. Use only with adequate ventilation. Keep away from heat and flame. In the event of a spill, follow practices indicated in Section 6: ACCIDENTAL RELEASE MEASURES.

CONDITIONS FOR SAFE STORAGE: This product is stable under ordinary conditions of handling, use and storage. Store containers in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible.

CONDITIONS FOR SAFE STORAGE (continued): Store away from incompatible materials (see Section 10: STABILITY AND REACTIVITY). Keep container tightly closed when not in use. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged. To prolong shelf life, store at temperatures below 26°C (80°F).

PRODUCT END USE: This product is used as a sealant. Follow all industry standards for use of this product.
8. EXPOSURE CONTROLS - PERSONAL PROTECTION

EXPOSURE LIMITS/CONTROL PARAMETERS:
Ventilation and Engineering Controls: Use adequate ventilation to ensure exposure levels are maintained below the limits provided below. Occupational/Workplace Exposure Limits/Guidelines:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS #</th>
<th>Guideline</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcium Carbonate, Natural</td>
<td>1317-65-3</td>
<td>OSHA PEL TWA</td>
<td>15 mg/m³ total dust</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NIOSH REL TWA</td>
<td>5 mg/m³ respirable fraction</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10 mg/m³ total dust</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5 mg/m³ respirable fraction</td>
</tr>
<tr>
<td>Carbon Black</td>
<td>1333-86-4</td>
<td>ACGIH TLV TWA</td>
<td>3.5 mg/m³ (inhalable)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OSHA PEL TWA</td>
<td>3.5 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NIOSH REL TWA</td>
<td>3.5 mg/m³ (0.1 in the presence of PAHs, as PAHs: 10-hr TWA)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DFG MAK TWA</td>
<td>As inhalable dust</td>
</tr>
<tr>
<td>Proprietary Red and Brown Iron Pigment</td>
<td></td>
<td>ACGIH TLV TWA</td>
<td>5 mg/m³ respirable fraction</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OSHA PEL TWA</td>
<td>10 mg/m³ fume</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NIOSH REL TWA</td>
<td>5 mg/m³ dust and fume, as Fe</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NIOSH IDLH</td>
<td>2500 mg/m³, as Fe</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DFG MAK TWA</td>
<td>With the exception of iron oxides which are not biologically available</td>
</tr>
<tr>
<td>Proprietary Crosslinker</td>
<td></td>
<td>NE</td>
<td>NE</td>
</tr>
<tr>
<td>Octamethylocycloctetrasiloxane</td>
<td>556-67-2</td>
<td>NE</td>
<td>NE</td>
</tr>
<tr>
<td>Proprietary Polydimethyl Siloxane Mixture</td>
<td></td>
<td>NE</td>
<td>NE</td>
</tr>
<tr>
<td>Proprietary Mineral Spirits</td>
<td></td>
<td>ACGIH TLV TWA</td>
<td>525 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OSHA PEL TWA</td>
<td>2900 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NIOSH REL TWA</td>
<td>350 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NIOSH REL STEL</td>
<td>1800 mg/m³ (15 min.)</td>
</tr>
<tr>
<td>Titanium Dioxide</td>
<td>13463-67-7</td>
<td>ACGIH TLV TWA</td>
<td>10 mg/m³ NIC: 1 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OSHA PEL TWA</td>
<td>15 mg/m³ total dust</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NIOSH REL</td>
<td>Lowest feasible concentration (LOQ 0.2 mg/m³)</td>
</tr>
<tr>
<td>Proprietary Amin Cross-Linker</td>
<td>Exposure limits given are for diethylenetriamine</td>
<td>ACGIH TLV TWA</td>
<td>4.2 mg/m³ (skin)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NIOSH REL TWA</td>
<td>4 mg/m³ (skin)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DFG MAK</td>
<td>Danger of sensitization of the Skin</td>
</tr>
</tbody>
</table>

The following compounds are possible reaction products from contact with water and during curing:
- Methyl Ethyl Ketoxime
- Proprietary Amine Cross-Linker
- Proprietary Red and Brown Iron Pigment
- Proprietary Crosslinker
- Octamethylocycloctetrasiloxane
- Proprietary Polydimethyl Siloxane Mixture
- Proprietary Mineral Spirits
- Titanium Dioxide
- Proprietary Amin Cross-Linker
- Exposure limits given are for diethylenetriamine

9. PHYSICAL and CHEMICAL PROPERTIES

FORM: Smooth paste.
MOLECULAR WEIGHT: Mixture.
ODOR: Mildly medicinal.
SPECIFIC GRAVITY: 1.1-1.3
RELATIVE VAPOR DENSITY (air = 1): Heavier than air.
SOLUBILITY IN WATER: Insoluble.
MELTING/FREEZING POINT: Not available.
VOC (less water and exempt): < 100 g/L
FLASH POINT: > 140°C (> 300°F)
pH: Not available.
FLAMMABLE LIMITS (in air by volume, %): Lower: Not established; Upper: Not established.
COEFFICIENT OF OIL/WATER DISTRIBUTION (PARTITION COEFFICIENT): Not established.

COLORS: Black, Tru-White, Aluminum Stone, Translucent, and Bronze
MOLECULAR FORMULA: Mixture.
ODOR THRESHOLD: Not available.
VAPOR PRESSURE, mm Hg @ 20°C: Not established.
EVAPORATION RATE (BuAc = 1): < 1
OTHER SOLUBILITIES: Not available.
BOILING POINT: Not established.
WEIGHT % VOC: ~ 10%
AUTOIGNITION TEMPERATURE: Not established.

Note: For complete and accurate information, please refer to the appropriate regulations and standards.
9. PHYSICAL and CHEMICAL PROPERTIES (Continued)

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

10. STABILITY and REACTIVITY

CHEMICAL STABILITY: Stable under normal circumstances of use and handling. Methylethyl Ketoxime is generated during curing.

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

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

HAZARDOUS DECOMPOSITION PRODUCTS: Combustion: Thermal decomposition of this product can generate dusts, irritating fumes, and toxic gases (e.g., carbon, iron, aluminum, titanium, nitrogen and silicone oxides, silicon carbides, formaldehyde, various hydrocarbons). Hydrolisis: Methylethyl ketoxime.

POSSIBILITY OF HAZARDOUS REACTIONS/POLYMERIZATION: This product is not expected to undergo hazardous polymerization, decomposition, condensation, or self-reactivity.

11. TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS: The most significant routes of occupational exposure are inhalation and contact with skin and eyes.

The symptoms of exposure to this product are as follows:

Contact with Skin & Eyes: Contact may mildly irritate the skin and cause redness and discomfort. Prolonged or repeated skin contact may cause dermatitis (dry, red skin). Eye contact may cause redness, pain, and tearing.

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

Ingestion: If the product is swallowed, it may mildly irritate the mouth, throat, and other tissues of the gastro-intestinal system and may cause nausea, vomiting, and diarrhea.

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

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

Target Organs: Acute: Skin, eyes, central nervous system. Chronic: Skin, fertility.

Chronic Effects: Prolonged or repeated skin contact may cause dermatitis (dry, red skin), sensitization to the skin or adverse liver or kidney effects.

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

PROPRIETARY CROSSSLINKER:

- **TCLo (Inhalation-Rat) 154 mg/m^3/6 hours/40 weeks-intermittent**: Lungs, Thorax, or Respiration: changes in lung weight; Blood: other changes
- **TCLo (Inhalation-Rat) 1100 mg/m^3/65 days-intermittent**: Kidney/Ureter/Bladder: renal function tests depressed; Blood: normocytic anemia
- **TDL (Oral-Rat) 10 mg/kg**: Biochemical: Metabolism (Intermediate): effect on inflammation or mediation of inflammation
- **TDL (Skin-Rabbit) 2 gm/kg/4 weeks-intermittent**: Skin and Appendages: dermatitis, other (after systemic exposure)

PROPRIETARY POLYDIMETHYL SILOXANE:

- **TDLo (Oral-Rat) 3160 mg/kg**
- **LDLo (Intravenous-Rat) 15 mg/kg**: Lungs, Thorax, or Respiration: acute pulmonary edema
- **TDLo (Inhalation-Rat) 154 mg/m^3/6 days-intermittent**: Lungs, Thorax, or Respiration: other changes, changes in lung weight; Biochemical: Metabolism (Intermediate): effect on inflammation or mediation of inflammation
- **TDLo (Intratracheal-Mouse) 96.77 mg/kg**: Lungs, Thorax, or Respiration: acute pulmonary edema, other changes; Biochemical: Metabolism (Intermediate): effect on inflammation or mediation of inflammation
- **TDLo (Intratracheal-Mouse) 2 mg/kg**: Lungs, Thorax, or Respiration: fibrosis, focal (pneumocooniosis), other changes; Biochemical: Metabolism (Intermediate): effect on inflammation or mediation of inflammation
- **TDLo (Intratracheal-Mouse) 50 mg/kg**: Lungs, Thorax, or Respiration: changes in lung weight
- **TDLo (Intratracheal-Mouse) 2 mg/kg**: Lungs, Thorax, or Respiration: fibrosis, focal (pneumocooniosis), other changes; Biochemical: Metabolism (Intermediate): effect on inflammation or mediation of inflammation
- **TDLo (Intratracheal-Mouse) 96.77 mg/kg**: Lungs, Thorax, or Respiration: acute pulmonary edema, other changes; Biochemical: Metabolism (Intermediate): effect on inflammation or mediation of inflammation
- **TDL (Intratracheal-Mouse) 2 mg/kg**: Lungs, Thorax, or Respiration: fibrosis, focal (pneumocooniosis), other changes; Biochemical: Metabolism (Intermediate): effect on inflammation or mediation of inflammation
- **TDL (Intratracheal-Mouse) 50 mg/kg**: Lungs, Thorax, or Respiration: changes in lung weight
- **TDL (Intratracheal-Mouse) 2 mg/kg**: Lungs, Thorax, or Respiration: fibrosis, focal (pneumocooniosis), other changes; Biochemical: Metabolism (Intermediate): effect on inflammation or mediation of inflammation
- **TDL (Intratracheal-Mouse) 96.77 mg/kg**: Lungs, Thorax, or Respiration: acute pulmonary edema, dyspnea, other changes

MINERAL SPIRITS (continued):

- **LC (Inhalation-Rat) > 5 mm/m^3**: Behavioral: somnolence (general decreased activity)

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11. TOXICOLOGICAL INFORMATION (Continued)

TOXICITY DATA (continued):

TITANIUM DIOXIDE (continued):
TClo (Inhalation-Rat) 250 mg/m³/13 weeks-intermittent: Lungs, Thorax, or Respiration: other changes; Blood: changes in cell count (unspecified); Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: dehydrogenases
cTcLo (Inhalation-Rat) 274 mg/m³/5 days-intermittent: Lungs, Thorax, or Respiration: changes in lung weight; Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: multiple enzyme effects, Metabolism (Intermediate): effect on inflammation or mediation of inflammation
cTcLo (Inhalation-Rat) 250 mg/m³/6 hours/2 years-intermittent: Tumorigenic: carcinogenic by RTECS criteria; Lungs, Thorax, or Respiration: tumors
cTcLo (Inhalation-Mouse) 10 mg/m³/6 hours/13 weeks-intermittent: Lungs, Thorax, or Respiration: other changes; Biochemical: Metabolism (Intermediate): effect on inflammation or mediation of inflammation
cTcLo (Inhalation-Mouse) 10 mg/m³/13 weeks-intermittent: Lungs, Thorax, or Respiration: spatum; Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: dehydrogenases

CARCINOGENIC POTENTIAL: The following table summarizes the carcinogenicity listing for the components of this product. “NO” indicates that the substance is not considered to be or suspected to be a carcinogen by the listed agency, see section 16 for definitions of other ratings.

<table>
<thead>
<tr>
<th>CHEMICAL</th>
<th>EPA</th>
<th>IARC</th>
<th>NTP</th>
<th>NIOSH</th>
<th>ACGIH</th>
<th>OSHA</th>
<th>PROP 65</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcium Carbonate (Natural)</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Carbon Black</td>
<td>No</td>
<td>2B</td>
<td>No</td>
<td>Ca</td>
<td>No</td>
<td>No</td>
<td>Yes (airborne unbound particles of respirable size)</td>
</tr>
<tr>
<td>Iron Oxide</td>
<td>No</td>
<td>3</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>A4</td>
<td>No</td>
</tr>
<tr>
<td>Mineral Spirits</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Octamethyloctetrasiloxane</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Proprietary Crosslinker</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Fumed Silicon Dioxide</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Titanium Dioxide</td>
<td>2B</td>
<td>No</td>
<td>No</td>
<td>Ca</td>
<td>No</td>
<td>A4</td>
<td>Yes (airborne unbound particles of respirable size)</td>
</tr>
</tbody>
</table>

The following is a compound from reaction with water and generated during curing:

Methyl Ethyl Ketoxime


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

SENSITIZATION TO THE PRODUCT: This product may cause skin sensitization and allergic reaction in susceptible individuals due to the Phenyl Oximino Silane component.

TOXICOLOGICAL SYNERGISTIC PRODUCTS: None known.

REPRODUCTIVE TOXICITY INFORMATION: This product has not been tested for reproductive toxicity. Information for some components is given, as follows.

Mutagenicity/Embryotoxicity/ Teratogenicity/Reproductive Toxicity: In a developmental and reproductive toxicity study involving female rats and the trace Octamethyloctetrasiloxane component, a significant percentage of female rats exposed experienced reduction of proestrus LH levels, a reduction of ovulation and decreased FSH hormone levels.

BIological EXposure INDICES (BEIs): There are no BEIs established for any component of this product at this time.

12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

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

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

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

ECOTOXICITY: This product has not been tested for aquatic or animal toxicity. Data are available for the trace Octamethyloctetrasiloxane component.
12. ECOLOGICAL INFORMATION (Continued)

ECOTOXICITY (continued): Although no data is available, under the Global Harmonization Standard, the Phenyl Oximino Silane component is classified as having chronic aquatic toxicity.

OCTAMETHYLCYCLOTETRASILOXANE:
LC₅₀ (Oncorhynchus mykiss Rainbow trout) 14 days = 10 µg/L
LC₅₀ (Lepomis macrochirus Bluegill) 96 hours = > 1000 mg/L
LC₅₀ (Brachydanio rerio Zebra danio) 96 hours = >500 mg/L

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

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

13. DISPOSAL CONSIDERATIONS

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

U.S. EPA WASTE NUMBER: Not applicable.

14. TRANSPORTATION INFORMATION

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

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

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

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

15. REGULATORY INFORMATION

U.S. REGULATIONS:

U.S. SARA Reporting Requirements: No component of this product is subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act.

U.S. SARA Hazard Categories (Section 311/312, 40 CFR 370-21): ACUTE: Yes; CHRONIC: Yes; FIRE: No; REACTIVE: No; SUDDEN RELEASE: No

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

U.S. CERCLA Reportable Quantity (RQ): Not applicable.

U.S. Clean Air Act (CA 112r) Threshold Quantity (TQ): Not applicable.

Other U.S. Federal Regulations: Not applicable.

California Safe Drinking Water and Toxic Enforcement Act (Proposition 65): This product contains Titanium Dioxide and Carbon Black, suspect carcinogens which are on the list, by the route of inhalation. Due to the form of the product, the Proposition 65 warning is not applicable to these compounds in this product.

CANADIAN REGULATIONS:

Canadian DSL/NDSL Inventory Status: The components of this product are listed on the DSL Inventory.

Canadian Environmental Protection Act (CEPA) Priorities Substances Lists: No component of this product is on the CEPA Priorities Substances Lists.

Canadian WHMIS (HPR-GHS) 2015 Classification and Symbols: See Section 16 in Classification and Symbols under HPR-GHS 2015.

MEXICAN REGULATIONS:

Mexican Workplace Regulations (NOM-018-STPS-2000): This product is not classified as hazardous.

16. OTHER INFORMATION

WARNINGS (per ANSI Z129.1): WARNING! CONTAINS TRACE COMPONENT THAT MAY CAUSE ADVERSE EFFECTS ON FERTILITY, BASED ON ANIMAL DATA. MAY CAUSE EYE, SKIN, AND RESPIRATORY TRACT IRRITATION, ESPECIALLY IF EXPOSURE IS PROLONGED. MAY BE HARMFUL IF ACCIDENTALLY INGESTED. MAY CAUSE SKIN SENSITIZATION AND ALLERGIC REACTION IN SUSCEPTIBLE INDIVIDUALS. COMBUSTIBLE – CAN IGNITE IF EXPOSED TO DIRECT FLAME. CONTAINS COMPOUNDS ACUTELY AND CHRONICALLY TOXIC TO AQUATIC ORGANISMS. Avoid contact with eyes, skin, and clothing. Avoid breathing fumes, dusts, vapors or mist. Do not taste or swallow. Wash thoroughly after handling. Keep container tightly closed. Use only with adequate ventilation. Keep away from heat and flame. Wear gloves, eye protection, respiratory protection, and appropriate body protection. FIRST-AID: In case of contact, immediately flush skin and eyes with plenty of water. Remove contaminated clothing and shoes. Get medical attention if irritation develops or persists. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If swallowed, do not induce vomiting. Get medical attention. IN CASE OF FIRE: Use water fog, foam, dry chemical, or CO₂. IN CASE OF SPILL: Absorb spilled product with polypads or other suitable absorbing material. Place all spill residue in an appropriate container and seal. Dispose of in accordance with U.S. Federal, State, and local hazardous waste disposal regulations and those of Canada.
GLOBA - REGENCY CLASSIFICATION

CLASSIFICATION: Reproductive Toxicity Category 2, Acute Oral Toxicity Category 5, Eye Irritation Category 2B, Skin Irritation Category 3, Skin Sensitization Category 1, Aquatic Chronic Toxicity Category 4

Signal Word: Warning


Precautionary Statements:


Response: P308 + P313: If exposed or concerned: Get medical advice/attention. P305 + P351 + P338: IF IN YES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. P337 + P313: If eye irritation persists: Get medical advice/attention. P302 + P352: IF ON SKIN: Wash with plenty of soap and water. P333 + P313: If skin irritation or rash occurs: Get medical advice/attention. P362 + P364: Take off contaminated clothing and wash it before reuse. P321: Specific treatment (remove from exposure and treat symptoms).

Storage: P405: Store locked up.

Disposal: P501: Dispose of contents/containers in accordance with all local, regional, national and international regulations.

Hazard Symbols/Picture: GHS07, GHS08

DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES

The information presented in the Material Safety Data Sheet is prepared in good faith based on data believed to be accurate as of the date this Material Safety Data Sheet was prepared. HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIES REGARDING THE ACCURACY OR COMPLETENESS OF THE INFORMATION PROVIDED ABOVE, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE. In no case shall the descriptions, information, data or designs provided be considered a part of our terms and conditions of sale. All materials may present hazards and should be used with caution. Because many factors may affect processing or application/use, we recommend that you make tests to determine the suitability of a product for your particular purpose prior to use. No responsibility is assumed for any damage or injury resulting from abnormal use or from any failure to adhere to recommended practices or applicable federal, state, or local laws or regulations. The information provided above, and the product, are furnished on the condition that the person receiving them shall make their own determination as to the suitability of the product for their particular purpose and on the condition that they assume the risk of their use. In addition, no authorization is given nor implied to practice any patented invention without a license.

REFERENCES AND DATA SOURCES: Refer to the supplier for information.

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

REVISED DATE: July 2012: Up-date and revise entire MSDS to include current GHS requirements. December 2015: Correction of classification. March 2017: Up-date due to change in formulation and up-date to most current format and regulations.

DATE OF PRINTING: March 21, 2017

DEFINITIONS OF TERMS

A large number of abbreviations and acronyms appear on a MSDS. Some of these, which are commonly used, are included below.

KEY ACRONYMS:

CHEMTREC: Chemical Transportation Emergency Center, a 24-hour emergency information and/or emergency medical/first responder assistance service.

CEILING LEVEL: The concentration that shall not be exceeded during any part of the working exposure.

DFG MAKs: Federal Republic of Germany Maximum Concentration Values in the workplace. Exposure limits are given as TWA (Time-Weighted Average) or PEAK (short-term exposure) values.

DFG MAK Germ Cell Mutagen Categories: 1: Germ cell mutagens that have been shown to increase the mutant frequency in the progeny of exposed humans. 2: Germ cell mutagens that have been shown to increase the mutant frequency in the progeny of exposed mammals. 3: Substances that have been shown to induce genetic damage in germ cells of human of animals, or which produce mutagenic effects in somatic cells of mammals in vivo and have been shown to reach the germ cells in an active form. 4: Germ cell mutagens because of their genotoxic effects in mammalian somatic cell in vivo; in exceptional cases, substances for which there are no in vivo data, but that are clearly mutagenic in vitro and structurally related to known in vivo mutagens. 5: Not applicable (Category 4 carcinogenic substances are those with non-genotoxic mechanisms of action. By definition, germ cell mutagens are genotoxic. Therefore, Category 4 for germ cell mutagens cannot apply. At some time in the future, it is conceivable that a Category 4 could be established for genotoxic substances with primary targets other than DNA [e.g., purely aneugenic substances] if research results make this seem sensible.)

DFG Pregnancy Risk Group Classification: Group A: A risk of damage to the developing embryo or fetus has been unequivocally demonstrated. Exposure of pregnant women can lead to damage of the developing organism, even when MAK and BAT (Biological Tolerance Value for Working Materials) values are observed. Group B: Currently available information indicates a risk of damage to the developing embryo or fetus must be considered to be probable. Damage to the developing organism cannot be excluded when pregnant women are exposed, even when MAK and BAT values are observed. Group C: There is no reason to fear a risk of damage to the developing embryo or fetus when MAK and BAT values are observed. Group D: Classification in one of the groups A–C is not yet possible because, although the data available may indicate a trend, they are not sufficient for final evaluation.

IDLH: Immediately Dangerous to Life and Health. This level represents a concentration from which one can escape within 30-minutes without suffering escape-preventing or permanent injury.

LOQ: Limit of Quantitation.

NE: Not Established.

NIC: Notice of Intended Change.

NIOSH Ceiling: The exposure that shall not be exceeded during any part of the workday. If instantaneous monitoring is not feasible, the ceiling shall be assumed as a 15-minute TWA exposure (unless otherwise specified) that shall not be exceeded at any time during a workday.

NIOSH RELs: NIOSH’s Recommended Exposure Limits.

PEL: OSHA’s Permissible Exposure Limits. This exposure value means exactly the same as a TLV, except that it is enforceable by OSHA. The OSHA Permissible Exposure Limits are based in the 1989 PELs and the June, 1993 Air Contaminants Rule (Federal Register 58: 35338-35351 and 58: 40191). Both the current PELs and the vacated PELs are indicated. The phrase, “Vacated 1989 PEL” is placed next to the PEL that was vacated by Court Order.

SKIN: Used when there is a danger of cutaneous absorption.

STEL: Short Term Exposure Limit, usually a 15-minute time-weighted average (TWA) exposure that should not be exceeded at any time during a workday, even if the 8-hr TWA is within the TLV-TWA, PEL-TWA or REL-TWA.

TLV: Threshold Limit Value. An airborne concentration of a substance that represents conditions under which it is generally believed that nearly all workers may be repeatedly exposed without adverse effect. The duration of exposure is considered to be the 8-hour.

TWA: Time Weighted Average exposure concentration for a conventional 8-hr (TLV, PEL) or up to a 10-hr (REL) workday and a 40-hr workweek.

WEEL: Workplace Environmental Exposure Levels from the AIHA.

Hazardous Materials Identification System Hazard Ratings: This rating system was developed by the National Paint and Coating Association and has been adopted by industry to identify the degree of chemical hazards.

Health Hazard: 0 Minimal Hazard: No significant health risk, irritation of skin or eyes only anticipated. Skin Irritation: Essentially non-irritating. Mechanical irritation may occur. PEL or OSHA = 0. Eye Irritation: Essentially non-irritating, minimal effects clearing in < 24 hours. Mechanical irritation may occur. OSHA = 0. Oral Toxicity LD50 Rat: > 5000 mg/kg. Dermal Toxicity LD50 Rat or Rabbit: > 1000–2000 mg/kg. Inhalation Toxicity LC50 4-hrs Rat: > 20 mg/L. Slight Hazard: Minor reversible injury may occur; may irritate the stomach if swallowed; may defat the skin and exacerbate existing dermatitis. Skin Irritation: Slightly or mildly irritating. PEL or Dose Range = 0 – 5. Eye Irritation: Slightly to mildly irritating, but reversible within 7 days. Dose = 0 ≤ 25 mg/L. Oral Toxicity LD50 Rat: > 500–5000 mg/kg. Dermal Toxicity LD50 Rat or Rabbit: > 1000–2000 mg/kg. Inhalation Toxicity LC50 4-hrs Rat: > 20–200 mg/L. 2 Moderate Hazard: Temporary or transitory injury may occur; prolonged exposure may affect the CNS. Skin Irritation: Moderately irritating; primary irritant; sensitizer. PEL or Dose Range ≥ 2, with no destruction of dermal tissue. Eye Irritation: Moderately to severely irritating; reversible corneal opacity; corneal involvement or irritation clearing in 8–21 days. Dose = 26–100 mg/kg, with reversible effects. Optical Toxicity LD50 Rat: > 50–500 mg/kg. Oral Toxicity LD50 Rat or Rabbit: > 1000–2000 mg/kg. Inhalation Toxicity LC50 4-hrs Rat or Rabbit: > 0.5 mg/L. 3 Serious Hazard: Major injury likely unless prompt action is taken and medical treatment is given; high level of toxicity; corrosive. Skin Irritation: Severely irritating and/or corrosive; may cause destruction of dermal tissue, skin burns, and dermal necrosis. PEL or Dose Range ≥ 5, with destruction of tissue. Eye Irritation: Severe irreversible action of corneal tissue; corneal involvement or irritation persisting for more than 21 days. Dose = 80 with effects irreversible in 21 days. Optical Toxicity LD50 Rat or Rabbit: > 1–5 mg/kg. Dermal Toxicity LD50 Rat or Rabbit: > 20–200 mg/kg. Inhalation Toxicity LC50 4-hrs Rat: > 0.05–0.5 mg/L.
DEFINITIONS OF TERMS (Continued)

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM

RATINGS (continued):

HEALTH HAZARD (continued): 4 Slight Hazard: Life-threatening; major or permanent damage may result from single or repeated exposure; extremely toxic; irreversible injury may result from brief contact. Skin Irritation: Not appropriate. Do not rate as 4, based on skin irritation alone. Eye Irritation: Not appropriate. Do not rate as 4, based on eye irritation alone. Acute Oral LD₅₀: 1 mg/kg. Dermal Toxicity LD₅₀ Rat or Rabbit ≤ 20 mg/kg. Inhalation Toxicity LC₅₀ 4-hr rat ≤ 0.05 mg/L.

FLAMMABILITY HAZARD: Minimal Hazard: Materials that will not burn in air when exposed to a temperature of 815.5°C (1500°F) for a period of 5 minutes. 1 Slight Hazard: Materials that must be pre-heated before ignition can occur. Material requires considerable pre-heating, under all ambient temperature conditions, before it can ignite. 2 Moderate Hazard: Materials that will readily polymerize, decompose, condense, or self-react at ambient temperature and/or pressure and have a moderate potential (or moderate risk) to cause significant heat generation or explosion. Explosive: Division 1.1 & 1.2 explosives. Substances that will ignite and cause a flash fire hazard, up to the boiling point of the liquid or up to a temperature of 190°C (70°F) and less than or equal to 235°C (455°F) for a period of 5 minutes in accordance with Annex D of NFPA 704. Liquids and solids, and semisolids having a flash point at or above 37.8°C (100°F) (i.e. OSHA Class IIA); and Materials that ignite spontaneously when exposed to air at a temperature of 54.4°C (130°F) or below (per (b) of 49 CFR 173, Appendix H or the UN Manual of Tests and Criteria).

PHYSICAL HAZARD: 0 Water Reactivity: Materials that do not react with water. Organic Peroxides: Materials that are normally stable, even under fire conditions and will not react with water. Explosive: Division 1.1 & 1.2 explosives. Substances that may incite detonation, explosion, or deflagration. Rating: No rating. Unstable Reactives: Substances that may polymerize, decompose, condense, or self-react. 1 Water Reactivity: Materials that change or decompose upon exposure to moisture. Organic Peroxides: Materials that are normally stable, but can become unstable at high temperatures, high pressures, or in the presence of water, but will not necessarily react violently. Explosives: Division 1.5 & 1.6 explosives. Substances that are very insensitive explosives or that do not have a mass explosion hazard. Pressurized: Compressed Gases: Materials that may form explosive mixtures with air or other oxidizing agents. Liquids: Materials that have a flash point at or above 37.8°C (100°F) and below 93.4°C (200°F) (i.e. Class II and Class IIIA liquids). Solids: Materials in a fibrous or shredded form that may burn rapidly and create flash fire hazards (e.g. cotton, sisal, hemp); and Solids and semisolids (e.g. viscous and slowly flowing as asphalt) that readily give off flammable vapors. 3 Severe Hazard: Liquids and solids that can be ignited by minor heat sources (i.e. Class IA liquids). Materials that ignite when exposed to air, Solids containing greater than 0.5% by weight of a flammable or combustible solvent are rated by the closed cup flash point of the solvent. 4 Explosives: Division 1.1 & 1.2 explosives. Substances that may incite detonation, explosion, or deflagration. Rating: No rating. Unstable Reactives: Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure and have a high potential (or high risk) to cause significant heat generation or explosion. Pyrophoric: Add to the definition of Flammability 4. 5 Severe Hazard: Materials that, under emergency conditions, can cause serious or permanent injury. Gases with an LC₅₀ for acute inhalation toxicity less than or equal to 1,000 ppm but less than or equal to 2 mg/L. Any liquid whose saturated vapor pressure at 20°C (68°F) is less than or equal to 0.1 mm Hg or 0.1 kPa. Dusts and mists with an LC₅₀ for acute inhalation toxicity less than or equal to 5 mg/L but less than or equal to 0.5 mg/L. Materials with an LD₅₀ for acute dermal toxicity greater than 10 mg/kg but less than or equal to 100 mg/L. Materials with an LD₅₀ for acute oral toxicity greater than 200 mg/kg but less than or equal to 20 mg/kg. Materials with an LD₅₀ for acute dermal toxicity greater than 0.5 mg/kg but less than or equal to 20 mg/kg. Materials with an LD₅₀ for acute oral toxicity greater than 50 mg/kg but less than or equal to 5 mg/kg. Materials with an LD₅₀ for acute dermal toxicity greater than 0.5 mg/kg but less than or equal to 2 mg/kg. Materials with an LD₅₀ for acute oral toxicity greater than 5 mg/kg but less than or equal to 0.5 mg/kg.

FLAMMABILITY HAZARD: Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand. Materials that will not burn in air when exposed to a temperature of 815.5°C (1500°F) for a period of 5 minutes in accordance with Annex D of NFPA 704. Materials that must be preheated before ignition can occur. Material requires considerable pre-heating, under all ambient temperature conditions, before it can ignite. Materials that will readily polymerize, decompose, condense, or self-react at ambient temperature and/or pressure and have a moderate potential (or moderate risk) to cause significant heat generation or explosion. Explosives: Division 1.1 & 1.2 explosives. Substances that will ignite and cause a flash fire hazard, up to the boiling point of the liquid or up to a temperature of 190°C (70°F) and less than or equal to 235°C (455°F) for a period of 5 minutes in accordance with Annex D of NFPA 704. Liquids and solids, and semisolids having a flash point at or above 37.4°C (100°F) (i.e. OSHA Class IIA); and Materials that ignite spontaneously when exposed to air at a temperature of 54.4°C (130°F) or below (per (b) of 49 CFR 173, Appendix H or the UN Manual of Tests and Criteria).

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March 15, 2017
DEFINITIONS OF TERMS (Continued)

NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS (continued):

INSTABILITY HAZARD: 0 Materials that in themselves are normally stable, even under fire conditions. Materials that have an instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) below 0.01 W/mL. Materials that do not exhibit an exotherm at temperatures less than or equal to 500°C (932°F) when tested by differential scanning calorimetry. 1 Materials that in themselves are normally stable, but that can become unstable at elevated temperatures and pressures. Materials that have an instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 0.01 W/mL and below 10 W/mL. 2 Materials that readily undergo violent chemical change at elevated temperatures and pressures. Materials that have an instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 10 W/mL and below 100 W/mL. 3 Materials that in themselves are capable of detonation or explosive decomposition or explosive reaction, but that require a strong initiating source or that must be heated under confinement before initiation. Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) at or above 100 W/mL and below 1000 W/mL. Materials that are sensitive to thermal or mechanical shock at elevated temperatures and pressures. 4 Materials that in themselves are readily capable of detonation or explosive decomposition or explosive reaction at normal temperatures and pressures. Materials that are sensitive to localized thermal or mechanical shock at normal temperatures and pressures. Materials that have an estimated instantaneous power density (product of heat of reaction and reaction rate) at 250°C (482°F) of 1000 W/mL or greater.

FLAMMABILITY LIMITS IN AIR:

Much of the information related to fire and explosion is derived from the National Fire Protection Association (NFPA). Flash Point: Minimum temperature at which a liquid gives off sufficient vapor to form an ignitable mixture with air near the surface of the liquid or within the test vessel used. Autoignition Temperature: Minimum temperature of a solid, liquid, or gas required to initiate or cause self-sustained combustion in air with no other source of ignition.UEL: Lowest concentration of a flammable vapor or gas/air mixture that will ignite and burn with a flame. UEL: Highest concentration of a flammable vapor or gas/air mixture that will ignite and burn with a flame.

TOXICOLOGICAL INFORMATION:

Human and Animal Toxicology: Possible health hazards as derived from human data, animal studies, or from the results of studies with similar compounds are presented. LD₅₀: Lethal Dose (solids & liquids) that kills 50% of the exposed animals. LC₅₀: Lethal Concentration (gases) that kills 50% of the exposed animals. ppm: Concentration expressed in parts of material per million parts of air or water. mg/kg: Quantity of material, by weight, administered to a test subject, based on their body weight in kg. mg/L: Lowest dose to cause a symptom. TLD₅₀: Lowest concentration to cause a symptom. TDL₅₀: Lowest dose (or concentration) to cause lethal or toxic effects.

Cancer Information:

IARC: International Agency for Research on Cancer. NTP: National Toxicology Program. REACH: Registry of Toxic Effects of Chemical Substances. IARC and NTP rate chemicals on a scale of decreasing potential to cause human cancer with rankings from 1 to 4. Subrankings (2A, 2B, etc.) are also used. Other Information: BEI: ACGIH Biological Exposure Indices, represent the levels of determinants which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV.

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

ECOLOGICAL INFORMATION:

EC: Effect concentration in water. BCF: Bioconcentration Factor, which is used to determine if a substance will concentrate in life forms that consume contaminated plant or animal matter. TLm: Median threshold limit. log Kow or log Koc: Coefficient of Oil/Water Distribution is used to assess a substance’s behavior in the environment.

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


CANADA: