SAFETY DATA SHEET
Prepared to U.S. OSHA, CMA, ANSI, Canadian WHMIS, and the Global Harmonization Standard

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY UNDERTAKING

IDENTIFICATION OF THE MIXTURE

TRADE/MATERIAL NAME: Duo-Sil Ultra®
CHEMICAL NAMES: Silyl Terminated Polyurethane
SYNONYMS: None
RELEVANT USE of the SUBSTANCE: Sealant
USES ADVISED AGAINST: Other than Relevant Use
SUPPLIER/MANUFACTURER’S NAME (USA/Canada): Bostik Inc.
Address: 11320 W. Watertown Plank Road
Wauwatosa, Wisconsin 53226 USA
Emergency Phone: +1 (800) 843-0844 (Domestic), +1 (414) 774-2250 (International)
Product Information: +1 (800) 227-0332
EMAIL of Competent Person for Information on SDS: msds@bostik.com

NOTE: ALL United States Occupational Safety and Health Administration Standard (29 CFR 1910.1200), U.S. State equivalent Standards, Canadian WHMIS [Controlled Products Regulations], Mexican NOM018-STPS 2000, SPRING Singapore, and Japanese JIS Z7250 required information is included in appropriate sections based on the U.S. ANSI Z400.1-2010 format. This product has been classified in accordance with the hazard criteria of the countries listed above.

2. HAZARD IDENTIFICATION

GLOBAL HARMONIZATION LABELING AND CLASSIFICATION: This product has been classified per UN GHS Standards under U.S. OSHA and other applicable regulations that require Global Harmonization compliance.
Classification: Carcinogenic Cat. 1B, Reproductive Toxicity Cat. 2, Aquatic Chronic Toxicity Cat. 3
Signal Word: Danger
Hazard Statement Codes: P201, P202, P273, P280, P308 + P313, P405, P501
Hazard Classification: Reproductive Toxicity Cat. 2
Hazard Statement Codes: H351i, H361fd, H412
Hazard Symbols: GHS08

EMERGENCY OVERVIEW: Product Description: This product is a colored, viscous paste with a mild acrylic odor. Health Hazards: May be harmful if accidentally ingested. Inhalation of vapors or fume if product is heated may cause headache, nausea and respiratory irritation. Eye contact with vapors or fume may also cause irritation. Brief skin contact is not expected to cause adverse effect. Prolonged skin contact may cause irritation. This product contains a Crystalline Silica, a known human carcinogen and a suspect carcinogen by inhalation; however, this hazard is not expected to be significant due to viscosity of the product. This product contains a phthalate compound, which may be a hormone disruptor and/or cause harm to fetus during pregnancy, based on animal data. Flammability Hazards: This product may be combustible if exposed to direct flame or if highly heated for a prolonged period. If involved in a fire, this product will release smoke, acrid vapors and toxic gases (e.g., calcium, carbon, tin, titanium and nitrogen oxides, ammonia, formaldehyde and acrylic monomers). Reactivity Hazards: This product is not reactive. Environmental Hazards: This product has not been tested for potential hazards if released to the environment; however it contains compounds that may cause long-term harm to aquatic organisms. All release should be avoided. Emergency Considerations: Emergency responders should wear appropriate protection for the situation to which they respond.

3. COMPOSITION and INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS #</th>
<th>Wt%</th>
<th>LABEL ELEMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proprietary Silyl Terminated Polyether Mixture</td>
<td>1317-65-3</td>
<td>25.0-35.0</td>
<td>Classification: Not Applicable</td>
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<tr>
<td>Limestone (natural calcium carbonate)</td>
<td>471-34-1</td>
<td>10.0-30.0</td>
<td>Classification: Not Applicable</td>
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<tr>
<td>Calcium Carbonate, Precipitated</td>
<td>68515-48-0</td>
<td>10.0-15.0</td>
<td>SELF CLASSIFICATION Classification: Reproductive Toxicity Cat. 2 Hazard Statement Codes: H361fd</td>
</tr>
<tr>
<td>Diisononyl Phthalate</td>
<td>13463-67-7</td>
<td>2.0-5.0</td>
<td>SELF CLASSIFICATION Classification: Carcinogenic Cat. 2 Hazard Statement Codes: H351i</td>
</tr>
</tbody>
</table>

See Section 16 for full text of Ingredient Hazard and Precautionary Statements.
3. COMPOSITION and INFORMATION ON INGREDIENTS (Continued)

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS #</th>
<th>W/W%</th>
<th>LABEL ELEMENTS</th>
<th>GHS Classification</th>
<th>Hazard Statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vinyltrimethoxysilane</td>
<td>2768-02-7</td>
<td>1.0-3.0</td>
<td>SELF CLASSIFICATION</td>
<td>Classification: Flammable Liquid Cat. 3, Acute Inhalation Toxicity Cat. 4</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Hazard Statement Codes: H225, H332</td>
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<tr>
<td>Stearic Acid</td>
<td>57-11-4</td>
<td>0.5-3.0</td>
<td>Classification: Not Applicable</td>
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<tr>
<td>Quartz</td>
<td>14808-60-7</td>
<td>0.0-0.5</td>
<td>SELF CLASSIFICATION</td>
<td>Classification: Carcinogenic Cat. 1B</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Hazard Statement Codes: H350</td>
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<td></td>
</tr>
<tr>
<td>Other trace components.</td>
<td></td>
<td>Balance</td>
<td>Classification: Not Applicable</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

See Section 16 for full text of Ingredient Hazard and Precautionary Statements

4. FIRST-AID MEASURES

DESCRIPTION OF FIRST AID MEASURES: Contaminated individuals must be taken for medical attention if any adverse effects occur. Remove contaminated clothing and shoes. Take a copy of this SDS to health professional with victim. Wash clothing and thoroughly clean shoes before reuse. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Take a copy of label and SDS to physician or health professional with the contaminated individual.

Skin Exposure: If adverse skin effects occur, discontinue use and flush contaminated area. Seek medical attention if adverse effect occurs after flushing.

Inhalation: If adverse effects occurs in event aerosols are inhaled, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention if adverse effect continues after removal to fresh air.

Eye Exposure: If this product contaminates the eyes, rinse eyes under gently running water. Use sufficient force to open eyelids and then "roll" eyes while flushing. Minimum flushing is for 20 minutes. The contaminated individual must seek medical attention if any adverse effect continues after rinsing.

Ingestion: If this product is swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION. If professional advice is not available, DO NOT INDUCE VOMITING. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or unable to swallow. If victim is convulsing, maintain an open airway and obtain immediate medical attention.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Pre-existing skin disorders may be aggravated by overexposures to this product.

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

5. FIRE-FIGHTING MEASURES

FLASH POINT: Not determined.
AUTOIGNITION TEMPERATURE: Not available.
FLAMMABLE LIMITS (in air by volume, %): Not applicable.
FIRE EXTINGUISHING MEDIA: Use extinguishing materials suitable for the surrounding area.
UNSUITABLE FIRE EXTINGUISHING MEDIA: None known.
UNUSUAL FIRE AND EXPLOSION HAZARDS: This product may be combustible if exposed to direct flame or if highly heated for a prolonged period. When involved in a fire, this material may decompose and produce irritating vapors and toxic gases (e.g., calcium, carbon, tin, titanium and nitrogen oxides, ammonia, formaldehyde and acrylic monomers).
Explosion Sensitivity to Static Discharge: Not sensitive.
SPECIAL PROTECTIVE ACTIONS FOR FIRE-FIGHTERS: Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus (SCBA) and full protective equipment. Chemical resistant clothing may be necessary. Move containers from fire area if it can be done without risk to personnel. Water spray can be used to cool fire-exposed containers. Water fog or spray can also be used by trained firefighters to disperse this product’s vapors and to protect 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: Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. Call CHEMTREC (1-800-424-9300) for emergency assistance. Or if in Canada, call CANUTEC (613-996-6666). 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: Proper protective equipment should be used. Use only non-sparking tools and equipment.
Small Spills: Wear rubber gloves, splash goggles, and appropriate body protection.
Large Spills: Minimum Personal Protective Equipment should be rubber gloves, rubber boots, face shield, and Tyvek suit.
6. ACCIDENTAL RELEASE MEASURES (Continued)

PERSONAL PROTECTIVE EQUIPMENT (continued):

Large Spills (continued): 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), boots, Tyvek or similar protective clothing, hard hat, and Self-Contained Breathing Apparatus.

METHODS FOR CLEAN-UP AND CONTAINMENT: Spills of this product present minimal hazard.

Small Spills: Small releases can be carefully swept up or cleaned up using a damp sponge or polyrags.

Large Spills: Access to the spill area should be restricted. For large spills, dike or otherwise contain spill and sweep-up or vacuum with non-sparking vacuum.

All Spills: Place all spill residue in a double plastic bag or other containment and seal. Close off sewers and take other measures to protect human health and the environment as necessary. Rinse area with soap and water solution and follow with a water rinse. Decontaminate the area thoroughly. Do not mix with wastes from other materials. Dispose of in accordance with applicable Federal, State, and local procedures (see Section 13, Disposal Considerations). For spills on water, contain, minimize dispersion and collect. Dispose of recovered material and report spill per regulatory requirements.

ENVIRONMENTAL PRECAUTIONS: Avoid release to the environment. Run-off water may be contaminated by other materials and should be contained to prevent possible environmental damage.

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

7. HANDLING and USE

PRECAUTIONS FOR SAFE HANDLING: As with all chemicals, avoid getting this material ON YOU or IN YOU. Do not eat, drink, smoke, or apply cosmetics while handling this product. Wash hands thoroughly after handling this product. Use in a well-ventilated location.

CONDITIONS FOR SAFE STORAGE: Store containers in a cool, dry location, away from direct sunlight, sources of intense heat. Containers should be grounded and separated from oxidizing materials by a minimum distance of 20 ft. or by a barrier of non-combustible material at least 5 ft. high having a fire-resistance rating of at least 0.5 hours. Storage areas should be made of fire resistant materials. Post warning and “NO SMOKING” signs in storage and use areas as appropriate. Have appropriate extinguishing equipment in the storage area (e.g., sprinkler system, portable fire extinguishers). Recommended storage temperature: Minimum: -1°C (34 °F); Maximum: 60° C (140°F). The specific end use(s) of this product is for use as a sealant. Follow all industry standards for use of this product. Use with adequate ventilation to ensure exposure levels are maintained below the limits provided below (if applicable). Exhaust directly to the outside, taking necessary precautions for environmental protection.

SPECIFIC END USE(S): This product is for use as a sealant. Follow practices indicated in Section 6 (Accidental Release Measures). Make certain that application equipment is locked and tagged-out safely, if necessary. Collect all rinsates and dispose of according to applicable Federal, State, and local procedures.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

EXPOSURE LIMITS/CONTROL PARAMETERS:

Ventilation and Engineering Controls: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided below (if applicable). Exhaust directly to the outside, taking necessary precautions for environmental protection.

Workplace Exposure Limits/Control Parameters: Due to form of the product, inhalation is unlikely. If heated to decomposition, exposure by inhalation may occur.

<table>
<thead>
<tr>
<th>CHEMICAL NAME</th>
<th>CAS #</th>
<th>EXPOSURE LIMITS IN AIR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ACGIH-TLVs</td>
<td>OSHA-PELs</td>
</tr>
<tr>
<td></td>
<td>TWA mg/m³</td>
<td>STEL mg/m³</td>
</tr>
<tr>
<td>Calcium Carbonate</td>
<td>1317-65-3</td>
<td>NE</td>
</tr>
<tr>
<td>Dissanonyl Phthalate</td>
<td>68515-48-0</td>
<td>NE</td>
</tr>
<tr>
<td>Proprietary Acrylic Polymer</td>
<td></td>
<td>NE</td>
</tr>
<tr>
<td>Propylene Glycol</td>
<td>57-55-6</td>
<td>NE</td>
</tr>
<tr>
<td>Reaction mass of Octadecanamide, 12-hydroxy-N-[2-[(1-oxodecyl) amino]ethyl]- and N,N'-ethane-1,2-diybis(12-hydroxyoctadecan-1-amide) and Decanamide, N,N'-1,2-ethanediylbis-</td>
<td>123-26-2</td>
<td>NE</td>
</tr>
<tr>
<td>Quartz, Crystalline Silica</td>
<td>14808-60-7</td>
<td>0.025 (resp. fract.)</td>
</tr>
</tbody>
</table>

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


Respiratory Protection: Maintain airborne contaminant concentrations below exposure limits listed above, if applicable. For materials without listed exposure limits, minimize respiratory exposure. If necessary, use only respiratory protection authorized under appropriate regulations. Oxygen levels below 19.5% are considered IDLH by U.S. OSHA. In such atmospheres, use of a full-facepiece pressure-demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under U.S. OSHA’s Respiratory Protection Standard (1910.134-1998).

Eye Protection: Wear splash goggles or safety glasses as appropriate for the task.

Hand Protection: Wash hands and wrists before putting on and after removing gloves. During manufacture or other similar operations, wear the appropriate hand protection for the process. Use double gloves for spill response, as stated in Section 6 (Accidental Release Measures) of this SDS. Because all gloves are to some extent permeable and their permeability increases with time, they should be changed regularly (hourly is preferable) or immediately if torn or punctured. If necessary refer to appropriate regulations.

Skin Protection: Use appropriate protective clothing for the task (e.g., lab coat, etc.). If necessary, refer to the U.S. OSHA Technical Manual (Section VII: Personal Protective Equipment) or other appropriate regulations. If a hazard of injury to the feet exists due to falling objects, rolling objects, where objects may pierce the soles of the feet or where employee’s feet may be exposed to electrical hazards, use foot protection, as described in U.S. OSHA and Canadian Standards.

9. PHYSICAL and CHEMICAL PROPERTIES

FORM: Paste.
COLOR: White and various colors
MOLECULAR FORMULA: Mixture.
MOLECULAR WEIGHT: Mixture.
ODOR: Mild
ODOR THRESHOLD: Not available.
FLAMMABLE LIMITS (in air by volume, %): Not applicable.
OXIDIZING PROPERTIES: Not applicable.
DECOMPOSITION TEMPERATURE: Not available.
PERCENT VOLATILE: Not available.
AUTOIGNITION TEMPERATURE: Not available.
FLASH POINT: >212°F
FREZZING/MELTING POINT: Not available.
BOILING POINT: Not available.
VAPOR PRESSURE: Not available.
SPECIFIC GRAVITY (water = 1): 1.53
BULK DENSITY: Not available.
VAPOR DENSITY (air = 1): Not available.
EVAPORATION RATE (n-BuAc = 1): > 1
SOLUBILITY IN WATER: Insoluble
SOLUBILITY IN SOLVENTS: Readily

10. STABILITY and REACTIVITY

CHEMICAL STABILITY: Stable when properly stored at recommended temperature (see Section 7, Handling and Storage).

DECOMPOSITION PRODUCTS: Combustion: If exposed to extremely high temperatures, thermal decomposition may generate irritating fumes and toxic gases (e.g., calcium, carbon, tin, titanium and nitrogen oxides, ammonia, styrene, formaldehyde and acrylic monomers). Hydrolysis: None known.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: This product is incompatible with strong oxidizers.

POSSIBILITY OF HAZARDOUS POLYMERIZATION OR REACTION: Will not occur.

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

11. TOXICOLOGICAL INFORMATION

SYMPTOMS OF EXPOSURE BY ROUTE OF EXPOSURE: The health hazard information provided below is pertinent to employees using this product in an occupational setting. The following paragraphs describe the symptoms of exposure by route of exposure.

Inhalation: Due to viscosity, inhalation is not a significant route of exposure. 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.

Contact with Skin or Eyes: Direct eye contact may cause irritation, redness, and tearing from mechanical irritation. Prolonged or repeated skin exposures may cause dermatitis (dry red skin).
11. TOXICOLOGICAL INFORMATION (Continued)

SYMPTOMS OF EXPOSURE BY ROUTE OF EXPOSURE:

**Skin Absorption**: Some trace components can be absorbed through intact skin. Unless contact is prolonged and covers a large area of skin, no significant adverse effects are expected.

**Ingestion**: Ingestion is not a significant route of occupational exposure and is unlikely to occur. If this product is swallowed, irritation of the mouth, throat, esophagus and other tissues of the digestive system may occur. Symptoms of ingestion may include nausea, vomiting, and diarrhea.

**Injection**: Accidental injection of this product, via laceration or puncture by a contaminated object can cause redness at the site of injection.

**HEALTH EFFECTS OR RISKS FROM EXPOSURE: An Explanation in Lay Terms.** Exposure to this product may cause the following health effects:

**Acute**: Inhalation of fumes or vapors may cause irritation of respiratory system.

**Eye contact** may cause irritation.

**Chronic**: Prolonged or repeated skin exposure may cause dermatitis (dry red skin).

**TARGET ORGANS**: Acute: Skin, eyes, respiratory system. Chronic: Skin.

**TOXICITY DATA**: Currently, the following toxicological data are available for some components of 1% or more concentration.

### ACRYLIC POLYMERS

- **LD₅₀ (Oral-Rat)** = 5000 mg/kg
- **LD₅₀ (Skin-Rabbit)** = 5000 mg/kg

### CALCIUM CARBONATE:

- **LD₅₀ (Skin-Rabbit)** > 3160 mg/kg

### CALCIVANOS

- **LD₅₀ (Skin-Human-melanoma)** > 1000 mg/L/48 hours: In Vitro Toxicity Studies: cell viability (lysosomal damage); neutral red assay etc.

### DICARBONIC ACID:

- **LD₅₀ (Oral-Rat)** >10,000 mg/kg: Lungs, Thorax, or Respiration: respiratory depression

### DIISONONYL PHthalate:

- **TDLo (Oral-Rat) 32,900 mg/kg/70 days-continuous: Liver: changes in liver weight**

### DIISONONYL PHthalate (continued):

- **TDLo (Oral-Rat) 1000 mg/kg: female 6-15 day(s) after conception**

### DISOSONYL PHthalate (continued):

- **TDLo (Oral-Rat) 405 gm/kg/79 weeks-continuous: Tumorigenic: equivocal tumorigenic**

### FLAMMABILITY HAZARD

#### MATERIAL IDENTIFICATION SYSTEM

**HAZARD MATERIAL IDENTIFICATION SYSTEM**

<table>
<thead>
<tr>
<th>HEALTH HAZARD</th>
<th>FLAMMABILITY HAZARD</th>
<th>PHYSICAL HAZARD</th>
</tr>
</thead>
<tbody>
<tr>
<td>(BLUE) 1</td>
<td>(RED) 1</td>
<td>(YELLOW) 0</td>
</tr>
</tbody>
</table>

For Routine Industrial Use and Handling Applications

**Hazard Scale**:

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

### DISOSONYL PHthalate (continued):

- **TDLo (Oral-Rat) 5000 mg/kg: female 6-15 day(s) after conception**

### DITRIBLADYNE:

- **LD₅₀ (Oral-Child) 79 gm/kg/56 weeks -intermittent: Brain and Coverings: changes in cerebellum weight**

### DIOXYNOL:

- **LD₅₀ (Oral-Rat) 45,765 mg/kg/113 days-continuous: Liver: changes in liver weight**

### DIOXYNOL:

- **TDLo (Skin-Human) 10 pph: Skin and Appendages: dermatitis, allergic (after topical exposure)**

### PROTECTIVE EQUIPMENT

- **EYES**
- **RESPIRATORY**
- **HANDS**
- **BODY**

**MAY 16, 2018**
TOXICITY DATA (continued):

**PROPYLENE GLYCOL (continued):**

- **TDL0 (Parenteral-Infant) 10 gm/kg/3 days-continuous:** Nutritional and Gross Metabolic: other changes

- **TDL0 (Skin-Human) 5 mg/kg/7 days-intermittent:** Skin and Appendages: primary irritation (after topical exposure)

- **TDL0 (Skin-Human) 4.5 mg/kg/3 days-intermittent:** Skin and Appendages: primary irritation (after topical exposure)

- **TDL0 (Skin-Human) 10 ppb48-hours:** Skin and Appendages: dermatitis, allergic (after topical exposure)

- **TDL0 (Skin-Man) 0.03 mL/kg/22 days-intermittent:** Skin and Appendages: cutaneous sensitization, experimental (after topical exposure)

- **TDL0 (Intravenous-Woman) 5167 mg/kg/13 days-continuous:** Nutritional and Gross Metabolic: metabolic acidosis

- **Standard Draize Test (Eye-Rabbit) 100 mg:** Mild

- **Standard Draize Test (Eye-Rabbit) 500 mg/24 hours:** Mild

- **LDLo (Oral-Rat) 20 gm/kg:**
- **LDLo (Oral-Mouse) 22 gm/kg:**
- **LDLo (Oral-Mouse) 20,300 mg/kg:** Behavioral: ataxia, tetany; Lungs, Thorax, or Respiration: respiratory depression

- **LDLo (Intraperitoneal-Rat) 18,500 mg/kg:**
- **LDLo (Oral-Dog) 22 gm/kg:**
- **LDLo (Oral-Dog) 20,000 mg/kg:** Behavioral: ataxia, tetany; Lungs, Thorax, or Respiration: respiratory depression

- **LDLo (Oral-Guinea Pig) 18,350 mg/kg:**
- **LDLo (Oral-Guinea Pig) 19,000 mg/kg:** Behavioral: ataxia, tetany Lungs, Thorax, or Respiration: respiratory depression

- **LDLo (Oral-Quail) 20,800 mg/kg:**
- **LDLo (Oral-Rabbit) 20,800 mg/kg:** Behavioral: ataxia, tetany; Lungs, Thorax, or Respiration: respiratory depression

- **LDLo (Intraperitoneal-Rat) 6660 mg/kg:**
- **LDLo (Intraperitoneal-Mouse) 9718 mg/kg:** Lungs, Thorax, or Respiration: respiratory depression

- **LDLo (Intravenous-Mouse) 8000 mg/kg:**
- **LDLo (Intravenous-Mouse) 9718 mg/kg:** Lungs, Thorax, or Respiration: respiratory depression

- **LDLo (Intramuscular-Rat) 6630 mg/kg:**
- **LDLo (Intramuscular-Mouse) 6300 mg/kg:**
- **LDLo (Intramuscular-Rat) 6660 mg/kg:**
- **LDLo (Intramuscular-Mouse) 6630 mg/kg:**
- **LDLo (Intramuscular-Dog) 26 gm/kg:**
- **LDLo (Intramuscular-Rabbit) 6500 mg/kg:**
- **LDLo (Intramuscular-Rat) 14 gm/kg:**
- **LDLo (Intramuscular-Rat) 20,000 mg/kg:** Behavioral: ataxia, tetany Lungs, Thorax, or Respiration: respiratory depression

- **LDLo (Oral-Rabbit) 20,000 mg/kg:** Behavioral: ataxia, tetany Lungs, Thorax, or Respiration: respiratory depression

**TITANIUM DIOXIDE:**

- **Carcinogen, with No Further Categorization)

- **Standard Draize Test (Skin-Human) 30 µg/3 days-continuous:** Mild

- **Standard Draize Test (Skin-Human) 300 µg/3 days-continuous:** Mild

- **TC (Inhalation-Rat) 10 mg/m³/18 hours/2 hours-intermittent:** Tumorigenic: carcinogenic by RTECS criteria; Lungs, Thorax, or Respiration: tumors

- **TC (Inhalation-Rat) 25 mg/m³/6 hours/2 hours-intermittent:** Tumorigenic: by RTECS criteria; Lungs, Thorax, or Respiration: tumors

- **TDL0 (Oral-Rat) 84 mL/kg/30 days-intermittent:** Skin and Appendages: tumors

- **TDL0 (Intraperitoneal-Rat) 19,500 mg/kg:** Behavioral: ataxia, tetany Lungs, Thorax, or Respiration: respiratory depression

- **TDL0 (Intraperitoneal-Rat) 84 mL/kg/30 days-intermittent:** Endocrine: hyperglycemia

- **TDL0 (Intraperitoneal-Rat) 88,269 mg/kg/30 days-intermittent:** Endocrine: hyperglycemia

IRRITANCY OF PRODUCT: Inhalation of fumes if product if heated or if applied in confined space may cause respiratory irritation. Eye contact may cause irritation. Prolonged skin contact may cause irritation.

SENSITIZATION OF PRODUCT: This product contains trace amounts of Formaldehyde, which is known to cause skin sensitization. Persons susceptible or already sensitized to Formaldehyde may experience an allergic reaction.

CARCINOGENIC POTENTIAL OF COMPONENTS: Components of this product are listed by agencies tracking the carcinogenic potential of chemical compounds, as follows:

**QUARTZ SILICA:** ACGIH-TLV-A2 (Suspected Human Carcinogen); IARC-1 (Carcinogenic to Humans); MAK-1 (Substances that Cause Cancer in Man and Can Be Assumed to Make a Significant Contribution to Cancer Risk); NIOSH-Ca (Potential Occupational Carcinogen with No Further Categorization); NTP-K (Known to Be a Human Carcinogen).

**TITANIUM DIOXIDE:** ACGIH-TLV-A3 (Confirmed Animal Carcinogen); IARC-3 (Unclassifiable as to Carcinogenicity in Humans); NIOSH-Ca (Potential Occupational Carcinogen, with No Further Categorization).

The remaining components are not found on the following lists: U.S. EPA, U.S. NTP, U.S. OSHA, U.S. NIOSH, GERMAN MAK, IARC, or ACGIH and therefore is neither considered to be nor suspected to be a cancer-causing agent by these agencies.

REPRODUCTIVE TOXICITY INFORMATION: This product has not been tested for reported mutagenic, embryotoxic, teratogenic or reproductive toxicity. The following information is available for the Diisononyl Phthalate component:

Embryotoxicity/Teratogenicity: Exposure to phthalates has been reported to result in increased incidence of developmental abnormalities such as cleft palate and skeletal malformations, and increased fetal death in experimental animal studies. The most sensitive system is the immature male reproductive tract, with phthalate exposure resulting in increased incidence of undescended testes, decreased testes weight, decreased anogenital distance (distance between the anus and the base of the penis), and other effects.

Reproductive Toxicity: Phthalates are classified as endocrine disruptors or hormonally-active agents (HAs) because of their ability to interfere with the endocrine system in the body.

ACGIH BIOLOGICAL EXPOSURE INDICES (BEIs): Currently, there are no ACGIH Biological Exposure Indices (BEIs) determined for this material.
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. The mineral components are not expected to biodegrade to great extent.

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

ECOTOXICITY: This product has not been tested for aquatic or animal toxicity. All releases to terrestrial, atmospheric and aquatic environments should be avoided. The following aquatic toxicity data are available for the product a component.

**REACTION MASS OF OCTADECANAMIDE, 12-HYDROXY-N-[2-[1-OXODECYL]AMINO(ETHYL)]- AND N,N'-ETHANE-1,2-DIYL BIS(12-HYDROXYOCTADECAN-1-AMIDE) AND DECANAMIDE, N,N'-1,2-ETHANEDIYLBIS:**

- **LC50 (Onchorhyncus mykiss rainbow trout)** 96 hours = > 100 mg/L (Method: OECD Test Guideline 203)
- **EC50 (Daphnia magna Water flea)** 48 hours = 94.9 mg/L (Method: OECD Test Guideline 202)
- **EC50 (Pseudokirchneriella subcapitata algae)** 72 hours = 43.2 mg/L (Method: OECD Test Guideline 201, Growth inhibition)
- **EC10 (Pseudokirchneriella subcapitata algae)** 72 hours = 37 mg/L (Method: OECD Test Guideline 201, Growth inhibition)

OTHER ADVERSE EFFECTS: This material is not listed as having 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

DISPOSAL METHODS: It is the responsibility of the generator to determine at the time of disposal whether the product meets the criteria of a hazardous waste per regulations of the area in which the waste is generated and/or disposed of. Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Shipment of wastes must be done with appropriately permitted and registered transporters.

DISPOSAL CONTAINERS: Waste materials must be placed in and shipped in appropriate 5-gallon or 55-gallon poly or metal waste pails or drums. Permeable cardboard containers are not appropriate and should not be used. Ensure that any required marking or labeling of the containers be done to all applicable regulations.

PRECAUTIONS TO BE FOLLOWED DURING WASTE HANDLING: Wear proper protective equipment when handling waste materials.

U.S. EPA WASTE NUMBER: Not applicable.

14. TRANSPORTATION INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION REGULATIONS: 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 (IATA): This product is not classified as dangerous goods under rules of IATA.

15. REGULATORY INFORMATION

UNITED STATES REGULATIONS:

- **U.S. SARA Reporting Requirements:** This product is not 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: No; FIRE: No; REACTIVE: No; SUDDEN RELEASE: No
- **U.S. SARA Threshold Planning Quantity (TPQ):** There are no specific Threshold Planning Quantities for components. The default Federal SDS submission and inventory requirement filing threshold of 10,000 lb (4,540 kg) may apply, per 40 CFR 370.20.
- **U.S. CERCLA Reportable Quantity (RQ):** Not applicable.
- **U.S. TSCA Inventory Status:** Components of this product are listed on the TSCA Inventory.
- **California Safe Drinking Water and Toxic Enforcement Act (Proposition 65):** The Quartz and Diisononyl Phthalate components are on the California Proposition 65 lists. WARNING: This product contains chemicals known to the State of California to cause cancer.

CANADIAN REGULATIONS:

- **Canadian DSL/NDSL Inventory Status:** Components are on the DSL or NDSL Inventories.
- **Canadian Environmental Protection Act (CEPA) Priorities Substances Lists:** Components are not on the CEPA Priorities Substances Lists.
- **Canadian WHMIS Classification and Symbols:** This product is classified as a Controlled Product, Hazard Class D2B (Immediate Acute Toxicity/Irritation, Potential Evidence of Carcinogenic and Reproductive Toxicity Potential) as per the Controlled Product Regulations.

16. OTHER INFORMATION

LABELING (Precautionary Statements) ANSI LABELING (Z129.1): CAUTION! MAY CAUSE IRRITATION BY INHALATION AND EYE CONTACT. PROLONGED SKIN CONTACT MAY CAUSE IRRITATION. CONTAINS TRACE AMOUNT OF CRYSTALLINE SILICA, A KNOWN HUMAN CARCINOGEN. CONTAINS PHTHALATE COMPOUND WHICH MAY HAVE ADVERSE EFFECTS ON FERTILITY AND FETUS DURING PREGNANCY. CONTAINS COMPOUND THAT CAN CAUSE LONG-TERM HARM TO AQUATIC ORGANISMS.
16. OTHER INFORMATION (Continued)

LABELING (Precautionary Statements) ANSI LABELING (continued): Avoid breathing fumes or vapors. Do not taste or swallow. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling. Wear appropriate eye, hand, and body protection. Avoid exposure to elevated temperatures. **FIRST-AID:** In case of contact, immediately flush skin or eyes with plenty of water for at least 20 minutes while removing 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:** Sweep or vacuum spilled material, avoiding generation of dusts and place in suitable container. Place residual in appropriate container and seal. Dispose of in accordance with U.S. Federal, State, and local hazardous waste disposal regulations. Consult Safety Data Sheet for additional information.

GLOBAL HARMONIZATION AND JAPANESE JIS Z7253 LABELING AND CLASSIFICATION: This product has been classified per UN GHS Standards under U.S applicable regulations that require Global Harmonization Compliance. **Classification:** Carcinogenic Category 1B, Reproductive Toxicity Category 2, Aquatic Chronic Toxicity Category 3

**Signal Word:** Danger

**Hazard Statements:**
- H350: May cause cancer.
- H361fd: Suspected of damaging fertility. Suspected of damaging the unborn child.
- H412: Harmful to aquatic life with long-lasting effects.

**Precautionary Statements:**
- **Prevention:** P201: Obtain special instructions before use. P202: Do not handle until all safety precautions have been read and understood. P273: Avoid release to the environment. P280: Wear protective gloves, clothing, eye protection and face protection.
- **Response:** P308 + P313: IF exposed or concerned: Get medical advice/attention.
- **Storage:** P405: Store locked up.
- **Disposal:** P501: Dispose of contents/containers in accordance with all local, regional, national and international regulations.
- **Hazard Symbols:** GHS08

COMPONENT CLASSIFICATION:

**Labeling and Classification Full Text under GHS:**
- Diisononyl Phthalate: This is a self-classification.
  - **Classification:** Reproductive Toxicity Category 2
  - **Hazard Statements:** H361fd: Suspected of damaging fertility. Suspected of damaging the unborn child.
- Quartz, Crystalline Silica: This is a self-classification.
  - **Classification:** Carcinogenic Category 1B
  - **Hazard Statements:** H350: May cause cancer.
- Reaction mass of Octadecanamide, 12-hydroxy-N-[2-{(1-oxodecyl) amino}ethyl]- and N,N’-ethane-1,2-diylbis(12-hydroxyoctadecan-1-amide) and Decanamide, N,N’-1,2-ethanediylbis:-
  - **Classification:** Aquatic Chronic Toxicity Category 3
  - **Hazard Statements:** H412: Harmful to aquatic life with long-lasting effects.
- Titanium Dioxide: This is a self-classification.
  - **Classification:** Carcinogenic Category 2
  - **Hazard Statements:** H350i: May cause cancer by inhalation.
- Vinyltrimethoxysilane: This is a self-classification.
  - **Classification:** Flammable Liquid Category 3, Acute Inhalation Toxicity Category 4
  - **Hazard Statements:** H226: Flammable liquid and vapour. H332: Harmful if inhaled.

REVISION DETAILS: New.

REFERENCES AND DATA SOURCES: Contact the supplier for information.

METHODS OF EVALUATING INFORMATION FOR THE PURPOSE OF CLASSIFICATION: Criteria of the GHS were used for classification.

PREPARED BY: Product Safety & Regulatory Affairs

DATE OF PRINTING: May 16, 2018
HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS (continued):

FLAMMABILITY HAZARD: (continued) 3 Solid materials in a fibrous or shredded form are classed as solids. If the material has sufficient dry particle size and enough solids and semisolids (e.g. viscous and slow flowing as asphalt) that readily give off flammable vapors.

3 Serious Hazard: Liquids and solids that can be ignited under almost all ambient temperature conditions. Gases and vapors in this degree readily can be ignited under almost all ambient temperatures, or, unaffected by ambient temperature, are readily ignited under almost all conditions. This usually includes the following: Liquids having a flash point below 22.8°C (73°F) and a boiling point at or above 113°C (235°F), or a boiling point at or above 22.8°C (73°F) and below 37.8°C (100°F) (i.e. OSHA Class IB and IC); and Materials that contain on their physical form or environmental conditions can form explosive mixtures with air and are volatile at room temperature or at ambient temperature and pressure that will form explosive mixtures with air, or which produce highly reactive by-products that may be highly reactive with water, and have a high potential (or high risk) to cause significant chemical generation or explosion. Substances that may react violently with water. Oxidizers: Materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials. Gases and vapors with an LC50 for acute inhalation toxicity greater than 10,000 ppm. Dusts and mists with an LC50 for acute inhalation toxicity greater than 10,000 ppm.

2 Serious Hazard: Liquids and solids that can be ignited under all ambient temperature conditions. Gases and vapors in this degree readily can be ignited under all ambient temperatures, or, unaffected by ambient temperature, are readily ignited under almost all conditions. This usually includes the following: Liquids having a flash point below 22.8°C (73°F) and a boiling point at or above 113°C (235°F), or a boiling point at or above 22.8°C (73°F) and below 37.8°C (100°F) (i.e. OSHA Class IB and IC); and Materials that contain on their physical form or environmental conditions can form explosive mixtures with air and are volatile at room temperature or at ambient temperature and pressure that will form explosive mixtures with air, or which produce highly reactive by-products that may be highly reactive with water, and have a high potential (or high risk) to cause significant chemical generation or explosion. Substances that may react violently with water. Oxidizers: Materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials. Gases and vapors with an LC50 for acute inhalation toxicity greater than 1,000 ppm but less than or equal to 10,000 ppm. Dusts and mists with an LC50 for acute inhalation toxicity greater than 1,000 ppm but less than or equal to 10,000 ppm.

1 Serious Hazard: Liquids and solids that can be ignited under all ambient temperature conditions. Gases and vapors in this degree readily can be ignited under all ambient temperatures, or, unaffected by ambient temperature, are readily ignited under almost all conditions. This usually includes the following: Liquids having a flash point below 22.8°C (73°F) and a boiling point at or above 113°C (235°F), or a boiling point at or above 22.8°C (73°F) and below 37.8°C (100°F) (i.e. OSHA Class IB and IC); and Materials that contain on their physical form or environmental conditions can form explosive mixtures with air and are volatile at room temperature or at ambient temperature and pressure that will form explosive mixtures with air, or which produce highly reactive by-products that may be highly reactive with water, and have a high potential (or high risk) to cause significant chemical generation or explosion. Substances that may react violently with water. Oxidizers: Materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials. Gases and vapors with an LC50 for acute inhalation toxicity greater than 100 ppm but less than or equal to 1,000 ppm. Dusts and mists with an LC50 for acute inhalation toxicity greater than 100 ppm but less than or equal to 1,000 ppm.

Performance Rating 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 values are observed. Group B: There is no reason to fear a risk of damage to the developing embryo or fetus when MAK and BAT values are observed. Group C: In one of the groups A-C is not yet possible because, although the data available may indicate a certain level of risk, these data are not sufficiently reliable. Group D: No data available. 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. LOC: Non-Irritation: Not established. When no exposure guidelines are established, an entry of NE is made for reference. NIOSH: Notice of Intended Change. NIOSH Ceiling: The exposure that shall not be exceeded during any part of the workday. When a ceiling that is not a time-weighted average (TWA) exposure is indicated, the ceiling exposure that shall not be exceeded at any time during a workday, even if the 8-hour TWA is below the ceiling. 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 that the concentration may be exceeded, as defined by the 8-hour TWA. TLV-TWA: Time Weighted Average concentration for a conventional 8-hour (TWA), or of up to a 10-hour (REL) workday and a 40-hour work week. WEEL: Weighted Exposure Limits 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. 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.
DEFINITION OF TERMS (Continued)

FLAMMABILITY LIMITS IN AIR:

Much of the information related to fire and explosion is derived from the National Fire Protection Association (NFPA). Fuel 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. IEI: Lowest concentration of a flammable vapor or gas/air mixture that will ignite and burn with a flame. UEI: 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 (liquids and solids that kill 50% of the exposed animals). LC₅₀: Lethal Concentration (gases that kill 50% of the exposed animals). ppm: Concentration expressed in parts per million of air or water. mg/m³: Concentration expressed in weight of substance per volume of air. mg/kg: Quantity of material, by weight, administered to a test subject, based on their body weight. TCₚ, LCo, and LCLₚ: Lowest concentration to cause a symptom. TCo: Lowest concentration to cause a symptom. TDo, LDLo, and LDo: or TC, TDLo, and LCLo: Lowest dose (or concentration) to cause lethal toxic effects. Cancer Information: IARC: International Agency for Research on Cancer. NTP: National Toxicology Program. RTECS: Registry of Toxic Effects of Chemical Substances. IARC and NTP rate chemicals on a scale of decreasing potential to cause human cancer with rankings from 1 (substances that are reasonably carcinogenic to humans) to 6 (substances that are not classified as carcinogenic). 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 an exceedance rate equal to the TLV.

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:

U.S.:

EPA: U.S. Environmental Protection Agency. ACGIH: American Conference of Governmental Industrial Hygienists. a professional association that establishes workplace exposure limits. OSHA: U.S. Occupational Safety and Health Administration. NIOSH: National Institute of Occupational Safety and Health, which is the research arm of OSHA. DOT: U.S. Department of Transportation. TC: Transport Canada. SARA: Superfund Amendments and Reauthorization Act. TSCA: U.S. Toxic Substance Control Act. CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act. Marine Pollutant status according to the DOT, CERCLA or Superfund; and various state regulations. This section also includes information on the precautionary warnings that appear on the material’s package label.

CANADA: