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

TRADE/MATERIAL NAME: SpecSeal® LC Sealant

RELEVANT USE of the SUBSTANCE: Firestop and Sound Transmission

USES ADVISED AGAINST: None

SUPPLIER/MANUFACTURER’S NAME: Specified Technologies, Inc.

Address: 210 Evans Way, Somerville, New Jersey 08876

Business Phone: (908) 526-8000 (8:00am to 5:00pm Eastern Standard Time)

Emergency Phone: U.S., Canada: 1-800-255-3924 (24 hrs)

International: +1-813-248-0585 (collect-24 hrs)

EMAIL of Competent Person for Information on SDS: techserv@stifirestop.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 AND JAPANESE JIS Z7253 LABELING AND CLASSIFICATION: This product has been classified per UN GHS Standards under U.S., Japanese and other applicable regulations that require Global Harmonization compliance.

Classification: Carcinogenic Category 2, Eye Irritation Category 2A, Specific Target Organ Toxicity (Inhalation-Respiratory Irritation)

Signal Word: Warning

Hazard Statements:
- H351: This product contains trace amounts of a suspected human carcinogen by inhalation: however, this hazard is not expected to be significant due to viscosity and consistency of the mixture.
- H319: Causes serious eye irritation.
- H335: May cause respiratory irritation.

Precautionary Statements:

Response:
- P308 + P313: IF exposed or concerned: Get medical advice/attention. P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. P337 + P313: If eye irritation persists: Get medical advice/attention. P304 + P340: IF inhaled, remove victim to fresh air and keep at rest in a position comfortable for breathing. P312: Call a POISON CENTER or doctor if you feel unwell. P321: Specific treatment (remove from exposure and treat symptoms).


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

Hazard Symbols: GHS07, GHS08

KOREAN ISHA (Notice 2009-68) LABELING AND CLASSIFICATION: Classified in accordance with ISHA Notice 2009-68. Under ISHA, no differences in classification are applicable.

3. COMPOSITION and INFORMATION ON INGREDIENTS

Hazardous Components:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS #</th>
<th>Chinese IECSC Inventory</th>
<th>Japanese ENCS #</th>
<th>Korean ECL #</th>
<th>Taiwan NESCI ECS</th>
<th>WT%</th>
<th>LABEL ELEMENTS</th>
</tr>
</thead>
</table>
| Aluminum Trihydrate | 21645-51-2 | Listed                  | 1-17            | KE-00980     |                 | 10-15% |自我分类
- GHS & JAPANESE  JIS Z7253
- GHS Hazard Codes: H319
- KOREAN ISHA: Category: Eye Irritation Cat. 2A
- Hazard Codes: H319

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.
3. COMPOSITION and INFORMATION ON INGREDIENTS (Continued)

Hazardous Components:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS #</th>
<th>Chinese IECSC Inventory</th>
<th>Japanese ENCS #</th>
<th>Korean ECL #</th>
<th>Taiwan NESCIECS</th>
<th>WT%</th>
<th>GHS &amp; Japanese JIS Z7253 Classification</th>
<th>Korean ISHA Classification</th>
<th>GHS Hazard Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mineral Spirits</td>
<td>64742-88-7</td>
<td>Listed</td>
<td>Not Listed</td>
<td>KE-31664</td>
<td></td>
<td>2-4%</td>
<td>SELF &amp; PUBLISHED CLASSIFICATION</td>
<td>GHS &amp; JAPANESE JIS Z7253, KOREAN ISHA:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Classification: Flammable Liquid Cat. 3, Aspiration Hazard Cat. 1, STOT (Inhalation-Central Nervous System) RE Cat. 1</td>
<td>Hazard Statement Codes: H226, H304, H372</td>
<td></td>
</tr>
<tr>
<td>Crystalline Silica</td>
<td>14806-60-7</td>
<td>Listed</td>
<td>1-548</td>
<td>KE-29983</td>
<td></td>
<td>0.1-0.15%</td>
<td>SELF CLASSIFICATION</td>
<td>GHS &amp; JAPANESE JIS Z7253, KOREAN ISHA:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Classification: Carcinogenic Cat. 1, STOT (Inhalation-Lungs) RE Cat. 2</td>
<td>Hazard Statement Codes: H350, H373</td>
<td></td>
</tr>
</tbody>
</table>

4. FIRST-AID MEASURES

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

Inhalation: If fumes or vapors are inhaled, remove victim to fresh air. 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.

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

5. FIRE-FIGHTING MEASURES

FLASH POINT: 205°C (401°F)

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 is formulated to be non-flammable and non-combustible. When involved in a fire, this material may decompose and produce irritating vapors and toxic gases.


Explosion Sensitivity to Static Discharge: Not sensitive.

SPECIAL PROTECTIVE ACTIONS FOR FIRE-FIGHTERS: No Special protective actions for fire-fighters are anticipated.

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).

PERSONAL PROTECTIVE EQUIPMENT: Proper protective equipment should be used.

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.

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 poly pads.

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. Rinse area with soap and water solution and follow with a water rinse. 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.
8. 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 or containers of this product. Avoid breathing fumes or vapors generated by 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. Do not store above 55°C (131°F)

SPECIFIC END USE(S): This product is for use as a sealant. Follow all industry standards for use of this product.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in SPECIFIC END USE(S). This product is for use as a sealant. Follow all industry standards for use of this product.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

EXPOSURE LIMITS/CONTROL PARAMETERS:

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

Workplace Exposure Limits/Control Parameters:

<table>
<thead>
<tr>
<th>CHEMICAL NAME</th>
<th>CAS #</th>
<th>EXPOSURE LIMITS IN AIR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum Trihydrate</td>
<td>21645-51-2</td>
<td>NE NE NE NE NE NE NE</td>
</tr>
<tr>
<td>Crystalline Silica (Quartz)</td>
<td>14808-60-7</td>
<td>0.025 (resp. fract.) NE 30 mg/m³ (total dust) 0.1 (vacated 1989 PEL) 250 mg/m³ (resp. dust) % SO₂ + 2 % SiO₂ + 5 or 10 mg/m³ (resp. dust) % SO₂ + 2 0.05 (resp. dust) NE 50 Carcinogen: IARC-1, MAK-1 (respirable fraction), NIOSH, MAK-Pregnancy Risk Classification: D</td>
</tr>
<tr>
<td>Mineral Spirits</td>
<td>64742-88-7</td>
<td>NE NE 200 400 (vacated 1989 PEL) NE 350 1800 (ceiling) 15 min. 1100 (based on 10% of LEL) Carcinogen: IARC-3</td>
</tr>
<tr>
<td>Proprietary Acrylic Coating</td>
<td>NE NE NE NE NE NE NE</td>
<td></td>
</tr>
</tbody>
</table>

NE = Not Established. See Section 16 for Definitions of Other Terms Used

International Occupational Exposure Limits: Currently, the following additional exposure limit values have been established by various countries for the components of this mixture. More current limits may be available; individual countries should be consulted to determine if newer limits are available.

**ALUMINUM HYDROXIDE:**
- Australia: TWA = 2 mg(Al)/m³, JUL 2008
- Belgium: TWA = 2 mg(Al)/m³, MAR 2002
- Finland: TWA = 2 mg(Al)/m³, NOV 2011
- France: VME = 2 mg(Al)/m³, FEB 2006
- Korea: TWA = 2 mg(Al)/m³, 2006
- New Zealand: TWA = 2 mg(Al)/m³, JAN 2002
- Russia: TWA = 2 mg(Al)/m³, 2005
- Switzerland: MAK-W = 3 mg/m³, resp, JAN 2011
- United Kingdom: TWA = 2 mg(Al)/m³, OCT 2007
- In Argentina, Bulgaria, Colombia, Jordan, Singapore, Vietnam check ACGIH TLV CRYSTALLINE SILICA (continued):
- Norway: TWA = 0.1 mg/m³ (resp. dust), JAN 1999
- Norway: TWA = 0.3 mg/m³ (total dust), JAN 1999
- Peru: TWA = 0.05 mg/m³, JUL 2005
- Russia: TWA = 1 mg/m³, STEL = 3 mg/m³, JUN 2003
- Sweden: TWA = 0.1 mg/m³ (resp. dust), JUN 2005
- Switzerland: MAK-W = 0.15 mg/m³, DEC 2006
- Thailand: TWA = 10 mg/m³ (resp. dust), JAN 1993
- Thailand: TWA = 30 mg/m³ (total dust), JAN 1993
- United Kingdom: TWA = 0.1 mg/m³ (resp. dust), OCT 2007
- In Argentina, Bulgaria, Colombia, Jordan, Singapore, Vietnam check ACGIH TLV CRYSTALLINE SILICA (continued):
- Australia: TWA = 0.1 mg/m³, JUL 2008
- Belgium: TWA = 0.1 mg/m³ (resp. dust), MAR 2002
- Denmark: TWA = 0.1 mg/m³ (respirable), carc, MAY 2011
- Denmark: TWA = 0.1 mg/m³ (resp.), carc, MAY 2011
- Denmark: TWA = 0.3 mg/m³ (total), MAY 2011
- Finland: TWA = 0.05 mg/m³, resp. dust, SEP 2009
- France: VME = 0.1 mg/m³, (resp.), FEB 2006
- Iceland: TWA = 0.1 mg/m³ (resp. dust), NOV 2011
- Japan: OEL-C = 0.03 mg/m³ (respirable), APR 2007
- Korea: TWA = 0.1 mg/m³, 2006
- Mexico: TWA = 0.1 mg/m³ (respirable), 2004
- The Netherlands: MAC-TGG = 0.075 mg/m³, 2003
- New Zealand: TWA = 0.2 mg/m³ (respirable dust), JAN 2002

SPECSEAL® LC SEALANT SDS EFFECTIVE DATE: JANUARY 9, 2017 PAGE 3 OF 9

Respiratory Protection: Maintain airborne contaminant concentrations below exposure limits listed above. For materials without listed exposure limits, minimize respiratory exposure. If necessary, use only respiratory protection authorized under appropriate regulations.

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

Hand Protection: During manufacture or other similar operations, wear the appropriate hand protection for the process.

Skin Protection: Use appropriate protective clothing. If necessary, refer to the U.S. OSHA Technical Manual (Section VII: Personal Protective Equipment) or other appropriate regulations. Full-body chemical protective clothing is recommended for emergency response procedures.

9. PHYSICAL and CHEMICAL PROPERTIES

FORM: Paste. COLOR: Red.
MOLECULAR FORMULA: Mixture. MOLECULAR WEIGHT: Mixture.
ODOR: Mild acrylic. ODOR THRESHOLD: Not available.
FLAMMABLE LIMITS (in air by volume, %): Not applicable. OXIDIZING PROPERTIES: Not applicable.
DECOMPOSITION TEMPERATURE: Not available. PERCENT VOLATILE: 20 ± 2
AUTOIGNITION TEMPERATURE: Not available. FLASH POINT: 205°C (401°F)
FREEZING/MELTING POINT: Not available. BOILING POINT: > 100°C (> 212°F)
VAPOR PRESSURE: Not available. SPECIFIC GRAVITY (water = 1): 1.24
VAPOR DENSITY (air = 1): Not available. CARB VOC: 0.46 wt % (calc.)
EVAPORATION RATE (n-BuAc = 1): > 1 SCAQMD (U.S. EPA Method 24): 57 gm/L
SOLUBILITY IN WATER: Insoluble. SOLUBILITY IN SOLVENTS: Not available.
COEFFICIENT WATER/OIL DISTRIBUTION: Not established. pH: Not available.
HOW TO DETECT THIS SUBSTANCE (warning properties in event of accidental release): The appearance may be characteristics to distinguish a release of this product.

10. STABILITY and REACTIVITY

CHEMICAL STABILITY: This product is stable when properly stored at normal temperature and pressures (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., aluminum, barium, calcium, carbon, and iron oxides, oxygen, aromatic hydrocarbons, reactive hydrocarbons aldehydes 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: Inhalation of fumes or vapors may cause irritation of the nose, throat, and lungs and cause coughing. Removal to fresh air should relieve symptoms. This product contains trace amounts of a suspected human carcinogen by inhalation: however, this hazard is not expected to be significant due to viscosity and consistency of the mixture.

Chronic inhalation of iron oxide dusts and fumes can cause metal fume fever, with symptoms of fever, malaise and flu-like symptoms.

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).

Skin Absorption: Components are not known to be absorbed through intact skin.

Ingestion: Ingestion is not a significant route of occupational exposure and is unlikely to occur.

Injection: Accidental injection of this product, via laceration or puncture by a contaminated object can cause redness at the site of injection. Animal data for the Crystalline Silica component indicate that it may cause carcinogenic effects by this route of exposure.

11. TOXICOLOGICAL INFORMATION (Continued)
HEALTH EFFECTS OR RISKS FROM EXPOSURE: 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 mechanical irritation.

Chronic: Prolonged or repeated skin exposure may cause dermatitis (dry red skin). This product contains trace amounts of a suspected human carcinogen by inhalation: however, this hazard is not expected to be significant due to its viscosity and consistency of the mixture.

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

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

ALUMINUM TIRHYDRATE:
TDLo (Oral-Child) 79 g/kg/2 years-intermittent: Behavioral changes in motor activity (specific assay), muscle contraction or spasticity; Musculoskeletal: osteomalacia
TDLo (Oral-Child) 122 g/kg/4 days: Gastrointestinal; other changes; Nutritional and Gross Metabolic: body temperature increase
TDLo (Oral-Woman) 84 g/kg/ female 1-40 week(s) after conception: Reproductive: Effects on Newborn: physical

Effect on Newborn: physical

Effect on Newborn: physical

Effect on Newborn: physical

Effect on Newborn: physical

Effect on Newborn: physical

MINERAL SPIRITS:
TDLo (Intraperitoneal-Rat) 1920 mg/kg/8 weeks-intermittent: Blood: microcytosis with or without anemia
TDLo (Oral-Rat) 8040 mg/kg/67 days-continuous: Blood: other changes; Musculoskeletal: osteomalacia; Nutritional and Gross Metabolic: changes in phosphorus
TDLo (Oral-Woman) 80,880 mg/kg/23 weeks-continuous: Liver: other changes; Musculoskeletal: other changes; Nutritional and Gross Metabolic: changes in growth, not otherwise specified
TDLo (Intraperitoneal-Rat) 150 mg/kg
TDLo (Intraperitoneal-Rat) 6240 mg/kg/26 weeks-intermittent: Blood: pigmented or nucleated red blood cells; Nutritional and Gross Metabolic: weight loss or decreased weight gain, changes in phosphorus
TDLo (Intraperitoneal-Rat) 1920 mg/kg/8 weeks-intermittent: Blood: microcytosis with or without anemia
TDLo (Intrahepatic-Rat) 960 mg/kg/4 weeks-intermittent: Blood: changes in erythrocyte (RBC) count

MINERAL SPIRITS (continued):
TCLo (Inhalation-Rat) 275 mg/m³/16 hours/16 days-intermittent: Liver: changes in liver weight
TCLo (Inhalation-Rat) 2200 mg/m³/16 hours/16 days-intermittent: Liver: other changes
TCLo (Inhalation-Rat) 25 mg/m³/16 hours/16 days-intermittent: Liver: other changes
TCLo (Inhalation-Rat) 550 mg/m³/16 hours/16 days-intermittent: Kidney/Ureter/Bladder: changes in kidney weight
TCLo (Inhalation-Rat) 138 mg/m³/91 days-intermittent: Kidney/Ureter/Bladder: changes in kidney weight
TCLo (Inhalation-Mouse) 2200 mg/m³/6 hours/16 days-intermittent: Liver: changes in liver weight
TCLo (Inhalation-Mouse) 2200 mg/m³/6 hours/16 days-intermittent: Liver: other changes
TCLo (Inhalation-Mouse) 138 mg/m³/16 hours/16 days-intermittent: Liver: changes in spleen
TCLo (Inhalation-Mouse) 2200 mg/m³/16 hours/16 days-intermittent: Liver: other changes
TCLo (Inhalation-Mouse) 79 gm/kg/2 years-intermittent: Blood: changes in serum composition (e.g. TP, bilirubin, cholesterol); Nutritional and Gross Metabolic: osteomalacia

MINERAL SPIRITS (continued):
TCLo (Intraperitoneal-Rat) 150 mg/kg
TDLo (Intraperitoneal-Rat) 6240 mg/kg/26 weeks-intermittent: Blood: pigmented or nucleated red blood cells; Nutritional and Gross Metabolic: weight loss or decreased weight gain, changes in phosphorus
TDLo (Intraperitoneal-Rat) 1920 mg/kg/8 weeks-intermittent: Blood: microcytosis with or without anemia
TDLo (Intrahepatic-Rat) 960 mg/kg/4 weeks-intermittent: Blood: changes in erythrocyte (RBC) count

MINERAL SPIRITS (continued):
TCLo (Inhalation-Rat) 275 mg/m³/16 hours/16 days-intermittent: Liver: changes in liver weight
TCLo (Inhalation-Rat) 2200 mg/m³/16 hours/16 days-intermittent: Liver: other changes
TCLo (Inhalation-Rat) 25 mg/m³/16 hours/16 days-intermittent: Liver: other changes
TCLo (Inhalation-Rat) 550 mg/m³/16 hours/16 days-intermittent: Kidney/Ureter/Bladder: changes in kidney weight
TCLo (Inhalation-Rat) 138 mg/m³/91 days-intermittent: Kidney/Ureter/Bladder: changes in kidney weight
TCLo (Inhalation-Mouse) 2200 mg/m³/6 hours/16 days-intermittent: Liver: changes in liver weight
TCLo (Inhalation-Mouse) 2200 mg/m³/6 hours/16 days-intermittent: Liver: other changes
TCLo (Inhalation-Mouse) 138 mg/m³/16 hours/16 days-intermittent: Liver: changes in spleen
TCLo (Inhalation-Mouse) 2200 mg/m³/16 hours/16 days-intermittent: Liver: other changes
TCLo (Inhalation-Mouse) 79 gm/kg/2 years-intermittent: Blood: changes in serum composition (e.g. TP, bilirubin, cholesterol); Nutritional and Gross Metabolic: osteomalacia

IRITANITY OF PRODUCT: Inhalation of fumes or vapors may cause respiratory irritation. Eye contact may cause irritation. Prolonged skin contact may cause irritation.

SENSITIZATION OF PRODUCT: This product is not currently known to cause allergic skin or respiratory reaction.

CARCINOGENIC POTENTIAL OF COMPONENTS: Components of this product are listed by agencies tracking the carcinogenic potential of chemical compounds, as follows:
CRYSTALLINE SILICA: ACGIH-THLV-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)
MINERAL SPIRITS: IARC-3 (Unclassifiable as to Carcinogenicity in Humans)

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: Components of this product have not reported mutagenic, embryotoxic, teratogenic or reproductive toxicity.

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM

HEALTH HAZARD (BLUE) 1*

FLAMMABILITY HAZARD (RED) 0

PHYSICAL HAZARD (YELLOW) 0

PROTECTIVE EQUIPMENT

EYES RESPIRATORY HANDS BODY

See Section 8

For Routine Industrial Use and Handling Applications

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard
11. TOXICOLOGICAL INFORMATION (Continued)

ACGIH BIOLOGICAL EXPOSURE INDICES (BEIs): Currently, there are no ACGIH Biological Exposure Indices (BEIs) determined for this material.

DEGREE OF EFFECT TO THE HEALTH OF THE POLLUTING AGENT OF ENVIRONMENT OF WORK (per Mexican NOM-010 STPS-1999): 0

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.

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.

INTERNATIONAL MARITIME ORGANIZATION (IMO) DESIGNATION: This product is not classified as Dangerous Goods by the International Maritime Organization.

OFFICIAL MEXICAN STANDARD; REGULATION FOR THE TRANSPORT OF DANGEROUS GOODS AND RESIDUES: This product is not classified as Dangerous Goods, per transport regulations of Mexico.

SINGAPORE STANDARD 286: PART A: This product has no requirements under the Specification for Caution Labeling for Hazardous Substances, Part 4: Marking of Packages, Containers and Vehicles, as it does not meet the criteria for any hazard class under this regulation.

TRANSPORT IN BULK ACCORDING TO THE IBC CODE: See the information under the individual jurisdiction listings for IBC information.

ENVIRONMENTAL HAZARDS: This material does not meet the criteria of environmentally hazardous according to the criteria of the UN Model Regulations (as reflected in the IMDG Code, ADR, RID, and ADN) and is not listed in Annex III under MARPOL 73/78.

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: Yes; FIRE: No; REACTIVE: No; SUDDEN RELEASE: No
U.S. SARA Threshold Planning Quantity (TPQ): There are no specific Threshold Planning Quantiies 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 Crystalline Silica component is on the California Proposition 65 lists. WARNING! This product contains a compound 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 would be categorized as a Controlled Product, D2B (Other Toxic Effects-Potential Carcinogenic Effect, Irritation) as per the Controlled Product Regulations.

CHINESE REGULATIONS:
- Chinese Inventory of Existing Chemical Substances Status: Components listed by CAS# are listed on the Chinese Inventory of Existing Chemical Substances (IECSC), or are not listed, per information in Section 2.

JAPANESE REGULATIONS:
- Japanese ENCS: Components listed by CAS# are on the ENCS Inventory, are excepted, or are not listed, per information in Section 2.
- Japanese Ministry of Economy, Trade, and Industry (METI) Status: Components are not listed as Class 1 Specified Chemical Substances, Class II Specified Chemical Substances, or Designated Chemical Substances by the Japanese METI
- Poisonous and Deleterious Substances Control Law: Components are not listed as a Specified Poisonous Substance under the Poisonous and Deleterious Substances Control Law.

KOREAN REGULATIONS:
- Korean Existing Chemicals List (ECL) Status: Components listed by CAS# are listed on the Korean ECL Inventory, or are not listed, per information in Section 2.

MEXICAN REGULATIONS:
- Mexican Workplace Regulations (NOM-018-STPS-2000): This product is classified as hazardous.

SINGAPORE REGULATIONS:
- List of Controlled Hazardous Substances: Components listed by CAS# are not listed on the Singapore List of Controlled Substances.
- Code of Practice on Pollution Control Requirements: The components identified by CAS# in Section 2 (Composition and Information on Ingredients) NOT are subject to the requirements under the Singapore Code of Practice on Pollution Control.

TAIWANESE REGULATIONS:
- Taiwan Existing Chemical Substances Inventory Status: Components listed by CAS# are listed on the Taiwan Existing Chemicals List.

16. OTHER INFORMATION

DEFINITION OF TERMS

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

CAS #: This is the Chemical Abstract Service Number that uniquely identifies each constituent.

EXPOSURE LIMITS IN AIR:

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

DGF 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.

DGF 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. 3A: 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. 3B: Substances that are suspected of being 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. 4: Not applicable (Category 4 carcinogenic substances are those with non-genotoxic mechanisms of action. By definition, germ cell mutagens are expected to be genotoxic. Therefore, a 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 made it seem sensible). 5: Germ cell mutagens, the potency of which is considered to be so low that, provided the MAK value is observed, their contribution to genetic risk for humans is expected not to be significant.

DGF MAK 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.

EXPOSURE LIMITS IN AIR (continued):

Group B: 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. When no exposure guidelines are established, an entry of NE is made for reference.

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. This exposure value means exactly the same as a TLV, except that it is enforceable by OSHA, RQL (continued). The OSHA Permissible Exposure Limits are based in the 1989 PELs and the June, 1990 Air Contaminants Rule (Federal Register: 56: 35338-35351 and 56: 40:191). 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 must be considered, including the 8-hour.

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

WEEL: Workplace Environmental Exposure Limits from the AIHA.
PACKING Group I oxidizers. Solids: any material that, in either concentration tested, exhibits a mean burning time less than the mean burning time of a 3.2 potassium bromate/cellulose mixture.

Hazardous Materials Identification System Hazard Ratings (continued):

**PHYSICAL HAZARD (continued):**

**FLAMMABILITY HAZARD:** Substances that may 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.

**UNSTABLE REACTIVES:** Substances that may polymerize, decompose, self-react, or react with water without requiring heat or confinement. Organic Peroxides: Materials that are readily capable of detonation or explosive decomposition at normal temperature and pressures. Explosive Oxidizers: Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure and have a high temperature of self-excitation.

**NATIONAL FIRE PROTECTION ASSOCIATION HAZARD RATINGS:**

**HAZHEALTH:** 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 3,000 ppm but less than or equal to 5,000 ppm. Materials with an LD₅₀ for acute oral toxicity greater than 2000 mg/kg but less than or equal to 5000 mg/kg. Materials that, under emergency conditions, can cause significant irritation. Gases and vapors with an LC₅₀ for acute inhalation toxicity greater than 10 mg/kg but less than or equal to 20 mg/kg. Materials that, under emergency conditions, can cause minor irritation. Gases and vapors with an LC₅₀ or LD₅₀ for acute oral toxicity greater than 20 mg/kg but less than or equal to 100 mg/kg. Materials that, under emergency conditions, can cause no observable effect to the skin.

**HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS (continued):**

**HAZMAT:** Materials that, under emergency conditions, can cause minor irritation. Gases and vapors with an LC₅₀ of 50 mg/kg or less but greater than 5 mg/kg. Materials that, under emergency conditions, can cause no observable effect to the skin. Gases and vapors with an LC₅₀ of 5 mg/kg or less but greater than 0.5 mg/kg. Materials that, under emergency conditions, can cause loss of consciousness or incapacitation. Gases and vapors with an LC₅₀ of 0.5 mg/kg or less. Materials that, under emergency conditions, can cause death. Gases and vapors with an LC₅₀ of 0.05 mg/kg or less but greater than 0.01 mg/kg.

**DEFINITION OF TERMS (continued):**

**FLAMMABILITY:** A material's potential (or low risk) for significant heat generation or explosion. Substances that readily form an exothermic reaction, can cause a significant heat generation or explosion. Substances that may polymerize, decompose, self-react, or react with water at normal or moderately elevated temperatures.

**LOSS OF CONSCIOUSNESS OR INCAPACITATION:** Gases and vapors with an LC₅₀ of 1 mg/kg or less. Materials that, under emergency conditions, can cause death. Gases and vapors with an LC₅₀ of 0.1 mg/kg or less but greater than 0.01 mg/kg. Materials that, under emergency conditions, can cause loss of consciousness or incapacitation. Gases and vapors with an LC₅₀ of 0.01 mg/kg or less but greater than 0.001 mg/kg.

**RAPID DECOMPOSITION:** Substances that, under emergency conditions, can cause loss of consciousness or incapacitation. Gases and vapors with an LC₅₀ of 1 mg/kg or less. Materials that, under emergency conditions, can cause death. Gases and vapors with an LC₅₀ of 0.1 mg/kg or less but greater than 0.01 mg/kg. Materials that, under emergency conditions, can cause loss of consciousness or incapacitation. Gases and vapors with an LC₅₀ of 0.01 mg/kg or less but greater than 0.001 mg/kg.

**HEALTH HAZARD:** A material that, under emergency conditions, can cause loss of consciousness or incapacitation. Gases and vapors with an LC₅₀ of 1 mg/kg or less. Materials that, under emergency conditions, can cause death. Gases and vapors with an LC₅₀ of 0.1 mg/kg or less but greater than 0.01 mg/kg. Materials that, under emergency conditions, can cause loss of consciousness or incapacitation. Gases and vapors with an LC₅₀ of 0.01 mg/kg or less but greater than 0.001 mg/kg.

**IRRITATION:** A material's potential to cause minor irritation. Gases and vapors with an LC₅₀ of 5 mg/kg or less but greater than 0.5 mg/kg. Materials that, under emergency conditions, can cause minor irritation. Gases and vapors with an LC₅₀ of 0.5 mg/kg or less but greater than 0.05 mg/kg.

**PACKING GROUP I:** Substances that readily undergo hazardous polymerization in the absence of inhibitors. Substances that may 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.

**PACKING GROUP II:** Substances that will not burn in air when exposure to a temperature of 815°C (1500°F) may cause a sustained combustibility reaction. Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure and have a high temperature of self-excitation. Substances that may 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.

**PACKING GROUP III:** Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure and have a low potential (or low risk) to cause significant heat generation or explosion. Substances that may polymerize, decompose, condense, or self-react at ambient temperature and/or pressure and have a low potential (or low risk) to cause significant heat generation or explosion.
readily ignited under almost all conditions. Liquids having a flash point below 22.8°C (73°F) and having a boiling point at or above 37.8°C (100°F) and those liquids having a flash point at or above 22.8°C (73°F) and below 37.8°C (100°F) (i.e., Class IB and IC liquids). Materials that on account of their physical form or environmental conditions can form explosive mixtures with air and are readily dispersed in air. Flammable or combustible dusts with representative diameter less than 420 microns (40 mesh). Materials that burn with extreme rapidity, usually by reason of self-contained oxygen (e.g., dry nitrocellulose and many organic peroxides). Solids containing greater than 0.5% by weight of a flammable or combustible solid are rated by the closed cup flash point of the solvent. Materials that will rapidly or completely vaporize at atmospheric pressure and normal ambient temperature or that are readily dispersed in air and will burn readily. Flammable gases. Flammable cryogenic materials. 

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

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

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. 

FLAMMABILITY LIMITS IN AIR (continued): LEL: 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: Concentration expressed in weight of substance per volume of air. mₚ₅₀: Quantity of material, by weight, administered to a test subject, based on their body weight in kg. TLV: Lowest dose to cause a symptom. TCLₐ: Lowest concentration to cause a symptom. TDₐ: LELₐ, and L₂₀ or TC: LCₐ: LCₐ: Lowest dose (or concentration) to cause lethal or toxic effects. Cancer Information: IARC: International Agency for Research on Cancer. NTP: National Toxicology Program. RTECS: Registry of Toxic Effects of Chemical Substances. IARC and NTP rate chemicals on a scale of decreasing potential to cause human cancer with rankings from 1 to 4. Subrankings (2A, 2B, etc.) are also used. Other Information: BEI: 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. 

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. Tₕₜₚ: Median Threshold limit. log Kₐw or log Kₐw: Coefficient of Oil/Water Distribution is used to assess a substance’s behavior in the environment. 