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

IDENTIFICATION OF THE MIXTURE

TRADE/MATERIAL NAME: SpecSeal® Series ES 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) Single Exposure Category 3

Signal Word: Warning


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

<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>
<tbody>
<tr>
<td>Proprietary Benzoate Esters</td>
<td>Not Available</td>
<td>Not Determined</td>
<td>Not Determined</td>
<td>Not Determined</td>
<td>Not Determined</td>
<td>2-6%</td>
<td>SELF CLASSIFICATION</td>
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<td>GHS &amp; Japanese JIS Z7253 Classification</td>
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<td>Korean ISHA Classification</td>
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<td></td>
<td>GHS Hazard Codes</td>
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<tr>
<td>Titanium Dioxide</td>
<td>13463-67-7</td>
<td>Listed</td>
<td>1-558</td>
<td>KE-33390</td>
<td></td>
<td>0.05-0.3%</td>
<td>SELF CLASSIFICATION</td>
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<td></td>
<td></td>
<td>GHS &amp; Japanese JIS Z7253, KOREAN ISHA:</td>
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<td></td>
<td></td>
<td></td>
<td>Classification: Acute Dermal Toxicity Cat. 5, Acute Inhalation Toxicity Cat. 5, Aquatic Acute Toxicity Cat. 2, Aquatic Chronic Toxicity Cat. 2</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td>Hazard Codes: H313, H333, H401, H411</td>
</tr>
<tr>
<td>Crystalline Silica</td>
<td>14808-60-7</td>
<td>Listed</td>
<td>1-548</td>
<td>KE-29983</td>
<td></td>
<td>0.5-0.9%</td>
<td>SELF CLASSIFICATION</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>GHS &amp; JAPANESE JIS Z7253, KOREAN ISHA:</td>
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<td></td>
<td></td>
<td></td>
<td>Classification: Carcinogenic Cat. 2</td>
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<td></td>
<td></td>
<td>Hazard Codes: H351</td>
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</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. 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.

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.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Pre-existing respiratory 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: 302 °C (576 °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. 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.
ENVIRONMENTAL PRECAUTIONS: Avoid release to the environment.
## 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 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.

## 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></td>
<td></td>
<td>ACGIH-TLVs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA mg/m³</td>
</tr>
<tr>
<td>Crystalline Silica (Quartz)</td>
<td>14080-60-7</td>
<td>0.025</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(resp. frac.)</td>
</tr>
<tr>
<td>Proprietary Benzoate Esters</td>
<td></td>
<td>NE</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Titanium Dioxide</td>
<td>13463-67-7</td>
<td>10 NE</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>NAME</th>
<th>LIMITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>TITANIUM DIOXIDE:</td>
<td></td>
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<tr>
<td>ARAB Republic of Egypt: TWA = 15 mg/m³, JAN 1993</td>
<td></td>
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<tr>
<td>Austria: MAK-TMW = 5 mg/m³, KZW = 10 mg/m³, resp, 2007</td>
<td></td>
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<tr>
<td>Belgium: TWA = 10 mg/m³, MAR 2002</td>
<td></td>
</tr>
<tr>
<td>Denmark: TWA = 6 mg(Ti)/m³, JAN 2011</td>
<td></td>
</tr>
<tr>
<td>France: VME = 10 mg/m³, FEB 2006</td>
<td></td>
</tr>
<tr>
<td>Germany: MAK = 1.5 mg/m³ (respirable), 2005</td>
<td></td>
</tr>
<tr>
<td>Iceland: TWA = 6 mg(Ti)/m³, NOV 2011</td>
<td></td>
</tr>
<tr>
<td>Japan: OEL-C = 1 mg/m³ (resp. dust), 4 mg/m³ (total dust), MAY 2009</td>
<td></td>
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<tr>
<td>Korea: TWA = 10 mg/m³, 2006</td>
<td></td>
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<tr>
<td>Mexico: TWA = 10 mg(Ti)/m³, STEL = 20 mg(Ti)/m³, 2004</td>
<td></td>
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<tr>
<td>The Netherlands: MAC-TGG = 10 mg/m³, 2003</td>
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</tr>
<tr>
<td>New Zealand: TWA = 10 mg/m³ (inspirable dust), JAN 2002</td>
<td></td>
</tr>
<tr>
<td>Norway: TWA = 5 mg/m³, JAN 1999</td>
<td></td>
</tr>
<tr>
<td>Peru: TWA = 10 mg/m³, JUL 2005</td>
<td></td>
</tr>
<tr>
<td>Poland: MAC(TWA) = 10 mg(Ti)/m³, MAC(STEL) = 30 mg(Ti)/m³, JAN 1999</td>
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</tr>
<tr>
<td>Russia: TWA = 10 mg/m³, JUN 2003</td>
<td></td>
</tr>
<tr>
<td>Sweden: TWA = 5 mg/m³, DEC 2006</td>
<td></td>
</tr>
<tr>
<td>Switzerland: MAK-W = 3 mg/m³, DEC 2006</td>
<td></td>
</tr>
<tr>
<td>Turkey: TWA = 15 mg/m³, JAN 1993</td>
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</tr>
<tr>
<td>United Kingdom: TWA = 10 mg/m³ (inhaled dust), OCT 2007</td>
<td></td>
</tr>
<tr>
<td>United Kingdom: TWA = 4 mg/m³ (resp. dust), OCT 2007</td>
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</tbody>
</table>


**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 VIII: 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: Blue or 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: 17-20
AUTOIGNITION TEMPERATURE: Not available.  FLASH POINT: Not available.
FREEZING/MELTING POINT: Not available.  BOILING POINT: 100-105°C (212-221°F)
VAPOR PRESSURE: Not available.  SPECIFIC GRAVITY (water = 1): 1.2-20 gm/L
VAPOR DENSITY (air = 1): Not available.  CARB VOC: 3.04 wt % (calc.)
DECOMPOSITION TEMPERATURE: Not available.  SCAQMD (U.S. EPA Method 24): 44 gm/L
SPECIFIC GRAVITY (n-BuAc = 1): > 1

dissolves when wet; insoluble when cured.

9. PHYSICAL and CHEMICAL PROPERTIES

FORM: Paste.  COLOR: Blue or 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: 17-20
AUTOIGNITION TEMPERATURE: Not available.  FLASH POINT: Not available.
FREEZING/MELTING POINT: Not available.  BOILING POINT: 100-105°C (212-221°F)
VAPOR PRESSURE: Not available.  SPECIFIC GRAVITY (water = 1): 1.2-20 gm/L
VAPOR DENSITY (air = 1): Not available.  CARB VOC: 3.04 wt % (calc.)
DECOMPOSITION TEMPERATURE: Not available.  SCAQMD (U.S. EPA Method 24): 44 gm/L
SPECIFIC GRAVITY (n-BuAc = 1): > 1
SOLUBILITY IN WATER: Dissolves when wet; insoluble when cured.
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., calcium, carbon, magnesium and titanium oxides, 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.
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. 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. Animal data for the Crystalline Silica component indicate that it may cause carcinogenic effects by this route of exposure.

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 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.
Due to the large amount of data available for the Propylene Glycol, Titanium Dioxide and Crystalline Silica components,
only human data, LD50 Oral Rat and Mouse, LD50 Skin Rabbit and Rat, LC50 Inhalation Rat and Mouse, carcinogenic
and mutation data are provided. Contact STI for information on additional data for these components.

PROPRIETARY BENZOATE ESTERS:
LD50 (Skin-Rat) > 2000 mg/Kg
LD50 (Inhalation-Rat) 4 hours = > 220 mg/L
11. TOXICOLOGICAL INFORMATION
(Continued)

IRRITANCY 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-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: Components of this product have no reported mutagenic, embryotoxic, teratogenic or reproductive toxicity.

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. The following aquatic toxicity data are available for the Proprietary Benzoate Esters component.

PROPRIETARY BENZOATE ESTERS:
EC50 (Daphnid) 19.3 mg/L
EC20 (Daphnid) 10.5 mg/L

PROPRIETARY BENZOATE ESTERS (continued):
EC50 (Algae) 72 hours = 4.9 mg/L
LC50 (Fish) 96 hours = 3.7 mg/L

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 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 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).

JAPANESE REGULATIONS:

Japanese ENCS: Components listed by CAS# are on the ENCS Inventory or are excepted.

Japanese Ministry of Economy, Trade, and Industry (METI) Status: Components are not listed as Class I 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.

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.
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. Exposures to MAKs are usually expressed as either a Time-Weighted Average (TWA) or a Short Term Exposure Limit (STEL) or higher.
  - **DGF MAK Germ Cell Mutagen Categories:** 1: Germ cell mutagens that have been shown to increase the mutation frequency in the progeny of exposed humans. 2: Germ cell mutagens that have been shown to increase the mutation frequency in one or more groups of experimental animals. 3A: Substances that have been shown to induce genetic damage in germ cells of human animals, or which produce mutagenic effects in somatic cells of mammals and/or in plants. PII or Draize ≥ 5, with no destruction of dermal tissue.
- **DEFINITION OF TERMS**:
  - **NIOSH RELs:** National Institute for Occupational Safety and Health Recommended Exposure Limit.
  - **PEL:** Occupational Exposure Limits. This exposure value means exactly the same as a TWA, except that it is enforceable by OSHA. The OSHA Permissible Exposure Limits are based in the 1989 PELs and the June, 1993 Air Contaminants Rules (Federal Register: 58: 3538-35335 and 58: 3538-35354). All PELs are TWA. The phrase, “Vacated 1989 PEL” is placed next to the PEL that was vacated by Court Order.
  - **IDLH:** Immediately Dangerous to Life and Health. This level represents a concentration from which one could not safely survive 30 minutes without suffering escape-preventing or permanent injury.
  - **LOQ:** Limit of Quantitation.
- **REFERENCES AND DATA SOURCES:** Contact the supplier for information.
DEFINITION OF TERMS (Continued)

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM HAZARD RATINGS (continued):

[500 ppm] Pyrophorics: No Rating. Oxidizers: Packing Group I oxidizers. Solids: any material that, in either concentration tested, exhibits a burning time of less than the mean burning time of 22.8 seconds for a 3.2% potassium chlorate or 3.2% sodium chlorate. Liquids: any material that, spontaneously ignited when mixed with cellulose in a 1:1 ratio, or which exhibits a mean pressure rise time less than the pressure rise time of a 1:1 peroxide (50%)/cellulose mixture. Liquids: any material that, spontaneously ignites self-react at ambient temperature and/or pressure and have a moderate potential (or moderate risk) to cause significant heat generation or explosion.

Water Reactivity: Materials that react exothermically with water, or materials that can be ignited under almost all ambient temperature conditions. Materials in this degree produce hazardous atmospheres with air under almost all ambient temperatures or, though unaffected by ambient temperatures, are readily combustible and/or have a potential to react with water at or above 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 250°C (482°F). Liquids that do not exhibit an exotherm at temperatures less than or equal to 500°C (932°F) when tested by differential scanning calorimetry (DSC) and/or will not ignite under almost all ambient temperature conditions. Materials that burn with extreme heat, rapidly, usually by reason of self-contained oxygen (e.g., dry nitrocellulose and many organic peroxides).

National Fire Protection Association Hazard Ratings:

Health Hazard: Materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials. Liquids and gases with an LEL for acute inhalation toxicity greater than 200 mg/L. Materials with an LEL for acute dermal toxicity greater than 2000 mg/kg. Materials with an LEL for acute oral toxicity greater than 2000 mg/kg. Materials that contain 0.5% or more of a flammable or combustible solvent. 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. Liquids and solids that are readily capable of detonation or explosive decomposition or explosive reaction at normal temperatures and/or pressures. Explosives: Division 1.1 & 1.2 explosives. Explosive substances that have an instantaneous power density from 100 W/mL and below 1000 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 (DSC) and/or will not ignite under almost all ambient temperature conditions. Materials that burn with extreme heat, rapidly, usually by reason of self-contained oxygen (e.g., dry nitrocellulose and many organic peroxides).

INSTABILITY HAZARD: 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) or at above 10 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 (DSC) and/or will not ignite under almost all ambient temperature conditions. Materials that burn with extreme heat, rapidly, usually by reason of self-contained oxygen (e.g., dry nitrocellulose and many organic peroxides).

FLAMMABILITY LIMITS IN AIR:

Much of the information related to fire and explosion is derived from the National Fire Protection Association (NFPA) standards at which a liquid gives off an insufficient 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.

TOXICOLOGICAL INFORMATION:

Human and Animal Toxicology: Possible health hazards as derived from human data, animal data, 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. LEL: Lowest concentration to cause a symptom. TDL0: Lowest concentration to cause a toxic effect. LCP: Lowest concentration to cause a chronic effect. LC50: Lethal concentration (gases) that kills 50% of the exposed animals.

ECOLOGICAL INFORMATION:

EC: Effect concentration in water. BCF: Bioconcentration Factor, which is used to determine if a substance will concentrate in fish forms that consume contaminated plant or animal matter. TLM: Median threshold limit. log Kow: Logarithm of Oil-water Distribution Coefficient is used to assess a substance's potential to bioaccumulate in the environment.

REGULATORY INFORMATION:


JAPAN:

METI: Ministry of Economy, Trade and Industry.