

## Safety Data Sheet



### Section 1: Identification

#### Product identifier

**Product Name** • **Reno NC Gun FS**

**Product Code** • 189850

#### Relevant identified uses of the substance or mixture and uses advised against

**Recommended use** • Refractory applications

#### Details of the supplier of the safety data sheet

**Manufacturer** • Reno Refractories, Inc.  
P O Box 201  
Morris, AL 35116  
United States  
www.renorefractories.com  
sales@renorefractories.com

**Telephone (General)** • 205-647-0240

#### Emergency telephone number

**Manufacturer** • 1-800-262-8200 - CHEMTREC

### Section 2: Hazard Identification

#### United States (US)

According to: OSHA 29 CFR 1910.1200 HCS

#### Classification of the substance or mixture

**OSHA HCS 2012** • Carcinogenicity 1A  
Specific Target Organ Toxicity Repeated Exposure 1  
Skin Irritation 2

#### Label elements

**OSHA HCS 2012**

**DANGER**



**Hazard statements** • May cause cancer.  
Causes damage to organs through prolonged or repeated exposure.

#### Precautionary statements

**Prevention** • Obtain special instructions before use.  
Do not handle until all safety precautions have been read and understood.

Do not breathe dust.  
 Wash thoroughly after handling.  
 Do not eat, drink or smoke when using this product.  
 Wear protective gloves, clothing, and eye/face protection, .

**Response** • IF exposed or concerned: Get medical advice/attention.

**Storage/Disposal** • Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

**Other hazards**

**OSHA HCS 2012**

- Under United States Regulations (29 CFR 1910.1200 - Hazard Communication Standard), this product is considered hazardous.

**Canada**

According to: WHMIS

**Classification of the substance or mixture**

**WHMIS**

- Other Toxic Effects - D2A
- Other Toxic Effects - D2B

**Label elements**

**WHMIS**



**WHMIS**

- Other Toxic Effects - D2A
- Other Toxic Effects - D2B

**Other hazards**

**WHMIS**

- In Canada, the product mentioned above is considered hazardous under the Workplace Hazardous Materials Information System (WHMIS).

**Section 3 - Composition/Information on Ingredients**

**Substances**

- Material does not meet the criteria of a substance.

**Mixtures**

| Composition            |                |                  |   |   |
|------------------------|----------------|------------------|---|---|
| Chemical Name          | Identifiers    | %                | LD50/LC50   | Classifications According to Regulation/Directive |
| Amorphous/fused silica | CAS:60676-86-0 | 45.54% TO 50%    | NDA   | OSHA HCS 2012: Not Classified                     |
| Mullite                | CAS:1302-93-8  | 20.37% TO 23.84% | NDA   | OSHA HCS 2012: STOT RE 2 (Lungs)                  |
| Aluminum oxide         | CAS:1344-28-1  | 7.88% TO 12%     | Inhalation-Rat LC50 • 0.2 mg/L 5 Hour(s) 28 Week(s) | OSHA HCS 2012: Not Classified                     |
| Cristobalite           | CAS:14464-46-1 | 4.5% TO 9.02%    | NDA   | OSHA HCS 2012: Carc. 1A                           |
| Silica, amorphous      | CAS:7631-86-9  | 3% TO 7.06%      | NDA   | OSHA HCS 2012: Not Classified                     |
| Amorphous silica fume  | CAS:69012-64-2 | 2.7% TO 6%       | NDA   | OSHA HCS 2012: STOT RE 1 (Lungs)                  |

|                                 |                |              |   |  |
|---------------------------------|----------------|--------------|---|--|
| Clay                            | CAS:1332-58-7  | 0.7% TO 2.1% | NDA                                     | OSHA HCS 2012: Eye Irrit. 2B; STOT RE 1                      |
| Clay                            | CAS:1302-78-9  | < 2%         | NDA                                     | OSHA HCS 2012:   |
| Quartz                          | CAS:14808-60-7 | 0.1% TO 1.5% | NDA                                     | OSHA HCS 2012: Carc. 1A; STOT RE 1 (Lungs)                   |
| Sodium silicate                 | CAS:1344-09-8  | < 1.215%     | Ingestion/Oral-Mammal LD50 • 2000 mg/kg | OSHA HCS 2012: Skin Corr. 1; Eye Irrit. 2; Acute Tox. Oral 4 |
| Chemical 1                      | Proprietary    | < 0.0784%    | NDA                                     | OSHA HCS 2012: Exposure limits                               |
| Silica, crystalline - tridymite | CAS:15468-32-3 | < 0.02%      | NDA                                     | OSHA HCS 2012:   |

## Section 4: First-Aid Measures

### Description of first aid measures

#### Inhalation

- Move victim to fresh air. Administer oxygen if breathing is difficult. Give artificial respiration if victim is not breathing. Get medical attention immediately.

#### Skin

- In case of contact with substance, immediately flush skin with running water for at least 20 minutes. If skin irritation occurs: Get medical advice/attention.

#### Eye

- In case of contact with substance, immediately flush eyes with running water for at least 20 minutes. If eye irritation persists: Get medical advice/attention.

#### Ingestion

- Rinse mouth. Do not give anything by mouth to an unconscious person. Get medical attention immediately.

### Most important symptoms and effects, both acute and delayed

- Refer to Section 11 - Toxicological Information.

### Indication of any immediate medical attention and special treatment needed

#### Notes to Physician

- All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

## Section 5: Fire-Fighting Measures

### Extinguishing media

**Suitable Extinguishing Media** • Material is non-combustible. In case of fire use media as appropriate for surrounding fire.

**Unsuitable Extinguishing Media** • None known.

### Special hazards arising from the substance or mixture

**Unusual Fire and Explosion Hazards** • None known.

**Hazardous Combustion Products** • None known.

### Advice for firefighters

- Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection. Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.

## Section 6 - Accidental Release Measures

## Personal precautions, protective equipment and emergency procedures

- Personal Precautions**
- Isolate hazard area and deny entry to unauthorized and/or unprotected personnel. Do not walk through spilled material. Ensure adequate ventilation to remove vapors, fumes, dust etc. Wear appropriate personal protective equipment, avoid direct contact.
- Emergency Procedures**
- Ventilate closed spaces before entering. Isolate hazard area and deny entry to unauthorized and/or unprotected personnel.

### Environmental precautions

- No specific actions or treatments recommended related to exposure to this material.

## Methods and material for containment and cleaning up

- Containment/Clean-up Measures**
- Avoid generating dust.  
**FOR SMALL SPILLS:** Clean with a vacuum with a filtration system sufficient to remove and prevent recirculation of crystalline silica (a vacuum equipped with a high-efficiency particulate air (HEPA) filter is recommended).  
**FOR LARGE SPILLS:** Use a fine spray or mist to control dust creation and carefully scoop or shovel into clean dry container for later reuse or disposal.  
 If, an appropriate vacuum is unavailable, only wet-clean-up methods should be used (i.e. misting). Moisture should be added as necessary to reduce exposure to airborne respirable silica dust.

## Section 7 - Handling and Storage

### Precautions for safe handling

- Handling**
- Use good safety and industrial hygiene practices. Use only in well ventilated areas. Wear appropriate personal protective equipment, avoid direct contact. Wear long sleeves and/or protective coveralls. Do not breathe dust. Avoid contact with skin, eyes, and clothing. Minimize dust generation and accumulation. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Contaminated clothing must be vacuumed before removal. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Wash thoroughly after handling.

### Conditions for safe storage, including any incompatibilities

- Storage**
- Keep container closed. Store in a covered location. Store in a cool, dry place. Keep from freezing. Storage and work area should be periodically cleaned to minimize dust accumulation.

## Section 8 - Exposure Controls/Personal Protection

### Control parameters

| Exposure Limits/Guidelines                   |        |   |   |                                    |  |                                  |
|--|--------|---|---|------------------------------------|--|----------------------------------|
|  | Result | ACGIH   | Canada Ontario  | Canada Quebec                      | Mexico                                       | NIOSH                            |
| Silica, crystalline - tridymite (15468-32-3) | TWAs   | Not established                                 | Not established   | 0.05 mg/m3 TWAEV (respirable dust) | 0.05 mg/m3 TWA VLE-PPT (respirable fraction) | 0.05 mg/m3 TWA (respirable dust) |
| Chemical 1 (Proprietary)                     | TWAs   | 10 mg/m3 TWA (inhalable particulate matter)     | 10 mg/m3 TWA (inhalable)  | 10 mg/m3 TWAEV (fume, as Mg)       | 10 mg/m3 TWA VLE-PPT (fume, as Mg)           | Not established                  |
| Quartz (14808-60-7)                          | TWAs   | 0.025 mg/m3 TWA (respirable particulate matter) | 0.10 mg/m3 TWA (designated substances regulation, respirable, listed under Silica, crystalline) | 0.1 mg/m3 TWAEV (respirable dust)  | 0.1 mg/m3 TWA VLE-PPT (respirable fraction)  | 0.05 mg/m3 TWA (respirable dust) |
|  | STELs  | Not established                                 | Not established   | Not established                    | 20 mg/m3 STEL [PPT-CT]                       | Not established                  |

|   |      |   |  |   |  |  |
|---|------|---|--|---|--|--|
| Clay<br>(1332-58-7)                       | TWAs | 2 mg/m3 TWA<br>(particulate matter<br>containing no<br>asbestos and <1%<br>crystalline silica,<br>respirable particulate<br>matter) | 2 mg/m3 TWA<br>(containing no<br>Asbestos and <1%<br>Crystalline silica,<br>respirable)                        | 5 mg/m3 TWAEV<br>(containing no<br>Asbestos and <1%<br>Crystalline silica,<br>respirable dust)    | 10 mg/m3 TWA VLE-<br>PPT   | 10 mg/m3 TWA (total<br>dust); 5 mg/m3 TWA<br>(respirable dust) |
| Amorphous silica<br>fume<br>(69012-64-2)  | TWAs | Not established   | 2 mg/m3 TWA<br>(respirable, listed<br>under Silica fume)   | 2 mg/m3 TWAEV<br>(containing no<br>Asbestos and <1%<br>Crystalline silica,<br>respirable dust)    | 2 mg/m3 TWA VLE-<br>PPT; 10 mg/m3 TWA<br>VLE-PPT (inhalable<br>particulate); 3 mg/m3<br>TWA VLE-PPT<br>(respirable<br>particulate)   | Not established  |
| Silica, amorphous<br>(7631-86-9)          | TWAs | Not established   | Not established  | Not established   | Not established  | 6 mg/m3 TWA  |
| Cristobalite<br>(14464-46-1)              | TWAs | 0.025 mg/m3 TWA<br>(respirable<br>particulate matter)   | 0.05 mg/m3 TWA<br>(designated<br>substances<br>regulation, respirable,<br>listed under Silica,<br>crystalline) | 0.05 mg/m3 TWAEV<br>(respirable dust)   | 0.05 mg/m3 TWA<br>VLE-PPT (respirable<br>fraction)   | 0.05 mg/m3 TWA<br>(respirable dust)                            |
| Aluminum oxide<br>(1344-28-1)             | TWAs | 1 mg/m3 TWA<br>(respirable<br>particulate matter)<br><br><i>as Aluminum<br/>insoluble<br/>compounds</i>                             | 1 mg/m3 TWA<br>(respirable)<br><br><i>as Aluminum<br/>insoluble<br/>compounds</i>                              | 10 mg/m3 TWAEV<br>(containing no<br>Asbestos and <1%<br>Crystalline silica, total<br>dust, as Al) | 10 mg/m3 TWA VLE-<br>PPT   | Not established  |
| Amorphous/fused<br>silica<br>(60676-86-0) | TWAs | Not established   | 0.1 mg/m3 TWA<br>(respirable)  | 0.1 mg/m3 TWAEV<br>(containing no<br>Asbestos and <1%<br>Crystalline silica,<br>respirable dust)  | 0.1 mg/m3 TWA VLE-<br>PPT; 10 mg/m3 TWA<br>VLE-PPT (inhalable<br>particulate); 3 mg/m3<br>TWA VLE-PPT<br>(respirable<br>particulate) | Not established  |

**Exposure Limits/Guidelines (Con't.)**

|   | Result | OSHA   |
|---|--------|--|
| Silica, crystalline - tridymite<br>(15468-32-3) | TWAs   | 50 µg/m3 TWA (listed under Respirable crystalline silica)    |
| Chemical 1<br>(Proprietary)                     | TWAs   | 15 mg/m3 TWA (fume, total particulate)                       |
| Quartz<br>(14808-60-7)                          | TWAs   | 50 µg/m3 TWA (listed under Respirable crystalline silica)    |
| Clay<br>(1332-58-7)                             | TWAs   | 15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction) |
| Cristobalite<br>(14464-46-1)                    | TWAs   | 50 µg/m3 TWA (listed under Respirable crystalline silica)    |
| Aluminum oxide<br>(1344-28-1)                   | TWAs   | 15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction) |

**Exposure Control Notations**

**Mexico**

- Aluminum oxide (1344-28-1): **Carcinogens:** (A4 - Not classifiable as a human carcinogen)
- Clay (1332-58-7): **Carcinogens:** (A4 - Not classifiable as a human carcinogen)

**Canada Ontario**

- Cristobalite (14464-46-1): **Designated Substances:** (0.05 mg/m3 TWA (respirable fraction, listed under Silica, crystalline))
- Quartz (14808-60-7): **Designated Substances:** (0.10 mg/m3 TWA (respirable fraction, listed under Silica, crystalline))

**Canada Quebec**

- Quartz (14808-60-7): **Carcinogens:** (C2 carcinogen - effect suspected in humans)

**ACGIH**

- Cristobalite (14464-46-1): **Carcinogens:** (A2 - Suspected Human Carcinogen)
- Quartz (14808-60-7): **Carcinogens:** (A2 - Suspected Human Carcinogen)
- Aluminum oxide as Aluminum insoluble compounds: **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen)
- Chemical 1 (Proprietary): **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen)
- Clay (1332-58-7): **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen)

**Exposure Limits Supplemental**

**OSHA**

- Silica, amorphous (7631-86-9): **Mineral Dusts:** (20 mppcf TWA; (80)/(%) SiO2) mg/m3 TWA)
- Cristobalite (14464-46-1): **Mineral Dusts:** ((1/2)(250)/(%)SiO2 + 5) mppcf TWA, respirable fraction; (1/2)(10)/(%)SiO2 + 2) mg/m3 TWA, respirable fraction)
- Amorphous/fused silica (60676-86-0): **Mineral Dusts:** ((80)/(%) SiO2) mg/m3 TWA; 20 mppcf TWA)
- Quartz (14808-60-7): **Mineral Dusts:** ((250)/(%)SiO2 + 5) mppcf TWA, respirable fraction; (10)/(%)SiO2 + 2) mg/m3 TWA, respirable fraction)
- Silica, crystalline - tridymite (15468-32-3): **Mineral Dusts:** ((1/2)(250)/(%)SiO2 + 5) mppcf TWA, respirable fraction; (1/2)(10)/(%)SiO2 + 2) mg/m3 TWA, respirable fraction)

**ACGIH**

- Cristobalite (14464-46-1): **TLV Basis - Critical Effects:** (lung cancer; pulmonary fibrosis)
- Quartz (14808-60-7): **TLV Basis - Critical Effects:** (lung cancer; pulmonary fibrosis)
- Aluminum oxide as Aluminum insoluble compounds: **TLV Basis - Critical Effects:** (pneumoconiosis; lower respiratory tract irritation; neurotoxicity)
- Chemical 1 (Proprietary): **TLV Basis - Critical Effects:** (metal fume fever; upper respiratory tract irritation)
- Clay (1332-58-7): **TLV Basis - Critical Effects:** (pneumoconiosis)

**Exposure controls**

**Engineering Measures/Controls**

- Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Adequate ventilation systems as needed to control concentrations of airborne contaminants below applicable threshold limit values. Ensure that dust handling systems (such as exhaust ducts, dust collectors, vessels and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is not leakage from the equipment). Collection systems must be designed and maintained to prevent the accumulation and recirculation of respirable silica into the workplace.

**Personal Protective Equipment**

**Respiratory**

- For limited exposure use an N95 dust mask. For prolonged exposure use an air-purifying respirator with high efficiency particulate air (HEPA) filters. Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or symptoms are experienced.

**Eye/Face**

- Wear protective eyewear (goggles, face shield, or safety glasses).

**Hands**

- Wear appropriate gloves.

**Skin/Body**

- Wear long sleeves and/or protective coveralls.

**General Industrial Hygiene Considerations**

- Do not breathe dust. Avoid contact with skin, eyes or clothing. Do not remove dusts from clothing by blowing or shaking. Do not eat, drink or smoke during work. Wash thoroughly after handling. Handle in accordance with good industrial hygiene and safety practice.

**Environmental Exposure Controls**

- Follow best practice for site management and disposal of waste. Dispose of in an approved landfill.

**Key to abbreviations**

ACGIH = American Conference of Governmental Industrial Hygiene

NIOSH = National Institute of Occupational Safety and Health

OSHA = Occupational Safety and Health Administration

STEL = Short Term Exposure Limits are based on 15-minute exposures

TWAEV = Time-Weighted Average Exposure Value

TWA = Time-Weighted Averages are based on 8h/day, 40h/week exposures

**Section 9 - Physical and Chemical Properties****Information on Physical and Chemical Properties**

| <b>Material Description</b>         |                   |                              |                    |
|-------------------------------------|-------------------|------------------------------|--------------------|
| Physical Form                       | Solid             | Appearance/Description       | No data available  |
| Color                               | Gray              | Odor                         | Earthy             |
| Particulate Size                    | 600 µ             | Odor Threshold               | No data available  |
| <b>General Properties</b>           |                   |                              |                    |
| Boiling Point                       | No data available | Melting Point/Freezing Point | No data available  |
| Decomposition Temperature           | No data available | pH                           | No data available  |
| Specific Gravity/Relative Density   | = 2.53 Water=1    | Water Solubility             | Negligible < 0.1 % |
| Viscosity                           | No data available |                              |                    |
| <b>Volatility</b>                   |                   |                              |                    |
| Vapor Pressure                      | No data available | Vapor Density                | No data available  |
| Evaporation Rate                    | No data available | VOC (Wt.)                    | 0 %                |
| VOC (Vol.)                          | 0 %               |                              |                    |
| <b>Flammability</b>                 |                   |                              |                    |
| Flash Point                         | No data available | UEL                          | No data available  |
| LEL                                 | No data available | Autoignition                 | No data available  |
| Flammability (solid, gas)           | No data available |                              |                    |
| <b>Environmental</b>                |                   |                              |                    |
| Octanol/Water Partition coefficient | No data available |                              |                    |

**Section 10: Stability and Reactivity****Reactivity**

- No dangerous reaction known under conditions of normal use.

**Chemical stability**

- Stable under normal temperatures and pressures.

**Possibility of hazardous reactions**

- Hazardous polymerization will not occur.

**Conditions to avoid**

- No data available

**Incompatible materials**

- No data available

**Hazardous decomposition products**

- No data available

**Section 11 - Toxicological Information**

### Information on toxicological effects

| Components                      |             |  |
|---------------------------------|-------------|--|
| Silica, amorphous (3% TO 7.06%) | 7631-86-9   | <b>Irritation:</b> Eye-Rabbit • 25 mg 24 Hour(s) • Mild irritation   |
| Cristobalite (4.5% TO 9.02%)    | 14464-46-1  | <b>Acute Toxicity:</b> Inhalation-Human TClO • 16 mppcf 8 Hour(s) 17.9 Year(s)-Intermittent; <i>Lungs, Thorax, or Respiration:</i> <b>Fibrosis, focal (pneumoconiosis); Lungs, Thorax, or Respiration:Cough; Lungs, Thorax, or Respiration:Dyspnea;</b><br><b>Multi-dose Toxicity:</b> Inhalation-Mouse TClO • 43 mg/m <sup>3</sup> 5 Hour(s) 9 Day(s)-Intermittent; <i>Lungs, Thorax, or Respiration:</i> <b>Pleural effusion; Lungs, Thorax, or Respiration:Other changes</b>  |
| Quartz (0.1% TO 1.5%)           | 14808-60-7  | <b>Acute Toxicity:</b> Ingestion/Oral-Rat TDLo • 120 g/kg; <i>Gastrointestinal:</i> <b>Hypermotility, diarrhea;</b> <i>Gastrointestinal:Other changes;</i> Inhalation-Rat TClO • 1 mg/kg; <i>Lungs, Thorax, or Respiration:Other changes;</i> <i>Biochemical:Metabolism (intermediary):</i> <b>Effect on inflammation or mediation of inflammation;</b><br><b>Multi-dose Toxicity:</b> Inhalation-Rat TClO • 6.2 mg/m <sup>3</sup> 6 Hour(s) 6 Week(s)-Intermittent; <i>Lungs, Thorax, or Respiration:Other changes;</i> <i>Blood:Changes in spleen;</i> <i>Immunological Including Allergic:</i> <b>Increase in cellular immune response;</b> Inhalation-Rat TClO • 58 mg/m <sup>3</sup> 13 Week(s)-Intermittent; <i>Lungs, Thorax, or Respiration:Other changes;</i> <i>Endocrine:Changes in thymus weight;</i> <i>Blood:Changes in leucocyte (WBC) count;</i> Inhalation-Rat TClO • 80 mg/m <sup>3</sup> 26 Week(s)-Intermittent; <i>Lungs, Thorax, or Respiration:</i> <b>Fibrosis, focal (pneumoconiosis); Blood:Changes in spleen; <i>Immunological Including Allergic:Decrease in cellular immune response;</i> Inhalation-Rat TClO • 108 mg/m<sup>3</sup> 6 Hour(s) 3 Day(s)-Intermittent; <i>Biochemical:Enzyme inhibition, induction, or change in blood or tissue levels:Phosphatases;</i> <i>Biochemical:Enzyme inhibition, induction, or change in blood or tissue levels:Other oxidoreductases;</i> <i>Biochemical:Metabolism (intermediary):</i><b>Other proteins;</b><br/><b>Tumorigen / Carcinogen:</b> Inhalation-Rat TClO • 50 mg/m<sup>3</sup> 6 Hour(s) 71 Week(s)-Intermittent; <i>Tumorigenic:</i><b>Carcinogenic by RTECS criteria; Liver:Tumors</b></b> |
| Aluminum oxide (7.88% TO 12%)   | 1344-28-1   | <b>Multi-dose Toxicity:</b> Inhalation-Rat LC50 • 0.2 mg/L 5 Hour(s) 28 Week(s) • Comments: Rat Lung, Thorax, or Respiration: Structural or functional change in trachea or bronchi Lung, Thorax, or Respiration: Chronic pulmonary edema or congestion ; Inhalation-Rabbit TClO • 200 mg/m <sup>3</sup> 5 Hour(s) 28 Week(s)-Intermittent; <i>Lungs, Thorax, or Respiration:</i> <b>Structural or functional change in trachea or bronchi; Lungs, Thorax, or Respiration:Chronic pulmonary edema; Related to Chronic Data:Death in the Other Multiple Dose data type field;</b> Inhalation-Rat TClO • 200 mg/m <sup>3</sup> 5 Hour(s) 28 Week(s)-Intermittent; <i>Lungs, Thorax, or Respiration:</i> <b>Structural or functional change in trachea or bronchi; Lungs, Thorax, or Respiration:Chronic pulmonary edema; Related to Chronic Data:Death in the Other Multiple Dose data type field</b>  |
| Chemical 1 (< 0.0784%)          | Proprietary | <b>Acute Toxicity:</b> Inhalation-Human TClO • 400 mg/m <sup>3</sup> ;<br><b>Multi-dose Toxicity:</b> Inhalation-Rat TClO • 1000 mg/m <sup>3</sup> 4 Hour(s) 50 Day(s)-Intermittent; <i>Lungs, Thorax, or Respiration:Other changes;</i> <i>Blood:Other hemolysis with or without anemia;</i><br><b>Tumorigen / Carcinogen:</b> Intratracheal-Hamster TDLo • 480 mg/kg 30 Week(s)-Intermittent; <i>Tumorigenic:</i> <b>Equivocal tumorigenic agent by RTECS criteria; Sense Organs and Special Senses:Olfaction:Tumors; Lungs, Thorax, or Respiration:Tumors</b>   |
| Clay (0.7% TO 2.1%)             | 1332-58-7   | <b>Multi-dose Toxicity:</b> Inhalation-Rat TClO • 30 mg/m <sup>3</sup> 96 Week(s)-Intermittent; <i>Lungs, Thorax, or Respiration:</i> <b>Fibrosis (interstitial); Lungs, Thorax, or Respiration:Other changes; Lungs, Thorax, or Respiration:Tumors</b>  |
| Clay (< 2%)                     | 1302-78-9   | <b>Multi-dose Toxicity:</b> Ingestion/Oral-Rat TDLo • 700 mg/kg 7 Day(s)-Intermittent; <i>Endocrine:Other changes;</i><br><b>Tumorigen / Carcinogen:</b> Ingestion/Oral-Mouse TDLo • 12000 g/kg 28 Week(s)-Continuous; <i>Tumorigenic:</i> <b>Equivocal tumorigenic agent by RTECS criteria; Liver:Tumors</b>  |
| Sodium silicate (< 1.215%)      | 1344-09-8   | <b>Acute Toxicity:</b> Skin-Rabbit LD50 • >4640 mg/kg; <i>Behavioral:Somnolence (general depressed activity); Lungs, Thorax, or Respiration:Dyspnea;</i><br><b>Irritation:</b> Eye-Rabbit • 10 mg 24 Hour(s) • Severe irritation; Skin-Rabbit • 500 mg 24 Hour(s) • Severe irritation  |

| GHS Properties                   | Classification                    |
|----------------------------------|-----------------------------------|
| <b>Acute toxicity</b>            | OSHA HCS 2012 • No data available |
| <b>Skin corrosion/Irritation</b> | OSHA HCS 2012 • Skin Irritation 2 |



|                                      |  |
|--------------------------------------|--|
| <b>Serious eye damage/Irritation</b> | OSHA HCS 2012 • No data available                                  |
| <b>Skin sensitization</b>            | OSHA HCS 2012 • No data available                                  |
| <b>Respiratory sensitization</b>     | OSHA HCS 2012 • No data available                                  |
| <b>Aspiration Hazard</b>             | OSHA HCS 2012 • No data available                                  |
| <b>Carcinogenicity</b>               | OSHA HCS 2012 • Carcinogenicity 1A                                 |
| <b>Germ Cell Mutagenicity</b>        | OSHA HCS 2012 • No data available                                  |
| <b>Toxicity for Reproduction</b>     | OSHA HCS 2012 • No data available                                  |
| <b>STOT-SE</b>                       | OSHA HCS 2012 • No data available                                  |
| <b>STOT-RE</b>                       | OSHA HCS 2012 • Specific Target Organ Toxicity Repeated Exposure 1 |

**Route(s) of entry/exposure**

- Inhalation, Skin, Eye, Ingestion

**Medical Conditions Aggravated by Exposure**

- Any pre-existing conditions of the lungs. Disorders of the lungs.

**Potential Health Effects**

**Inhalation**

**Acute (Immediate)**

- Nuisance dust may affect the lungs but reactions are typically reversible.

**Chronic (Delayed)**

- Chronic overexposure to dust containing respirable sized crystalline silica can cause delayed lung injury (silicosis). Inhalation of dust containing crystalline silica pulmonary diseases such as asthma and lung disorder associated with smoking.

**Skin**

**Acute (Immediate)**

- Exposure to dust may cause mechanical irritation.

**Chronic (Delayed)**

- No data available.

**Eye**

**Acute (Immediate)**

- Excessive concentrations of nuisance dust in the workplace may reduce visibility and may cause unpleasant deposits in eyes.

**Chronic (Delayed)**

- No data available.

**Ingestion**

**Acute (Immediate)**

- Excessive concentrations of nuisance dust in the workplace may cause mechanical irritation to mucous membranes.

**Chronic (Delayed)**

- No data available.

**Carcinogenic Effects**

- May cause cancer. IARC studies have shown sufficient evidence from animal studies to categorize crystalline silica as a group 1 carcinogen.

| <b>Carcinogenic Effects</b> |            |                      |                        |
|-----------------------------|------------|----------------------|------------------------|
|                             | <b>CAS</b> | <b>IARC</b>          | <b>NTP</b>             |
| Quartz                      | 14808-60-7 | Group 1-Carcinogenic | Known Human Carcinogen |
| Cristobalite                | 14464-46-1 | Group 1-Carcinogenic | Not Listed             |

**Key to abbreviations**

LD = Lethal Dose

TC = Toxic Concentration

**Section 12 - Ecological Information**

**Toxicity**

- Material data lacking.

**Persistence and degradability**

- Material data lacking.

### Bioaccumulative potential

- Material data lacking.

### Mobility in Soil

- Material data lacking.

### Other adverse effects

- No studies have been found.

## Section 13 - Disposal Considerations

### Waste treatment methods

#### Product waste

- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

#### Packaging waste

- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

## Section 14 - Transport Information

|           | UN number | UN proper shipping name | Transport hazard class (es) | Packing group | Environmental hazards |
|-----------|-----------|-------------------------|-----------------------------|---------------|-----------------------|
| DOT       | NDA       | Not Regulated           | NDA                         | NDA           | NDA                   |
| TDG       | NDA       | Not Regulated           | NDA                         | NDA           | NDA                   |
| IATA/ICAO | NDA       | Not Regulated           | NDA                         | NDA           | NDA                   |

**Special precautions for user** • None specified.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** • No data available

## Section 15 - Regulatory Information

### Safety, health and environmental regulations/legislation specific for the substance or mixture

**SARA Hazard Classifications** • Chronic

| State Right To Know    |                    |     |     |     |
|------------------------|--------------------|-----|-----|-----|
| Component              | CAS                | MA  | NJ  | PA  |
| Aluminum oxide         | 1344-28-1          | Yes | Yes | Yes |
| Amorphous/fused silica | 60676-86-0         | Yes | Yes | No  |
| Clay                   | 1302-78-9          | No  | No  | No  |
| Cristobalite           | 14464-46-1         | Yes | Yes | Yes |
| Chemical 2             | <i>Proprietary</i> | No  | No  | No  |
| Clay                   | 1332-58-7          | Yes | Yes | Yes |
| Chemical 1             | <i>Proprietary</i> | Yes | Yes | Yes |
| Mullite                | 1302-93-8          | No  | No  | No  |
| Quartz                 | 14808-60-7         | Yes | Yes | Yes |

|                                 |            |     |     |     |
|---------------------------------|------------|-----|-----|-----|
| Amorphous silica fume           | 69012-64-2 | No  | No  | No  |
| Silica, amorphous               | 7631-86-9  | Yes | Yes | Yes |
| Silica, crystalline - tridymite | 15468-32-3 | Yes | Yes | Yes |
| Sodium silicate                 | 1344-09-8  | No  | No  | No  |

| Inventory                       |                    |            |      |
|---------------------------------|--------------------|------------|------|
| Component                       | CAS                | Canada DSL | TSCA |
| Aluminum oxide                  | 1344-28-1          | Yes        | Yes  |
| Amorphous/fused silica          | 60676-86-0         | Yes        | Yes  |
| Clay                            | 1302-78-9          | Yes        | Yes  |
| Cristobalite                    | 14464-46-1         | Yes        | Yes  |
| Chemical 2                      | <i>Proprietary</i> | Yes        | Yes  |
| Clay                            | 1332-58-7          | Yes        | Yes  |
| Chemical 1                      | <i>Proprietary</i> | Yes        | Yes  |
| Mullite                         | 1302-93-8          | Yes        | Yes  |
| Quartz                          | 14808-60-7         | Yes        | Yes  |
| Amorphous silica fume           | 69012-64-2         | Yes        | Yes  |
| Silica, amorphous               | 7631-86-9          | Yes        | Yes  |
| Silica, crystalline - tridymite | 15468-32-3         | No         | No   |
| Sodium silicate                 | 1344-09-8          | Yes        | Yes  |

## Canada

### Labor

#### Canada - WHMIS 1988 - Classifications of Substances

|                                   |                    |   |
|-----------------------------------|--------------------|---|
| • Chemical 2                      | <i>Proprietary</i> | Uncontrolled product according to WHMIS classification criteria   |
| • Silica, crystalline - tridymite | 15468-32-3         | D2A   |
| • Clay                            | 1332-58-7          | D2A   |
| • Mullite                         | 1302-93-8          | Not Listed  |
| • Amorphous silica fume           | 69012-64-2         | Not Listed  |
| • Chemical 1                      | <i>Proprietary</i> | Uncontrolled product according to WHMIS classification criteria   |
| • Aluminum oxide                  | 1344-28-1          | Uncontrolled product according to WHMIS classification criteria<br>D2A (In certain cases, this classification does not apply. For more information, consult the section Substance Specific Issues - Silica, crystalline, encapsulated on Health Canada's WHMIS Division website.) |
| • Cristobalite                    | 14464-46-1         | Uncontrolled product  |

|                          |            |   |
|--------------------------|------------|---|
| • Silica, amorphous      | 7631-86-9  | according to WHMIS classification criteria  |
| • Amorphous/fused silica | 60676-86-0 | Uncontrolled product according to WHMIS classification criteria   |
| • Sodium silicate        | 1344-09-8  | D2B (SiO <sub>2</sub> :Na <sub>2</sub> O ratio >2.4:1);<br>E (SiO <sub>2</sub> :Na <sub>2</sub> O ratio <2.4:1)<br>D2A (In certain cases, this classification does not apply. For more information, consult the section Substance Specific Issues - Silica, crystalline, encapsulated on Health Canada's WHMIS Division website.) |
| • Quartz                 | 14808-60-7 |   |
| • Clay                   | 1302-78-9  | D2A   |

**Canada - WHMIS 1988 - Ingredient Disclosure List**

|                                   |                    |            |
|-----------------------------------|--------------------|------------|
| • Chemical 2                      | <i>Proprietary</i> | Not Listed |
| • Silica, crystalline - tridymite | 15468-32-3         | 1 %        |
| • Clay                            | 1332-58-7          | Not Listed |
| • Mullite                         | 1302-93-8          | Not Listed |
| • Amorphous silica fume           | 69012-64-2         | Not Listed |
| • Chemical 1                      | <i>Proprietary</i> | 1 %        |
| • Aluminum oxide                  | 1344-28-1          | 1 %        |
| • Cristobalite                    | 14464-46-1         | 1 %        |
| • Silica, amorphous               | 7631-86-9          | 1 %        |
| • Amorphous/fused silica          | 60676-86-0         | 1 %        |
| • Sodium silicate                 | 1344-09-8          | Not Listed |
| • Quartz                          | 14808-60-7         | 1 %        |
| • Clay                            | 1302-78-9          | Not Listed |

**United States**

**Environment**

**U.S. - CERCLA/SARA - Section 313 - Emission Reporting**

|                                   |                    |  |
|-----------------------------------|--------------------|--|
| • Chemical 2                      | <i>Proprietary</i> | Not Listed                                     |
| • Silica, crystalline - tridymite | 15468-32-3         | Not Listed                                     |
| • Clay                            | 1332-58-7          | Not Listed                                     |
| • Mullite                         | 1302-93-8          | Not Listed                                     |
| • Amorphous silica fume           | 69012-64-2         | Not Listed                                     |
| • Chemical 1                      | <i>Proprietary</i> | Not Listed                                     |
| • Aluminum oxide                  | 1344-28-1          | 1.0 % de minimis concentration (fibrous forms) |
| • Cristobalite                    | 14464-46-1         | Not Listed                                     |
| • Silica, amorphous               | 7631-86-9          | Not Listed                                     |
| • Amorphous/fused silica          | 60676-86-0         | Not Listed                                     |
| • Sodium silicate                 | 1344-09-8          | Not Listed                                     |
| • Quartz                          | 14808-60-7         | Not Listed                                     |
| • Clay                            | 1302-78-9          | Not Listed                                     |

**United States - California**

**Environment**

**U.S. - California - Proposition 65 - Carcinogens List**

|                                   |                    |            |
|-----------------------------------|--------------------|------------|
| • Chemical 2                      | <i>Proprietary</i> | Not Listed |
| • Silica, crystalline - tridymite | 15468-32-3         | Not Listed |

|                          |                    |            |
|--------------------------|--------------------|------------|
| • Clay                   | 1332-58-7          | Not Listed |
| • Mullite                | 1302-93-8          | Not Listed |
| • Amorphous silica fume  | 69012-64-2         | Not Listed |
| • Chemical 1             | <i>Proprietary</i> | Not Listed |
| • Aluminum oxide         | 1344-28-1          | Not Listed |
| • Cristobalite           | 14464-46-1         | Not Listed |
| • Silica, amorphous      | 7631-86-9          | Not Listed |
| • Amorphous/fused silica | 60676-86-0         | Not Listed |
| • Sodium silicate        | 1344-09-8          | Not Listed |
| • Quartz                 | 14808-60-7         | Not Listed |
| • Clay                   | 1302-78-9          | Not Listed |

## United States - Pennsylvania

### Labor

#### U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

|                                   |                    |            |
|-----------------------------------|--------------------|------------|
| • Chemical 2                      | <i>Proprietary</i> | Not Listed |
| • Silica, crystalline - tridymite | 15468-32-3         | Not Listed |
| • Clay                            | 1332-58-7          | Not Listed |
| • Mullite                         | 1302-93-8          | Not Listed |
| • Amorphous silica fume           | 69012-64-2         | Not Listed |
| • Chemical 1                      | <i>Proprietary</i> | Not Listed |
| • Aluminum oxide                  | 1344-28-1          |            |
| • Cristobalite                    | 14464-46-1         | Not Listed |
| • Silica, amorphous               | 7631-86-9          | Not Listed |
| • Amorphous/fused silica          | 60676-86-0         | Not Listed |
| • Sodium silicate                 | 1344-09-8          | Not Listed |
| • Quartz                          | 14808-60-7         | Not Listed |
| • Clay                            | 1302-78-9          | Not Listed |

## Other Information

- **WARNING:** This product contains a chemical known to the State of California to cause cancer.

## Section 16 - Other Information

|  |   |
|--|---|
| <b>Revision Date</b>                     | <ul style="list-style-type: none"> <li>• 01/May/2018</li> </ul>   |
| <b>Last Revision Date</b>                | <ul style="list-style-type: none"> <li>• 20/April/2017</li> </ul>   |
| <b>Preparation Date</b>                  | <ul style="list-style-type: none"> <li>• 20/April/2017</li> </ul>   |
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### Key to abbreviations

NDA = No data available