

Safety Data Sheet



Section 1: Identification

Product identifier

Product Name • Reno Gun 65 LC
Product Code • 126650

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 • Serious Eye Damage 1
Carcinogenicity 1A
Specific Target Organ Toxicity Repeated Exposure 1

Label elements

OSHA HCS 2012

DANGER



Hazard statements • Causes serious eye damage
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 IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 Immediately call a POISON CENTER or doctor/physician.
 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
 Corrosive - E

Label elements

WHMIS



WHMIS

- Other Toxic Effects - D2A
 Other Toxic Effects - D2B
 Corrosive - E

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 | Comments |
| Mullite | CAS:1302-93-8 | 33.88% TO 36.19% | NDA | OSHA HCS 2012: STOT RE 2 (Lungs) | NDA |
| Bauxite | CAS:1318-16-7 | 15.984% TO 20% | NDA | OSHA HCS 2012: STOT RE 2 (Lungs) | NDA |
| Aluminum oxide | CAS:1344-28-1 | 10.835% TO 17.5025% | Inhalation-Rat LC50 • 0.2 mg/L 5 Hour(s) 28 Week (s) | OSHA HCS 2012: Not Classified | NDA |

| | | | | | |
|------------------------------|----------------|-------------------|-----|--|-----|
| Silica, amorphous | CAS:7631-86-9 | < 10.81% | NDA | OSHA HCS 2012: Not Classified | NDA |
| Cement, alumina, chemicals | CAS:65997-16-2 | 1.6% TO 7% | NDA | OSHA HCS 2012: Not Classified | NDA |
| Aluminum calcium oxide | CAS:12042-68-1 | 2% TO 7% | NDA | OSHA HCS 2012: Eye Dam. 1; Skin Irrit. 2; STOT SE 3: Resp. Irrit.; | NDA |
| Amorphous silica fume | CAS:69012-64-2 | 2.4% TO 6% | NDA | OSHA HCS 2012: STOT RE 1 (Lungs) | NDA |
| Aluminum(III) silicate (2:1) | CAS:1302-76-7 | 2.55% TO 5.7% | NDA | OSHA HCS 2012: STOT RE 2 (Lungs) | NDA |
| Clay | Proprietary | 1.4% TO 3.6% | NDA | OSHA HCS 2012: Not Classified | NDA |
| Quartz | CAS:14808-60-7 | 0.35% TO 2.0175% | NDA | OSHA HCS 2012: Carc. 1A; STOT RE 1 (Lungs) | NDA |
| Various Metal Oxides | NDA | 0% TO 1.2% | NDA | OSHA HCS 2012: Not Classified | NDA |
| Titanium dioxide | CAS:13463-67-7 | 0.03% TO 0.52375% | NDA | OSHA HCS 2012: Carc. 2 | NDA |
| Amorphous/fused silica | CAS:60676-86-0 | 0% TO 0.42% | NDA | OSHA HCS 2012: Not Classified | NDA |
| Cristobalite | CAS:14464-46-1 | 0.132% TO 0.287% | NDA | OSHA HCS 2012: Carc. 1A | NDA |
| Iron oxide | CAS:1309-37-1 | 0% TO 0.280125% | NDA | OSHA HCS 2012: Not Classified | NDA |
| Sodium aluminate | CAS:1302-42-7 | < 0.1% | NDA | OSHA HCS 2012: Exposure limits | NDA |
| Sodium hydroxide | CAS:1310-73-2 | 0% TO 0.06875% | NDA | OSHA HCS 2012: Exposure limits | NDA |
| Magnesium oxide | CAS:1309-48-4 | 0% TO 0.042% | NDA | OSHA HCS 2012: Exposure limits | NDA |
| Calcium oxide | CAS:1305-78-8 | 0% TO 0.0265% | NDA | OSHA HCS 2012: Exposure limits | NDA |

Section 4: First-Aid Measures

Description of first aid measures

Inhalation

- Move victim to fresh air. Give artificial respiration if victim is not breathing. Administer oxygen if breathing is difficult. 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 touch or walk through spilled material. Ensure adequate ventilation to remove vapors, fumes, dust etc.

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 • Do not breathe dust. Avoid contact with skin, eyes, and clothing. Minimize dust generation and accumulation. Use good safety and industrial hygiene practices. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Wear long sleeves and/or protective coveralls. 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. Do not use in areas without adequate ventilation.

Conditions for safe storage, including any incompatibilities

Storage • Store in a covered location. Keep container closed. 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 |
| Sodium hydroxide (1310-73-2) | Ceilings | 2 mg/m3 Ceiling | 2 mg/m3 Ceiling | 2 mg/m3 Ceiling | 2 mg/m3 Ceiling | 2 mg/m3 Ceiling |
| Iron oxide (1309-37-1) | STELs | Not established | Not established | Not established | 10 mg/m3 STEL [LMPE-CT] (as Fe) | Not established |
| | TWAs | 5 mg/m3 TWA (respirable fraction) | 5 mg/m3 TWA (respirable) | 5 mg/m3 TWAEV (dust and fume, as Fe); 10 mg/m3 TWAEV (containing no Asbestos and <1% Crystalline silica, regulated under Rouge, total dust) | 5 mg/m3 TWA LMPE-PPT | 5 mg/m3 TWA (dust and fume, as Fe) |
| Calcium oxide (1305-78-8) | TWAs | 2 mg/m3 TWA | 2 mg/m3 TWA | 2 mg/m3 TWAEV | 2 mg/m3 TWA LMPE-PPT | 2 mg/m3 TWA |
| Magnesium oxide (1309-48-4) | TWAs | 10 mg/m3 TWA (inhalable fraction) | 10 mg/m3 TWA (inhalable) | 10 mg/m3 TWAEV (fume, as Mg) | 10 mg/m3 TWA LMPE-PPT (fume, as Mg) | Not established |
| Amorphous/fused silica (60676-86-0) | TWAs | Not established | 0.1 mg/m3 TWA (respirable) | 0.1 mg/m3 TWAEV (containing no Asbestos and <1% Crystalline silica, respirable dust) | 0.1 mg/m3 TWA LMPE-PPT; 10 mg/m3 TWA LMPE-PPT (inhalable particulate); 3 mg/m3 TWA LMPE-PPT (respirable particulate) | Not established |
| Titanium dioxide (13463-67-7) | STELs | Not established | Not established | Not established | 20 mg/m3 STEL [LMPE-CT] (as Ti) | Not established |
| | TWAs | 10 mg/m3 TWA | 10 mg/m3 TWA | 10 mg/m3 TWAEV (containing no Asbestos and <1% Crystalline silica, total dust) | 10 mg/m3 TWA LMPE-PPT (as Ti) | Not established |
| Zirconium oxide | STELs | 10 mg/m3 STEL (as Zr) <i>as Zirconium compounds</i> | 10 mg/m3 STEL (as Zr) <i>as Zirconium compounds</i> | 10 mg/m3 STEV (as Zr) <i>as Zirconium compounds</i> | 10 mg/m3 STEL [LMPE-CT] (as Zr) <i>as Zirconium compounds</i> | 10 mg/m3 STEL (except Zirconium tetrachloride, as Zr) <i>as Zirconium compounds</i> |
| | TWAs | 5 mg/m3 TWA (as Zr) <i>as Zirconium compounds</i> | 5 mg/m3 TWA (as Zr) <i>as Zirconium compounds</i> | 5 mg/m3 TWAEV (as Zr) <i>as Zirconium compounds</i> | 5 mg/m3 TWA LMPE-PPT (as Zr) <i>as Zirconium compounds</i> | 5 mg/m3 TWA (except Zirconium tetrachloride, as Zr) <i>as Zirconium compounds</i> |
| Cellulose (9004-34-6) | STELs | Not established | Not established | Not established | 20 mg/m3 STEL [LMPE-CT] | Not established |
| | TWAs | 10 mg/m3 TWA | 10 mg/m3 TWA | 10 mg/m3 TWAEV (containing no Asbestos and <1% Crystalline silica, total dust) | 10 mg/m3 TWA LMPE-PPT | 10 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable dust) |

| | | | | | | | |
|--|-------|--|--|--|--|--|--|
| Sodium aluminate | TWAs | Not established | Not established | 2 mg/m3 TWAEV (as Al) <i>as Aluminum, soluble salts</i> | 2 mg/m3 TWA LMPE-PPT <i>as Aluminum, soluble salts</i> | 2 mg/m3 TWA (as Al) <i>as Aluminum, soluble salts</i> | |
| Cristobalite (14464-46-1) | TWAs | 0.025 mg/m3 TWA (respirable fraction) | 0.05 mg/m3 TWA (designated substances regulation, respirable, listed under Silica, crystalline) | 0.05 mg/m3 TWAEV (respirable dust) | 0.05 mg/m3 TWA LMPE-PPT (respirable fraction) | 0.05 mg/m3 TWA (respirable dust) | |
| Quartz (14808-60-7) | TWAs | 0.025 mg/m3 TWA (respirable fraction) | 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 LMPE-PPT (respirable fraction) | 0.05 mg/m3 TWA (respirable dust) | |
| Clay (Proprietary) | STELs | Not established | Not established | Not established | 20 mg/m3 STEL [LMPE-CT] | Not established | |
| | TWAs | 2 mg/m3 TWA (particulate matter containing no asbestos and <1% crystalline silica, respirable fraction) | 2 mg/m3 TWA (containing no Asbestos and <1% Crystalline silica, respirable) | 5 mg/m3 TWAEV (containing no Asbestos and <1% Crystalline silica, respirable dust) | 10 mg/m3 TWA LMPE-PPT | 10 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable dust) | |
| Cement, alumina, chemicals | TWAs | 10 mg/m3 TWA (inhalable particles, recommended); 3 mg/m3 TWA (respirable particles, recommended) <i>as Particulates not otherwise classified (PNOC)</i> | 10 mg/m3 TWA (inhalable); 3 mg/m3 TWA (respirable) <i>as Particulates not otherwise classified (PNOC)</i> | 10 mg/m3 TWAEV (including dust, inert or nuisance particulates; containing no Asbestos and <1% Crystalline silica, total dust) <i>as Particulates not otherwise classified (PNOC)</i> | Not established | Not established | |
| Amorphous silica fume (69012-64-2) | TWAs | Not established | 2 mg/m3 TWA (respirable, listed under Silica fume) | 2 mg/m3 TWAEV (containing no Asbestos and <1% Crystalline silica, respirable dust) | 2 mg/m3 TWA LMPE-PPT; 10 mg/m3 TWA LMPE-PPT (inhalable particulate); 3 mg/m3 TWA LMPE-PPT (respirable particulate) | Not established | |
| Silica, amorphous (7631-86-9) | TWAs | Not established | Not established | Not established | Not established | 6 mg/m3 TWA | |
| Aluminum oxide (1344-28-1) | TWAs | 1 mg/m3 TWA (respirable fraction) <i>as Aluminum insoluble compounds</i> | 1 mg/m3 TWA (respirable) <i>as Aluminum insoluble compounds</i> | 10 mg/m3 TWAEV (containing no Asbestos and <1% Crystalline silica, total dust, as Al) | 10 mg/m3 TWA LMPE-PPT | Not established | |
| Exposure Limits/Guidelines (Con't.) | | | | | | | |
| | | | | Result | OSHA | | |

| | | |
|----------------------------------|------|---|
| Sodium hydroxide (1310-73-2) | TWAs | 2 mg/m3 TWA |
| Iron oxide (1309-37-1) | TWAs | 10 mg/m3 TWA (fume); 15 mg/m3 TWA (total dust, listed under Rouge); 5 mg/m3 TWA (respirable fraction, listed under Rouge) |
| Calcium oxide (1305-78-8) | TWAs | 5 mg/m3 TWA |
| Magnesium oxide (1309-48-4) | TWAs | 15 mg/m3 TWA (fume, total particulate) |
| Titanium dioxide (13463-67-7) | TWAs | 15 mg/m3 TWA (total dust) |
| Zirconium oxide | TWAs | 5 mg/m3 TWA (as Zr) <i>as Zirconium compounds</i> |
| Cellulose (9004-34-6) | TWAs | 15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction) |
| Clay (Proprietary) | TWAs | 15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction) |
| Cement, alumina, chemicals | TWAs | 15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction) <i>as Particulates not otherwise classified (PNOC)</i> |
| Aluminum oxide (1344-28-1) | TWAs | 15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction) |

Exposure Control Notations

Mexico

- Iron oxide (1309-37-1): **Carcinogens:** (A4 - Not classifiable as a human carcinogen)
- Zirconium oxide as Zirconium compounds: **Carcinogens:** (A4 - Not classifiable as a human carcinogen)
- Clay (Proprietary): **Carcinogens:** (A4 - Not classifiable as a human carcinogen)
- Aluminum oxide (1344-28-1): **Carcinogens:** (A4 - Not classifiable as a human carcinogen)
- Titanium dioxide (13463-67-7): **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

- Iron oxide (1309-37-1): **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen)
- Magnesium oxide (1309-48-4): **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen)
- Zirconium oxide as Zirconium compounds: **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen)
- Clay (Proprietary): **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen)
- Aluminum oxide as Aluminum insoluble compounds: **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen)
- Titanium dioxide (13463-67-7): **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen)
- Cristobalite (14464-46-1): **Carcinogens:** (A2 - Suspected Human Carcinogen)
- Quartz (14808-60-7): **Carcinogens:** (A2 - Suspected Human Carcinogen)

Exposure Limits Supplemental

OSHA

- Cristobalite (14464-46-1): **Mineral Dusts:** ((1/2)(30)/(%SiO₂ + 2) mg/m3 TWA, total dust; (1/2)(250)/(%SiO₂ + 5) mppcf TWA, respirable fraction; (1/2)(10)/(%SiO₂ + 2) mg/m3 TWA, respirable fraction)
- Quartz (14808-60-7): **Mineral Dusts:** ((30)/(%SiO₂ + 2) mg/m3 TWA, total dust; (250)/(%SiO₂ + 5) mppcf TWA, respirable fraction; (10)/(%SiO₂ + 2) mg/m3 TWA, respirable fraction)
- Amorphous/fused silica (60676-86-0): **Mineral Dusts:** ((80)/(% SiO₂) mg/m3 TWA; 20 mppcf TWA)
- Silica, amorphous (7631-86-9): **Mineral Dusts:** (20 mppcf TWA; (80)/(% SiO₂) mg/m3 TWA)

ACGIH

- Calcium oxide (1305-78-8): **TLV Basis - Critical Effects:** (upper respiratory tract irritation)
- Iron oxide (1309-37-1): **TLV Basis - Critical Effects:** (pneumoconiosis)
- Sodium hydroxide (1310-73-2): **TLV Basis - Critical Effects:** (eye, skin and upper respiratory tract irritation)
- Clay (Proprietary): **TLV Basis - Critical Effects:** (pneumoconiosis)
- Aluminum oxide as Aluminum insoluble compounds: **TLV Basis - Critical Effects:** (pneumoconiosis; lower respiratory tract irritation; neurotoxicity)
- Titanium dioxide (13463-67-7): **TLV Basis - Critical Effects:** (lower respiratory tract irritation) | **Notice of Intended Changes (TLVs):** (1 mg/m3 TWA (respirable fraction); A3 - confirmed animal carcinogen with unknown relevance to humans; TLV basis: lower respiratory tract irritation, pneumoconiosis)
- Cristobalite (14464-46-1): **TLV Basis - Critical Effects:** (lung cancer; pulmonary fibrosis)
- Quartz (14808-60-7): **TLV Basis - Critical Effects:** (lung cancer; pulmonary fibrosis)
- Cellulose (9004-34-6): **TLV Basis - Critical Effects:** (upper respiratory tract irritation)

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

- Avoid breathing 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 hands before eating, drinking, or smoking. 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

STEV = Short Term Exposure Value

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

Material Description

| Physical Form | Solid | Appearance/Description | Gray granular dry powder with an earthy odor. |
|---------------|-------|------------------------|---|
| | | | |

| | | | |
|-------------------------------------|-------------------|------------------------------|--------------------|
| Color | Gray | Odor | Earthy |
| Particulate Size | 600 µ | Odor Threshold | No data available |
| General Properties | | | |
| 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 | No data available | Water Solubility | Negligible < 0.1 % |
| Viscosity | No data available | | |
| Volatility | | | |
| Vapor Pressure | No data available | Vapor Density | No data available |
| Evaporation Rate | No data available | VOC (Wt.) | 0 % |
| VOC (Vol.) | 0 % | | |
| Flammability | | | |
| Flash Point | No data available | UEL | No data available |
| LEL | No data available | Autoignition | No data available |
| Flammability (solid, gas) | No data available | | |
| Environmental | | | |
| 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 not indicated.

Conditions to avoid

- None known.

Incompatible materials

- None known.

Hazardous decomposition products

- None known.

Section 11 - Toxicological Information

Information on toxicological effects

| | | Components |
|--------------------------------------|-------------|---|
| Clay (1.4% TO 3.6%) | Proprietary | Multi-dose Toxicity: Inhalation-Rat TClO • 30 mg/m ³ 96 Week(s)-Intermittent; <i>Lungs, Thorax, or Respiration:Fibrosis (interstitial); Lungs, Thorax, or Respiration:Other changes; Lungs, Thorax, or Respiration:Tumors;</i> Reproductive: Ingestion/Oral-Rat TDLo • 370 g/kg (37D pre/1-22D preg); <i>Reproductive Effects:Maternal Effects:Other effects; Reproductive Effects:Effects on Newborn:Other neonatal measures or effects.</i> |
| Titanium dioxide (0.03% TO 0.52375%) | 13463-67-7 | Irritation: Skin-Human • 300 µg 3 Day(s)-Intermittent • Mild irritation; Tumorigen / Carcinogen: Inhalation-Rat TClO • 250 mg/m ³ 6 Hour(s) 2 Year(s)-Intermittent; <i>Tumorigenic:Carcinogenic by RTECS criteria; Lungs, Thorax, or Respiration:Tumors</i> |
| | | Acute Toxicity: Inhalation-Human TClO • 16 mppcf 8 Hour(s) 17.9 Year(s)-Intermittent; <i>Lungs, Thorax, or</i> |

| | | |
|---------------------------------|------------|--|
| Cristobalite (0.132% TO 0.287%) | 14464-46-1 | <i>Respiration:Fibrosis, focal (pneumoconiosis); Lungs, Thorax, or Respiration:Cough; Lungs, Thorax, or Respiration:Dyspnea;</i> Multi-dose Toxicity: Inhalation-Mouse T _{CLo} • 43 mg/m ³ 5 Hour(s) 9 Day(s)-Intermittent; <i>Lungs, Thorax, or Respiration:Pleural effusion; Lungs, Thorax, or Respiration:Other changes</i> |
| Silica, amorphous (< 10.81%) | 7631-86-9 | Irritation: Eye-Rabbit • 25 mg 24 Hour(s) • Mild irritation |

| GHS Properties | Classification |
|-------------------------------|--|
| Acute toxicity | OSHA HCS 2012 • No data available |
| Skin corrosion/Irritation | OSHA HCS 2012 • No data available |
| Serious eye damage/Irritation | OSHA HCS 2012 • Serious Eye Damage 1 |
| Skin sensitization | OSHA HCS 2012 • No data available |
| Respiratory sensitization | OSHA HCS 2012 • No data available |
| Aspiration Hazard | OSHA HCS 2012 • No data available |
| Carcinogenicity | OSHA HCS 2012 • Carcinogenicity 1A |
| Germ Cell Mutagenicity | OSHA HCS 2012 • No data available |
| Toxicity for Reproduction | OSHA HCS 2012 • No data available |
| STOT-SE | OSHA HCS 2012 • No data available |
| STOT-RE | 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)

- Exposure to dust may cause irritation.

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 irritation.

Chronic (Delayed)

- No data available.

Eye

Acute (Immediate)

- Causes serious eye damage. 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.

| Carcinogenic Effects | | | |
|----------------------|------------|------------------------------|------------|
| | CAS | IARC | NTP |
| Titanium dioxide | 13463-67-7 | Group 2B-Possible Carcinogen | Not Listed |
| Cristobalite | 14464-46-1 | Group 1-Carcinogenic | Not Listed |

| | | | |
|--------|------------|----------------------|------------------------|
| Quartz | 14808-60-7 | Group 1-Carcinogenic | Known Human Carcinogen |
|--------|------------|----------------------|------------------------|

Key to abbreviations

TC = Toxic Concentration

TD = Toxic Dose

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 • Acute, Chronic

| State Right To Know | | | | |
|---------------------|--------------------|-----|-----|-----|
| Component | CAS | MA | NJ | PA |
| Aluminum oxide | 1344-28-1 | Yes | Yes | Yes |
| Bauxite | 1318-16-7 | No | No | No |
| Calcium oxide | 1305-78-8 | Yes | Yes | Yes |
| Cristobalite | 14464-46-1 | Yes | Yes | Yes |
| Clay | <i>Proprietary</i> | Yes | Yes | Yes |
| Quartz | 14808-60-7 | Yes | Yes | Yes |
| Silica, amorphous | 7631-86-9 | Yes | Yes | Yes |
| Sodium aluminate | 1302-42-7 | No | No | No |
| Sodium hydroxide | 1310-73-2 | Yes | Yes | Yes |
| Titanium dioxide | 13463-67-7 | Yes | Yes | Yes |

| Inventory | | | |
|-------------------|--------------------|------------|------|
| Component | CAS | Canada DSL | TSCA |
| Aluminum oxide | 1344-28-1 | Yes | Yes |
| Bauxite | 1318-16-7 | No | No |
| Calcium oxide | 1305-78-8 | Yes | Yes |
| Cristobalite | 14464-46-1 | Yes | Yes |
| Clay | <i>Proprietary</i> | Yes | Yes |
| Quartz | 14808-60-7 | Yes | Yes |
| Silica, amorphous | 7631-86-9 | Yes | Yes |
| Sodium aluminate | 1302-42-7 | Yes | Yes |
| Sodium hydroxide | 1310-73-2 | Yes | Yes |
| Titanium dioxide | 13463-67-7 | Yes | Yes |

Canada

Labor

Canada - WHMIS - Classifications of Substances

| | | |
|--------------------|--------------------|--|
| • Sodium aluminate | 1302-42-7 | E |
| • Clay | <i>Proprietary</i> | D2A |
| • Bauxite | 1318-16-7 | Not Listed |
| • Calcium oxide | 1305-78-8 | E |
| • Sodium hydroxide | 1310-73-2 | E (including 0.04% in aqueous solution, 0.08%, 0.4% in aqueous solution, 2%, 2.5%, 4% in aqueous solution, 5%, 10%, 16%, 20%, 40%, 50% in aqueous solution, 8.7N) D2A (In certain cases, this classification does not apply. For more information, consult the section Substance Specific Issues - Titanium dioxide, mixture containing on Health Canada's WHMIS Division website.) |
| • Titanium dioxide | 13463-67-7 | Uncontrolled product according to WHMIS |
| • Aluminum oxide | 1344-28-1 | |

| | | |
|--|--------------------|---|
| • Cristobalite | 14464-46-1 | classification criteria 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.) |
| • Silica, amorphous | 7631-86-9 | Uncontrolled product according to WHMIS classification criteria 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 | |
| Canada - WHMIS - Ingredient Disclosure List | | |
| • Sodium aluminate | 1302-42-7 | Not Listed |
| • Clay | <i>Proprietary</i> | Not Listed |
| • Bauxite | 1318-16-7 | 1 % |
| • Calcium oxide | 1305-78-8 | 1 % |
| • Sodium hydroxide | 1310-73-2 | 1 % |
| • Titanium dioxide | 13463-67-7 | Not Listed |
| • Aluminum oxide | 1344-28-1 | 1 % |
| • Cristobalite | 14464-46-1 | 1 % |
| • Silica, amorphous | 7631-86-9 | 1 % |
| • Quartz | 14808-60-7 | 1 % |

United States

Environment

U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities

| | | |
|---------------------|--------------------|-----------------------------------|
| • Sodium aluminate | 1302-42-7 | Not Listed |
| • Clay | <i>Proprietary</i> | Not Listed |
| • Bauxite | 1318-16-7 | Not Listed |
| • Calcium oxide | 1305-78-8 | Not Listed |
| • Sodium hydroxide | 1310-73-2 | 1000 lb final RQ; 454 kg final RQ |
| • Titanium dioxide | 13463-67-7 | Not Listed |
| • Aluminum oxide | 1344-28-1 | Not Listed |
| • Cristobalite | 14464-46-1 | Not Listed |
| • Silica, amorphous | 7631-86-9 | Not Listed |
| • Quartz | 14808-60-7 | Not Listed |

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

| | | |
|--------------------|--------------------|------------|
| • Sodium aluminate | 1302-42-7 | Not Listed |
| • Clay | <i>Proprietary</i> | Not Listed |
| • Bauxite | 1318-16-7 | Not Listed |
| • Calcium oxide | 1305-78-8 | Not Listed |
| • Sodium hydroxide | 1310-73-2 | Not Listed |
| • Titanium dioxide | 13463-67-7 | 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 |
| • Quartz | 14808-60-7 | Not Listed |

United States - California

Environment

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

| | | |
|---------------------|--------------------|--|
| • Sodium aluminate | 1302-42-7 | Not Listed |
| • Clay | <i>Proprietary</i> | Not Listed |
| • Bauxite | 1318-16-7 | Not Listed |
| • Calcium oxide | 1305-78-8 | Not Listed |
| • Sodium hydroxide | 1310-73-2 | Not Listed |
| • Titanium dioxide | 13463-67-7 | carcinogen, initial date 9/2/11 (airborne, unbound particles of respirable size) |
| • Aluminum oxide | 1344-28-1 | Not Listed |
| • Cristobalite | 14464-46-1 | Not Listed |
| • Silica, amorphous | 7631-86-9 | Not Listed |
| • Quartz | 14808-60-7 | carcinogen, initial date 10/1/88 (airborne particles of respirable size) |

United States - Pennsylvania

Labor

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

| | | |
|---------------------|--------------------|------------|
| • Sodium aluminate | 1302-42-7 | Not Listed |
| • Clay | <i>Proprietary</i> | Not Listed |
| • Bauxite | 1318-16-7 | Not Listed |
| • Calcium oxide | 1305-78-8 | Not Listed |
| • Sodium hydroxide | 1310-73-2 | |
| • Titanium dioxide | 13463-67-7 | Not Listed |
| • Aluminum oxide | 1344-28-1 | |
| • Cristobalite | 14464-46-1 | Not Listed |
| • Silica, amorphous | 7631-86-9 | Not Listed |
| • Quartz | 14808-60-7 | Not Listed |

Other Information

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

Section 16 - Other Information

| | |
|--|--|
| Revision Date | • 27/April/2018 |
| Last Revision Date | • 09/April/2015 |
| Preparation Date | • 01/April/2014 |
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Key to abbreviations

NDA = No data available