

## Safety Data Sheet



### Section 1: Identification

#### Product identifier

- Product Name** • **Reno Lite Gun 26-62**  
**Product Code** • 136700

#### 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.  
 PO 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** • Skin Irritation 2  
 Serious Eye Damage 1  
 Specific Target Organ Toxicity Single Exposure 3: Respiratory Tract Irritation  
 Carcinogenicity 1A  
 Specific Target Organ Toxicity Repeated Exposure 1

#### Label elements

**OSHA HCS 2012**

#### DANGER



- Hazard statements** • Causes skin irritation  
 Causes serious eye damage  
 May cause respiratory irritation  
 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.
  - Use only outdoors or in a well-ventilated area.
  - Wear protective gloves, clothing, and eye/face protection, .

- Response**
- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
  - Call a POISON CENTER or doctor/physician if you feel unwell.
  - If on skin: Wash with plenty of water .
  - Take off contaminated clothing and wash before reuse.
  - Specific treatment, see supplemental first aid information.
  - If skin irritation occurs: Get medical advice/attention.
  - 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**
- Store in a well-ventilated place. Keep container tightly closed.
  - 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



- 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
Calcium Aluminate	<i>Proprietary</i>	16% TO 35%	NDA	<b>OSHA HCS 2012:</b> Eye Dam. 1; Skin Irrit. 2; STOT SE 3: Resp. Irrit.	NDA
Perlite	<b>CAS:</b> 93763-70-3	16% TO 19%	NDA	<b>OSHA HCS 2012:</b> Not Classified	NDA
Mullite	<b>CAS:</b> 1302-93-8	14% TO 18.6%	NDA	<b>OSHA HCS 2012:</b> STOT RE 2 (Lungs)	NDA
Cristobalite	<b>CAS:</b> 14464-46-1	5.6% TO 11.566%	NDA	<b>OSHA HCS 2012:</b> Carc. 1A	NDA
Kaolin	<b>CAS:</b> 1332-58-7	6.4% TO 11%	NDA	<b>OSHA HCS 2012:</b> Not Classified	NDA
Silica, amorphous	<b>CAS:</b> 7631-86-9	4.2% TO 7.75%	NDA	<b>OSHA HCS 2012:</b> Not Classified	NDA
Bentonite	<b>CAS:</b> 1302-78-9	1.8% TO 6%	NDA	<b>OSHA HCS 2012:</b> STOT RE 2 (Lungs)	NDA
Aluminum(III) silicate (2:1)	<b>CAS:</b> 1302-76-7	2.55% TO 5.7%	NDA	<b>OSHA HCS 2012:</b> STOT RE 2 (Lungs)	NDA
Quartz	<b>CAS:</b> 14808-60-7	0.18% TO 3.45%	NDA	<b>OSHA HCS 2012:</b> Carc. 1A; STOT RE 1 (Lungs)	NDA
Silica, crystalline - tridymite	<b>CAS:</b> 15468-32-3	0% TO 2.26%	NDA	<b>OSHA HCS 2012:</b> STOT RE 1 (Lungs, Inhl)	NDA
Amorphous/fused silica	<b>CAS:</b> 60676-86-0	0% TO 2.1%	NDA	<b>OSHA HCS 2012:</b> Not Classified	NDA
Iron oxide	<b>CAS:</b> 1309-37-1	0% TO 1.4%	NDA	<b>OSHA HCS 2012:</b> Not Classified	NDA
Titanium dioxide	<b>CAS:</b> 13463-67-7	0.03% TO 1.35%	NDA	<b>OSHA HCS 2012:</b> Carc. 2	NDA
Magnesium oxide	<b>CAS:</b> 1309-48-4	0% TO 0.21%	NDA	<b>OSHA HCS 2012:</b> Not Classified	NDA
Sodium hydroxide	<b>CAS:</b> 1310-73-2	0% TO 0.175%	NDA	<b>OSHA HCS 2012:</b> Skin Corr. 1B; Eye Dam. 1	NDA
1-Propene, homopolymer	<b>CAS:</b> 9003-07-0	< 0.15%	Ingestion/Oral-Rat LD50 • >8 g/kg	<b>OSHA HCS 2012:</b> Not Classified	NDA
Sodium aluminate	<b>CAS:</b> 1302-42-7	< 0.1%	NDA	<b>OSHA HCS 2012:</b> Exposure limits	NDA
Calcium oxide	<b>CAS:</b> 1305-78-8	0% TO 0.07%	NDA	<b>OSHA HCS 2012:</b> 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)
Silica, crystalline - tridymite (15468-32-3)	TWAs	Not established	Not established	0.05 mg/m3 TWAEV (respirable dust)	0.05 mg/m3 TWA LMPE-PPT (respirable fraction)	0.05 mg/m3 TWA (respirable dust)
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
Sodium aluminate as Aluminum, soluble salts	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>

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)
Silica, amorphous (7631-86-9)	TWAs	Not established	Not established	Not established	Not established	6 mg/m3 TWA
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)
Kaolin (1332-58-7)	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)
Perlite (93763-70-3)	TWAs	Not established	10 mg/m3 TWA (containing no Asbestos and <1% Crystalline silica)	Not established	10 mg/m3 TWA LMPE-PPT	10 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable dust)

**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)
Kaolin (1332-58-7)	TWAs	15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction)

**Exposure Control Notations**

**Mexico**

- Perlite (93763-70-3): **Carcinogens:** (A4 - Not classifiable as a human carcinogen)
- Kaolin (1332-58-7): **Carcinogens:** (A4 - Not classifiable as a human carcinogen)
- Titanium dioxide (13463-67-7): **Carcinogens:** (A4 - Not classifiable as a human carcinogen)
- Iron oxide (1309-37-1): **Carcinogens:** (A4 - Not classifiable as a human carcinogen)

**Canada Ontario**

- Cristobalite (14464-46-1): **Designated Substances:** (0.05 mg/m<sup>3</sup> TWA (respirable fraction, listed under Silica, crystalline))
- Quartz (14808-60-7): **Designated Substances:** (0.10 mg/m<sup>3</sup> 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)
- Kaolin (1332-58-7): **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen)
- Titanium dioxide (13463-67-7): **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen)
- 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)

## Exposure Limits Supplemental

### OSHA

- Silica, amorphous (7631-86-9): **Mineral Dusts:** (20 mppcf TWA; (80)/(%) SiO<sub>2</sub>) mg/m<sup>3</sup> TWA)
- Cristobalite (14464-46-1): **Mineral Dusts:** ((1/2)(30)/(%)SiO<sub>2</sub> + 2) mg/m<sup>3</sup> TWA, total dust; (1/2)(250)/(%)SiO<sub>2</sub> + 5) mppcf TWA, respirable fraction; (1/2)(10)/(%)SiO<sub>2</sub> + 2) mg/m<sup>3</sup> TWA, respirable fraction)
- Silica, crystalline - tridymite (15468-32-3): **Mineral Dusts:** ((1/2)(30)/(%)SiO<sub>2</sub> + 2) mg/m<sup>3</sup> TWA, total dust; (1/2)(250)/(%)SiO<sub>2</sub> + 5) mppcf TWA, respirable fraction; (1/2)(10)/(%)SiO<sub>2</sub> + 2) mg/m<sup>3</sup> TWA, respirable fraction)
- Quartz (14808-60-7): **Mineral Dusts:** ((30)/(%)SiO<sub>2</sub> + 2) mg/m<sup>3</sup> TWA, total dust; (250)/(%)SiO<sub>2</sub> + 5) mppcf TWA, respirable fraction; (10)/(%)SiO<sub>2</sub> + 2) mg/m<sup>3</sup> TWA, respirable fraction)
- Amorphous/fused silica (60676-86-0): **Mineral Dusts:** ((80)/(%) SiO<sub>2</sub>) mg/m<sup>3</sup> TWA; 20 mppcf TWA)

### 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)
- Kaolin (1332-58-7): **TLV Basis - Critical Effects:** (pneumoconiosis)
- Titanium dioxide (13463-67-7): **TLV Basis - Critical Effects:** (lower respiratory tract irritation) | **Notice of Intended Changes (TLVs):** (1 mg/m<sup>3</sup> TWA (respirable fraction); A3 - confirmed animal carcinogen with unknown relevance to humans; TLV basis: lower respiratory tract irritation, pneumoconiosis)
- 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)
- Calcium oxide (1305-78-8): **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

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 $\mu$	Odor Threshold	No data available
General Properties			
Boiling Point	No data available	Melting Point	No data available
Decomposition Temperature	No data available	pH	No data available
Specific Gravity/Relative Density	2.2 to 2.9	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		
Silica, amorphous (4.2% TO 7.75%)	7631-86-9	<b>Irritation:</b> Eye-Rabbit • 25 mg 24 Hour(s) • Mild irritation
Cristobalite (5.6% TO 11.566%)	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:Fibrosis, focal (pneumoconiosis)</i> ; <i>Lungs, Thorax, or Respiration:Cough</i> ; <i>Lungs, Thorax, or Respiration:Dyspnea</i> ; <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:Pleural effusion</i> ; <i>Lungs, Thorax, or Respiration:Other changes</i>
Perlite (16% TO 19%)	93763-70-3	<b>Acute Toxicity:</b> Ingestion/Oral-Mouse LD50 • 12960 mg/kg
Silica, crystalline - tridymite (0% TO 2.26%)	15468-32-3	<b>Acute Toxicity:</b> Inhalation-Human TClO • 16 mppcf 8 Hour(s) 17.9 Year(s)-Intermittent; <i>Lungs, Thorax, or Respiration:Fibrosis, focal (pneumoconiosis)</i> ; <i>Lungs, Thorax, or Respiration:Cough</i> ; <i>Lungs, Thorax, or Respiration:Dyspnea</i>
Kaolin (6.4% TO 11%)	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:Fibrosis (interstitial)</i> ; <i>Lungs, Thorax, or Respiration:Other changes</i> ; <i>Lungs, Thorax, or Respiration:Tumors</i> ; <b>Reproductive:</b> Ingestion/Oral-Rat TDLo • 370 g/kg (37D pre/1-22D preg); <i>Reproductive Effects:Maternal Effects:Other effects</i> ; <i>Reproductive Effects:Effects on Newborn:Other neonatal measures or effects.</i>
Titanium dioxide (0.03% TO 1.35%)	13463-67-7	<b>Irritation:</b> Skin-Human • 300 µg 3 Day(s)-Intermittent • Mild irritation; <b>Tumorigen / Carcinogen:</b> Inhalation-Rat TClO • 250 mg/m <sup>3</sup> 6 Hour(s) 2 Year(s)-Intermittent; <i>Tumorigenic:Carcinogenic by RTECS criteria</i> ; <i>Lungs, Thorax, or Respiration:Tumors</i>
1-Propene, homopolymer (< 0.15%)	9003-07-0	<b>Acute Toxicity:</b> Ingestion/Oral-Rat LD50 • >8 g/kg

GHS Properties	Classification
Acute toxicity	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
Skin corrosion/Irritation	OSHA HCS 2012 • Skin Irritation 2
Skin sensitization	OSHA HCS 2012 • No data available
STOT-RE	OSHA HCS 2012 • Specific Target Organ Toxicity Repeated Exposure 1
STOT-SE	OSHA HCS 2012 • Specific Target Organ Toxicity Single Exposure 3: Respiratory Tract Irritation
Toxicity for Reproduction	OSHA HCS 2012 • No data available
Respiratory sensitization	OSHA HCS 2012 • No data available
Serious eye damage/Irritation	OSHA HCS 2012 • Serious Eye Damage 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)**

- May cause respiratory irritation. 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)**

- Causes skin irritation. 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.

<b>Carcinogenic Effects</b>			
	<b>CAS</b>	<b>IARC</b>	<b>NTP</b>
Silica, crystalline - tridymite	15468-32-3	Group 1-Carcinogenic	Not Listed
Titanium dioxide	13463-67-7	Group 2B-Possible Carcinogen	Not Listed
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
- 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
Amorphous/fused silica	60676-86-0	Yes	Yes	No
Bentonite	1302-78-9	No	No	No
Calcium oxide	1305-78-8	Yes	Yes	Yes
Cristobalite	14464-46-1	Yes	Yes	Yes
Iron oxide	1309-37-1	Yes	Yes	Yes
Kaolin	1332-58-7	Yes	Yes	Yes
Quartz	14808-60-7	Yes	Yes	Yes
Silica, amorphous	7631-86-9	Yes	Yes	Yes
Silica, crystalline - tridymite	15468-32-3	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
Amorphous/fused silica	60676-86-0	Yes	Yes

Bentonite	1302-78-9	Yes	Yes
Calcium oxide	1305-78-8	Yes	Yes
Cristobalite	14464-46-1	Yes	Yes
Iron oxide	1309-37-1	Yes	Yes
Kaolin	1332-58-7	Yes	Yes
Quartz	14808-60-7	Yes	Yes
Silica, amorphous	7631-86-9	Yes	Yes
Silica, crystalline - tridymite	15468-32-3	No	No
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
• Silica, crystalline - tridymite	15468-32-3	D2A
• Kaolin	1332-58-7	D2A
• Calcium oxide	1305-78-8	E
• Iron oxide	1309-37-1	Uncontrolled product according to WHMIS classification criteria 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)
• Sodium hydroxide	1310-73-2	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	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 according to WHMIS classification criteria
• Silica, amorphous	7631-86-9	Uncontrolled product according to WHMIS classification criteria
• Amorphous/fused silica	60676-86-0	D2A (In certain cases, this classification does not apply. For more information, consult

• Quartz	14808-60-7	the section Substance Specific Issues - Silica, crystalline, encapsulated on Health Canada's WHMIS Division website.)
• Bentonite	1302-78-9	D2A

**Canada - WHMIS - Ingredient Disclosure List**

• Sodium aluminate	1302-42-7	Not Listed
• Silica, crystalline - tridymite	15468-32-3	1 %
• Kaolin	1332-58-7	Not Listed
• Calcium oxide	1305-78-8	1 %
• Iron oxide	1309-37-1	1 %
• Sodium hydroxide	1310-73-2	1 %
• Titanium dioxide	13463-67-7	Not Listed
• Cristobalite	14464-46-1	1 %
• Silica, amorphous	7631-86-9	1 %
• Amorphous/fused silica	60676-86-0	1 %
• Quartz	14808-60-7	1 %
• Bentonite	1302-78-9	Not Listed

**United States**

**Environment**

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

• Sodium aluminate	1302-42-7	Not Listed
• Silica, crystalline - tridymite	15468-32-3	Not Listed
• Kaolin	1332-58-7	Not Listed
• Calcium oxide	1305-78-8	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Sodium hydroxide	1310-73-2	1000 lb final RQ; 454 kg final RQ
• Titanium dioxide	13463-67-7	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
• Amorphous/fused silica	60676-86-0	Not Listed
• Quartz	14808-60-7	Not Listed
• Bentonite	1302-78-9	Not Listed

**United States - California**

**Environment**

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

• Sodium aluminate	1302-42-7	Not Listed
• Silica, crystalline - tridymite	15468-32-3	Not Listed
• Kaolin	1332-58-7	Not Listed
• Calcium oxide	1305-78-8	Not Listed
• Iron oxide	1309-37-1	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)
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
• Amorphous/fused silica	60676-86-0	Not Listed
		carcinogen, initial date 10/1/88

• Quartz	14808-60-7	(airborne particles of respirable size)
• Bentonite	1302-78-9	Not Listed

## United States - Pennsylvania

### Labor

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

• Sodium aluminate	1302-42-7	Not Listed
• Silica, crystalline - tridymite	15468-32-3	Not Listed
• Kaolin	1332-58-7	Not Listed
• Calcium oxide	1305-78-8	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Sodium hydroxide	1310-73-2	
• Titanium dioxide	13463-67-7	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
• Amorphous/fused silica	60676-86-0	Not Listed
• Quartz	14808-60-7	Not Listed
• Bentonite	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

### Last Revision Date

- 07/April/2015

### Preparation Date

- 01/June/2009

### Disclaimer/Statement of Liability

- The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release. Reno Refractories **MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, WITH RESPECT TO SUCH INFORMATION, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR COURSE OF PERFORMANCE OR USAGE OF TRADE.** User is responsible for determining whether the product is fit for a particular purpose and suitable for user's method of use or application. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

### Key to abbreviations

NDA = No data available