Safety Data Sheet

Section 1: Identification

Product identifier

Product Name | **Reno Lite Gun 24-62**

Product Code | 135800

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 - H315
Serious Eye Damage 1 - H318
Specific Target Organ Toxicity Single Exposure 3: Respiratory Tract Irritation - H335
Carcinogenicity 1A - H350
Specific Target Organ Toxicity Repeated Exposure 1 - H372

Label elements

OSHA HCS 2012

DANGER

Hazard statements | Causes skin irritation - H315
Causes serious eye damage - H318
May cause respiratory irritation - H335
May cause cancer. - H350
Causes damage to organs through prolonged or repeated exposure. - H372

Precautionary statements

Prevention | Obtain special instructions before use. - P201
Do not handle until all safety precautions have been read and understood. - P202
Do not breathe dust. - P260
Wash thoroughly after handling. - P264
Do not eat, drink or smoke when using this product. - P270
Use only outdoors or in a well-ventilated area. - P271
Wear protective gloves, clothing , and eye/face protection , . - P280

Response | IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. - P304+P340
Call a POISON CENTER or doctor/physician if you feel unwell. - P312
If on skin: Wash with plenty of water .
Take off contaminated clothing and wash before reuse. - P362
Specific treatment, see supplemental first aid information. - P321
If skin irritation occurs: Get medical advice/attention. - P332+P313
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. - P305+P351+P338
Immediately call a POISON CENTER or doctor/physician. - P310
IF exposed or concerned: Get medical advice/attention. - P308+P313

Storage/Disposal | Store in a well-ventilated place. Keep container tightly closed. - P403+P233
Dispose of content and/or container in accordance with local, regional, national, and/or international regulations. - P501

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**
Aluminum calcium oxide	**CAS:**12042-68-1	12% TO 36%	NDA	**OSHA HCS 2012:** Eye Dam. 1; Skin Irrit. 2; STOT SE 3: Resp. Irrit.;	NDA
Perlite	**CAS:**93763-70-3	18% TO 22%	NDA	**OSHA HCS 2012:** Not Classified	NDA
Mullite	**CAS:**1302-93-8	14% TO 19.2%	NDA	**OSHA HCS 2012:** STOT RE 2 (Lungs)	NDA
Cristobalite	**CAS:**14464-46-1	5.6% TO 11.92%	NDA	**OSHA HCS 2012:** Carc. 1A	NDA
Kaolin	**CAS:**1332-58-7	6.4% TO 11%	NDA	**OSHA HCS 2012:** Not Classified	NDA
Silica, amorphous	**CAS:**7631-86-9	4.2% TO 8%	NDA	**OSHA HCS 2012:** Not Classified	NDA
Bentonite	**CAS:**1302-78-9	1.8% TO 6%	NDA	**OSHA HCS 2012:** STOT RE 2 (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
Quartz	**CAS:**14808-60-7	0.18% TO 3.6334%	NDA	**OSHA HCS 2012:** Carc. 1A; STOT RE 1 (Lungs)	NDA
Silica, crystalline - tridymite	**CAS:**15468-32-3	0% TO 2.26%	NDA	**OSHA HCS 2012:** STOT RE 1 (Lungs, Inhl)	NDA
Amorphous/fused silica	**CAS:**60676-86-0	0% TO 2.16%	NDA	**OSHA HCS 2012:** Not Classified	NDA
Iron oxide	**CAS:**1309-37-1	0% TO 1.4415%	NDA	**OSHA HCS 2012:** Not Classified	NDA
Titanium dioxide	**CAS:**13463-67-7	0.03% TO 1.3965%	NDA	**OSHA HCS 2012:** Carc. 2	NDA
Sodium hydroxide	**CAS:**1310-73-2	0% TO 0.2205%	NDA	**OSHA HCS 2012:** Skin. Corr. 1B; Eye Corr. 1	NDA
Magnesium oxide	**CAS:**1309-48-4	0% TO 0.216%	NDA	**OSHA HCS 2012:** Not Classified	NDA
1-Propene, homopolymer	**CAS:**9003-07-0	< 0.15%	Ingestion/Oral-Rat LD50 • >8 g/kg	**OSHA HCS 2012:** Not Classified	NDA
Sodium aluminate	**CAS:**1302-42-7	< 0.1%	NDA	**OSHA HCS 2012:** Exposure limits	NDA
Calcium oxide	**CAS:**1305-78-8	< 0.087%	NDA	**OSHA HCS 2012:** Exposure limits	NDA
Zirconium oxide	**CAS:**1314-23-4	< 0.051%	NDA	**OSHA HCS 2012:** Exposure limits	NDA
Aluminum oxide	**CAS:**1344-28-1	< 0.003%	Inhalation-Rat LC50 • 0.2 mg/L 5 Hour(s) 28 Week(s)	**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 unavailabe, 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. 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)
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
Aluminum oxide (1344-28-1)	TWAs	1 mg/m3 TWA (respirable fraction) *as Aluminum insoluble compounds*	1 mg/m3 TWA (respirable) *as Aluminum insoluble compounds*	10 mg/m3 TWAEV (containing no Asbestos and <1% Crystalline silica, total dust, as Al)	10 mg/m3 TWA LMPE-PPT	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	10 mg/m3 TWA LMPE-PPT (as Ti)	Not established

				dust)		
Zirconium oxide as Zirconium compounds	STELs	10 mg/m3 STEL (as Zr) *as Zirconium compounds*	10 mg/m3 STEL (as Zr) *as Zirconium compounds*	10 mg/m3 STEV (as Zr) *as Zirconium compounds*	10 mg/m3 STEL [LMPE-CT] (as Zr) *as Zirconium compounds*	10 mg/m3 STEL (except Zirconium tetrachloride, as Zr) *as Zirconium compounds*
	TWAs	5 mg/m3 TWA (as Zr) *as Zirconium compounds*	5 mg/m3 TWA (as Zr) *as Zirconium compounds*	5 mg/m3 TWAEV (as Zr) *as Zirconium compounds*	5 mg/m3 TWA LMPE-PPT (as Zr) *as Zirconium compounds*	5 mg/m3 TWA (except Zirconium tetrachloride, as Zr) *as Zirconium compounds*
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
Sodium aluminate as Aluminum, soluble salts	TWAs	Not established	Not established	2 mg/m3 TWAEV (as Al) *as Aluminum, soluble salts*	2 mg/m3 TWA LMPE-PPT *as Aluminum, soluble salts*	2 mg/m3 TWA (as Al) *as Aluminum, soluble salts*
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
		10 mg/m3 TWA (fume); 15 mg/m3 TWA (total

Iron oxide (1309-37-1)	TWAs	dust, listed under Rouge); 5 mg/m3 TWA (respirable fraction, listed under Rouge)
Magnesium oxide (1309-48-4)	TWAs	15 mg/m3 TWA (fume, total particulate)
Aluminum oxide (1344-28-1)	TWAs	15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction)
Titanium dioxide (13463-67-7)	TWAs	15 mg/m3 TWA (total dust)
Zirconium oxide	TWAs	5 mg/m3 TWA (as Zr) *as Zirconium compounds*
Calcium oxide (1305-78-8)	TWAs	5 mg/m3 TWA
Kaolin (1332-58-7)	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)
- Kaolin (1332-58-7): **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)
- Perlite (93763-70-3): **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)
- Kaolin (1332-58-7): **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)
- Silica, crystalline - tridymite (15468-32-3): **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)
- 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)
- Kaolin (1332-58-7): **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)

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 µ	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=1	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		
Sodium hydroxide (0% TO 0.2205%)	1310-73-2	**Irritation:** Eye-Rabbit • 50 µg 24 Hour(s) • Severe irritation; Skin-Rabbit • 500 mg 24 Hour(s) • Severe irritation
Kaolin (6.4% TO 11%)	1332-58-7	**Multi-dose Toxicity:** Inhalation-Rat TCLo • 30 mg/m³ 96 Week(s)-Intermittent; *Lungs, Thorax, or Respiration*:**Fibrosis (interstitial)**; *Lungs, Thorax, or Respiration*:**Other changes**; *Lungs, Thorax, or Respiration*:**Tumors**; **Reproductive:** Ingestion/Oral-Rat TDLo • 370 g/kg (37D pre/1-22D preg); *Reproductive Effects:Maternal Effects*:**Other effects**; *Reproductive Effects:Effects on Newborn*:**Other neonatal measures or effects.**
Titanium dioxide (0.03% TO 1.3965%)	13463-67-7	**Irritation:** Skin-Human • 300 µg 3 Day(s)-Intermittent • Mild irritation; **Tumorigen / Carcinogen:** Inhalation-Rat TCLo • 250 mg/m³ 6 Hour(s) 2 Year(s)-Intermittent; *Tumorigenic*:**Carcinogenic by RTECS criteria**; *Lungs, Thorax, or Respiration*:**Tumors**
		Acute Toxicity: Inhalation-Human TCLo • 16 mppcf 8 Hour(s) 17.9 Year(s)-Intermittent; *Lungs, Thorax, or*

Cristobalite (5.6% TO 11.92%)	14464-46-1	*Respiration*:**Fibrosis, focal (pneumoconiosis)**; *Lungs, Thorax, or Respiration*:**Cough**; *Lungs, Thorax, or Respiration*:**Dyspnea**; **Multi-dose Toxicity:** Inhalation-Mouse TCLo • 43 mg/m³ 5 Hour(s) 9 Day(s)-Intermittent; *Lungs, Thorax, or Respiration*:**Pleural effusion**; *Lungs, Thorax, or Respiration*:**Other changes**
Silica, crystalline - tridymite (0% TO 2.26%)	15468-32-3	**Acute Toxicity:** Inhalation-Human TCLo • 16 mppcf 8 Hour(s) 17.9 Year(s)-Intermittent; *Lungs, Thorax, or Respiration*:**Fibrosis, focal (pneumoconiosis)**; *Lungs, Thorax, or Respiration*:**Cough**; *Lungs, Thorax, or Respiration*:**Dyspnea**
Silica, amorphous (4.2% TO 8%)	7631-86-9	**Irritation:** Eye-Rabbit • 25 mg 24 Hour(s) • Mild irritation
1-Propene, homopolymer (< 0.15%)	9003-07-0	**Acute Toxicity:** Ingestion/Oral-Rat LD50 • >8 g/kg
Perlite (18% TO 22%)	93763-70-3	**Acute Toxicity:** Ingestion/Oral-Mouse LD50 • 12960 mg/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.

Carcinogenic Effects			
	CAS	IARC	NTP
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
Perlite	93763-70-3	Yes	Yes	Yes
Potassium oxide	12136-45-7	No	Yes	No
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
Perlite	93763-70-3	Yes	No
Potassium oxide	12136-45-7	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

• Potassium oxide	12136-45-7	E
• Sodium aluminate	1302-42-7	E
• Silica, crystalline - tridymite	15468-32-3	D2A
• Kaolin	1332-58-7	D2A
• Perlite	93763-70-3	D2A (expanded, containing >0.1% Crystalline silica); Uncontrolled product according to WHMIS classification criteria (expanded)
• Calcium oxide	1305-78-8	E
• Iron oxide	1309-37-1	Uncontrolled product according to WHMIS classification criteria
• 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)
• Titanium dioxide	13463-67-7	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.)
• Cristobalite	14464-46-1	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
• Amorphous/fused silica	60676-86-0	Uncontrolled product according to WHMIS classification criteria
• Quartz	14808-60-7	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.)
• Bentonite	1302-78-9	D2A

Canada - WHMIS - Ingredient Disclosure List

• Potassium oxide	12136-45-7	Not Listed
• Sodium aluminate	1302-42-7	Not Listed
• Silica, crystalline - tridymite	15468-32-3	1 %
• Kaolin	1332-58-7	Not Listed
• Perlite	93763-70-3	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

• Potassium oxide	12136-45-7	Not Listed
• Sodium aluminate	1302-42-7	Not Listed
• Silica, crystalline - tridymite	15468-32-3	Not Listed
• Kaolin	1332-58-7	Not Listed
• Perlite	93763-70-3	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

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

• Potassium oxide	12136-45-7	Not Listed
• Sodium aluminate	1302-42-7	Not Listed
• Silica, crystalline - tridymite	15468-32-3	Not Listed
• Kaolin	1332-58-7	Not Listed
• Perlite	93763-70-3	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	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

• Potassium oxide	12136-45-7	Not Listed
• Sodium aluminate	1302-42-7	Not Listed
• Silica, crystalline - tridymite	15468-32-3	Not Listed
• Kaolin	1332-58-7	Not Listed
• Perlite	93763-70-3	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
• Quartz	14808-60-7	carcinogen, initial date 10/1/88 (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

• Potassium oxide	12136-45-7	Not Listed
• Sodium aluminate	1302-42-7	Not Listed
• Silica, crystalline - tridymite	15468-32-3	Not Listed
• Kaolin	1332-58-7	Not Listed
• Perlite	93763-70-3	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 | 16/January/2015

Preparation Date | 01/June/2009

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Key to abbreviations

NDA = No data available