

Safety Data Sheet



Section 1: Identification

Product identifier

- Product Name** • Reno Cast 60 LC/AL
Product Code • 146400

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

- Recommended use** • Refractory applications

Details of the supplier of the safety data sheet

- Manufacturer** • Reno Refractories, Inc.
P O Box 201
Morris, AL 35116
United States
www.renorefractories.com
sales@renorefractories.com
Telephone (General) • 205-647-0240

Emergency telephone number

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

Section 2: Hazard Identification

United States (US)

According to: OSHA 29 CFR 1910.1200 HCS

Classification of the substance or mixture

- OSHA HCS 2012** • Carcinogenicity 1A
Specific Target Organ Toxicity Repeated Exposure 1

Label elements

OSHA HCS 2012

DANGER



- Hazard statements** • May cause cancer.
Causes damage to organs - lungs 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/protective clothing/eye protection/face protection.

Response • IF exposed or concerned: Get medical advice/attention.
Get medical advice/attention if you feel unwell.

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

Label elements

WHMIS



WHMIS

- Other Toxic Effects - D2A

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
Mullite	CAS:1302-93-8	46.2% TO 47.74%	NDA	OSHA HCS 2012: STOT RE 2(Lungs)
Aluminum(III) silicate (2:1)	CAS:1302-76-7	12.75% TO 16.15%	NDA	OSHA HCS 2012: STOT RE 2 (Lungs)
Silica, amorphous	CAS:7631-86-9	< 14.26%	NDA	OSHA HCS 2012: Data lacking
Cement, alumina, chemicals	CAS:65997-16-2	6% TO 7%	NDA	OSHA HCS 2012: Skin Irrit 2; Eye Irrit 2A
Amorphous silica fume	CAS:69012-64-2	6% TO 7%	NDA	OSHA HCS 2012: STOT RE 1 (Lungs)
Aluminum oxide	CAS:1344-28-1	5.91% TO 7%	NDA	OSHA HCS 2012: Not Classified - Criteria not met
Non-Wetting Agent	Proprietary	2.82% TO 4.88%	Ingestion/Oral-Rat LD50 • 4250 mg/kg	OSHA HCS 2012: Eye Irrit. 2 WHMIS: Other Toxic Effects - D2B

Quartz	CAS:14808-60-7	0.75% TO 1.99%	NDA	OSHA HCS 2012: Carc. 1A; STOT RE 1 (Lungs)
Titanium dioxide	CAS:13463-67-7	0.16% TO 0.85%	NDA	OSHA HCS 2012: Carc. 2
Cristobalite	CAS:14464-46-1	0.18% TO 0.203%	NDA	OSHA HCS 2012: Carc. 1A
Limestone	CAS:1317-65-3	0.03% TO 0.145%	NDA	OSHA HCS 2012: WHMIS: Other Toxic Effects - D2A
Triphosphoric acid, sodium salt (1:5)	CAS:7758-29-4	0.093% TO 0.1395%	Ingestion/Oral-Rat LD50 • 3120 mg/kg Skin-Rabbit LD50 • >4640 mg/kg	OSHA HCS 2012: Eye 2A, Skin 2; STOT SE 3 - Resp
Polyphosphoric acids, sodium salts	CAS:68915-31-1	0.05% TO 0.1%	Ingestion/Oral-Rat LD50 • 3053 mg/kg	OSHA HCS 2012: Not classified - Criteria not met
1-Propene, homopolymer	CAS:9003-07-0	0.09% TO 0.1%	Ingestion/Oral-Rat LD50 • >8 g/kg	OSHA HCS 2012: None
Zirconium oxide	CAS:1314-23-4	< 0.085%	NDA	OSHA HCS 2012: WHMIS:
Sodium hydroxide	CAS:1310-73-2	< 0.068%	NDA	OSHA HCS 2012: WHMIS: Corrosive - E
Calcium oxide	CAS:1305-78-8	< 0.03%	NDA	OSHA HCS 2012: Skin Corr. 1C; Eye Dam. 1 WHMIS: Corrosive - E
Blancol	CAS:9084-06-4	0.0086% TO 0.0176%	Ingestion/Oral-Rat LD50 • 3800 mg/kg	OSHA HCS 2012:
Potassium oxide	CAS:12136-45-7	< 0.014%	NDA	OSHA HCS 2012: WHMIS:
Diphosphoric acid, sodium salt (1:4)	CAS:7722-88-5	0.001% TO 0.0075%	Ingestion/Oral-Rat LD50 • 4 g/kg	OSHA HCS 2012: Skin Irrit. 2; Eye Irrit. 2A; STOT RE 2 (Lungs)
Sodium trimetaphosphate	CAS:7785-84-4	0.002% TO 0.003%	Ingestion/Oral-Mouse LD50 • 10300 mg/kg Skin-Rabbit LD50 • >4640 mg/kg	OSHA HCS 2012:
Iron oxide	CAS:1309-37-1	< 0.0025%	NDA	OSHA HCS 2012: WHMIS:
Sodium sulfate	CAS:7757-82-6	0.0007% TO 0.0018%	Ingestion/Oral-Mouse LD50 • 5989 mg/kg	OSHA HCS 2012:
Formaldehyde	CAS:50-00-0	<= 0.00001%	Ingestion/Oral-Rat LD50 • 100 mg/kg Inhalation-Rat LC50 • 578 mg/m ³ 2 Hour(s) Skin-Rabbit LD50 • 270 µL/kg	OSHA HCS 2012: Acute Tox 3 (Oral, Dermal); Acute Tox 2 (Inhalation)(not relevant); Skin Sensitizer 1A; Eye Dam. 1; Skin Corr. 1A(not relevant); Carc. 1A; Muta. 1B;

Section 4: First-Aid Measures

Description of first aid measures

Inhalation

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

Skin

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

Eye

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

Ingestion

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

Most important symptoms and effects, both acute and delayed

- Refer to Section 11 - Toxicological Information.

Indication of any immediate medical attention and special treatment needed

Notes to Physician

- All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to material 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. Wash thoroughly after handling. Do not use in areas without adequate ventilation. 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.

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
Formaldehyde (50-00-0)	Ceilings	0.3 ppm Ceiling	1.5 ppm Ceiling	2 ppm Ceiling; 3 mg/m3 Ceiling	2 ppm Ceiling; 3 mg/m3 Ceiling	0.1 ppm Ceiling (15 min)
	STELs	Not established	1 ppm STEL	Not established	Not established	Not established
	TWAs	Not established	Not established	Not established	Not established	0.016 ppm TWA
Diphosphoric acid, sodium salt (1:4) (7722-88-5)	TWAs	Not established	5 mg/m3 TWA	5 mg/m3 TWAEV	Not established	5 mg/m3 TWA
Iron oxide (1309-37-1)	STELs	Not established	Not established	Not established	10 mg/m3 STEL [PPT-CT] (as Fe)	Not established
	TWAs	5 mg/m3 TWA (respirable particulate matter)	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 VLE-PPT	5 mg/m3 TWA (dust and fume, as Fe)
Limestone (1317-65-3)	STELs	Not established	Not established	Not established	20 mg/m3 STEL [PPT-CT]	Not established
	TWAs	Not established	Not established	10 mg/m3 TWAEV (Limestone, containing no Asbestos and <1% Crystalline silica, total dust)	10 mg/m3 TWA VLE-PPT	10 mg/m3 TWA (total dust); 5 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 VLE-PPT	2 mg/m3 TWA
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
Titanium dioxide (13463-67-7)	STELs	Not established	Not established	Not established	20 mg/m3 STEL [PPT-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 VLE-PPT (as Ti)	Not established
			0.05 mg/m3 TWA			

Cristobalite (14464-46-1)	TWAs	0.025 mg/m3 TWA (respirable particulate matter)	(designated substances regulation, respirable, listed under Silica, crystalline)	0.05 mg/m3 TWAEV (respirable dust)	0.05 mg/m3 TWA VLE-PPT (respirable fraction)	0.05 mg/m3 TWA (respirable dust)
Quartz (14808-60-7)	TWAs	0.025 mg/m3 TWA (respirable particulate matter)	0.10 mg/m3 TWA (designated substances regulation, respirable, listed under Silica, crystalline)	0.1 mg/m3 TWAEV (respirable dust)	0.1 mg/m3 TWA VLE-PPT (respirable fraction)	0.05 mg/m3 TWA (respirable dust)
Aluminum oxide (1344-28-1)	TWAs	Not established	Not established	10 mg/m3 TWAEV (containing no Asbestos and <1% Crystalline silica, total dust, as Al)	10 mg/m3 TWA VLE-PPT	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 VLE-PPT; 10 mg/m3 TWA VLE-PPT (inhalable particulate); 3 mg/m3 TWA VLE-PPT (respirable particulate)	Not established
Silica, amorphous (7631-86-9)	TWAs	Not established	Not established	Not established	Not established	6 mg/m3 TWA

Exposure Limits/Guidelines (Con't.)

	Result	OSHA
Formaldehyde (50-00-0)	STELs	2 ppm STEL (see 29 CFR 1910.1048)
	TWAs	0.75 ppm 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)
Limestone (1317-65-3)	TWAs	15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction)
Calcium oxide (1305-78-8)	TWAs	5 mg/m3 TWA
Sodium hydroxide (1310-73-2)	TWAs	2 mg/m3 TWA
Titanium dioxide (13463-67-7)	TWAs	15 mg/m3 TWA (total dust)
Cristobalite (14464-46-1)	TWAs	50 µg/m3 TWA (listed under Respirable crystalline silica)
Quartz (14808-60-7)	TWAs	50 µg/m3 TWA (listed under Respirable crystalline silica)
Aluminum oxide (1344-28-1)	TWAs	15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction)

Exposure Control Notations

Mexico

- Titanium dioxide (13463-67-7): **Carcinogens:** (A4 - Not classifiable as a human carcinogen)
- Aluminum oxide (1344-28-1): **Carcinogens:** (A4 - Not classifiable as a human carcinogen)
- Formaldehyde (50-00-0): **Carcinogens:** (A2 - Suspected 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/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)
- Formaldehyde (50-00-0): **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)
- Titanium dioxide (13463-67-7): **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen)
- Formaldehyde (50-00-0): **Carcinogens:** (A2 - Suspected Human Carcinogen) | **Sensitizers:** (dermal sensitizer; respiratory sensitizer)
- Iron oxide (1309-37-1): **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen)

Exposure Limits Supplemental

OSHA

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

ACGIH

- Cristobalite (14464-46-1): **TLV Basis - Critical Effects:** (lung cancer; pulmonary fibrosis)
- Quartz (14808-60-7): **TLV Basis - Critical Effects:** (lung cancer; pulmonary fibrosis)
- Titanium dioxide (13463-67-7): **TLV Basis - Critical Effects:** (lower respiratory tract irritation)
- Formaldehyde (50-00-0): **TLV Basis - Critical Effects:** (eye and upper respiratory tract irritation) | **Notice of Intended Changes (TLVs):** (0.1 ppm TWA; 0.3 ppm STEL; dermal and respiratory sensitizer; A1 - confirmed human carcinogen; TLV basis: eye and upper respiratory tract irritation; upper respiratory tract cancer)
- 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)
- Iron oxide (1309-37-1): **TLV Basis - Critical Effects:** (pneumoconiosis)

Exposure controls

Engineering Measures/Controls

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

Personal Protective Equipment

Respiratory

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

Eye/Face

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

Hands

- Wear appropriate gloves.

Skin/Body

- Wear long sleeves and/or protective coveralls.

General Industrial Hygiene Considerations

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

Environmental Exposure Controls

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

Key to abbreviations

ACGIH = American Conference of Governmental Industrial Hygiene
 NIOSH = National Institute of Occupational Safety and Health
 OSHA = Occupational Safety and Health Administration

STEL = Short Term Exposure Limits are based on 15-minute exposures
 TWAEV = Time-Weighted Average Exposure Value
 TWA = Time-Weighted Averages are based on 8h/day, 40h/week exposures

Section 9 - Physical and Chemical Properties

Information on Physical and Chemical Properties

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	3200 °F(1760 °C)
Decomposition Temperature	No data available	pH	Not relevant
Specific Gravity/Relative Density	= 2.53 Water=1	Water Solubility	Negligible < 0.1 %
Viscosity	No data available	Explosive Properties	No data available
Oxidizing Properties:	No data available		
Volatility			
Vapor Pressure	No data available	Vapor Density	No data available
Evaporation Rate	No data available	VOC (Wt.)	0 %
Flammability			
Flash Point	No data available	UEL	No data available
LEL	No data available	Autoignition	No data available
Flammability (solid, gas)	Not flammable.		
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 will not occur.

Conditions to avoid

- No data available

Incompatible materials

- No data available

Hazardous decomposition products

- No data available

Section 11 - Toxicological Information

Information on toxicological effects

Components		
Silica, amorphous (< 14.26%)	7631-86-9	Irritation: Eye-Rabbit • 25 mg 24 Hour(s) • Mild irritation
Titanium dioxide (0.16% TO 0.85%)	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:</i> Carcinogenic by RTECS criteria; Lungs, Thorax, or Respiration:Tumors
Formaldehyde (<= 0.00001%)	50-00-0	Acute Toxicity: Ingestion/Oral-Rat LD50 • 100 mg/kg; Inhalation-Rat LC50 • 250 ppm 4 Hour(s); Skin-Rabbit LD50 • 270 mg/kg; Irritation: Eye-Rabbit • 750 µg • Severe irritation; Skin-Human • 2 % 48 Hour(s); Skin-Rabbit • 2 mg 24 Hour (s) • Severe irritation; Mutagen: <i>Unscheduled DNA synthesis</i> • Ingestion/Oral-Rat • 55 mg/kg; <i>Sister chromatid exchange</i> • Inhalation -Human • 0.985 mg/m ³ 8 Hour(s) 8.5 Year(s)
Non-Wetting Agent (2.82% TO 4.88%)	Proprietary	Acute Toxicity: Ingestion/Oral-Rat LD50 • 4250 mg/kg; <i>Behavioral:Somnolence (general depressed activity); Behavioral:Ataxia; Lungs, Thorax, or Respiration:Respiratory depression;</i> Multi-dose Toxicity: Ingestion/Oral-Rat TDLo • 44 g/kg 31 Day(s)-Intermittent; <i>Cardiac:EKG changes not diagnostic of above; Musculoskeletal:Changes in teeth and supporting structures;</i> <i>Biochemical:Enzyme inhibition, induction, or change in blood or tissue levels:Transaminases;</i> Reproductive: <i>Intraperitoneal-Mouse TDLo • 3200 mg/kg (9D preg); Reproductive Effects:Effects on Fertility:Post-implantation mortality</i>
Limestone (0.03% TO 0.145%)	1317-65-3	Multi-dose Toxicity: Inhalation-Rat TClO • 84 mg/m ³ 4 Hour(s) 40 Week(s)-Intermittent; <i>Lungs, Thorax, or Respiration:Fibrosis (interstitial); Liver:Other changes; Kidney, Ureter, and Bladder:Other changes;</i> Inhalation-Rat TClO • 250 mg/m ³ 2 Hour(s) 24 Week(s)-Intermittent; <i>Lungs, Thorax, or Respiration:Fibrosis, focal (pneumoconiosis)</i>
Sodium hydroxide (< 0.068%)	1310-73-2	Acute Toxicity: Skin-Rabbit TClO • 25 pph; <i>Behavioral:Food intake (animal); Nutritional and Gross Metabolic:Changes in Chemistry or Temperature:Body temperature increase; Skin and Appendages:After topical exposure:Primary irritation;</i> Irritation: Eye-Rabbit • 1 mg 30 Second(s)-Rinse • Severe irritation; Skin-Rabbit • 500 mg 24 Hour(s) • Severe irritation
Iron oxide (< 0.0025%)	1309-37-1	Acute Toxicity: Inhalation-Rat TClO • 0.8 mg/kg; <i>Lungs, Thorax, or Respiration:Emphysema;</i> <i>Biochemical:Enzyme inhibition, induction, or change in blood or tissue levels:Multiple enzyme effects;</i> <i>Biochemical:Metabolism (intermediary):Effect on inflammation or mediation of inflammation</i>

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 • No data available
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

- Target Organs**
 - Lungs
- Route(s) of entry/exposure**
 - Inhalation, Skin, Eye, Ingestion
- Medical Conditions Aggravated by Exposure**
 - Any pre-existing conditions of the lungs. Disorders of the lungs.
- Potential Health Effects**
- Inhalation**
- Acute (Immediate)**
 - Nuisance dust may affect the lungs but reactions are typically reversible.
- Chronic (Delayed)**
 - Chronic overexposure to dust containing respirable sized crystalline silica can cause delayed lung injury (silicosis). Inhalation of dust containing crystalline silica pulmonary diseases such as asthma and lung disorder associated with smoking.
- Skin**
- Acute (Immediate)**
 - Exposure to dust may cause mechanical irritation.
- Chronic (Delayed)**
 - No data available.
- Eye**
- Acute (Immediate)**
 - Excessive concentrations of nuisance dust in the workplace may reduce visibility and may cause unpleasant deposits in eyes.
- Chronic (Delayed)**
 - No data available.
- Ingestion**
- Acute (Immediate)**
 - Excessive concentrations of nuisance dust in the workplace may cause mechanical irritation to mucous membranes.
- Chronic (Delayed)**
 - No data available.
- Carcinogenic Effects**
 - May cause cancer. IARC studies have shown sufficient evidence from animal studies to categorize crystalline silica as a group 1 carcinogen.

Carcinogenic Effects				
	CAS	OSHA	IARC	NTP
Formaldehyde	50-00-0	Specifically Regulated Carcinogen	Group 1-Carcinogenic	Known Human Carcinogen
Titanium dioxide	13463-67-7	Not Listed	Group 2B-Possible Carcinogen	Evidence of Carcinogenicity
Cristobalite	14464-46-1	Not Listed	Group 1-Carcinogenic	Not Listed
Quartz	14808-60-7	Not Listed	Group 1-Carcinogenic	Known Human Carcinogen

Key to abbreviations

MLD = Mild

TC = Toxic Concentration

Section 12 - Ecological Information

Toxicity

- Material data lacking.

Persistence and degradability

- Material data lacking.

Bioaccumulative potential

- Material data lacking.

Mobility in Soil

- Material data lacking.

Other adverse effects

- No studies have been found.

Section 13 - Disposal Considerations

Waste treatment methods

Product waste

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

Packaging waste

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

Section 14 - Transport Information

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

Special precautions for user • None known.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code • Not relevant.

Section 15 - Regulatory Information

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

SARA Hazard Classifications • Chronic

State Right To Know				
Component	CAS	MA	NJ	PA
1-Propene, homopolymer	9003-07-0	No	No	No
Aluminum oxide	1344-28-1	Yes	Yes	Yes
Aluminum(III) silicate (2:1)	1302-76-7	No	No	No
Blancol	9084-06-4	No	No	No
Non-Wetting Agent	<i>Proprietary</i>	No	No	No
Calcium oxide	1305-78-8	Yes	Yes	Yes
Cement, alumina, chemicals	65997-16-2	No	No	No
Cristobalite	14464-46-1	Yes	Yes	Yes
Diphosphoric acid, sodium salt (1:4)	7722-88-5	Yes	Yes	Yes
Formaldehyde	50-00-0	Yes	Yes	Yes
Iron oxide	1309-37-1	Yes	Yes	Yes
Limestone	1317-65-3	Yes	Yes	Yes
Mullite	1302-93-8	No	No	No

Polyphosphoric acids, sodium salts	68915-31-1	No	No	No
Potassium oxide	12136-45-7	No	Yes	No
Quartz	14808-60-7	Yes	Yes	Yes
Amorphous silica fume	69012-64-2	No	No	No
Silica, amorphous	7631-86-9	Yes	Yes	Yes
Sodium hydroxide	1310-73-2	Yes	Yes	Yes
Sodium sulfate	7757-82-6	Yes	No	Yes
Sodium trimetaphosphate	7785-84-4	Yes	No	Yes
Titanium dioxide	13463-67-7	Yes	Yes	Yes
Triphosphoric acid, sodium salt (1:5)	7758-29-4	Yes	No	Yes
Zirconium oxide	1314-23-4	Yes	No	No

Inventory				
Component	CAS	Canada DSL	Canada NDSL	TSCA
1-Propene, homopolymer	9003-07-0	Yes	No	Yes
Aluminum oxide	1344-28-1	Yes	No	Yes
Aluminum(III) silicate (2:1)	1302-76-7	Yes	No	No
Blancol	9084-06-4	Yes	No	Yes
Non-Wetting Agent	<i>Proprietary</i>	Yes	No	Yes
Calcium oxide	1305-78-8	Yes	No	Yes
Cement, alumina, chemicals	65997-16-2	Yes	No	Yes
Cristobalite	14464-46-1	Yes	No	Yes
Diphosphoric acid, sodium salt (1:4)	7722-88-5	Yes	No	Yes
Formaldehyde	50-00-0	Yes	No	Yes
Iron oxide	1309-37-1	Yes	No	Yes
Limestone	1317-65-3	No	Yes	Yes
Mullite	1302-93-8	Yes	No	Yes
Polyphosphoric acids, sodium salts	68915-31-1	Yes	No	Yes
Potassium oxide	12136-45-7	Yes	No	Yes
Quartz	14808-60-7	Yes	No	Yes
Amorphous silica fume	69012-64-2	Yes	No	Yes
Silica, amorphous	7631-86-9	Yes	No	Yes
Sodium hydroxide	1310-73-2	Yes	No	Yes
Sodium sulfate	7757-82-6	Yes	No	Yes
Sodium trimetaphosphate	7785-84-4	Yes	No	Yes
Titanium dioxide	13463-67-7	Yes	No	Yes

Triphosphoric acid, sodium salt (1:5)	7758-29-4	Yes	No	Yes
Zirconium oxide	1314-23-4	Yes	No	Yes

Canada

Labor

Canada - WHMIS 1988 - Classifications of Substances

• Polyphosphoric acids, sodium salts	68915-31-1	Not Listed
• Blancol	9084-06-4	Not Listed
• Cement, alumina, chemicals	65997-16-2	Not Listed
• Potassium oxide	12136-45-7	E
• Sodium trimetaphosphate	7785-84-4	Not Listed
• Triphosphoric acid, sodium salt (1:5)	7758-29-4	Not Listed
• Non-Wetting Agent	<i>Proprietary</i>	Not Listed
• Mullite	1302-93-8	Not Listed
• Amorphous silica fume	69012-64-2	Not Listed
• Formaldehyde	50-00-0	B1, D1A, D2A, D2B; B3, D1A, D2A, D2B, E (regulated under Formol)
• 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, 0.04N, 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	D2B (listed under Sodium pyrophosphate)
• Diphosphoric acid, sodium salt (1:4)	7722-88-5	Uncontrolled product according to WHMIS classification criteria
• Aluminum oxide	1344-28-1	D2A
• Limestone	1317-65-3	Uncontrolled product according to WHMIS classification criteria
• Sodium sulfate	7757-82-6	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
• Silica, amorphous	7631-86-9	

• Zirconium oxide	1314-23-4	classification criteria 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.)
• 1-Propene, homopolymer	9003-07-0	Uncontrolled product according to WHMIS classification criteria
• Aluminum(III) silicate (2:1)	1302-76-7	Not Listed
Canada - WHMIS 1988 - Ingredient Disclosure List		
• Polyphosphoric acids, sodium salts	68915-31-1	Not Listed
• Blancol	9084-06-4	Not Listed
• Cement, alumina, chemicals	65997-16-2	Not Listed
• Potassium oxide	12136-45-7	Not Listed
• Sodium trimetaphosphate	7785-84-4	Not Listed
• Triphosphoric acid, sodium salt (1:5)	7758-29-4	Not Listed
• Non-Wetting Agent	<i>Proprietary</i>	Not Listed
• Mullite	1302-93-8	Not Listed
• Amorphous silica fume	69012-64-2	Not Listed
• Formaldehyde	50-00-0	0.1 %
• 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
• Diphosphoric acid, sodium salt (1:4)	7722-88-5	1 %
• Aluminum oxide	1344-28-1	1 %
• Limestone	1317-65-3	Not Listed
• Sodium sulfate	7757-82-6	Not Listed
• Cristobalite	14464-46-1	1 %
• Silica, amorphous	7631-86-9	1 %
• Zirconium oxide	1314-23-4	Not Listed
• Quartz	14808-60-7	1 %
• 1-Propene, homopolymer	9003-07-0	Not Listed
• Aluminum(III) silicate (2:1)	1302-76-7	Not Listed

Environment

Canada - CEPA - Priority Substances List

• Polyphosphoric acids, sodium salts	68915-31-1	Not Listed
• Blancol	9084-06-4	Not Listed
• Cement, alumina, chemicals	65997-16-2	Not Listed
• Potassium oxide	12136-45-7	Not Listed
• Sodium trimetaphosphate	7785-84-4	Not Listed
• Triphosphoric acid, sodium salt (1:5)	7758-29-4	Not Listed
• Non-Wetting Agent	<i>Proprietary</i>	Not Listed
• Mullite	1302-93-8	Not Listed
• Amorphous silica fume	69012-64-2	Not Listed

• Formaldehyde	50-00-0	Priority Substance List 2 (substance considered toxic)
• 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
• Diphosphoric acid, sodium salt (1:4)	7722-88-5	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Limestone	1317-65-3	Not Listed
• Sodium sulfate	7757-82-6	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
• Zirconium oxide	1314-23-4	Not Listed
• Quartz	14808-60-7	Not Listed
• 1-Propene, homopolymer	9003-07-0	Not Listed
• Aluminum(III) silicate (2:1)	1302-76-7	Not Listed

Canada - CEPA - Schedule I - List of Toxic Substances

• Polyphosphoric acids, sodium salts	68915-31-1	Not Listed
• Blancol	9084-06-4	Not Listed
• Cement, alumina, chemicals	65997-16-2	Not Listed
• Potassium oxide	12136-45-7	Not Listed
• Sodium trimetaphosphate	7785-84-4	Not Listed
• Triphosphoric acid, sodium salt (1:5)	7758-29-4	Not Listed
• Non-Wetting Agent	<i>Proprietary</i>	Not Listed
• Mullite	1302-93-8	Not Listed
• Amorphous silica fume	69012-64-2	Not Listed
• Formaldehyde	50-00-0	
• 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
• Diphosphoric acid, sodium salt (1:4)	7722-88-5	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Limestone	1317-65-3	Not Listed
• Sodium sulfate	7757-82-6	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
• Zirconium oxide	1314-23-4	Not Listed
• Quartz	14808-60-7	Not Listed
• 1-Propene, homopolymer	9003-07-0	Not Listed
• Aluminum(III) silicate (2:1)	1302-76-7	Not Listed

United States

Labor

U.S. - OSHA - Process Safety Management - Highly Hazardous Chemicals

• Polyphosphoric acids, sodium salts	68915-31-1	Not Listed
• Blancol	9084-06-4	Not Listed
• Cement, alumina, chemicals	65997-16-2	Not Listed
• Potassium oxide	12136-45-7	Not Listed
• Sodium trimetaphosphate	7785-84-4	Not Listed
• Triphosphoric acid, sodium salt (1:5)	7758-29-4	Not Listed
• Non-Wetting Agent	<i>Proprietary</i>	Not Listed
• Mullite	1302-93-8	Not Listed

• Amorphous silica fume	69012-64-2	Not Listed
• Formaldehyde	50-00-0	1000 lb TQ
• 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
• Diphosphoric acid, sodium salt (1:4)	7722-88-5	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Limestone	1317-65-3	Not Listed
• Sodium sulfate	7757-82-6	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
• Zirconium oxide	1314-23-4	Not Listed
• Quartz	14808-60-7	Not Listed
• 1-Propene, homopolymer	9003-07-0	Not Listed
• Aluminum(III) silicate (2:1)	1302-76-7	Not Listed

U.S. - OSHA - Specifically Regulated Chemicals

• Polyphosphoric acids, sodium salts	68915-31-1	Not Listed
• Blancol	9084-06-4	Not Listed
• Cement, alumina, chemicals	65997-16-2	Not Listed
• Potassium oxide	12136-45-7	Not Listed
• Sodium trimetaphosphate	7785-84-4	Not Listed
• Triphosphoric acid, sodium salt (1:5)	7758-29-4	Not Listed
• Non-Wetting Agent	<i>Proprietary</i>	Not Listed
• Mullite	1302-93-8	Not Listed
• Amorphous silica fume	69012-64-2	Not Listed
		2 ppm STEL (See 29 CFR 1910.1048, 15 min); 0.5 ppm Action Level (See 29 CFR 1910.1048); 0.75 ppm TWA (See 29 CFR 1910.1048)
• Formaldehyde	50-00-0	
• 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
• Diphosphoric acid, sodium salt (1:4)	7722-88-5	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Limestone	1317-65-3	Not Listed
• Sodium sulfate	7757-82-6	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
• Zirconium oxide	1314-23-4	Not Listed
• Quartz	14808-60-7	Not Listed
• 1-Propene, homopolymer	9003-07-0	Not Listed
• Aluminum(III) silicate (2:1)	1302-76-7	Not Listed

Environment

U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants

• Polyphosphoric acids, sodium salts	68915-31-1	Not Listed
• Blancol	9084-06-4	Not Listed
• Cement, alumina, chemicals	65997-16-2	Not Listed
• Potassium oxide	12136-45-7	Not Listed
• Sodium trimetaphosphate	7785-84-4	Not Listed

• Triphosphoric acid, sodium salt (1:5)	7758-29-4	Not Listed
• Non-Wetting Agent	<i>Proprietary</i>	Not Listed
• Mullite	1302-93-8	Not Listed
• Amorphous silica fume	69012-64-2	Not Listed
• Formaldehyde	50-00-0	
• 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
• Diphosphoric acid, sodium salt (1:4)	7722-88-5	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Limestone	1317-65-3	Not Listed
• Sodium sulfate	7757-82-6	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
• Zirconium oxide	1314-23-4	Not Listed
• Quartz	14808-60-7	Not Listed
• 1-Propene, homopolymer	9003-07-0	Not Listed
• Aluminum(III) silicate (2:1)	1302-76-7	Not Listed

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

• Polyphosphoric acids, sodium salts	68915-31-1	Not Listed
• Blancol	9084-06-4	Not Listed
• Cement, alumina, chemicals	65997-16-2	Not Listed
• Potassium oxide	12136-45-7	Not Listed
• Sodium trimetaphosphate	7785-84-4	Not Listed
• Triphosphoric acid, sodium salt (1:5)	7758-29-4	Not Listed
• Non-Wetting Agent	<i>Proprietary</i>	Not Listed
• Mullite	1302-93-8	Not Listed
• Amorphous silica fume	69012-64-2	Not Listed
• Formaldehyde	50-00-0	100 lb final RQ; 45.4 kg final RQ
• 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
• Diphosphoric acid, sodium salt (1:4)	7722-88-5	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Limestone	1317-65-3	Not Listed
• Sodium sulfate	7757-82-6	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
• Zirconium oxide	1314-23-4	Not Listed
• Quartz	14808-60-7	Not Listed
• 1-Propene, homopolymer	9003-07-0	Not Listed
• Aluminum(III) silicate (2:1)	1302-76-7	Not Listed

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs

• Polyphosphoric acids, sodium salts	68915-31-1	Not Listed
• Blancol	9084-06-4	Not Listed
• Cement, alumina, chemicals	65997-16-2	Not Listed
• Potassium oxide	12136-45-7	Not Listed
• Sodium trimetaphosphate	7785-84-4	Not Listed

• Triphosphoric acid, sodium salt (1:5)	7758-29-4	Not Listed
• Non-Wetting Agent	<i>Proprietary</i>	Not Listed
• Mullite	1302-93-8	Not Listed
• Amorphous silica fume	69012-64-2	Not Listed
• Formaldehyde	50-00-0	100 lb EPCRA RQ
• 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
• Diphosphoric acid, sodium salt (1:4)	7722-88-5	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Limestone	1317-65-3	Not Listed
• Sodium sulfate	7757-82-6	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
• Zirconium oxide	1314-23-4	Not Listed
• Quartz	14808-60-7	Not Listed
• 1-Propene, homopolymer	9003-07-0	Not Listed
• Aluminum(III) silicate (2:1)	1302-76-7	Not Listed

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs

• Polyphosphoric acids, sodium salts	68915-31-1	Not Listed
• Blancol	9084-06-4	Not Listed
• Cement, alumina, chemicals	65997-16-2	Not Listed
• Potassium oxide	12136-45-7	Not Listed
• Sodium trimetaphosphate	7785-84-4	Not Listed
• Triphosphoric acid, sodium salt (1:5)	7758-29-4	Not Listed
• Non-Wetting Agent	<i>Proprietary</i>	Not Listed
• Mullite	1302-93-8	Not Listed
• Amorphous silica fume	69012-64-2	Not Listed
• Formaldehyde	50-00-0	500 lb TPQ
• 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
• Diphosphoric acid, sodium salt (1:4)	7722-88-5	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Limestone	1317-65-3	Not Listed
• Sodium sulfate	7757-82-6	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
• Zirconium oxide	1314-23-4	Not Listed
• Quartz	14808-60-7	Not Listed
• 1-Propene, homopolymer	9003-07-0	Not Listed
• Aluminum(III) silicate (2:1)	1302-76-7	Not Listed

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

• Polyphosphoric acids, sodium salts	68915-31-1	Not Listed
• Blancol	9084-06-4	Not Listed
• Cement, alumina, chemicals	65997-16-2	Not Listed
• Potassium oxide	12136-45-7	Not Listed
• Sodium trimetaphosphate	7785-84-4	Not Listed
• Triphosphoric acid, sodium salt (1:5)	7758-29-4	Not Listed
• Non-Wetting Agent	<i>Proprietary</i>	Not Listed

• Mullite	1302-93-8	Not Listed
• Amorphous silica fume	69012-64-2	Not Listed
• Formaldehyde	50-00-0	0.1 % de minimis concentration
• 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
• Diphosphoric acid, sodium salt (1:4)	7722-88-5	Not Listed
• Aluminum oxide	1344-28-1	1.0 % de minimis concentration (fibrous forms)
• Limestone	1317-65-3	Not Listed
• Sodium sulfate	7757-82-6	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
• Zirconium oxide	1314-23-4	Not Listed
• Quartz	14808-60-7	Not Listed
• 1-Propene, homopolymer	9003-07-0	Not Listed
• Aluminum(III) silicate (2:1)	1302-76-7	Not Listed

U.S. - RCRA (Resource Conservation & Recovery Act) - Basis for Listing - Appendix VII

• Polyphosphoric acids, sodium salts	68915-31-1	Not Listed
• Blancol	9084-06-4	Not Listed
• Cement, alumina, chemicals	65997-16-2	Not Listed
• Potassium oxide	12136-45-7	Not Listed
• Sodium trimetaphosphate	7785-84-4	Not Listed
• Triphosphoric acid, sodium salt (1:5)	7758-29-4	Not Listed
• Non-Wetting Agent	<i>Proprietary</i>	Not Listed
• Mullite	1302-93-8	Not Listed
• Amorphous silica fume	69012-64-2	Not Listed
• Formaldehyde	50-00-0	Included in waste streams: K009, K010, K038, K040, K156, K157
• 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
• Diphosphoric acid, sodium salt (1:4)	7722-88-5	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Limestone	1317-65-3	Not Listed
• Sodium sulfate	7757-82-6	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
• Zirconium oxide	1314-23-4	Not Listed
• Quartz	14808-60-7	Not Listed
• 1-Propene, homopolymer	9003-07-0	Not Listed
• Aluminum(III) silicate (2:1)	1302-76-7	Not Listed

U.S. - RCRA (Resource Conservation & Recovery Act) - Hazardous Constituents - Appendix VIII to 40 CFR 261

• Polyphosphoric acids, sodium salts	68915-31-1	Not Listed
• Blancol	9084-06-4	Not Listed
• Cement, alumina, chemicals	65997-16-2	Not Listed
• Potassium oxide	12136-45-7	Not Listed
• Sodium trimetaphosphate	7785-84-4	Not Listed
• Triphosphoric acid, sodium salt (1:5)	7758-29-4	Not Listed

• Non-Wetting Agent	<i>Proprietary</i>	Not Listed
• Mullite	1302-93-8	Not Listed
• Amorphous silica fume	69012-64-2	Not Listed
• Formaldehyde	50-00-0	waste number U122
• 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
• Diphosphoric acid, sodium salt (1:4)	7722-88-5	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Limestone	1317-65-3	Not Listed
• Sodium sulfate	7757-82-6	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
• Zirconium oxide	1314-23-4	Not Listed
• Quartz	14808-60-7	Not Listed
• 1-Propene, homopolymer	9003-07-0	Not Listed
• Aluminum(III) silicate (2:1)	1302-76-7	Not Listed

U.S. - RCRA (Resource Conservation & Recovery Act) - U Series Wastes - Acutely Toxic Wastes & Other Hazardous Characteristics

• Polyphosphoric acids, sodium salts	68915-31-1	Not Listed
• Blancol	9084-06-4	Not Listed
• Cement, alumina, chemicals	65997-16-2	Not Listed
• Potassium oxide	12136-45-7	Not Listed
• Sodium trimetaphosphate	7785-84-4	Not Listed
• Triphosphoric acid, sodium salt (1:5)	7758-29-4	Not Listed
• Non-Wetting Agent	<i>Proprietary</i>	Not Listed
• Mullite	1302-93-8	Not Listed
• Amorphous silica fume	69012-64-2	Not Listed
• Formaldehyde	50-00-0	waste number U122
• 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
• Diphosphoric acid, sodium salt (1:4)	7722-88-5	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Limestone	1317-65-3	Not Listed
• Sodium sulfate	7757-82-6	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
• Zirconium oxide	1314-23-4	Not Listed
• Quartz	14808-60-7	Not Listed
• 1-Propene, homopolymer	9003-07-0	Not Listed
• Aluminum(III) silicate (2:1)	1302-76-7	Not Listed

United States - California

Environment

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

• Polyphosphoric acids, sodium salts	68915-31-1	Not Listed
• Blancol	9084-06-4	Not Listed
• Cement, alumina, chemicals	65997-16-2	Not Listed
• Potassium oxide	12136-45-7	Not Listed

• Sodium trimetaphosphate	7785-84-4	Not Listed
• Triphosphoric acid, sodium salt (1:5)	7758-29-4	Not Listed
• Non-Wetting Agent	<i>Proprietary</i>	Not Listed
• Mullite	1302-93-8	Not Listed
• Amorphous silica fume	69012-64-2	Not Listed
• Formaldehyde	50-00-0	carcinogen, 1/1/1988 (gas)
• 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, 9/2/2011 (airborne, unbound particles of respirable size)
• Diphosphoric acid, sodium salt (1:4)	7722-88-5	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Limestone	1317-65-3	Not Listed
• Sodium sulfate	7757-82-6	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
• Zirconium oxide	1314-23-4	Not Listed
• Quartz	14808-60-7	Not Listed
• 1-Propene, homopolymer	9003-07-0	Not Listed
• Aluminum(III) silicate (2:1)	1302-76-7	Not Listed

U.S. - California - Proposition 65 - No Significant Risk Levels (NSRL)

• Polyphosphoric acids, sodium salts	68915-31-1	Not Listed
• Blancol	9084-06-4	Not Listed
• Cement, alumina, chemicals	65997-16-2	Not Listed
• Potassium oxide	12136-45-7	Not Listed
• Sodium trimetaphosphate	7785-84-4	Not Listed
• Triphosphoric acid, sodium salt (1:5)	7758-29-4	Not Listed
• Non-Wetting Agent	<i>Proprietary</i>	Not Listed
• Mullite	1302-93-8	Not Listed
• Amorphous silica fume	69012-64-2	Not Listed
• Formaldehyde	50-00-0	40 µg/day NSRL (gas)
• 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
• Diphosphoric acid, sodium salt (1:4)	7722-88-5	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Limestone	1317-65-3	Not Listed
• Sodium sulfate	7757-82-6	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
• Zirconium oxide	1314-23-4	Not Listed
• Quartz	14808-60-7	Not Listed
• 1-Propene, homopolymer	9003-07-0	Not Listed
• Aluminum(III) silicate (2:1)	1302-76-7	Not Listed

United States - Pennsylvania

Labor

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

• Polyphosphoric acids, sodium salts	68915-31-1	Not Listed
• Blancol	9084-06-4	Not Listed

• Cement, alumina, chemicals	65997-16-2	Not Listed
• Potassium oxide	12136-45-7	Not Listed
• Sodium trimetaphosphate	7785-84-4	
• Triphosphoric acid, sodium salt (1:5)	7758-29-4	
• Non-Wetting Agent	<i>Proprietary</i>	Not Listed
• Mullite	1302-93-8	Not Listed
• Amorphous silica fume	69012-64-2	Not Listed
• Formaldehyde	50-00-0	
• 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
• Diphosphoric acid, sodium salt (1:4)	7722-88-5	Not Listed
• Aluminum oxide	1344-28-1	
• Limestone	1317-65-3	Not Listed
• Sodium sulfate	7757-82-6	(solution)
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
• Zirconium oxide	1314-23-4	Not Listed
• Quartz	14808-60-7	Not Listed
• 1-Propene, homopolymer	9003-07-0	Not Listed
• Aluminum(III) silicate (2:1)	1302-76-7	Not Listed

U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances

• Polyphosphoric acids, sodium salts	68915-31-1	Not Listed
• Blacol	9084-06-4	Not Listed
• Cement, alumina, chemicals	65997-16-2	Not Listed
• Potassium oxide	12136-45-7	Not Listed
• Sodium trimetaphosphate	7785-84-4	Not Listed
• Triphosphoric acid, sodium salt (1:5)	7758-29-4	Not Listed
• Non-Wetting Agent	<i>Proprietary</i>	Not Listed
• Mullite	1302-93-8	Not Listed
• Amorphous silica fume	69012-64-2	Not Listed
• Formaldehyde	50-00-0	
• 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
• Diphosphoric acid, sodium salt (1:4)	7722-88-5	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Limestone	1317-65-3	Not Listed
• Sodium sulfate	7757-82-6	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
• Zirconium oxide	1314-23-4	Not Listed
• Quartz	14808-60-7	Not Listed
• 1-Propene, homopolymer	9003-07-0	Not Listed
• Aluminum(III) silicate (2:1)	1302-76-7	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** • 08/May/2017
- 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