

Safety Data Sheet



Section 1: Identification

Product identifier

- Product Name** • **Reno Cast 98 UL**
Product Code • 164500

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** • Respiratory Sensitization 1

Label elements

OSHA HCS 2012

DANGER



- Hazard statements** • May cause allergy or asthma symptoms or breathing difficulties if inhaled

Precautionary statements

- Prevention** • Avoid breathing dust.
 Wear protective gloves/protective clothing/eye protection/face protection.
 In case of inadequate ventilation wear respiratory protection.
- Response** • IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
 If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.

- 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



- Other Toxic Effects - D2A

Other hazards

WHMIS

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

See Section 12 for Ecological Information.

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 oxide	CAS:1344-28-1	87.43% TO 98%	Inhalation-Rat LC50 • 0.2 mg/L 5 Hour(s) 28 Week(s)	OSHA HCS 2012: Not Classified	NDA
Cement, alumina, chemicals	CAS:65997-16-2	4% TO 6%	NDA	OSHA HCS 2012: Not Classified	NDA
Dispersing Agent 3	Proprietary	< 0.2%	Ingestion/Oral-Rat LD50 • 11700 mg/kg	OSHA HCS 2012: Skin Irrit. 2; Eye Dam. 1	NDA
Amorphous/fused silica	CAS:60676-86-0	< 0.2%	NDA	OSHA HCS 2012: Not Classified	NDA
Iron oxide	CAS:1309-37-1	< 0.1%	NDA	OSHA HCS 2012: Exposure limits	NDA
Sodium hydroxide	CAS:1310-73-2	< 0.025%	NDA	OSHA HCS 2012: Exposure limits	NDA
Magnesium oxide	CAS:1309-48-4	< 0.025%	NDA	OSHA HCS 2012: Not Classified	NDA
Calcium oxide	CAS:1305-78-8	< 0.025%	NDA	OSHA HCS 2012: Exposure limits	NDA

Boric acid	CAS:10043-35-3	< 0.025%	Ingestion/Oral-Rat LD50 • 2500 mg/kg	OSHA HCS 2012: Exposure limits	NDA
Quartz	CAS:14808-60-7	< 0.005%	NDA	OSHA HCS 2012: Exposure limits	NDA
Dispersing Agent	Proprietary	< 0.0005%	Ingestion/Oral-Rat LD50 • 100 mg/kg Inhalation-Rat LC50 • 250 ppm 2 Hour(s) Skin-Rabbit LD50 • 270 mg/kg	OSHA HCS 2012: Exposure limits	NDA

See Section 11 for Toxicological Information.

Section 4: First-Aid Measures

Description of first aid measures

- Inhalation**
- Move victim to fresh air. Administer oxygen if breathing is difficult. Give artificial respiration if victim is not breathing. Get medical attention immediately.
- Skin**
- In case of contact with substance, immediately flush skin with running water for at least 20 minutes. If skin irritation occurs: Get medical advice/attention.
- Eye**
- In case of contact with substance, immediately flush eyes with running water for at least 20 minutes. If eye irritation persists: Get medical advice/attention.
- Ingestion**
- Rinse mouth. Do not give anything by mouth to an unconscious person. Get medical attention immediately.

Most important symptoms and effects, both acute and delayed

- Refer to Section 11 - Toxicological Information.

Indication of any immediate medical attention and special treatment needed

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

Section 5: Fire-Fighting Measures

Extinguishing media

- Suitable Extinguishing Media**
- Material is non-combustible. In case of fire use media as appropriate for surrounding fire.
- Unsuitable Extinguishing Media**
- None known.

Special hazards arising from the substance or mixture

- Unusual Fire and Explosion Hazards**
- None known.
- Hazardous Combustion Products**
- None known.

Advice for firefighters

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

Section 6 - Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

Personal Precautions

- Isolate hazard area and deny entry to unauthorized and/or unprotected personnel. Do not 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
Dispersing Agent (Proprietary)	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	1.0 ppm STEL	Not established	Not established	Not established
	TWAs	Not established	Not established	Not established	Not established	0.016 ppm TWA
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)
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
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
Boric acid (10043-35-3)	STELs	6 mg/m3 STEL (inhalable fraction, listed under Borate compounds, inorganic)	6 mg/m3 STEL (inhalable, listed under Borate compounds, inorganic)	Not established	Not established	Not established
	TWAs	2 mg/m3 TWA (inhalable fraction, listed under Borate compounds, inorganic)	2 mg/m3 TWA (inhalable, listed under Borate compounds, inorganic)	Not established	Not established	Not established
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)
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
Cement, alumina, chemicals	TWAs	10 mg/m3 TWA (inhalable particles, recommended); 3 mg/m3 TWA (respirable particles, recommended) <i>as Particulates not otherwise classified (PNOC)</i>	10 mg/m3 TWA (inhalable); 3 mg/m3 TWA (respirable) <i>as Particulates not otherwise classified (PNOC)</i>	10 mg/m3 TWAEV (including dust, inert or nuisance particulates; containing no Asbestos and <1% Crystalline silica, total dust) <i>as Particulates not otherwise classified (PNOC)</i>	Not established	Not established
Aluminum oxide (1344-28-1)	TWAs	1 mg/m3 TWA (respirable fraction) <i>as Aluminum insoluble compounds</i>	1 mg/m3 TWA (respirable) <i>as Aluminum insoluble compounds</i>	10 mg/m3 TWAEV (containing no Asbestos and <1% Crystalline silica, total dust, as Al)	10 mg/m3 TWA LMPE-PPT	Not established

Exposure Limits/Guidelines (Con't.)

	Result	OSHA
Dispersing Agent (Proprietary)	STELs	2 ppm STEL (see 29 CFR 1910.1048)
	TWAs	0.75 ppm TWA

Sodium hydroxide (1310-73-2)	TWAs	2 mg/m3 TWA
Calcium oxide (1305-78-8)	TWAs	5 mg/m3 TWA
Magnesium oxide (1309-48-4)	TWAs	15 mg/m3 TWA (fume, total particulate)
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)
Cement, alumina, chemicals	TWAs	15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction) <i>as Particulates not otherwise classified (PNOC)</i>
Aluminum oxide (1344-28-1)	TWAs	15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction)

**Exposure Limits Supplemental
OSHA**

- Amorphous/fused silica (60676-86-0): **Mineral Dusts:** ((80)/(%) SiO₂) mg/m³ TWA; 20 mppcf TWA)
- 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)

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 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. Do not breathe dust.

**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	No data available
Decomposition Temperature	No data available	pH	No data available
Specific Gravity/Relative Density	= 3.04 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)	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		
Dispersing Agent 3 (< 0.2%)	Proprietary	Acute Toxicity: Ingestion/Oral-Rat LD50 • 11700 mg/kg; <i>Behavioral:Ataxia; Cardiac:Change in rate; Lungs, Thorax, or Respiration:Respiratory depression;</i> Irritation: Eye-Rabbit • 750 µg 24 Hour(s) • Severe irritation; Skin-Rabbit • 0.5 mL • Moderate irritation; Multi-dose Toxicity: Ingestion/Oral-Rat TDLo • 18.6 g/kg 30 Day(s)-Intermittent; <i>Biochemical:Enzyme inhibition, induction, or change in blood or tissue levels:Phosphatases; Biochemical:Enzyme inhibition, induction, or change in blood or tissue levels:Peptidases; Blood:Changes in serum composition (e.g., TP, bilirubin cholesterol)</i>
Dispersing Agent (< 0.0005%)	Proprietary	Acute Toxicity: Ingestion/Oral-Mouse LD50 • 42 mg/kg; <i>Behavioral:Somnolence (general depressed activity); Behavioral:Convulsions or effect on seizure threshold; Behavioral:Excitement;</i> Ingestion/Oral-Rat LD50 • 100 mg/kg; Ingestion/Oral-Human LDLo • 70 mg/kg; <i>Gastrointestinal:Ulceration or bleeding from stomach; Liver:Other changes; Kidney, Ureter, and Bladder:Other changes;</i> Inhalation-Rat LC50 • 203 mg/m ³ ; <i>Peripheral Nerve and Sensation:Spastic paralysis with or without sensory change; Behavioral:Convulsions or effect on seizure threshold; Behavioral:Excitement;</i> Inhalation-Human TCLo • 0.2 ppm; <i>Sense Organs and Special Senses:Eye:Conjunctive irritation;</i> Inhalation-Human TCLo • 1 mg/m ³ ; <i>Sense Organs and Special Senses:Eye:Conjunctive irritation; Lungs, Thorax, or Respiration:Cough;</i> Inhalation-Human TCLo • 0.75 ppm; <i>Sense Organs and Special Senses:Olfaction:Other changes; Sense Organs and Special Senses:Eye:Conjunctive irritation; Lungs, Thorax, or Respiration:Other changes</i>

GHS Properties	Classification
Respiratory sensitization	OSHA HCS 2012 • Respiratory Sensitizer 1
Serious eye damage/Irritation	OSHA HCS 2012 • No data available
Acute toxicity	OSHA HCS 2012 • No data available
Aspiration Hazard	OSHA HCS 2012 • No data available
Carcinogenicity	OSHA HCS 2012 • No data available
Germ Cell Mutagenicity	OSHA HCS 2012 • No data available
Skin corrosion/Irritation	OSHA HCS 2012 • Skin Irritation 2
Skin sensitization	OSHA HCS 2012 • Skin Sensitizer 1
STOT-RE	OSHA HCS 2012 • No data available
STOT-SE	OSHA HCS 2012 • No data available
Toxicity for Reproduction	OSHA HCS 2012 • No data available

Route(s) of entry/exposure • Inhalation, Skin, Eye, Ingestion

Potential Health Effects

Inhalation

- Acute (Immediate)** • Nuisance dust may affect the lungs but reactions are typically reversible.
- Chronic (Delayed)** • May cause allergy or asthma symptoms or breathing difficulties if inhaled.

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

- This material does contain a component that may cause cancer, however based on regulatory criteria this material is not classified as a carcinogen.

Carcinogenic Effects				
	CAS	OSHA	IARC	NTP
Dispersing Agent	Proprietary	Specifically Regulated Carcinogen	Group 1-Carcinogenic	Known Human Carcinogen
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
Aluminum oxide	1344-28-1	Yes	Yes	Yes
Boric acid	10043-35-3	No	No	No
Calcium oxide	1305-78-8	Yes	Yes	Yes
Dispersing Agent 3	<i>Proprietary</i>	No	No	No
Dispersing Agent	<i>Proprietary</i>	Yes	Yes	Yes
Magnesium oxide	1309-48-4	Yes	Yes	Yes
Quartz	14808-60-7	Yes	Yes	Yes
Sodium hydroxide	1310-73-2	Yes	Yes	Yes

Inventory			
Component	CAS	Canada DSL	TSCA
Aluminum oxide	1344-28-1	Yes	Yes
Boric acid	10043-35-3	Yes	Yes
Calcium oxide	1305-78-8	Yes	Yes
Dispersing Agent 3	<i>Proprietary</i>	Yes	Yes
Dispersing Agent	<i>Proprietary</i>	Yes	Yes
Magnesium oxide	1309-48-4	Yes	Yes
Quartz	14808-60-7	Yes	Yes
Sodium hydroxide	1310-73-2	Yes	Yes

Canada

Labor

Canada - WHMIS - Classifications of Substances

• Dispersing Agent	<i>Proprietary</i>	A, B1, D1A, D2A, D2B; B3, D1A, D2A, D2B, E (regulated under Formol)
• Calcium oxide	1305-78-8	E
• Magnesium oxide	1309-48-4	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)
• Aluminum oxide	1344-28-1	Uncontrolled product according to WHMIS

<ul style="list-style-type: none"> • Dispersing Agent 3 • Boric acid 	<p><i>Proprietary</i> 10043-35-3</p>	<p>classification criteria E (including 40%) D2A 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.)</p>
<ul style="list-style-type: none"> • Quartz 	<p>14808-60-7</p>	

Canada - WHMIS - Ingredient Disclosure List

• Dispersing Agent	<i>Proprietary</i>	0.1 %
• Calcium oxide	1305-78-8	1 %
• Magnesium oxide	1309-48-4	1 %
• Sodium hydroxide	1310-73-2	1 %
• Aluminum oxide	1344-28-1	1 %
• Dispersing Agent 3	<i>Proprietary</i>	1 %
• Boric acid	10043-35-3	1 %
• Quartz	14808-60-7	1 %

Environment

Canada - CEPA - Priority Substances List

• Dispersing Agent	<i>Proprietary</i>	Priority Substance List 2 (substance considered toxic)
• Calcium oxide	1305-78-8	Not Listed
• Magnesium oxide	1309-48-4	Not Listed
• Sodium hydroxide	1310-73-2	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Dispersing Agent 3	<i>Proprietary</i>	Not Listed
• Boric acid	10043-35-3	Not Listed
• Quartz	14808-60-7	Not Listed

Canada - CEPA - Schedule I - List of Toxic Substances

• Dispersing Agent	<i>Proprietary</i>	
• Calcium oxide	1305-78-8	Not Listed
• Magnesium oxide	1309-48-4	Not Listed
• Sodium hydroxide	1310-73-2	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Dispersing Agent 3	<i>Proprietary</i>	Not Listed
• Boric acid	10043-35-3	Not Listed
• Quartz	14808-60-7	Not Listed

United States

Labor

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

• Dispersing Agent	<i>Proprietary</i>	1000 lb TQ
• Calcium oxide	1305-78-8	Not Listed
• Magnesium oxide	1309-48-4	Not Listed
• Sodium hydroxide	1310-73-2	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Dispersing Agent 3	<i>Proprietary</i>	Not Listed
• Boric acid	10043-35-3	Not Listed

• Quartz	14808-60-7	Not Listed
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U.S. - OSHA - Specifically Regulated Chemicals

• Dispersing Agent	<i>Proprietary</i>	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)
• Calcium oxide	1305-78-8	Not Listed
• Magnesium oxide	1309-48-4	Not Listed
• Sodium hydroxide	1310-73-2	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Dispersing Agent 3	<i>Proprietary</i>	Not Listed
• Boric acid	10043-35-3	Not Listed
• Quartz	14808-60-7	Not Listed

Environment

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

• Dispersing Agent	<i>Proprietary</i>	
• Calcium oxide	1305-78-8	Not Listed
• Magnesium oxide	1309-48-4	Not Listed
• Sodium hydroxide	1310-73-2	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Dispersing Agent 3	<i>Proprietary</i>	Not Listed
• Boric acid	10043-35-3	Not Listed
• Quartz	14808-60-7	Not Listed

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

• Dispersing Agent	<i>Proprietary</i>	100 lb final RQ; 45.4 kg final RQ
• Calcium oxide	1305-78-8	Not Listed
• Magnesium oxide	1309-48-4	Not Listed
• Sodium hydroxide	1310-73-2	1000 lb final RQ; 454 kg final RQ
• Aluminum oxide	1344-28-1	Not Listed
• Dispersing Agent 3	<i>Proprietary</i>	Not Listed
• Boric acid	10043-35-3	Not Listed
• Quartz	14808-60-7	Not Listed

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

• Dispersing Agent	<i>Proprietary</i>	100 lb EPCRA RQ
• Calcium oxide	1305-78-8	Not Listed
• Magnesium oxide	1309-48-4	Not Listed
• Sodium hydroxide	1310-73-2	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Dispersing Agent 3	<i>Proprietary</i>	Not Listed
• Boric acid	10043-35-3	Not Listed
• Quartz	14808-60-7	Not Listed

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

• Dispersing Agent	<i>Proprietary</i>	500 lb TPQ
• Calcium oxide	1305-78-8	Not Listed
• Magnesium oxide	1309-48-4	Not Listed
• Sodium hydroxide	1310-73-2	Not Listed
• Aluminum oxide	1344-28-1	Not Listed

• Dispersing Agent 3	<i>Proprietary</i>	Not Listed
• Boric acid	10043-35-3	Not Listed
• Quartz	14808-60-7	Not Listed

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

• Dispersing Agent	<i>Proprietary</i>	0.1 % de minimis concentration
• Calcium oxide	1305-78-8	Not Listed
• Magnesium oxide	1309-48-4	Not Listed
• Sodium hydroxide	1310-73-2	Not Listed
• Aluminum oxide	1344-28-1	1.0 % de minimis concentration (fibrous forms)
• Dispersing Agent 3	<i>Proprietary</i>	Not Listed
• Boric acid	10043-35-3	Not Listed
• Quartz	14808-60-7	Not Listed

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

• Dispersing Agent	<i>Proprietary</i>	Included in waste streams: K009, K010, K038, K040, K156, K157
• Calcium oxide	1305-78-8	Not Listed
• Magnesium oxide	1309-48-4	Not Listed
• Sodium hydroxide	1310-73-2	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Dispersing Agent 3	<i>Proprietary</i>	Not Listed
• Boric acid	10043-35-3	Not Listed
• Quartz	14808-60-7	Not Listed

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

• Dispersing Agent	<i>Proprietary</i>	waste number U122
• Calcium oxide	1305-78-8	Not Listed
• Magnesium oxide	1309-48-4	Not Listed
• Sodium hydroxide	1310-73-2	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Dispersing Agent 3	<i>Proprietary</i>	Not Listed
• Boric acid	10043-35-3	Not Listed
• Quartz	14808-60-7	Not Listed

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

• Dispersing Agent	<i>Proprietary</i>	waste number U122
• Calcium oxide	1305-78-8	Not Listed
• Magnesium oxide	1309-48-4	Not Listed
• Sodium hydroxide	1310-73-2	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Dispersing Agent 3	<i>Proprietary</i>	Not Listed
• Boric acid	10043-35-3	Not Listed
• Quartz	14808-60-7	Not Listed

United States - California

Environment

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

• Dispersing Agent	<i>Proprietary</i>	carcinogen, 1/1/1988 (gas)
• Calcium oxide	1305-78-8	Not Listed

• Magnesium oxide	1309-48-4	Not Listed
• Sodium hydroxide	1310-73-2	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Dispersing Agent 3	<i>Proprietary</i>	Not Listed
• Boric acid	10043-35-3	Not Listed
• Quartz	14808-60-7	carcinogen, 10/1/1988 (airborne particles of respirable size)
U.S. - California - Proposition 65 - No Significant Risk Levels (NSRL)		
• Dispersing Agent	<i>Proprietary</i>	40 µg/day NSRL (gas)
• Calcium oxide	1305-78-8	Not Listed
• Magnesium oxide	1309-48-4	Not Listed
• Sodium hydroxide	1310-73-2	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Dispersing Agent 3	<i>Proprietary</i>	Not Listed
• Boric acid	10043-35-3	Not Listed
• Quartz	14808-60-7	Not Listed

United States - Pennsylvania

Labor

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

• Dispersing Agent	<i>Proprietary</i>	
• Calcium oxide	1305-78-8	Not Listed
• Magnesium oxide	1309-48-4	Not Listed
• Sodium hydroxide	1310-73-2	
• Aluminum oxide	1344-28-1	
• Dispersing Agent 3	<i>Proprietary</i>	Not Listed
• Boric acid	10043-35-3	Not Listed
• Quartz	14808-60-7	Not Listed

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

• Dispersing Agent	<i>Proprietary</i>	
• Calcium oxide	1305-78-8	Not Listed
• Magnesium oxide	1309-48-4	Not Listed
• Sodium hydroxide	1310-73-2	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Dispersing Agent 3	<i>Proprietary</i>	Not Listed
• Boric acid	10043-35-3	Not Listed
• Quartz	14808-60-7	Not Listed

Other Information

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

Section 16 - Other Information

Revision Date	• 23/November/2015
Last Revision Date	• 23/November/2015
Preparation Date	• 23/November/2015
Disclaimer/Statement of	• The information provided in this Safety Data Sheet is correct to the best of our

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Key to abbreviations

NDA = No data available
