

Safety Data Sheet



Section 1: Identification

Product identifier

- Product Name** • Reno Cast 65 LC/AL
Product Code • 149300

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 via Inhalation

Precautionary statements

- Prevention** • Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.

Do not breathe dust, fume, gas, mist, vapours and/or spray.
 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).

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
Mullite	CAS:1302-93-8 EC Number:215-113-2	43.72% TO 50.18%	NDA	OSHA HCS 2012: STOT RE 2 (Lungs)	NDA
Aluminum oxide	CAS:1344-28-1 EC Number:215-691-6	19.8% TO 26%	NDA	OSHA HCS 2012: Not Classified - Criteria not met	NDA
Silica, amorphous	CAS:7631-86-9 EC Number:231-545-4	12.28% TO 13.93%	NDA	OSHA HCS 2012: Data Lacking	NDA

Cement, alumina, chemicals	CAS: 65997-16-2 EC Number: 266-045-5	5% TO 8%	NDA	OSHA HCS 2012: Skin Irrit. 2, Eye Irrit. 2A	NDA
Amorphous silica fume	CAS: 69012-64-2 EC Number: 273-761-1	3.6% TO 8%	NDA	OSHA HCS 2012: STOT RE 1 (Lungs)	NDA
Non-Wetting Agent	<i>Proprietary</i>	0.94% TO 3.9%	Ingestion/Oral-Rat LD50 • 4417 mg/kg	OSHA HCS 2012: WHMIS: Other Toxic Effects - D2B	NDA
Aluminum(III) silicate (2:1)	CAS: 1302-76-7 EINECS: 215-106-4	0.595% TO 0.99%	NDA	OSHA HCS 2012: STOT RE2 (Lungs)	NDA
Cristobalite	CAS: 14464-46-1 EC Number: 238-455-4	< 0.1796%	NDA	OSHA HCS 2012: Carc. 1A	NDA
Triphosphoric acid, sodium salt (1:5)	CAS: 7758-29-4	0.093% TO 0.1395%	Ingestion/Oral-Rat LD50 • 3120 mg/kg	OSHA HCS 2012: WHMIS: Other Toxic Effects - D2B	NDA
Limestone	CAS: 1317-65-3	0.01% TO 0.116%	NDA	OSHA HCS 2012: WHMIS: Other Toxic Effects - D2A	NDA
Polyphosphoric acids, sodium salts	CAS: 68915-31-1	0.05% TO 0.1%	Ingestion/Oral-Rat LD50 • 3053 mg/kg	OSHA HCS 2012: WHMIS: Other Toxic Effects - D2B	NDA
1-Propene, homopolymer	CAS: 9003-07-0	0.06% TO 0.09%	NDA	OSHA HCS 2012: Data Lacking	NDA
Quartz	CAS: 14808-60-7 EC Number: 238-878-4	0.035% TO 0.085%	NDA	OSHA HCS 2012: Carc. 1A; STOT RE 1(Lungs)	NDA
Titanium dioxide	CAS: 13463-67-7 EC Number: 236-675-5	0.007% TO 0.055%	NDA	OSHA HCS 2012: Carc. 2	NDA
Blancol	CAS: 9084-06-4	0.0088% TO 0.0176%	Ingestion/Oral-Rat LD50 • 3800 mg/kg	OSHA HCS 2012: WHMIS:	NDA
Diphosphoric acid, sodium salt (1:4)	CAS: 7722-88-5	0.005% TO 0.0075%	Ingestion/Oral-Mouse LD50 • 2980 mg/kg	OSHA HCS 2012: WHMIS: Other Toxic Effects - D2B	NDA
Sodium trimetaphosphate	CAS: 7785-84-4	0.002% TO 0.003%	Ingestion/Oral-Mouse LD50 • 10300 mg/kg	OSHA HCS 2012: WHMIS: Other Toxic Effects - D2B	NDA
Sodium sulfate	CAS: 7757-82-6	0.0009% TO 0.0018%	Ingestion/Oral-Mouse LD50 • 5989 mg/kg	OSHA HCS 2012: WHMIS:	NDA
Chemical	<i>Proprietary</i>	< 0.00001%	Ingestion/Oral-Rat LD50 • 100 mg/kg	OSHA HCS 2012: WHMIS: Corrosive - E; Toxic - D1B	NDA

See Section 11 for Toxicological Information.

Section 4: First-Aid Measures

Description of first aid measures

Inhalation

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

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
Reno Cast 65 LC/AL	TWAs	10 mg/m ³ TWA (inhalable particles, recommended); 3 mg/m ³ TWA (respirable particles, recommended) <i>as Particulates not otherwise classified (PNOC)</i>	10 mg/m ³ TWAEV (inhalable particulate); 3 mg/m ³ TWAEV (respirable particulate) <i>as Particulates not otherwise classified (PNOC)</i>	10 mg/m ³ TWAEV (total dust, containing no asbestos and less than 1% crystalline silica) <i>as Particulates not otherwise classified (PNOC)</i>	Not established	Not established
Chemical (Proprietary)	Ceilings	0.3 ppm Ceiling	1.5 ppm CEV	2 ppm Ceiling; 3 mg/m ³ Ceiling	2 ppm Ceiling; 3 mg/m ³ Ceiling	0.1 ppm Ceiling (15 min)
	STELs	Not established	1.0 ppm STEV	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/m ³ TWAEV	5 mg/m ³ TWAEV	Not established	5 mg/m ³ TWA
Titanium dioxide (13463-67-7)	STELs	Not established	Not established	Not established	20 mg/m ³ STEL [LMPE-CT] (as Ti)	Not established
	TWAs	10 mg/m ³ TWA	10 mg/m ³ TWAEV (total dust)	10 mg/m ³ TWAEV (total dust, containing no asbestos and less than 1% crystalline silica)	10 mg/m ³ TWA LMPE-PPT (as Ti)	Not established
Quartz (14808-60-7)	TWAs	0.025 mg/m ³ TWA (respirable fraction)	0.10 mg/m ³ TWAEV (designated substance regulation)	0.1 mg/m ³ TWAEV (respirable dust)	0.1 mg/m ³ TWA LMPE-PPT (respirable fraction)	0.05 mg/m ³ TWA (respirable dust)
Cristobalite (14464-46-1)	TWAs	0.025 mg/m ³ TWA (respirable fraction)	0.05 mg/m ³ TWAEV (designated substance regulation)	0.05 mg/m ³ TWAEV (respirable dust)	0.05 mg/m ³ TWA LMPE-PPT (respirable fraction)	0.05 mg/m ³ TWA (respirable dust)

Amorphous silica fume (69012-64-2)	TWAs	Not established	2 mg/m3 TWAEV (fume, respirable)	2 mg/m3 TWAEV (respirable dust, containing no asbestos and less than 1% crystalline silica)	2 mg/m3 TWA LMPE-PPT; 10 mg/m3 TWA LMPE-PPT (inhalable particulate); 3 mg/m3 TWA LMPE-PPT (respirable particulate)	Not established
Silica, amorphous (7631-86-9)	TWAs	Not established	Not established	Not established	Not established	6 mg/m3 TWA
Aluminum oxide (1344-28-1)	TWAs	1 mg/m3 TWA (respirable fraction) <i>as Aluminum insoluble compounds</i>	10 mg/m3 TWAEV (total dust)	10 mg/m3 TWAEV (total dust, containing no asbestos and less than 1% crystalline silica, as Al)	10 mg/m3 TWA LMPE-PPT	Not established

Exposure Limits/Guidelines (Con't.)

	Result	OSHA
Reno Cast 65 LC/AL	TWAs	15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction) <i>as Particulates not otherwise classified (PNOC)</i>
Chemical (Proprietary)	STELs	2 ppm STEL (see 29 CFR 1910.1048)
	TWAs	0.75 ppm TWA
Titanium dioxide (13463-67-7)	TWAs	15 mg/m3 TWA (total dust)
Aluminum oxide (1344-28-1)	TWAs	15 mg/m3 TWA (total dust); 5 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

- 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
Odor Threshold	Data lacking		
General Properties			
Boiling Point	Data lacking	Melting Point/Freezing Point	Data lacking
Decomposition Temperature	Data lacking	pH	Data lacking
Specific Gravity/Relative Density	= 2.56 Water=1	Water Solubility	Negligible
Viscosity	Data lacking		
Volatility			
Vapor Pressure	Data lacking	Vapor Density	Data lacking
Evaporation Rate	Data lacking		
Flammability			
Flash Point	Data lacking	UEL	Data lacking
LEL	Data lacking	Autoignition	Data lacking
Flammability (solid, gas)	Not flammable.		
Environmental			
Octanol/Water Partition coefficient	Data lacking		

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 (12.28% TO 13.93%)	7631-86-9	Irritation: Eye-Rabbit • 25 mg 24 Hour(s) • Mild irritation
Titanium dioxide (0.007% TO 0.055%)	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; Tumorigenic: Carcinogenic by RTECS criteria; Lungs, Thorax, or Respiration: Tumors

GHS Properties	Classification
Acute toxicity	OSHA HCS 2012 • Classification criteria not met
Skin corrosion/Irritation	OSHA HCS 2012 • Classification criteria not met
Serious eye damage/Irritation	OSHA HCS 2012 • Classification criteria not met
Skin sensitization	OSHA HCS 2012 • Classification criteria not met
Respiratory sensitization	OSHA HCS 2012 • Classification criteria not met
Aspiration Hazard	OSHA HCS 2012 • Classification criteria not met
Carcinogenicity	OSHA HCS 2012 • Carcinogenicity 1A
Germ Cell Mutagenicity	OSHA HCS 2012 • Classification criteria not met
Toxicity for Reproduction	OSHA HCS 2012 • Classification criteria not met
STOT-SE	OSHA HCS 2012 • Classification criteria not met
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
Chemical	Proprietary	Specifically Regulated Carcinogen	Group 1-Carcinogenic	Known Human Carcinogen
Titanium dioxide	13463-67-7	Not Listed	Group 2B-Possible Carcinogen	Not Listed
Quartz	14808-60-7	Not Listed	Group 1-Carcinogenic	Known Human Carcinogen
Cristobalite	14464-46-1	Not Listed	Group 1-Carcinogenic	Not Listed

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
Reno Cast 65 LC/AL as Particulates not otherwise classified (PNOC)	NDA	No	No	No
Aluminum oxide	1344-28-1	Yes	Yes	Yes
Cristobalite	14464-46-1	Yes	Yes	Yes
Diphosphoric acid, sodium salt (1:4)	7722-88-5	Yes	Yes	Yes
Chemical	<i>Proprietary</i>	Yes	Yes	Yes
Quartz	14808-60-7	Yes	Yes	Yes
Silica, amorphous	7631-86-9	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

Inventory			
Component	CAS	Canada DSL	TSCA
Reno Cast 65 LC/AL as Particulates not otherwise classified (PNOC)	NDA	No	No
Aluminum oxide	1344-28-1	Yes	Yes
Cristobalite	14464-46-1	Yes	Yes
Diphosphoric acid, sodium salt (1:4)	7722-88-5	Yes	Yes
Chemical	<i>Proprietary</i>	Yes	Yes
Quartz	14808-60-7	Yes	Yes
Silica, amorphous	7631-86-9	Yes	Yes
Sodium sulfate	7757-82-6	Yes	Yes
Sodium trimetaphosphate	7785-84-4	Yes	Yes
Titanium dioxide	13463-67-7	Yes	Yes
Triphosphoric acid, sodium salt (1:5)	7758-29-4	Yes	Yes

Canada

Labor

Canada - WHMIS - Classifications of Substances

• Reno Cast 65 LC/AL as Particulates not otherwise classified (PNOC)		Not Listed
• Sodium trimetaphosphate	7785-84-4	Not Listed
• Triphosphoric acid, sodium salt (1:5)	7758-29-4	Not Listed
• Chemical	<i>Proprietary</i>	A, B1, D1A, D2A, D2B; B3, D1A, D2A, D2B, E (regulated under Formol) 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 Uncontrolled product according to WHMIS classification criteria
• Diphosphoric acid, sodium salt (1:4)	7722-88-5	Not Listed
• Aluminum oxide	1344-28-1	Uncontrolled product according to WHMIS classification criteria
• Aluminum oxide as Aluminum insoluble compounds		Not Listed
• Sodium sulfate	7757-82-6	Uncontrolled product according to WHMIS classification criteria D2A (In certain cases, this classification does not apply. For more information, consult the section Substance Specific Issues - Silica, crystalline, encapsulated on Health Canada's WHMIS Division website.)
• Cristobalite	14464-46-1	Uncontrolled product according to WHMIS classification criteria D2A (In certain cases, this classification does not apply. For more information, consult the section Substance Specific Issues - Silica, crystalline, encapsulated on Health Canada's WHMIS Division website.)
• Silica, amorphous	7631-86-9	Uncontrolled product according to WHMIS classification criteria D2A (In certain cases, this classification does not apply. For more information, consult the section Substance Specific Issues - Silica, crystalline, encapsulated on Health Canada's WHMIS Division website.)
• Quartz	14808-60-7	Uncontrolled product according to WHMIS classification criteria D2A (In certain cases, this classification does not apply. For more information, consult the section Substance Specific Issues - Silica, crystalline, encapsulated on Health Canada's WHMIS Division website.)

Canada - WHMIS - Ingredient Disclosure List

• Reno Cast 65 LC/AL as Particulates not otherwise classified (PNOC)		Not Listed
• Sodium trimetaphosphate	7785-84-4	Not Listed
• Triphosphoric acid, sodium salt (1:5)	7758-29-4	Not Listed
• Chemical	<i>Proprietary</i>	0.1 %
• Titanium dioxide	13463-67-7	Not Listed
• Diphosphoric acid, sodium salt (1:4)	7722-88-5	1 %
• Aluminum oxide	1344-28-1	1 %
• Aluminum oxide as Aluminum insoluble compounds		Not Listed
• Sodium sulfate	7757-82-6	Not Listed
• Cristobalite	14464-46-1	1 %
• Silica, amorphous	7631-86-9	1 %
• Quartz	14808-60-7	1 %

Environment

Canada - CEPA - Priority Substances List

• Reno Cast 65 LC/AL as Particulates not otherwise classified (PNOC)		Not Listed
• Sodium trimetaphosphate	7785-84-4	Not Listed
• Triphosphoric acid, sodium salt (1:5)	7758-29-4	Not Listed
• Chemical	<i>Proprietary</i>	Priority Substance List 2 (substance considered toxic)
• 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
• Aluminum oxide as Aluminum insoluble compounds		Not Listed
• Sodium sulfate	7757-82-6	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
• Quartz	14808-60-7	Not Listed

Canada - CEPA - Schedule I - List of Toxic Substances

• Reno Cast 65 LC/AL as Particulates not otherwise classified (PNOC)		Not Listed
• Sodium trimetaphosphate	7785-84-4	Not Listed
• Triphosphoric acid, sodium salt (1:5)	7758-29-4	Not Listed
• Chemical	<i>Proprietary</i>	
• 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
• Aluminum oxide as Aluminum insoluble compounds		Not Listed
• Sodium sulfate	7757-82-6	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
• Quartz	14808-60-7	Not Listed

Mexico

Other

Mexico - Hazard Classifications

• Reno Cast 65 LC/AL as Particulates not otherwise classified (PNOC)		Not Listed
• Sodium trimetaphosphate	7785-84-4	Not Listed
• Triphosphoric acid, sodium salt (1:5)	7758-29-4	Not Listed
• Chemical	<i>Proprietary</i>	Hazard Class = 3 (8) PG = III UN1198; Hazard Class = 8 PG = III (with not <25% formaldehyde) UN2209
• 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
• Aluminum oxide as Aluminum insoluble compounds		Not Listed
• Sodium sulfate	7757-82-6	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
• Quartz	14808-60-7	Not Listed

Mexico - Regulated Substances

• Reno Cast 65 LC/AL as Particulates not otherwise classified (PNOC)		Not Listed
• Sodium trimetaphosphate	7785-84-4	Not Listed
• Triphosphoric acid, sodium salt (1:5)	7758-29-4	Not Listed

• Chemical	<i>Proprietary</i>	UN1198; UN2209 (with not <25% formaldehyde)
• 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
• Aluminum oxide as Aluminum insoluble compounds		Not Listed
• Sodium sulfate	7757-82-6	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
• Quartz	14808-60-7	Not Listed

United States

Labor		
U.S. - OSHA - Process Safety Management - Highly Hazardous Chemicals		
• Reno Cast 65 LC/AL as Particulates not otherwise classified (PNOC)		Not Listed
• Sodium trimetaphosphate	7785-84-4	Not Listed
• Triphosphoric acid, sodium salt (1:5)	7758-29-4	Not Listed
• Chemical	<i>Proprietary</i>	1000 lb TQ
• 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
• Aluminum oxide as Aluminum insoluble compounds		Not Listed
• Sodium sulfate	7757-82-6	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
• Quartz	14808-60-7	Not Listed
U.S. - OSHA - Specifically Regulated Chemicals		
• Reno Cast 65 LC/AL as Particulates not otherwise classified (PNOC)		Not Listed
• Sodium trimetaphosphate	7785-84-4	Not Listed
• Triphosphoric acid, sodium salt (1:5)	7758-29-4	Not Listed
• Chemical	<i>Proprietary</i>	2 ppm STEL (Irritant and potential cancer hazard, See 29 CFR 1910.1048, 15 min); 0.5 ppm Action Level; 0.75 ppm TWA
• 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
• Aluminum oxide as Aluminum insoluble compounds		Not Listed
• Sodium sulfate	7757-82-6	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
• Quartz	14808-60-7	Not Listed

Environment		
U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants		
• Reno Cast 65 LC/AL as Particulates not otherwise classified (PNOC)		Not Listed
• Sodium trimetaphosphate	7785-84-4	Not Listed
• Triphosphoric acid, sodium salt (1:5)	7758-29-4	Not Listed
• Chemical	<i>Proprietary</i>	
• 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

• Aluminum oxide as Aluminum insoluble compounds		Not Listed
• Sodium sulfate	7757-82-6	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
• Quartz	14808-60-7	Not Listed

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

• Reno Cast 65 LC/AL as Particulates not otherwise classified (PNOC)		Not Listed
• Sodium trimetaphosphate	7785-84-4	Not Listed
• Triphosphoric acid, sodium salt (1:5)	7758-29-4	Not Listed
• Chemical	<i>Proprietary</i>	100 lb final RQ; 45.4 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
• Aluminum oxide as Aluminum insoluble compounds		Not Listed
• Sodium sulfate	7757-82-6	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
• Quartz	14808-60-7	Not Listed

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

• Reno Cast 65 LC/AL as Particulates not otherwise classified (PNOC)		Not Listed
• Sodium trimetaphosphate	7785-84-4	Not Listed
• Triphosphoric acid, sodium salt (1:5)	7758-29-4	Not Listed
• Chemical	<i>Proprietary</i>	100 lb EPCRA 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
• Aluminum oxide as Aluminum insoluble compounds		Not Listed
• Sodium sulfate	7757-82-6	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
• Quartz	14808-60-7	Not Listed

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

• Reno Cast 65 LC/AL as Particulates not otherwise classified (PNOC)		Not Listed
• Sodium trimetaphosphate	7785-84-4	Not Listed
• Triphosphoric acid, sodium salt (1:5)	7758-29-4	Not Listed
• Chemical	<i>Proprietary</i>	500 lb TPQ
• 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
• Aluminum oxide as Aluminum insoluble compounds		Not Listed
• Sodium sulfate	7757-82-6	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
• Quartz	14808-60-7	Not Listed

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

• Reno Cast 65 LC/AL as Particulates not otherwise classified (PNOC)		Not Listed
• Sodium trimetaphosphate	7785-84-4	Not Listed
• Triphosphoric acid, sodium salt (1:5)	7758-29-4	Not Listed
• Chemical	<i>Proprietary</i>	0.1 % de minimis concentration

• 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)
• Aluminum oxide as Aluminum insoluble compounds		Not Listed
• Sodium sulfate	7757-82-6	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
• Quartz	14808-60-7	Not Listed

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

• Reno Cast 65 LC/AL as Particulates not otherwise classified (PNOC)		Not Listed
• Sodium trimetaphosphate	7785-84-4	Not Listed
• Triphosphoric acid, sodium salt (1:5)	7758-29-4	Not Listed
• Chemical	<i>Proprietary</i>	Included in waste streams: K009, K010, K038, K040, K156, K157
• 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
• Aluminum oxide as Aluminum insoluble compounds		Not Listed
• Sodium sulfate	7757-82-6	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
• Quartz	14808-60-7	Not Listed

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

• Reno Cast 65 LC/AL as Particulates not otherwise classified (PNOC)		Not Listed
• Sodium trimetaphosphate	7785-84-4	Not Listed
• Triphosphoric acid, sodium salt (1:5)	7758-29-4	Not Listed
• Chemical	<i>Proprietary</i>	waste number U122
• 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
• Aluminum oxide as Aluminum insoluble compounds		Not Listed
• Sodium sulfate	7757-82-6	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
• Quartz	14808-60-7	Not Listed

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

• Reno Cast 65 LC/AL as Particulates not otherwise classified (PNOC)		Not Listed
• Sodium trimetaphosphate	7785-84-4	Not Listed
• Triphosphoric acid, sodium salt (1:5)	7758-29-4	Not Listed
• Chemical	<i>Proprietary</i>	waste number U122
• 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
• Aluminum oxide as Aluminum insoluble compounds		Not Listed
• Sodium sulfate	7757-82-6	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
• Quartz	14808-60-7	Not Listed

United States - California

Environment

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

• Reno Cast 65 LC/AL as Particulates not otherwise classified (PNOC)		Not Listed
• Sodium trimetaphosphate	7785-84-4	Not Listed
• Triphosphoric acid, sodium salt (1:5)	7758-29-4	Not Listed
• Chemical	<i>Proprietary</i>	carcinogen, initial date 1/1/88 (gas)
• Titanium dioxide	13463-67-7	carcinogen, initial date 9/2/11 (airborne, unbound particles of respirable size)
• Diphosphoric acid, sodium salt (1:4)	7722-88-5	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Aluminum oxide as Aluminum insoluble compounds		Not Listed
• Sodium sulfate	7757-82-6	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
• Quartz	14808-60-7	carcinogen, initial date 10/1/88 (airborne particles of respirable size)

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

• Reno Cast 65 LC/AL as Particulates not otherwise classified (PNOC)		Not Listed
• Sodium trimetaphosphate	7785-84-4	Not Listed
• Triphosphoric acid, sodium salt (1:5)	7758-29-4	Not Listed
• Chemical	<i>Proprietary</i>	40 µg/day NSRL (gas)
• 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
• Aluminum oxide as Aluminum insoluble compounds		Not Listed
• Sodium sulfate	7757-82-6	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
• Quartz	14808-60-7	Not Listed

United States - Pennsylvania

Labor

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

• Reno Cast 65 LC/AL as Particulates not otherwise classified (PNOC)		Not Listed
• Sodium trimetaphosphate	7785-84-4	
• Triphosphoric acid, sodium salt (1:5)	7758-29-4	
• Chemical	<i>Proprietary</i>	
• Titanium dioxide	13463-67-7	Not Listed
• Diphosphoric acid, sodium salt (1:4)	7722-88-5	Not Listed
• Aluminum oxide	1344-28-1	
• Aluminum oxide as Aluminum insoluble compounds		Not Listed
• Sodium sulfate	7757-82-6	(solution)
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
• Quartz	14808-60-7	Not Listed

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

• Reno Cast 65 LC/AL as Particulates not otherwise classified (PNOC)		Not Listed
• Sodium trimetaphosphate	7785-84-4	Not Listed

• Triphosphoric acid, sodium salt (1:5)	7758-29-4	Not Listed
• Chemical	<i>Proprietary</i>	
• 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
• Aluminum oxide as Aluminum insoluble compounds		Not Listed
• Sodium sulfate	7757-82-6	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
• Quartz	14808-60-7	Not Listed

United States - Rhode Island

Labor		
U.S. - Rhode Island - Hazardous Substance List		
• Reno Cast 65 LC/AL as Particulates not otherwise classified (PNOC)		Toxic
• Sodium trimetaphosphate	7785-84-4	Not Listed
• Triphosphoric acid, sodium salt (1:5)	7758-29-4	Not Listed
• Chemical	<i>Proprietary</i>	Toxic; Flammable; Carcinogen
• Titanium dioxide	13463-67-7	Toxic
• Diphosphoric acid, sodium salt (1:4)	7722-88-5	Toxic
• Aluminum oxide	1344-28-1	Toxic
• Aluminum oxide as Aluminum insoluble compounds		Not Listed
• Sodium sulfate	7757-82-6	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
• Quartz	14808-60-7	Toxic (dust and fiber)

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	• 30/July/2013
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