

Safety Data Sheet



Section 1: Identification

Product identifier

Product Name | Reno Plastic 95 P
Product Code | 240100

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

Recommended use | Refractory applications

Details of the supplier of the safety data sheet

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

Emergency telephone number

Manufacturer | 1-800-262-8200 - CHEMTREC

Section 2: Hazard Identification

United States (US)

According to OSHA 29 CFR 1910.1200 HCS

Classification of the substance or mixture

OSHA HCS 2012 | Skin Irritation 2 - H315
 Serious Eye Damage 1 - H318
 Carcinogenicity 1A - H350
 Specific Target Organ Toxicity Repeated Exposure 2 - H373

Label elements

OSHA HCS 2012

DANGER

Hazard statements | Causes skin irritation - H315
 Causes serious eye damage - H318
 May cause cancer. - H350
 May cause damage to organs through prolonged or repeated exposure. - H373

Precautionary statements

Prevention | Obtain special instructions before use. - P201
 Do not handle until all safety precautions have been read and understood. - P202
 Do not breathe dust. - P260
 Wash thoroughly after handling. - P264
 Wear protective gloves, clothing, and eye/face protection, . - P280

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

Storage/Disposal | Dispose of content and/or container in accordance with local, regional, national, and/or international regulations. - P501

Other hazards

OSHA HCS 2012 | Under United States Regulations (29 CFR 1910.1200 - Hazard Communication Standard), this product is considered hazardous.

Canada

According to WHMIS

Classification of the substance or mixture

WHMIS | Other Toxic Effects - D2A
 Corrosive - E

Label elements

WHMIS



| Other Toxic Effects - D2A
 Corrosive - E

Other hazards

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

Section 3 - Composition/Information on Ingredients

Substances

| Material does not meet the criteria of a substance.

Mixtures

Composition					
Chemical Name	Identifiers	%	LD50/LC50	Classifications According to Regulation/Directive	Comments
Aluminum oxide	CAS:1344-28-1	81.33% TO 88%	Inhalation-Rat LC50 • 0.2 mg/L 5 Hour(s) 28 Week(s) Ingestion/Oral-Rat LD50 • 1.25	OSHA HCS 2012: Not Classified	NDA

Phosphoric acid	CAS:7664-38-2	2.4% TO 4.55%	g/kg Inhalation-Rat LC50 • 25.5 mg/m ³	OSHA HCS 2012: Skin Corr. 1C; Eye Dam. 1	NDA
Bentonite	CAS:1302-78-9	0.6% TO 4%	NDA	OSHA HCS 2012: STOT RE 2 (Lungs)	NDA
Phosphoric acid, aluminum salt (1:3)	CAS:13530-50-2	0.4% TO 1.05%	NDA	OSHA HCS 2012: Not Classified	NDA
Boron oxide	CAS:1303-86-2	0.04% TO 0.35%	Ingestion/Oral-Rat LD50 • 3150 mg/kg	OSHA HCS 2012: Not Classified	NDA
Quartz	CAS:14808-60-7	0.01% TO 0.2%	NDA	OSHA HCS 2012: Carc. 1A; STOT RE 1 (Lungs)	NDA
Silica, crystalline - tridymite	CAS:15468-32-3	0% TO 0.04%	NDA	OSHA HCS 2012: Exposure limits	NDA
Cristobalite	CAS:14464-46-1	0% TO 0.04%	NDA	OSHA HCS 2012: Exposure limits	NDA

Section 4: First-Aid Measures

Description of first aid measures

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

Most important symptoms and effects, both acute and delayed

- | Refer to Section 11 - Toxicological Information.

Indication of any immediate medical attention and special treatment needed

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

Section 5: Fire-Fighting Measures

Extinguishing media

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

Special hazards arising from the substance or mixture

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

Advice for firefighters

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

Section 6 - Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

- Personal Precautions** | Isolate hazard area and deny entry to unauthorized and/or unprotected personnel. Do not touch or walk through spilled material. Ensure adequate ventilation to remove vapors, fumes, dust etc.
- Emergency Procedures** | Ventilate closed spaces before entering. Isolate hazard area and deny entry to unauthorized and/or unprotected personnel.

Environmental precautions

- | No specific actions or treatments recommended related to exposure to this material.

Methods and material for containment and cleaning up

- Containment/Clean-up Measures** | Avoid generating dust.
 FOR SMALL SPILLS: Clean with a vacuum with a filtration system sufficient to remove and prevent recirculation of crystalline silica (a vacuum equipped with a high-efficiency particulate air (HEPA) filter is recommended).
 FOR LARGE SPILLS: Use a fine spray or mist to control dust creation and carefully scoop or shovel into clean dry container for later reuse or disposal.
 If, an appropriate vacuum is unavailable, only wet-clean-up methods should be used (i.e. misting). Moisture should be added as necessary to reduce exposure to airborne respirable silica dust.

Section 7 - Handling and Storage

Precautions for safe handling

- Handling** | Do not breathe dust. Avoid contact with skin, eyes, and clothing. Minimize dust generation and accumulation. Use good safety and industrial hygiene practices. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Wear long sleeves and/or protective coveralls. Contaminated clothing must be vacuumed before removal. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Wash thoroughly after handling. Do not use in areas without adequate ventilation.

Conditions for safe storage, including any incompatibilities

- Storage** | Store in a covered location. Keep container closed. 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
Silica, crystalline - tridymite (15468-32-3)	TWAs	Not established	Not established	0.05 mg/m3 TWAEV (respirable dust)	0.05 mg/m3 TWA LMPE-PPT (respirable fraction)	0.05 mg/m3 TWA (respirable dust)
Cristobalite (14464-46-1)	TWAs	0.025 mg/m3 TWA (respirable fraction)	0.05 mg/m3 TWA (designated substances regulation, respirable, listed under Silica, crystalline)	0.05 mg/m3 TWAEV (respirable dust)	0.05 mg/m3 TWA LMPE-PPT (respirable fraction)	0.05 mg/m3 TWA (respirable dust)
			0.10 mg/m3 TWA			

Quartz (14808-60-7)	TWAs	0.025 mg/m3 TWA (respirable fraction)	(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)
Boron oxide (1303-86-2)	STELs	Not established	Not established	Not established	20 mg/m3 STEL [LMPE-CT]	Not established
	TWAs	10 mg/m3 TWA	10 mg/m3 TWA	10 mg/m3 TWAEV	10 mg/m3 TWA LMPE-PPT	10 mg/m3 TWA
Phosphoric acid, aluminum salt (1:3) as Aluminum, soluble salts	TWAs	Not established	Not established	2 mg/m3 TWAEV (as Al) as Aluminum, soluble salts	2 mg/m3 TWA LMPE-PPT as Aluminum, soluble salts	2 mg/m3 TWA (as Al) as Aluminum, soluble salts
Phosphoric acid (7664-38-2)	STELs	3 mg/m3 STEL	3 mg/m3 STEL	3 mg/m3 STEV	3 mg/m3 STEL [LMPE-CT]	3 mg/m3 STEL
	TWAs	1 mg/m3 TWA	1 mg/m3 TWA	1 mg/m3 TWAEV	1 mg/m3 TWA LMPE-PPT	1 mg/m3 TWA
Aluminum oxide (1344-28-1)	TWAs	1 mg/m3 TWA (respirable fraction) as Aluminum insoluble compounds	1 mg/m3 TWA (respirable) as Aluminum insoluble compounds	10 mg/m3 TWAEV (containing no Asbestos and <1% Crystalline silica, total dust, as Al)	10 mg/m3 TWA LMPE-PPT	Not established

Exposure Limits/Guidelines (Con't.)

	Result	OSHA
Boron oxide (1303-86-2)	TWAs	15 mg/m3 TWA (total dust)
Phosphoric acid (7664-38-2)	TWAs	1 mg/m3 TWA
Aluminum oxide (1344-28-1)	TWAs	15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction)

Exposure Limits Supplemental OSHA

- Cristobalite (14464-46-1): **Mineral Dusts:** ((1/2)(30)/(SiO₂ + 2) mg/m3 TWA, total dust; (1/2)(250)/(SiO₂ + 5) mppcf TWA, respirable fraction; (1/2)(10)/(SiO₂ + 2) mg/m3 TWA, respirable fraction)
- Silica, crystalline - tridymite (15468-32-3): **Mineral Dusts:** ((1/2)(30)/(SiO₂ + 2) mg/m3 TWA, total dust; (1/2)(250)/(SiO₂ + 5) mppcf TWA, respirable fraction; (1/2)(10)/(SiO₂ + 2) mg/m3 TWA, respirable fraction)
- 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

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

Personal Protective Equipment

Respiratory	For limited exposure use an N95 dust mask. For prolonged exposure use an air-purifying respirator with high efficiency particulate air (HEPA) filters. Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or symptoms are experienced.
Eye/Face	Wear protective eyewear (goggles, face shield, or safety glasses).
Hands	Wear appropriate gloves.
Skin/Body	Wear long sleeves and/or protective coveralls.
General Industrial Hygiene Considerations	Avoid breathing dust. Avoid contact with skin, eyes or clothing. Do not remove dusts from clothing by blowing or shaking. Do not eat, drink or smoke during work. Wash hands before eating, drinking, or smoking. Wash thoroughly after handling. Handle in accordance with good industrial hygiene and safety practice.
Environmental Exposure Controls	Follow best practice for site management and disposal of waste. Dispose of in an approved landfill.
Key to abbreviations	
ACGIH = American Conference of Governmental Industrial Hygiene	STEV = Short Term Exposure Value
NIOSH = National Institute of Occupational Safety and Health	TWA = Time-Weighted Averages are based on 8h/day, 40h/week exposures
OSHA = Occupational Safety and Health Administration	TWAEV = Time-Weighted Average Exposure Value
STEL = Short Term Exposure Limits are based on 15-minute exposures	

Section 9 - Physical and Chemical Properties

Information on Physical and Chemical Properties

Material Description			
Physical Form	Solid	Appearance/Description	Light gray, granular, partial putty-like solid with no odor.
Color	Light gray.	Odor	Odorless
Particulate Size	600 µ	Odor Threshold	No data available
General Properties			
Boiling Point	No data available	Melting Point	No data available
Decomposition Temperature	No data available	pH	Not relevant
Specific Gravity/Relative Density	2.5 to 2.7 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	Not relevant	UEL	Not relevant
LEL	Not relevant	Autoignition	No data available
Flammability (solid, gas)	No data available		
Environmental			
Octanol/Water Partition coefficient	No data available		

Section 10: Stability and Reactivity

Reactivity

| No dangerous reaction known under conditions of normal use.

Chemical stability

| Stable under normal temperatures and pressures.

Possibility of hazardous reactions

| Hazardous polymerization not indicated.

Conditions to avoid

| None known.

Incompatible materials

| None known.

Hazardous decomposition products

| None known.

Section 11 - Toxicological Information**Information on toxicological effects**

		Components
Phosphoric acid (2.4% TO 4.55%)	7664-38-2	Acute Toxicity: Ingestion/Oral-Rat LD50 • 1.25 g/kg; <i>Lungs, Thorax, or Respiration:</i> Acute pulmonary edema; Liver:Changes in liver weight ; Inhalation-Rat LC50 • 25.5 mg/m ³ ; <i>Lungs, Thorax, or Respiration:</i> Acute pulmonary edema; Liver:Changes in liver weight
Boron oxide (0.04% TO 0.35%)	1303-86-2	Acute Toxicity: Ingestion/Oral-Rat LD50 • 3150 mg/kg; Irritation: Eye-Rabbit • 50 mg; Skin-Rabbit • 1 g; Multi-dose Toxicity: Inhalation-Rat TClO • 150 mg/m ³ 2 Hour(s) 15 Day(s)-Intermittent; <i>Sense Organs and Special Senses:</i> Olfaction:Other changes; Lungs, Thorax, or Respiration:Other changes; Nutritional and Gross Metabolic: <i>Gross Metabolite Changes:</i> Weight loss or decreased weight gain

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

Route(s) of entry/exposure

| Inhalation, Skin, Eye, Ingestion

Medical Conditions Aggravated by Exposure

| Any pre-existing conditions of the lungs. Disorders of the lungs.

Potential Health Effects**Inhalation****Acute (Immediate)**

| Exposure to dust may cause irritation.

Chronic (Delayed) | Chronic overexposure to dust containing respirable sized crystalline silica can cause delayed lung injury (silicosis). Inhalation of dust containing crystalline silica pulmonary diseases such as asthma and lung disorder associated with smoking.

Skin

Acute (Immediate) | Causes skin irritation. Exposure to dust may cause irritation.

Chronic (Delayed) | No data available.

Eye

Acute (Immediate) | Causes serious eye damage. Excessive concentrations of nuisance dust in the workplace may reduce visibility and may cause unpleasant deposits in eyes.

Chronic (Delayed) | No data available.

Ingestion

Acute (Immediate) | Excessive concentrations of nuisance dust in the workplace may cause mechanical irritation to mucous membranes.

Chronic (Delayed) | No data available.

Carcinogenic Effects

| May cause cancer. IARC studies have shown sufficient evidence from animal studies to categorize crystalline silica as a group 1 carcinogen.

Carcinogenic Effects			
	CAS	IARC	NTP
Cristobalite	14464-46-1	Group 1-Carcinogenic	Not Listed
Silica, crystalline - tridymite	15468-32-3	Group 1-Carcinogenic	Not Listed
Quartz	14808-60-7	Group 1-Carcinogenic	Known Human Carcinogen

Key to abbreviations

LD = Lethal Dose

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.

international regulations.

Section 14 - Transport Information

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

Special precautions for user | None specified.**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** | No data available**Section 15 - Regulatory Information****Safety, health and environmental regulations/legislation specific for the substance or mixture****SARA Hazard Classifications** | Acute, Chronic

State Right To Know				
Component	CAS	MA	NJ	PA
Aluminum oxide	1344-28-1	Yes	Yes	Yes
Bentonite	1302-78-9	No	No	No
Boron oxide	1303-86-2	Yes	Yes	Yes
Cristobalite	14464-46-1	Yes	Yes	Yes
Phosphoric acid	7664-38-2	Yes	Yes	Yes
Quartz	14808-60-7	Yes	Yes	Yes
Silica, crystalline - tridymite	15468-32-3	Yes	Yes	Yes

Inventory			
Component	CAS	Canada DSL	TSCA
Aluminum oxide	1344-28-1	Yes	Yes
Bentonite	1302-78-9	Yes	Yes
Boron oxide	1303-86-2	Yes	Yes
Cristobalite	14464-46-1	Yes	Yes
Phosphoric acid	7664-38-2	Yes	Yes
Quartz	14808-60-7	Yes	Yes
Silica, crystalline - tridymite	15468-32-3	No	No

Canada**Labor****Canada - WHMIS - Classifications of Substances**

- Silica, crystalline - tridymite 15468-32-3 D2A
- Boron oxide 1303-86-2 D2B

• Phosphoric acid	7664-38-2	E (including <=85%)
• Aluminum oxide	1344-28-1	Uncontrolled product according to WHMIS classification criteria
• Cristobalite	14464-46-1	D2A (In certain cases, this classification does not apply. For more information, consult the section Substance Specific Issues - Silica, crystalline, encapsulated on Health Canada's WHMIS Division website.)
• Quartz	14808-60-7	D2A (In certain cases, this classification does not apply. For more information, consult the section Substance Specific Issues - Silica, crystalline, encapsulated on Health Canada's WHMIS Division website.)
• Bentonite	1302-78-9	D2A
Canada - WHMIS - Ingredient Disclosure List		
• Silica, crystalline - tridymite	15468-32-3	1 %
• Boron oxide	1303-86-2	1 %
• Phosphoric acid	7664-38-2	1 %
• Aluminum oxide	1344-28-1	1 %
• Cristobalite	14464-46-1	1 %
• Quartz	14808-60-7	1 %
• Bentonite	1302-78-9	Not Listed

United States

Environment

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

• Silica, crystalline - tridymite	15468-32-3	Not Listed
• Boron oxide	1303-86-2	Not Listed
• Phosphoric acid	7664-38-2	5000 lb final RQ; 2270 kg final RQ
• Aluminum oxide	1344-28-1	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Quartz	14808-60-7	Not Listed
• Bentonite	1302-78-9	Not Listed

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

• Silica, crystalline - tridymite	15468-32-3	Not Listed
• Boron oxide	1303-86-2	Not Listed
• Phosphoric acid	7664-38-2	Not Listed
• Aluminum oxide	1344-28-1	1.0 % de minimis concentration (fibrous forms)
• Cristobalite	14464-46-1	Not Listed
• Quartz	14808-60-7	Not Listed
• Bentonite	1302-78-9	Not Listed

United States - California

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

• Silica, crystalline - tridymite	15468-32-3	Not Listed
• Boron oxide	1303-86-2	Not Listed
• Phosphoric acid	7664-38-2	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Cristobalite	14464-46-1	Not Listed
• Quartz	14808-60-7	carcinogen, initial date 10/1/88 (airborne particles of respirable size)
• Bentonite	1302-78-9	Not Listed

United States - Pennsylvania**Labor****U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List**

• Silica, crystalline - tridymite	15468-32-3	Not Listed
• Boron oxide	1303-86-2	Not Listed
• Phosphoric acid	7664-38-2	
• Aluminum oxide	1344-28-1	
• Cristobalite	14464-46-1	Not Listed
• Quartz	14808-60-7	Not Listed
• Bentonite	1302-78-9	Not Listed

Other Information

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

Section 16 - Other Information

Last Revision Date | 30/December/2014

Preparation Date | 14/March/2007

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