

Section 1: Identification

Product identifier

Product Name • **Reno Pipe Shield**

Product Code • 186550

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 • Carcinogenicity 1A - H350
Specific Target Organ Toxicity Repeated Exposure 1 - H372

Label elements

OSHA HCS 2012

DANGER



Hazard statements • May cause cancer. - H350
Causes damage to organs - Lungs through prolonged or repeated exposure via Inhalation - H372

Precautionary statements

Prevention • Obtain special instructions before use. - P201
Do not handle until all safety precautions have been read and understood. - P202
Do not breathe dust. - P260

Wash thoroughly after handling. - P264
Do not eat, drink or smoke when using this product. - P270
Wear protective gloves/protective clothing/eye protection/face protection. - P280

Response • IF exposed or concerned: Get medical advice/attention. - P308+P313
Get medical advice/attention if you feel unwell. - P314

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

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).

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
Tabular Alumina	CAS:1344-28-1	74.1% TO 80%	NDA	OSHA HCS 2012: Not Classified - Criteria not met	NDA
Aluminum oxide	CAS:1344-28-1	9.85% TO 12%	NDA	OSHA HCS 2012: Not Classified - Criteria not met	NDA
Aluminum(III) silicate (2:1)	CAS:1302-76-7	2.55% TO 3.8%	NDA	OSHA HCS 2012: STOT RE 2 (Lungs)	NDA
Amorphous/fused silica	CAS:60676-86-0	< 3.2%	NDA	OSHA HCS 2012: Data lacking	NDA
Silica fumes	CAS:69012-64-2	2% TO 3%	NDA	OSHA HCS 2012: STOT RE 1 (Lungs)	NDA
Raw Clay	Proprietary	0.3% TO 2%	NDA	OSHA HCS 2012: STOT RE 2 (Lungs)	NDA
Alumina Silicate	Proprietary	0.87% TO 1.74%	NDA	OSHA HCS 2012: STOT RE 2 (Lungs)	NDA
Iron oxide	CAS:1309-37-1	< 1.6%	NDA	OSHA HCS 2012: Data lacking	NDA

Quartz	CAS:14808-60-7	0.157% TO 0.59%	NDA	OSHA HCS 2012: Carc. 1A; STOT RE 1 (Lungs)	NDA
Setting Agent 1	Proprietary	0.0196% TO 0.449%	NDA	OSHA HCS 2012: Not Classified - Criteria not met	NDA
Titanium dioxide	CAS:13463-67-7	0.03% TO 0.4%	NDA	OSHA HCS 2012: Carc. 2	NDA
Sodium hydroxide	CAS:1310-73-2	< 0.4%	NDA	OSHA HCS 2012: Skin. Corr. 1B; Eye Corr. 1	NDA
Calcium oxide	CAS:1305-78-8	< 0.4%	NDA	OSHA HCS 2012: Skin Irrit 2, Eye Irrit 2, STOT SE 3 (resp)	NDA
Silica, amorphous	CAS:7631-86-9	0.13% TO 0.26%	NDA	OSHA HCS 2012: Data Lacking	NDA
Cristobalite	CAS:14464-46-1	0.0045% TO 0.027%	NDA	OSHA HCS 2012: Carc. 1A	NDA
Silica, crystalline - tridymite	CAS:15468-32-3	0% TO 0.02%	NDA	OSHA HCS 2012: Data lacking	NDA

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 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 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/m ³ TWAEV (respirable dust)	0.05 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)
Setting Agent 1 (Proprietary)	TWAs	10 mg/m ³ TWA (inhalable fraction)	10 mg/m ³ TWAEV (inhalable)	10 mg/m ³ TWAEV (fume, as Mg)	10 mg/m ³ TWA LMPE-PPT (fume, as Mg)	Not established
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
Silica, amorphous (7631-86-9)	TWAs	Not established	Not established	Not established	Not established	6 mg/m ³ TWA
Quartz	TWAs	0.025 mg/m ³ TWA	0.10 mg/m ³ TWAEV	0.1 mg/m ³ TWAEV	0.1 mg/m ³ TWA	0.05 mg/m ³ TWA

(14808-60-7)		(respirable fraction)	(designated substance regulation)	(respirable dust)	LMPE-PPT (respirable fraction)	(respirable dust)
Sodium hydroxide (1310-73-2)	Ceilings	2 mg/m3 Ceiling	2 mg/m3 CEV	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 TWAEV	2 mg/m3 TWAEV	2 mg/m3 TWA LMPE-PPT	2 mg/m3 TWA
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 TWAEV (respirable); 10 mg/m3 TWAEV (total dust)	5 mg/m3 TWAEV (dust and fume, as Fe)	5 mg/m3 TWA LMPE-PPT	5 mg/m3 TWA (dust and fume, as Fe)
Silica fumes (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
Amorphous/fused silica (60676-86-0)	TWAs	Not established	0.1 mg/m3 TWAEV (respirable)	0.1 mg/m3 TWAEV (respirable dust, containing no asbestos and less than 1% crystalline silica)	0.1 mg/m3 TWA LMPE-PPT; 10 mg/m3 TWA LMPE-PPT (inhalable particulate); 3 mg/m3 TWA LMPE-PPT (respirable particulate)	Not established
Aluminum oxide (1344-28-1)	TWAs	Not established	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
Tabular Alumina (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
Setting Agent 1 (Proprietary)	TWAs	15 mg/m3 TWA (fume, total particulate)
Titanium dioxide (13463-67-7)	TWAs	15 mg/m3 TWA (total dust)
Sodium hydroxide (1310-73-2)	TWAs	2 mg/m3 TWA
Calcium oxide (1305-78-8)	TWAs	5 mg/m3 TWA
Iron oxide (1309-37-1)	TWAs	10 mg/m3 TWA (fume)
Aluminum oxide (1344-28-1)	TWAs	15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction)
Tabular Alumina (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
Particulate Size	600 μ	Odor Threshold	No data available

General Properties

Boiling Point	No data available	Melting Point	3200 F(1760 C)
Decomposition Temperature	No data available	pH	No data available
Specific Gravity/Relative Density	2.93 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		

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		
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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 (0.13% TO 0.26%)	7631-86-9	Irritation: Eye-Rabbit • 25 mg 24 Hour(s) • Mild irritation
Sodium hydroxide (< 0.4%)	1310-73-2	Irritation: Eye-Rabbit • 50 µg 24 Hour(s) • Severe irritation; Skin-Rabbit • 500 mg 24 Hour(s) • Severe irritation
Titanium dioxide (0.03% TO 0.4%)	13463-67-7	Irritation: Skin-Human • 300 µg 3 Day(s)-Intermittent • Mild irritation; Tumorigen / Carcinogen: Inhalation-Rat TCl ₀ • 250 mg/m ³ 6 Hour(s) 2 Year(s)-Intermittent; <i>Tumorigenic: Carcinogenic by RTECS criteria; Lungs, Thorax, or Respiration: Tumors</i>

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•No data available
Skin sensitization	OSHA HCS 2012•No data available
STOT-RE	OSHA HCS 2012•Specific Target Organ Toxicity Repeated Exposure 1
STOT-SE	OSHA HCS 2012•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•No data available

Target Organs

- Lungs

Route(s) of entry/exposure

- Inhalation, Skin, Eye, Ingestion

Medical Conditions

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

Aggravated by Exposure

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) Eye**
- No data available.
- Acute (Immediate)**
- Excessive concentrations of nuisance dust in the workplace may reduce visibility and may cause unpleasant deposits in eyes.
- Chronic (Delayed) Ingestion**
- No data available.
- Acute (Immediate)**
- Excessive concentrations of nuisance dust in the workplace may cause mechanical irritation to mucous membranes.
- Chronic (Delayed) Carcinogenic Effects**
- No data available.
 - May cause cancer. IARC studies have shown sufficient evidence from animal studies to categorize crystalline silica as a group 1 carcinogen.

Carcinogenic Effects			
	CAS	IARC	NTP
Silica, crystalline - tridymite	15468-32-3	Group 1-Carcinogenic	Not Listed
Cristobalite	14464-46-1	Group 1-Carcinogenic	Not Listed
Titanium dioxide	13463-67-7	Group 2B-Possible Carcinogen	Not Listed
Quartz	14808-60-7	Group 1-Carcinogenic	Known Human Carcinogen

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
Tabular Alumina	1344-28-1	Yes	Yes	Yes
Aluminum oxide	1344-28-1	Yes	Yes	Yes
Amorphous/fused silica	60676-86-0	Yes	Yes	No
Raw Clay	<i>Proprietary</i>	No	No	No
Calcium oxide	1305-78-8	Yes	Yes	Yes
Cristobalite	14464-46-1	Yes	Yes	Yes
Iron oxide	1309-37-1	Yes	Yes	Yes
Setting Agent 1	<i>Proprietary</i>	Yes	Yes	Yes
Quartz	14808-60-7	Yes	Yes	Yes
Sodium hydroxide	1310-73-2	Yes	Yes	Yes
Chemical 2	<i>Proprietary</i>	No	No	No
Titanium dioxide	13463-67-7	Yes	Yes	Yes

Inventory			
Component	CAS	Canada DSL	TSCA
Tabular Alumina	1344-28-1	Yes	Yes
Aluminum oxide	1344-28-1	Yes	Yes
Amorphous/fused silica	60676-86-0	Yes	Yes
Raw Clay	<i>Proprietary</i>	Yes	Yes
Calcium oxide	1305-78-8	Yes	Yes
Cristobalite	14464-46-1	Yes	Yes
Iron oxide	1309-37-1	Yes	Yes
Setting Agent 1	<i>Proprietary</i>	Yes	Yes
Quartz	14808-60-7	Yes	Yes
Sodium hydroxide	1310-73-2	Yes	Yes
Chemical 2	<i>Proprietary</i>	Yes	Yes
Titanium dioxide	13463-67-7	Yes	Yes

Canada

Labor

Canada - WHMIS - Classifications of Substances

•Reno Pipe Shield as Particulates not otherwise classified (PNOC)

Not Listed

•Calcium oxide

1305-78-8

E

•Iron oxide

1309-37-1

Uncontrolled product according to WHMIS

•Iron oxide as Iron compounds		classification criteria Not Listed
•Setting Agent 1	<i>Proprietary</i>	Uncontrolled product according to WHMIS classification criteria
•Sodium hydroxide	1310-73-2	E (including 0.04% in aqueous solution, 0.08%, 0.4% in aqueous solution, 2%, 2.5%, 4% in aqueous solution, 5%, 10%, 16%, 20%, 40%, 50% in aqueous solution, 8.7N) 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	Uncontrolled product according to WHMIS classification criteria
•Tabular Alumina	1344-28-1	Uncontrolled product according to WHMIS classification criteria
•Aluminum oxide	1344-28-1	Uncontrolled product according to WHMIS classification criteria
•Tabular Alumina as Aluminum insoluble compounds		Not Listed 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
•Amorphous/fused silica	60676-86-0	D2B (SiO ₂ :Na ₂ O ratio >2.4:1); E (SiO ₂ :Na ₂ O ratio <2.4:1) 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.)
•Chemical 2	<i>Proprietary</i>	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
•Raw Clay	<i>Proprietary</i>	D2A
Canada - WHMIS - Ingredient Disclosure List		
•Reno NC Gun 90 as Particulates not otherwise classified (PNOC)		Not Listed
•Calcium oxide	1305-78-8	1 %
•Iron oxide	1309-37-1	1 %
•Iron oxide as Iron compounds		Not Listed
•Setting Agent 1	<i>Proprietary</i>	1 %
•Sodium hydroxide	1310-73-2	1 %
•Titanium dioxide	13463-67-7	Not Listed
•Tabular Alumina	1344-28-1	1 %
•Aluminum oxide	1344-28-1	1 %

•Tabular Alumina as Aluminum insoluble compounds		Not Listed
•Cristobalite	14464-46-1	1 %
•Amorphous/fused silica	60676-86-0	1 %
•Chemical 2	<i>Proprietary</i>	Not Listed
•Quartz	14808-60-7	1 %
•Raw Clay	<i>Proprietary</i>	Not Listed

Mexico

Other

Mexico - Hazard Classifications

•Reno NC Gun 90 as Particulates not otherwise classified (PNOC)		Not Listed
•Calcium oxide	1305-78-8	Hazard Class = 8 PG = III UN1910
•Iron oxide	1309-37-1	Not Listed
•Iron oxide as Iron compounds		Not Listed
•Setting Agent 1	<i>Proprietary</i>	Not Listed
•Sodium hydroxide	1310-73-2	Hazard Class = 8 PG = II UN1823; Hazard Class = 8 PG = II UN1824; Hazard Class = 8 PG = III UN1824
•Titanium dioxide	13463-67-7	Not Listed
•Tabular Alumina	1344-28-1	Not Listed
•Aluminum oxide	1344-28-1	Not Listed
•Tabular Alumina as Aluminum insoluble compounds		Not Listed
•Cristobalite	14464-46-1	Not Listed
•Amorphous/fused silica	60676-86-0	Not Listed
•Chemical 2	<i>Proprietary</i>	Not Listed
•Quartz	14808-60-7	Not Listed
•Raw Clay	<i>Proprietary</i>	Not Listed

Mexico - Regulated Substances

•Reno NC Gun 90 as Particulates not otherwise classified (PNOC)		Not Listed
•Calcium oxide	1305-78-8	UN1910
•Iron oxide	1309-37-1	Not Listed
•Iron oxide as Iron compounds		Not Listed
•Setting Agent 1	<i>Proprietary</i>	Not Listed
•Sodium hydroxide	1310-73-2	UN1823; UN1824; UN1824
•Titanium dioxide	13463-67-7	Not Listed
•Tabular Alumina	1344-28-1	Not Listed
•Aluminum oxide	1344-28-1	Not Listed
•Tabular Alumina as Aluminum insoluble compounds		Not Listed
•Cristobalite	14464-46-1	Not Listed
•Amorphous/fused silica	60676-86-0	Not Listed
•Chemical 2	<i>Proprietary</i>	Not Listed
•Quartz	14808-60-7	Not Listed
•Raw Clay	<i>Proprietary</i>	Not Listed

United States

Environment

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

•Reno NC Gun 90 as Particulates not otherwise classified (PNOC)		Not Listed
•Calcium oxide	1305-78-8	Not Listed
•Iron oxide	1309-37-1	Not Listed
•Iron oxide as Iron compounds		Not Listed
•Setting Agent 1	<i>Proprietary</i>	Not Listed
•Sodium hydroxide	1310-73-2	1000 lb final RQ; 454 kg final RQ
•Titanium dioxide	13463-67-7	Not Listed
•Tabular Alumina	1344-28-1	Not Listed
•Aluminum oxide	1344-28-1	Not Listed
•Tabular Alumina as Aluminum insoluble compounds		Not Listed
•Cristobalite	14464-46-1	Not Listed
•Amorphous/fused silica	60676-86-0	Not Listed
•Chemical 2	<i>Proprietary</i>	Not Listed
•Quartz	14808-60-7	Not Listed

•Raw Clay	<i>Proprietary</i>	Not Listed
U.S. - CERCLA/SARA - Section 313 - Emission Reporting		
•Reno NC Gun 90 as Particulates not otherwise classified (PNOC)		Not Listed
•Calcium oxide	1305-78-8	Not Listed
•Iron oxide	1309-37-1	Not Listed
•Iron oxide as Iron compounds		Not Listed
•Setting Agent 1	<i>Proprietary</i>	Not Listed
•Sodium hydroxide	1310-73-2	Not Listed
•Titanium dioxide	13463-67-7	Not Listed
•Tabular Alumina	1344-28-1	1.0 % de minimis concentration (fibrous forms)
•Aluminum oxide	1344-28-1	1.0 % de minimis concentration (fibrous forms)
•Tabular Alumina as Aluminum insoluble compounds		Not Listed
•Cristobalite	14464-46-1	Not Listed
•Amorphous/fused silica	60676-86-0	Not Listed
•Chemical 2	<i>Proprietary</i>	Not Listed
•Quartz	14808-60-7	Not Listed
•Raw Clay	<i>Proprietary</i>	Not Listed

United States - California

Environment

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

•Reno NC Gun 90 as Particulates not otherwise classified (PNOC)		Not Listed
•Calcium oxide	1305-78-8	Not Listed
•Iron oxide	1309-37-1	Not Listed
•Iron oxide as Iron compounds		Not Listed
•Setting Agent 1	<i>Proprietary</i>	Not Listed
•Sodium hydroxide	1310-73-2	Not Listed
•Titanium dioxide	13463-67-7	carcinogen, initial date 9/2/11 (airborne, unbound particles of respirable size)
•Tabular Alumina	1344-28-1	Not Listed
•Aluminum oxide	1344-28-1	Not Listed
•Tabular Alumina as Aluminum insoluble compounds		Not Listed
•Cristobalite	14464-46-1	Not Listed
•Amorphous/fused silica	60676-86-0	Not Listed
•Chemical 2	<i>Proprietary</i>	Not Listed
•Quartz	14808-60-7	carcinogen, initial date 10/1/88 (airborne particles of respirable size)
•Raw Clay	<i>Proprietary</i>	Not Listed

United States - Pennsylvania

Labor

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

•Reno NC Gun 90 as Particulates not otherwise classified (PNOC)		Not Listed
•Calcium oxide	1305-78-8	Not Listed
•Iron oxide	1309-37-1	Not Listed
•Iron oxide as Iron compounds		Not Listed
•Setting Agent 1	<i>Proprietary</i>	Not Listed
•Sodium hydroxide	1310-73-2	
•Titanium dioxide	13463-67-7	Not Listed
•Tabular Alumina	1344-28-1	
•Aluminum oxide	1344-28-1	
•Tabular Alumina as Aluminum insoluble compounds		Not Listed
•Cristobalite	14464-46-1	Not Listed
•Amorphous/fused silica	60676-86-0	Not Listed
•Chemical 2	<i>Proprietary</i>	Not Listed
•Quartz	14808-60-7	Not Listed
•Raw Clay	<i>Proprietary</i>	Not Listed

United States - Rhode Island

Labor

U.S. - Rhode Island - Hazardous Substance List

•Reno NC Gun 90 as Particulates not otherwise classified (PNOC)		Not Listed
•Calcium oxide	1305-78-8	Toxic; Flammable
•Iron oxide	1309-37-1	Toxic (fume)
•Iron oxide as Iron compounds		Not Listed
•Setting Agent 1	<i>Proprietary</i>	Toxic (fume)
•Sodium hydroxide	1310-73-2	Toxic; Flammable
•Titanium dioxide	13463-67-7	Toxic
•Tabular Alumina	1344-28-1	Toxic
•Aluminum oxide	1344-28-1	Toxic
•Tabular Alumina as Aluminum insoluble compounds		Not Listed
•Cristobalite	14464-46-1	Not Listed
•Amorphous/fused silica	60676-86-0	Toxic
•Chemical 2	<i>Proprietary</i>	Not Listed
•Quartz	14808-60-7	Toxic (dust and fiber)
•Raw Clay	<i>Proprietary</i>	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 • 26/August/2013

Preparation Date • 26/August/2013

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Key to abbreviations
NDA = No data available
