

Safety Data Sheet

Section 1: Identification

Product identifier

Product Name • Sand (Whole Grain)

Synonyms • AFS 42, AquaSil, Arena Sand; Artificial Turf Sand; Colorado Silica Sand®; Crystalline Silica; Quartz; Sand; Silica Sand; Traction Sand; Frac Sand

Product Code • PS-002

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

Recommended use • Industries such as frac sand, fracturing, water filtration, construction materials, cement, non-skid surfaces, fillers, refractories, fiberglass, ceramics, golf course sand, artificial athletic sands, volleyball courts, playgrounds and horse arenas/tracks

Restrictions on use • Do not use for abrasive blasting. This material safety data sheet and the information contained herein were not developed for abrasive blasting.

Details of the supplier of the safety data sheet

Manufacturer • Premier Silica
5205 N. O'Connor Blvd
Suite 200 Irving, TX 75039
United States
www.Premiersilica.com

Telephone (General) • 972-444-9001

Emergency telephone number

Manufacturer • 800 424-9300 - CHEMTREC - contract #: 8091

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 1 - 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 • Store locked up. - P405
 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.

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
Quartz	CAS:14808-60-7	70% TO 99.5%	NDA	OSHA HCS 2012: Carc. 1A; STOT RE 1 (Lungs, Inhl)	NDA
Aluminum oxide	CAS:1344-28-1	0% TO 19%	NDA	OSHA HCS 2012: STOT RE 2 (Lungs, Inhl)	NDA
Potassium oxide	CAS:12136-45-7	0% TO 12%	NDA	OSHA HCS 2012: Not Classified	NDA
Iron oxide	CAS:1309-37-1	0% TO 2%	NDA	OSHA HCS 2012: Not Classified	NDA
Calcium oxide	CAS:1305-78-8	0% TO 1.1%	NDA	OSHA HCS 2012: Skin Corr. 1C; Eye Dam. 1	NDA
Titanium dioxide	CAS:13463-67-7	0% TO 0.7%	NDA	OSHA HCS 2012: Muta. 2; Carc. 2; STOT RE 2 (Lungs)	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. If signs/symptoms continue, get medical attention.

Skin • In case of contact with substance, immediately flush skin with running water for at least 20 minutes.

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.

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

Section 5: Fire-Fighting Measures

Extinguishing media

Suitable Extinguishing Media • In case of fire use media as appropriate for surrounding fire.

Unsuitable Extinguishing Media • No data available.

Special hazards arising from the substance or mixture

Unusual Fire and Explosion Hazards • No unusual fire and explosion hazards.

Hazardous Combustion Products • No data available.

Advice for firefighters

- Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

Section 6 - Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

Personal Precautions • Ventilate the area. Do not walk through spilled material. Wear appropriate personal protective equipment, avoid direct contact. Do not breathe dust. Do not rely on your sight to determine if dust is in the air. Respirable crystalline silica dust may be in the air without a visible dust cloud.

Emergency Procedures • As an immediate precautionary measure, isolate spill or leak area for at least 25 meters (75 feet) in all directions. Keep unauthorized personnel away. Stay upwind. Ventilate closed spaces before entering.

Environmental precautions

- Avoid run off to waterways and sewers.

Methods and material for containment and cleaning up

Containment/Clean-up Measures • Avoid generating dust.

SMALL DRY SPILLS: With clean shovel place material into clean, dry container and cover loosely; move containers from spill area.

LARGE SPILLS: Cover powder spill with plastic sheet or tarp to minimize spreading.

Section 7 - Handling and Storage

Precautions for safe handling

Handling • Use only with adequate ventilation. Do not rely on your sight to determine if dust is in the air. Respirable crystalline silica dust may be in the air without a visible dust cloud. Wear appropriate personal protective equipment, avoid direct contact. Do not breathe dust. Avoid contact with skin, eyes, and clothing. Minimize dust generation and accumulation. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco.

Conditions for safe storage, including any incompatibilities

Storage • Store in a well-ventilated place. Keep container tightly closed.

Section 8 - Exposure Controls/Personal Protection

Control parameters

Exposure Limits/Guidelines				
	Result	ACGIH	NIOSH	OSHA
Calcium oxide (1305-78-8)	TWAs	2 mg/m ³ TWA	2 mg/m ³ TWA	5 mg/m ³ TWA
Iron oxide (1309-37-1)	TWAs	5 mg/m ³ TWA (respirable fraction)	5 mg/m ³ TWA (dust and fume, as Fe)	10 mg/m ³ TWA (fume); 15 mg/m ³ TWA (total dust, listed under Rouge); 5 mg/m ³ TWA (respirable fraction, listed under Rouge)
Titanium dioxide (13463-67-7)	TWAs	10 mg/m ³ TWA	Not established	15 mg/m ³ TWA (total dust)
Aluminum oxide (1344-28-1)	TWAs	1 mg/m ³ TWA (respirable fraction) <i>as Aluminum insoluble compounds</i>	Not established	15 mg/m ³ TWA (total dust); 5 mg/m ³ TWA (respirable fraction)
Quartz (14808-60-7)	TWAs	0.025 mg/m ³ TWA (respirable fraction)	0.05 mg/m ³ TWA (respirable dust)	Mineral Dust (30) / (%SiO ₂ + 2) mg/m ³ TWA Respirable Dust (10) / (%SiO ₂ + 2) mg/m ³ TWA

Exposure Control Notations

ACGIH

- Quartz (14808-60-7): **Carcinogens:** (A2 - Suspected Human Carcinogen)
- Aluminum oxide as Aluminum insoluble compounds: **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen)
- Iron oxide (1309-37-1): **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen)
- Titanium dioxide (13463-67-7): **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen)

Exposure Limits Supplemental

OSHA

- 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)

ACGIH

- Quartz (14808-60-7): **TLV Basis - Critical Effects:** (lung cancer; pulmonary fibrosis)
- Aluminum oxide as Aluminum insoluble compounds: **TLV Basis - Critical Effects:** (pneumoconiosis; lower respiratory tract irritation; neurotoxicity)
- Iron oxide (1309-37-1): **TLV Basis - Critical Effects:** (pneumoconiosis)
- Calcium oxide (1305-78-8): **TLV Basis - Critical Effects:** (upper respiratory tract irritation)
- Titanium dioxide (13463-67-7): **TLV Basis - Critical Effects:** (lower respiratory tract irritation) | **Notice of Intended Changes (TLVs):** (1 mg/m³ TWA (respirable fraction); A3 - confirmed animal carcinogen with unknown relevance to humans; TLV basis: lower respiratory tract irritation, pneumoconiosis)

Exposure controls

Engineering

Measures/Controls

- Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. 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).

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 safety goggles.

Skin/Body

- Wear appropriate gloves. Wear long sleeves and/or protective coveralls.

Environmental Exposure Controls

- Follow best practice for site management and disposal of waste.

Key to abbreviations

ACGIH = American Conference of Governmental Industrial Hygiene

NIOSH = National Institute of Occupational Safety and Health

OSHA = Occupational Safety and Health Administration

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	White or tan sand, granular solid with no odor.
Color	White or tan.	Odor	Odorless
Odor Threshold	No data available		
General Properties			
Boiling Point	4046 F(2230 C)	Melting Point	3110 F(1710 C)
Decomposition Temperature	No data available	pH	6 to 8
Specific Gravity/Relative Density	2.65 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	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

- Inert, not reactive. However, silica will dissolve in hydrofluoric acid and produce a corrosive gas – silicon tetrafluoride (SiF₄).

Chemical stability

- Stable under normal temperatures and pressures.

Possibility of hazardous reactions

- Hazardous polymerization not indicated.

Conditions to avoid

- Avoid generating dust.

Incompatible materials

- Contact with powerful oxidizing agents, such as fluorine, boron, trifluoride, chlorine trifluoride, manganese trifluoride and oxygen difluoride, may cause fires.

Hazardous decomposition products

- No data available.

Section 11 - Toxicological Information

Information on toxicological effects

		Components
Quartz (70% TO 99.5%)	14808-60-7	<p>Acute Toxicity: Inhalation-Human TClO • 16 mppcf 8 Hour(s) 17.9 Year(s)-Intermittent; <i>Lungs, Thorax, or Respiration:Fibrosis, focal (pneumoconiosis); Lungs, Thorax, or Respiration:Cough; Lungs, Thorax, or Respiration:Dyspnea;</i> Inhalation-Rat TClO • 200 mg/kg; <i>Lungs, Thorax, or Respiration:Fibrosis, focal (pneumoconiosis); Lungs, Thorax, or Respiration:Other changes; Nutritional and Gross Metabolic:Changes in Chemistry or Temperature:Fe;</i></p> <p>Multi-dose Toxicity: Inhalation-Hamster TClO • 3 mg/m³ 6 Hour(s) 78 Week(s)-Intermittent; <i>Lungs, Thorax, or Respiration:Fibrosis (interstitial); Lungs, Thorax, or Respiration:Changes in lung weight;</i> Inhalation-Rat TClO • 6.2 mg/m³ 6 Hour(s) 6 Week(s)-Intermittent; <i>Lungs, Thorax, or Respiration:Other changes; Blood:Changes in spleen; Immunological Including Allergic:Increase in cellular immune response;</i> Inhalation-Rat TClO • 80 mg/m³ 26 Week(s)-Intermittent; <i>Lungs, Thorax, or Respiration:Fibrosis, focal (pneumoconiosis); Blood:Changes in spleen; Immunological Including Allergic:Decrease in cellular immune response;</i></p> <p>Mutagen: Micronucleus test • Hamster • Lung (Somatic cell) • 160 µg/cm³; DNA damage • Human • Other Cell Type • 120 mg/L 24 Hour(s); Micronucleus test • Human • Lung (Somatic cell) • 40 µg/cm³;</p> <p>Tumorigen / Carcinogen: Inhalation-Rat TClO • 50 mg/m³ 6 Hour(s) 71 Week(s)-Intermittent; <i>Tumorigenic:Carcinogenic by RTECS criteria; Liver:Tumors</i></p>
Aluminum oxide (0% TO 19%)	1344-28-1	<p>Multi-dose Toxicity: Inhalation-Rat TClO • 200 mg/m³ 5 Hour(s) 28 Week(s)-Intermittent; <i>Lungs, Thorax, or Respiration:Structural or functional change in trachea or bronchi; Lungs, Thorax, or Respiration:Chronic pulmonary edema; Related to Chronic Data:Death in the Other Multiple Dose data type field;</i></p> <p>Tumorigen / Carcinogen: Implant-Rat • 200 mg/kg; <i>Tumorigenic:Equivocal tumorigenic agent by RTECS criteria; Tumorigenic:Tumors at site of application;</i> Implant-Rat TDLo • 200 mg/kg; <i>Tumorigenic:Neoplastic by RTECS criteria; Tumorigenic:Tumors at site of application;</i> Intrapleural-Rat TDLo • 90 mg/kg; <i>Tumorigenic:Equivocal tumorigenic agent by RTECS criteria; Lungs, Thorax, or Respiration:Tumors</i></p>
Iron oxide (0% TO 2%)	1309-37-1	<p>Acute Toxicity: Inhalation-Rat TClO • 50 mg/m³ 12 Hour(s); <i>Behavioral:Excitement; Behavioral:Fluid intake; Gastrointestinal:Hypermotility, diarrhea;</i> Inhalation-Rat TClO • .8 mg/kg; <i>Lungs, Thorax, or Respiration:Emphysema; Biochemical:Enzyme inhibition, induction, or change in blood or tissue levels:Multiple enzyme effects; Biochemical:Metabolism (intermediary):Effect on inflammation or mediation of inflammation;</i></p> <p>Multi-dose Toxicity: Inhalation-Rat TClO • 500 µg/m³ 24 Hour(s) 61 Day(s)-Continuous; <i>Brain and Coverings:Other degenerative changes; Blood:Changes in serum composition (e.g., TP, bilirubin cholesterol); Biochemical:Enzyme inhibition, induction, or change in blood or tissue levels:True cholinesterase</i></p>
Titanium dioxide (0% TO 0.7%)	13463-67-7	<p>Irritation: Skin-Human • 300 µg 3 Day(s)-Intermittent • Mild irritation;</p> <p>Multi-dose Toxicity: Inhalation-Rat TClO • 250 mg/m³ 6 Hour(s) 4 Week(s)-Intermittent; <i>Lungs, Thorax, or Respiration:Chronic pulmonary edema; Lungs, Thorax, or Respiration:Other changes;</i> Inhalation-Rat TClO • 10 mg/m³ 6 Hour(s) 13 Week(s)-Intermittent; <i>Lungs, Thorax, or Respiration:Fibrosis (interstitial); Lungs, Thorax, or Respiration:Other changes; Biochemical:Metabolism (intermediary):Effect on inflammation or mediation of inflammation;</i></p> <p>Mutagen: Micronucleus test • Ingestion/Oral-Mouse • 280 mg/kg 7 Day(s)-Intermittent; DNA damage • Ingestion/Oral-Mouse • 280 mg/kg 7 Day(s)-Intermittent; Cytogenetic analysis • Ingestion/Oral-Mouse • 280 mg/kg 7 Day(s)-Intermittent;</p> <p>Tumorigen / Carcinogen: Inhalation-Rat • 10 mg/m³ 18 Hour(s) 2 Year(s)-Intermittent; <i>Tumorigenic:Carcinogenic by RTECS criteria; Lungs, Thorax, or Respiration:Tumors;</i> Inhalation-Rat TClO • 250 mg/m³ 6 Hour(s) 2 Year(s)-Intermittent; <i>Tumorigenic:Carcinogenic by RTECS criteria; Lungs, Thorax, or Respiration:Tumors</i></p>

GHS Properties	Classification
Acute toxicity	OSHA HCS 2012•Data lacking
Aspiration Hazard	OSHA HCS 2012•Data lacking
Carcinogenicity	OSHA HCS 2012•Carcinogenicity 1
Germ Cell Mutagenicity	OSHA HCS 2012•Data lacking
Skin corrosion/Irritation	OSHA HCS 2012•Data lacking
Skin sensitization	OSHA HCS 2012•Data lacking
STOT-RE	OSHA HCS 2012•Specific Target Organ Toxicity Repeated Exposure 1
STOT-SE	OSHA HCS 2012•Data lacking
Toxicity for Reproduction	OSHA HCS 2012•Data lacking
Respiratory sensitization	OSHA HCS 2012•Data lacking
Serious eye damage/Irritation	OSHA HCS 2012•Data lacking

Potential Health Effects

Inhalation

Acute (Immediate)

- Exposure to dust may cause irritation. Processes such as cutting, grinding, crushing, or impact may result in generation of excessive amounts of airborne dusts in the workplace. Nuisance dust may affect the lungs but reactions are typically reversible.

Chronic (Delayed)

- Respirable crystalline silica (quartz) can cause silicosis, a fibrosis (scarring) of the lungs. Silicosis may be progressive; it may lead to disability and death.

Skin

Acute (Immediate)

- Exposure to dust may cause mechanical irritation.

Chronic (Delayed)

- No data available.

Eye

Acute (Immediate)

- Exposure to dust may cause mechanical irritation. 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. Crystalline silica (quartz) inhaled from occupational sources is classified as carcinogenic to humans.

Carcinogenic Effects			
	CAS	IARC	NTP
Titanium dioxide	13463-67-7	Group 2B-Possible Carcinogen	Not Listed
Quartz	14808-60-7	Group 1-Carcinogenic	Known Human Carcinogen

Key to abbreviations

TC = Toxic Concentration

TD = Toxic Dose

Section 12 - Ecological Information

Toxicity

- Not relevant.

Persistence and degradability

- Not relevant.

Bioaccumulative potential

- Not relevant. Some organisms accumulate Si(OH)₄.

Mobility in Soil

- Negligible

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
IMO/IMDG	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

- Chronic

Inventory						
Component	CAS	Canada DSL	Canada NDSL	EU EINECS	EU ELNICS	TSCA
Aluminum oxide	1344-28-1	Yes	No	Yes	No	Yes
Calcium oxide	1305-78-8	Yes	No	Yes	No	Yes
Iron oxide	1309-37-1	Yes	No	Yes	No	Yes
Potassium oxide	12136-45-7	Yes	No	Yes	No	Yes
Quartz	14808-60-7	Yes	No	Yes	No	Yes
Titanium dioxide	13463-67-7	Yes	No	Yes	No	Yes

Canada

Labor

Canada - WHMIS - Classifications of Substances

•Potassium oxide	12136-45-7	E
•Calcium oxide	1305-78-8	E
•Iron oxide	1309-37-1	Uncontrolled product according to WHMIS classification criteria D2A (In certain cases, this classification does not apply. For more information, consult the section
•Titanium dioxide	13463-67-7	Substance Specific Issues - Titanium dioxide, mixture containing on Health Canada's WHMIS Division website.)
•Aluminum oxide	1344-28-1	Uncontrolled product according to WHMIS classification criteria D2A (In certain cases, this classification does not apply. For more information, consult the section
•Quartz	14808-60-7	Substance Specific Issues - Silica, crystalline, encapsulated on Health Canada's WHMIS Division website.)

Canada - WHMIS - Ingredient Disclosure List

•Potassium oxide	12136-45-7	Not Listed
•Calcium oxide	1305-78-8	1 %
•Iron oxide	1309-37-1	1 %
•Titanium dioxide	13463-67-7	Not Listed
•Aluminum oxide	1344-28-1	1 %
•Quartz	14808-60-7	1 %

Environment

Canada - CEPA - Priority Substances List

•Potassium oxide	12136-45-7	Not Listed
•Calcium oxide	1305-78-8	Not Listed
•Iron oxide	1309-37-1	Not Listed
•Titanium dioxide	13463-67-7	Not Listed
•Aluminum oxide	1344-28-1	Not Listed
•Quartz	14808-60-7	Not Listed

United States

Labor

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

•Potassium oxide	12136-45-7	Not Listed
•Calcium oxide	1305-78-8	Not Listed
•Iron oxide	1309-37-1	Not Listed
•Titanium dioxide	13463-67-7	Not Listed
•Aluminum oxide	1344-28-1	Not Listed
•Quartz	14808-60-7	Not Listed

U.S. - OSHA - Specifically Regulated Chemicals

•Potassium oxide	12136-45-7	Not Listed
•Calcium oxide	1305-78-8	Not Listed
•Iron oxide	1309-37-1	Not Listed
•Titanium dioxide	13463-67-7	Not Listed
•Aluminum oxide	1344-28-1	Not Listed
•Quartz	14808-60-7	Not Listed

Environment

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

•Potassium oxide	12136-45-7	Not Listed
•Calcium oxide	1305-78-8	Not Listed
•Iron oxide	1309-37-1	Not Listed
•Titanium dioxide	13463-67-7	Not Listed
•Aluminum oxide	1344-28-1	Not Listed
•Quartz	14808-60-7	Not Listed

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

•Potassium oxide	12136-45-7	Not Listed
•Calcium oxide	1305-78-8	Not Listed
•Iron oxide	1309-37-1	Not Listed
•Titanium dioxide	13463-67-7	Not Listed
•Aluminum oxide	1344-28-1	Not Listed
•Quartz	14808-60-7	Not Listed

U.S. - CERCLA/SARA - Radionuclides and Their Reportable Quantities

•Potassium oxide	12136-45-7	Not Listed
•Calcium oxide	1305-78-8	Not Listed
•Iron oxide	1309-37-1	Not Listed
•Titanium dioxide	13463-67-7	Not Listed
•Aluminum oxide	1344-28-1	Not Listed
•Quartz	14808-60-7	Not Listed

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

•Potassium oxide	12136-45-7	Not Listed
•Calcium oxide	1305-78-8	Not Listed
•Iron oxide	1309-37-1	Not Listed
•Titanium dioxide	13463-67-7	Not Listed
•Aluminum oxide	1344-28-1	Not Listed
•Quartz	14808-60-7	Not Listed

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

•Potassium oxide	12136-45-7	Not Listed
•Calcium oxide	1305-78-8	Not Listed

•Iron oxide	1309-37-1	Not Listed
•Titanium dioxide	13463-67-7	Not Listed
•Aluminum oxide	1344-28-1	Not Listed
•Quartz	14808-60-7	Not Listed
U.S. - CERCLA/SARA - Section 313 - Emission Reporting		
•Potassium oxide	12136-45-7	Not Listed
•Calcium oxide	1305-78-8	Not Listed
•Iron oxide	1309-37-1	Not Listed
•Titanium dioxide	13463-67-7	Not Listed
•Aluminum oxide	1344-28-1	1.0 % de minimis concentration (fibrous forms)
•Quartz	14808-60-7	Not Listed
U.S. - CERCLA/SARA - Section 313 - PBT Chemical Listing		
•Potassium oxide	12136-45-7	Not Listed
•Calcium oxide	1305-78-8	Not Listed
•Iron oxide	1309-37-1	Not Listed
•Titanium dioxide	13463-67-7	Not Listed
•Aluminum oxide	1344-28-1	Not Listed
•Quartz	14808-60-7	Not Listed
United States - California		
Environment		
U.S. - California - Proposition 65 - Carcinogens List		
•Potassium oxide	12136-45-7	Not Listed
•Calcium oxide	1305-78-8	Not Listed
•Iron oxide	1309-37-1	Not Listed
•Titanium dioxide	13463-67-7	carcinogen, initial date 9/2/11 (airborne, unbound particles of respirable size)
•Aluminum oxide	1344-28-1	Not Listed
•Quartz	14808-60-7	carcinogen, initial date 10/1/88 (airborne particles of respirable size)
U.S. - California - Proposition 65 - Developmental Toxicity		
•Potassium oxide	12136-45-7	Not Listed
•Calcium oxide	1305-78-8	Not Listed
•Iron oxide	1309-37-1	Not Listed
•Titanium dioxide	13463-67-7	Not Listed
•Aluminum oxide	1344-28-1	Not Listed
•Quartz	14808-60-7	Not Listed
U.S. - California - Proposition 65 - Maximum Allowable Dose Levels (MADL)		
•Potassium oxide	12136-45-7	Not Listed
•Calcium oxide	1305-78-8	Not Listed
•Iron oxide	1309-37-1	Not Listed
•Titanium dioxide	13463-67-7	Not Listed
•Aluminum oxide	1344-28-1	Not Listed
•Quartz	14808-60-7	Not Listed
U.S. - California - Proposition 65 - No Significant Risk Levels (NSRL)		
•Potassium oxide	12136-45-7	Not Listed
•Calcium oxide	1305-78-8	Not Listed
•Iron oxide	1309-37-1	Not Listed
•Titanium dioxide	13463-67-7	Not Listed
•Aluminum oxide	1344-28-1	Not Listed
•Quartz	14808-60-7	Not Listed
U.S. - California - Proposition 65 - Reproductive Toxicity - Female		
•Potassium oxide	12136-45-7	Not Listed
•Calcium oxide	1305-78-8	Not Listed
•Iron oxide	1309-37-1	Not Listed

•Titanium dioxide	13463-67-7	Not Listed
•Aluminum oxide	1344-28-1	Not Listed
•Quartz	14808-60-7	Not Listed
U.S. - California - Proposition 65 - Reproductive Toxicity - Male		
•Potassium oxide	12136-45-7	Not Listed
•Calcium oxide	1305-78-8	Not Listed
•Iron oxide	1309-37-1	Not Listed
•Titanium dioxide	13463-67-7	Not Listed
•Aluminum oxide	1344-28-1	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

Last Revision Date	• 22/September/2014
Preparation Date	• 22/September/2014
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Key to abbreviations

NDA = No data available