

Safety Data Sheet



Section 1: Identification

Product identifier

Product Name • **LOS Bottom Slag Unit 2**

Synonyms • Bottom Ash

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

Recommended use • Sandblasting Grit

Details of the supplier of the safety data sheet

Manufacturer • Basin Electric Power Cooperative
 Leland Olds Station
 3901 Hwy 200A Stanton, ND 58571
 United States
 www.basinelectric.com

Telephone (General) • 701-745-3371

Emergency telephone number

Manufacturer • 701-745-3371

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 Corrosion 1C - H314
 - Serious Eye Damage 1 - H318
 - Carcinogenicity 2 - H351
 - Specific Target Organ Toxicity Repeated Exposure 2 - H373

Label elements

OSHA HCS 2012

DANGER



- Hazard statements**
- Causes severe skin burns and eye damage. - H314
 - Causes serious eye damage - H318
 - Suspected of causing cancer. - H351
 - May cause damage to organs - Lungs through prolonged or repeated exposure via Inhalation - 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/protective clothing/eye protection/face protection. - P280
- Response**
- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. - P304+P340
 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. - P303+P361+P353
 - Wash contaminated clothing before reuse. - P363
 - Specific treatment, see supplemental first aid information. - P321
 - 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 SWALLOWED: Rinse mouth. Do NOT induce vomiting. - P301+P330+P331
 - 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.

Section 3 - Composition/Information on Ingredients

Substances

- Material does not meet the criteria of a substance.

Mixtures

Composition			
Chemical Name	Identifiers	%	Classifications According to Regulation/Directive
Silica, amorphous	CAS:7631-86-9	37%	OSHA HCS 2012: Not Classified
Calcium oxide	CAS:1305-78-8	22% TO 28%	OSHA HCS 2012: Skin Corr. 1C; Eye Dam. 1
Aluminum oxide	CAS:1344-28-1	13%	OSHA HCS 2012: STOT RE 2 (Lungs, Inhl)
Iron oxide	CAS:1309-37-1	11% TO 13%	OSHA HCS 2012: Not Classified
Magnesium oxide	CAS:1309-48-4	7.2%	OSHA HCS 2012: Not Classified
Sodium oxide	CAS:1313-59-3	1.71%	OSHA HCS 2012: Skin Corr. 1B; Eye Dam. 1
Potassium oxide	CAS:12136-45-7	1.09%	OSHA HCS 2012: Skin Corr. 1B; Eye Dam. 1
Barium oxide	CAS:1304-28-5	0.83%	OSHA HCS 2012: Not Classified
Strontium oxide	CAS:1314-11-0	0.58%	OSHA HCS 2012: Not Classified
Titanium dioxide	CAS:13463-67-7	0.56%	OSHA HCS 2012: Muta. 2; Carc. 2; STOT RE 2 (Lungs)
Phosphorus oxide	CAS:1314-56-3	0.23%	OSHA HCS 2012: Skin Corr. 1B; Eye Dam. 1
Sulfur trioxide	CAS:7446-11-9	0.12%	OSHA HCS 2012: Skin Corr. 1A; Eye Dam. 1
Manganese dioxide	CAS:1313-13-9	0.12%	OSHA HCS 2012: STOT RE 1 (CNS, Inhl); Ox. Sol. 3

Section 4: First-Aid Measures

Description of first aid measures

Inhalation

- Move victim to fresh air. Administer oxygen if breathing is difficult. Do not use mouth-to-mouth method if victim inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Give artificial respiration if victim is not breathing.

Skin

- For minor skin contact, avoid spreading material on unaffected skin. In case of contact with substance, immediately flush skin with running water for at least 20 minutes. Remove and isolate contaminated clothing.

Eye

- In case of contact with substance, immediately flush eyes with running water for at least 20 minutes.

Ingestion

- If swallowed, rinse mouth with water (only if the person is conscious) Do NOT induce vomiting. Do not use mouth-to-mouth method if victim ingested the substance. Obtain medical attention immediately if ingested.

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

- LARGE FIRES: Dry chemical, CO₂, alcohol-resistant foam or water spray.
SMALL FIRES: Dry chemical, CO₂ or water spray.

Unsuitable Extinguishing Media

- No data available

Special hazards arising from the substance or mixture

Unusual Fire and Explosion Hazards

- Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes.

Hazardous Combustion Products

- Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive fumes.

Advice for firefighters

- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.
Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
Wear positive pressure self-contained breathing apparatus (SCBA).
SMALL FIRES: Move containers from fire area if you can do it without risk.

Section 6 - Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

Personal Precautions

- Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Wear appropriate personal protective equipment, avoid direct contact.

Emergency Procedures

- Keep unauthorized personnel away. 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

- Stop leak if you can do it without risk. Avoid generating dust. Spills may be cleaned up by sweeping or by using an industrial vacuum cleaner, vacuum truck, or front-end loader. Spilled material may be dampened with a water mist to control airborne dust before removal.

Section 7 - Handling and Storage

Precautions for safe handling

Handling

- Use only with adequate ventilation. Wear appropriate personal protective equipment, avoid direct contact. Do not breathe dust. Do not get in eyes, on skin, or on 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

- Keep container tightly closed. Store in a cool, dry, well-ventilated place.

Section 8 - Exposure Controls/Personal Protection

Control parameters

Exposure Limits/Guidelines				
	Result	ACGIH	NIOSH	OSHA
Manganese dioxide as Manganese compounds	Ceilings	Not established	Not established	5 mg/m ³ Ceiling (as Mn) <i>as Manganese compounds</i>
	STELs	Not established	3 mg/m ³ STEL (as Mn) <i>as Manganese compounds</i>	Not established
	TWAs	Not established	1 mg/m ³ TWA (as Mn) <i>as Manganese compounds</i>	Not established
Titanium dioxide (13463-67-7)	TWAs	10 mg/m ³ TWA	Not established	15 mg/m ³ TWA (total dust)
Magnesium oxide (1309-48-4)	TWAs	10 mg/m ³ TWA (inhalable fraction)	Not established	15 mg/m ³ TWA (fume, total particulate)
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)
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)
Calcium oxide (1305-78-8)	TWAs	2 mg/m ³ TWA	2 mg/m ³ TWA	5 mg/m ³ TWA
Silica, amorphous (7631-86-9)	TWAs	Not established	6 mg/m ³ TWA	Not established

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.

Personal Protective Equipment

Respiratory

- In case of insufficient ventilation, wear suitable respiratory equipment. For prolonged exposure use an air-purifying respirator with high efficiency particulate air (HEPA) filters.

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. Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways.

Key to abbreviations

ACGIH = American Conference of Governmental Industrial Hygiene

STEL = Short Term Exposure Limits are based on 15-minute exposures

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

Section 9 - Physical and Chemical Properties

Information on Physical and Chemical Properties

Material Description			
Physical Form	Solid	Appearance/Description	Gray to black granular solid with no odor.
Color	Gray to black.	Odor	Odorless
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	> 1 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

- No dangerous reaction known under conditions of normal use.

Chemical stability

- Stable

Possibility of hazardous reactions

- Hazardous polymerization will not occur.

Conditions to avoid

- Incompatible materials. Excess heat.

Incompatible materials

- No data available.

Hazardous decomposition products

- No data available.

Section 11 - Toxicological Information

Information on toxicological effects

Components		
Silica, amorphous (37%)	7631-86-9	Acute Toxicity: Inhalation-Rat LCLo • >200 g/m ³ 1 Hour(s); <i>Lungs, Thorax, or Respiration:</i> Fibrosis, focal (pneumoconiosis); Irritation: Eye-Rabbit • 25 mg 24 Hour(s) • Mild irritation
Titanium dioxide (0.56%)	13463-67-7	Irritation: Skin-Human • 300 µg 3 Day(s)-Intermittent • Mild irritation; Multi-dose Toxicity: Inhalation-Rat TLo • 250 mg/m ³ 6 Hour(s) 4 Week(s)-Intermittent; <i>Lungs, Thorax, or Respiration:</i> Chronic pulmonary edema; Lungs, Thorax, or Respiration:Other changes; Inhalation-Rat TLo • 10 mg/m ³ 6 Hour(s) 13 Week(s)-Intermittent; <i>Lungs, Thorax, or Respiration:</i> Fibrosis (interstitial); Lungs, Thorax, or Respiration:Other changes; <i>Biochemical:Metabolism (intermediary):</i> Effect on inflammation or mediation of inflammation; 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; Tumorigen / Carcinogen: Inhalation-Rat • 10 mg/m ³ 18 Hour(s) 2 Year(s)-Intermittent; <i>Tumorigenic:</i> Carcinogenic by RTECS criteria; Lungs, Thorax, or Respiration:Tumors; Inhalation-Rat TLo • 250 mg/m ³ 6 Hour(s) 2 Year(s)-Intermittent; <i>Tumorigenic:</i> Carcinogenic by RTECS criteria; Lungs, Thorax, or Respiration:Tumors
Sulfur trioxide (0.12%)	7446-11-9	Acute Toxicity: Inhalation-Guinea Pig LCLo • 30 mg/m ³ 6 Hour(s); <i>Liver:</i> Hepatitis (hepatocellular necrosis), diffuse; Lungs, Thorax, or Respiration:Structural or functional change in trachea or bronchi; Endocrine:Other changes
Manganese dioxide (0.12%)	1313-13-9	Acute Toxicity: Ingestion/Oral-Rat LD50 • 3478 mg/kg; Reproductive: Inhalation-Mouse TLo • 49 mg/m ³ 7 Hour(s)(75D pre/1-18D preg); <i>Reproductive Effects:Effects on Newborn:Growth statistics (e.g., reduced weight gain); Reproductive Effects:Effects on Newborn:Behavioral</i>
Aluminum oxide (13%)	1344-28-1	Multi-dose Toxicity: Inhalation-Rabbit TLo • 200 mg/m ³ 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> Inhalation-Rat TLo • 200 mg/m ³ 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>
Iron oxide (11% TO 13%)	1309-37-1	Multi-dose Toxicity: Inhalation-Rat TLo • 500 µg/m ³ 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> Tumorigen / Carcinogen: Subcutaneous-Rat TDLo • 135 mg/kg; <i>Tumorigenic:Equivocal tumorigenic agent by RTECS criteria; Tumorigenic:Tumors at site of application</i>
Magnesium oxide (7.2%)	1309-48-4	Multi-dose Toxicity: Inhalation-Rat TLo • 1000 mg/m ³ 4 Hour(s) 50 Day(s)-Intermittent; <i>Lungs, Thorax, or Respiration:Other changes; Blood:Other hemolysis with or without anemia;</i> Tumorigen / Carcinogen: Intratracheal-Hamster TDLo • 480 mg/kg 30 Week(s)-Intermittent; <i>Tumorigenic:Equivocal tumorigenic agent by RTECS criteria; Sense Organs and Special Senses:Olfaction:Tumors; Lungs, Thorax, or Respiration:Tumors</i>

GHS Properties	Classification
Acute toxicity	OSHA HCS 2012 • Data lacking
Aspiration Hazard	OSHA HCS 2012 • Data lacking
Carcinogenicity	OSHA HCS 2012 • Carcinogenicity 2
Germ Cell Mutagenicity	OSHA HCS 2012 • Data lacking
Skin corrosion/Irritation	OSHA HCS 2012 • Skin Corrosion 1C
Skin sensitization	OSHA HCS 2012 • Data lacking
STOT-RE	OSHA HCS 2012 • Specific Target Organ Toxicity Repeated Exposure 2
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 • Serious Eye Damage 1

Potential Health Effects

Inhalation

- Acute (Immediate)**
 - May cause corrosive burns - irreversible damage.
- Chronic (Delayed)**
 - May cause damage to Lungs through prolonged or repeated exposure via Inhalation. Repeated or prolonged exposure to corrosive fumes may cause bronchial irritation with chronic cough.

Skin

- Acute (Immediate)**
 - Causes severe skin burns and eye damage.
- Chronic (Delayed)**
 - Repeated or prolonged exposure to corrosive materials will cause dermatitis.

Eye

- Acute (Immediate)**
 - Causes serious eye damage.
- Chronic (Delayed)**
 - Repeated or prolonged exposure to corrosive materials or fumes may cause conjunctivitis.

Ingestion

- Acute (Immediate)**
 - May cause irreversible damage to mucous membranes.
- Chronic (Delayed)**
 - Repeated or prolonged exposure to corrosive materials or fumes may cause gastrointestinal disturbances.

Carcinogenic Effects

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

Carcinogenic Effects		
	CAS	IARC
Sulfur trioxide	7446-11-9	Group 1-Carcinogenic
Titanium dioxide	13463-67-7	Group 2B-Possible Carcinogen

Section 12 - Ecological Information

Toxicity

- Non-mandatory section - information about this substance not compiled for this reason.

Persistence and degradability

- Non-mandatory section - information about this substance not compiled for this reason.

Bioaccumulative potential

- Non-mandatory section - information about this substance not compiled for this reason.

Mobility in Soil

- Non-mandatory section - information about this substance not compiled for this reason.

Other adverse effects

- Non-mandatory section - information about this substance not compiled for this reason.

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

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

Inventory						
Component	CAS	Canada DSL	Canada NDSL	EU EINECS	EU ELNICS	TSCA
Aluminum oxide	1344-28-1	Yes	No	Yes	No	Yes
Barium oxide	1304-28-5	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
Magnesium oxide	1309-48-4	Yes	No	Yes	No	Yes
Manganese dioxide	1313-13-9	Yes	No	Yes	No	Yes
Phosphorus oxide	1314-56-3	Yes	No	Yes	No	Yes
Potassium oxide	12136-45-7	Yes	No	Yes	No	Yes
Silica, amorphous	7631-86-9	Yes	No	Yes	No	Yes
Sodium oxide	1313-59-3	Yes	No	Yes	No	Yes
Strontium oxide	1314-11-0	Yes	No	Yes	No	Yes
Sulfur trioxide	7446-11-9	Yes	No	Yes	No	Yes

Titanium dioxide	13463-67-7	Yes	No	Yes	No	Yes
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Canada

Labor

Canada - WHMIS - Classifications of Substances

• Sodium oxide	1313-59-3	E
• Potassium oxide	12136-45-7	E
• Barium oxide	1304-28-5	D1B, D2B
• Phosphorus oxide	1314-56-3	D1A, E
• Sulfur trioxide	7446-11-9	Not Listed
• Strontium oxide	1314-11-0	E
• Calcium oxide	1305-78-8	E
• Iron oxide	1309-37-1	Uncontrolled product according to WHMIS classification criteria
• Magnesium oxide	1309-48-4	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 - Titanium dioxide, mixture containing on Health Canada's WHMIS Division website.)
• Titanium dioxide	13463-67-7	Uncontrolled product according to WHMIS classification criteria
• Aluminum oxide	1344-28-1	C, D2B
• Manganese dioxide	1313-13-9	Uncontrolled product according to WHMIS classification criteria
• Silica, amorphous	7631-86-9	

Canada - WHMIS - Ingredient Disclosure List

• Sodium oxide	1313-59-3	Not Listed
• Potassium oxide	12136-45-7	Not Listed
• Barium oxide	1304-28-5	Not Listed
• Phosphorus oxide	1314-56-3	1 %
• Sulfur trioxide	7446-11-9	1 %
• Strontium oxide	1314-11-0	Not Listed
• Calcium oxide	1305-78-8	1 %
• Iron oxide	1309-37-1	1 %
• Magnesium oxide	1309-48-4	1 %
• Titanium dioxide	13463-67-7	Not Listed
• Aluminum oxide	1344-28-1	1 %
• Manganese dioxide	1313-13-9	Not Listed
• Silica, amorphous	7631-86-9	1 %

Environment

Canada - CEPA - Priority Substances List

• Sodium oxide	1313-59-3	Not Listed
• Potassium oxide	12136-45-7	Not Listed
• Barium oxide	1304-28-5	Not Listed

• Phosphorus oxide	1314-56-3	Not Listed
• Sulfur trioxide	7446-11-9	Not Listed
• Strontium oxide	1314-11-0	Not Listed
• Calcium oxide	1305-78-8	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Magnesium oxide	1309-48-4	Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Manganese dioxide	1313-13-9	Not Listed
• Silica, amorphous	7631-86-9	Not Listed

United States

Labor

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

• Sodium oxide	1313-59-3	Not Listed
• Potassium oxide	12136-45-7	Not Listed
• Barium oxide	1304-28-5	Not Listed
• Phosphorus oxide	1314-56-3	Not Listed
• Sulfur trioxide	7446-11-9	1000 lb TQ
• Strontium oxide	1314-11-0	Not Listed
• Calcium oxide	1305-78-8	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Magnesium oxide	1309-48-4	Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Manganese dioxide	1313-13-9	Not Listed
• Silica, amorphous	7631-86-9	Not Listed

U.S. - OSHA - Specifically Regulated Chemicals

• Sodium oxide	1313-59-3	Not Listed
• Potassium oxide	12136-45-7	Not Listed
• Barium oxide	1304-28-5	Not Listed
• Phosphorus oxide	1314-56-3	Not Listed
• Sulfur trioxide	7446-11-9	Not Listed
• Strontium oxide	1314-11-0	Not Listed
• Calcium oxide	1305-78-8	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Magnesium oxide	1309-48-4	Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Manganese dioxide	1313-13-9	Not Listed
• Silica, amorphous	7631-86-9	Not Listed

Environment

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

• Sodium oxide	1313-59-3	Not Listed
• Potassium oxide	12136-45-7	Not Listed
• Barium oxide	1304-28-5	Not Listed
• Phosphorus oxide	1314-56-3	Not Listed
• Sulfur trioxide	7446-11-9	Not Listed
• Strontium oxide	1314-11-0	Not Listed
• Calcium oxide	1305-78-8	Not Listed
• Iron oxide	1309-37-1	Not Listed

• Magnesium oxide	1309-48-4	Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Manganese dioxide	1313-13-9	Not Listed
• Silica, amorphous	7631-86-9	Not Listed

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

• Sodium oxide	1313-59-3	Not Listed
• Potassium oxide	12136-45-7	Not Listed
• Barium oxide	1304-28-5	Not Listed
• Phosphorus oxide	1314-56-3	Not Listed
• Sulfur trioxide	7446-11-9	Not Listed
• Strontium oxide	1314-11-0	Not Listed
• Calcium oxide	1305-78-8	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Magnesium oxide	1309-48-4	Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Manganese dioxide	1313-13-9	Not Listed
• Silica, amorphous	7631-86-9	Not Listed

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

• Sodium oxide	1313-59-3	Not Listed
• Potassium oxide	12136-45-7	Not Listed
• Barium oxide	1304-28-5	Not Listed
• Phosphorus oxide	1314-56-3	Not Listed
• Sulfur trioxide	7446-11-9	Not Listed
• Strontium oxide	1314-11-0	Not Listed
• Calcium oxide	1305-78-8	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Magnesium oxide	1309-48-4	Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Manganese dioxide	1313-13-9	Not Listed
• Silica, amorphous	7631-86-9	Not Listed

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

• Sodium oxide	1313-59-3	Not Listed
• Potassium oxide	12136-45-7	Not Listed
• Barium oxide	1304-28-5	Not Listed
• Phosphorus oxide	1314-56-3	Not Listed
• Sulfur trioxide	7446-11-9	100 lb EPCRA RQ
• Strontium oxide	1314-11-0	Not Listed
• Calcium oxide	1305-78-8	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Magnesium oxide	1309-48-4	Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Manganese dioxide	1313-13-9	Not Listed
• Silica, amorphous	7631-86-9	Not Listed

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

• Sodium oxide	1313-59-3	Not Listed
• Potassium oxide	12136-45-7	Not Listed

• Barium oxide	1304-28-5	Not Listed
• Phosphorus oxide	1314-56-3	Not Listed
• Sulfur trioxide	7446-11-9	100 lb TPQ (This material is a reactive solid. The TPQ does not default to 10000 pounds for non-powder, non-molten, non-solution form)
• Strontium oxide	1314-11-0	Not Listed
• Calcium oxide	1305-78-8	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Magnesium oxide	1309-48-4	Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Manganese dioxide	1313-13-9	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
U.S. - CERCLA/SARA - Section 313 - Emission Reporting		
• Sodium oxide	1313-59-3	Not Listed
• Potassium oxide	12136-45-7	Not Listed
• Barium oxide	1304-28-5	Not Listed
• Phosphorus oxide	1314-56-3	Not Listed
• Sulfur trioxide	7446-11-9	Not Listed
• Strontium oxide	1314-11-0	Not Listed
• Calcium oxide	1305-78-8	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Magnesium oxide	1309-48-4	Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Aluminum oxide	1344-28-1	1.0 % de minimis concentration (fibrous forms)
• Manganese dioxide	1313-13-9	Not Listed
• Silica, amorphous	7631-86-9	Not Listed
U.S. - CERCLA/SARA - Section 313 - PBT Chemical Listing		
• Sodium oxide	1313-59-3	Not Listed
• Potassium oxide	12136-45-7	Not Listed
• Barium oxide	1304-28-5	Not Listed
• Phosphorus oxide	1314-56-3	Not Listed
• Sulfur trioxide	7446-11-9	Not Listed
• Strontium oxide	1314-11-0	Not Listed
• Calcium oxide	1305-78-8	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Magnesium oxide	1309-48-4	Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Manganese dioxide	1313-13-9	Not Listed
• Silica, amorphous	7631-86-9	Not Listed

United States - California

Environment

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

• Sodium oxide	1313-59-3	Not Listed
• Potassium oxide	12136-45-7	Not Listed
• Barium oxide	1304-28-5	Not Listed
• Phosphorus oxide	1314-56-3	Not Listed

• Sulfur trioxide	7446-11-9	Not Listed
• Strontium oxide	1314-11-0	Not Listed
• Calcium oxide	1305-78-8	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Magnesium oxide	1309-48-4	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
• Manganese dioxide	1313-13-9	Not Listed
• Silica, amorphous	7631-86-9	Not Listed

U.S. - California - Proposition 65 - Developmental Toxicity

• Sodium oxide	1313-59-3	Not Listed
• Potassium oxide	12136-45-7	Not Listed
• Barium oxide	1304-28-5	Not Listed
• Phosphorus oxide	1314-56-3	Not Listed
• Sulfur trioxide	7446-11-9	Not Listed
• Strontium oxide	1314-11-0	Not Listed
• Calcium oxide	1305-78-8	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Magnesium oxide	1309-48-4	Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Manganese dioxide	1313-13-9	Not Listed
• Silica, amorphous	7631-86-9	Not Listed

U.S. - California - Proposition 65 - Maximum Allowable Dose Levels (MADL)

• Sodium oxide	1313-59-3	Not Listed
• Potassium oxide	12136-45-7	Not Listed
• Barium oxide	1304-28-5	Not Listed
• Phosphorus oxide	1314-56-3	Not Listed
• Sulfur trioxide	7446-11-9	Not Listed
• Strontium oxide	1314-11-0	Not Listed
• Calcium oxide	1305-78-8	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Magnesium oxide	1309-48-4	Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Manganese dioxide	1313-13-9	Not Listed
• Silica, amorphous	7631-86-9	Not Listed

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

• Sodium oxide	1313-59-3	Not Listed
• Potassium oxide	12136-45-7	Not Listed
• Barium oxide	1304-28-5	Not Listed
• Phosphorus oxide	1314-56-3	Not Listed
• Sulfur trioxide	7446-11-9	Not Listed
• Strontium oxide	1314-11-0	Not Listed
• Calcium oxide	1305-78-8	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Magnesium oxide	1309-48-4	Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Aluminum oxide	1344-28-1	Not Listed

• Manganese dioxide	1313-13-9	Not Listed
• Silica, amorphous	7631-86-9	Not Listed

U.S. - California - Proposition 65 - Reproductive Toxicity - Female

• Sodium oxide	1313-59-3	Not Listed
• Potassium oxide	12136-45-7	Not Listed
• Barium oxide	1304-28-5	Not Listed
• Phosphorus oxide	1314-56-3	Not Listed
• Sulfur trioxide	7446-11-9	Not Listed
• Strontium oxide	1314-11-0	Not Listed
• Calcium oxide	1305-78-8	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Magnesium oxide	1309-48-4	Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Manganese dioxide	1313-13-9	Not Listed
• Silica, amorphous	7631-86-9	Not Listed

U.S. - California - Proposition 65 - Reproductive Toxicity - Male

• Sodium oxide	1313-59-3	Not Listed
• Potassium oxide	12136-45-7	Not Listed
• Barium oxide	1304-28-5	Not Listed
• Phosphorus oxide	1314-56-3	Not Listed
• Sulfur trioxide	7446-11-9	Not Listed
• Strontium oxide	1314-11-0	Not Listed
• Calcium oxide	1305-78-8	Not Listed
• Iron oxide	1309-37-1	Not Listed
• Magnesium oxide	1309-48-4	Not Listed
• Titanium dioxide	13463-67-7	Not Listed
• Aluminum oxide	1344-28-1	Not Listed
• Manganese dioxide	1313-13-9	Not Listed
• Silica, amorphous	7631-86-9	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**

- 09/October/2014

Preparation Date

- 09/October/2014

Disclaimer/Statement of Liability

- The information contained in this Safety Data Sheet (SDS) is believed to be correct since it was obtained from sources we believe are reliable. However, no representation, guarantees or warranties of any kind are made as to its accuracy, suitability for particular applications, hazards connected with the use of the material, or the results to be obtained from the use thereof. User assumes all risks and liability of any use, processing or handling of any material, variation in methods, conditions and equipment used to store, handle, or process the material and hazards connected with the use of the material are solely the responsibility of the user and remain at his sole discretion. Compliance with all applicable federal, state, and local laws and regulations remains the responsibility of the user, and the user has the responsibility of provide a safe work place to examine all aspects of its operation and to determine if or where precautions, in addition to those described herein, are required.

Key to abbreviations

NDA = No Data Available
