SAFETY DATA SHEET

1. Identification

Product identifier **Pyrolox**

Other means of identification

Product code 100395

Recommended use Not available.

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name Prince Minerals LLC

Address 15311 Vantage Pkwy W
Suite 350
Houston, TX 77032
United States

Telephone General Information (713) 955-5398

Website www.princecorp.com

E-mail Not available.

Emergency phone number CHEMTREC (800) 424-9300

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards

Acute toxicity, oral	Category 4
Acute toxicity, inhalation	Category 4
Serious eye damage/eye irritation	Category 2A
Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation

Environmental hazards Not classified.

OSHA defined hazards Not classified.

Label elements

Signal word Warning

Hazard statement Harmful if swallowed. Causes serious eye irritation. Harmful if inhaled. May cause respiratory irritation.

Precautionary statement

Prevention Avoid breathing dust. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear eye/face protection.

Response If swallowed: Call a poison center/doctor if you feel unwell. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison center/doctor if you feel unwell. Rinse mouth. If eye irritation persists: Get medical advice/attention.

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

Disposal Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information None.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
MANGANESE DIOXIDE (MNO2)		1313-13-9	90 - 100

Constituents

Chemical name	CAS number	%
CALCIUM OXIDE	1305-78-8	0 - 15
IRON	7439-89-6	1 - 10
QUARTZ (SIO2)	14808-60-7	0 - 10
ALUMINIUM OXIDE	1344-28-1	<= 7
MAGNESIUM OXIDE	1309-48-4	<= 5
Potassium Oxide	12136-45-7	<= 3
Disodium Oxide	1313-59-3	<= 1
Barium Oxide	1304-28-5	<= 1
TITANIUM DIOXIDE	13463-67-7	<= 1
PHOSPHORUS	7723-14-0	<= 1

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

Composition comments Occupational Exposure Limits for constituents are listed in Section 8.

4. First-aid measures

Inhalation Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Call a POISON CENTER or doctor/physician if you feel unwell.

Skin contact Wash off with soap and water. Get medical attention if irritation develops and persists.

Eye contact Do not rub eyes. Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

Ingestion Rinse mouth. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical advice/attention if you feel unwell.

Most important symptoms/effects, acute and delayed Nausea, vomiting. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Coughing.

Indication of immediate medical attention and special treatment needed Provide general supportive measures and treat symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

General information If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

Suitable extinguishing media Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions Use water spray to cool unopened containers.

Specific methods Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of dust. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up

Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Stop the flow of material, if this is without risk. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers.

Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. Following product recovery, flush area with water.

Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

Environmental precautions

Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Minimize dust generation and accumulation. Avoid breathing dust. Avoid contact with eyes. Avoid prolonged exposure. Do not taste or swallow. When using, do not eat, drink or smoke. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. Store in original tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
MANGANESE DIOXIDE (MNO2) (CAS 1313-13-9)	Ceiling	5 mg/m3

Constituents	Type	Value	Form
Barium Oxide (CAS 1304-28-5)	PEL	0.5 mg/m3	
PHOSPHORUS (CAS 7723-14-0)	PEL	0.1 mg/m3	
TITANIUM DIOXIDE (CAS 13463-67-7)	PEL	15 mg/m3	Total dust.
MAGNESIUM OXIDE (CAS 1309-48-4)	PEL	15 mg/m3	Total particulate.
ALUMINIUM OXIDE (CAS 1344-28-1)	PEL	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.
CALCIUM OXIDE (CAS 1305-78-8)	PEL	5 mg/m3	

US. OSHA Table Z-3 (29 CFR 1910.1000)

Constituents	Type	Value	Form
QUARTZ (SIO2) (CAS 14808-60-7)	TWA	0.3 mg/m3	Total dust.
		0.1 mg/m3	Respirable.
		2.4 mppcf	Respirable.

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
MANGANESE DIOXIDE (MNO2) (CAS 1313-13-9)	TWA	0.1 mg/m3	Inhalable fraction.
		0.02 mg/m3	Respirable fraction.

Constituents	Type	Value	Form
Barium Oxide (CAS 1304-28-5)	TWA	0.5 mg/m3	
PHOSPHORUS (CAS 7723-14-0)	TWA	0.1 mg/m3	
TITANIUM DIOXIDE (CAS 13463-67-7)	TWA	10 mg/m3	
MAGNESIUM OXIDE (CAS 1309-48-4)	TWA	10 mg/m3	Inhalable fraction.

US. ACGIH Threshold Limit Values

Constituents	Type	Value	Form
ALUMINIUM OXIDE (CAS 1344-28-1)	TWA	1 mg/m3	Respirable fraction.
QUARTZ (SIO2) (CAS 14808-60-7)	TWA	0.025 mg/m3	Respirable fraction.
CALCIUM OXIDE (CAS 1305-78-8)	TWA	2 mg/m3	

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
MANGANESE DIOXIDE (MNO2) (CAS 1313-13-9)	STEL	3 mg/m3	Fume.
	TWA	1 mg/m3	Fume.

Constituents	Type	Value	Form
Barium Oxide (CAS 1304-28-5)	TWA	0.5 mg/m3	
PHOSPHORUS (CAS 7723-14-0)	TWA	0.1 mg/m3	
QUARTZ (SIO2) (CAS 14808-60-7)	TWA	0.05 mg/m3	Respirable dust.
CALCIUM OXIDE (CAS 1305-78-8)	TWA	2 mg/m3	

Biological limit values No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls Good general ventilation (typically 10 air changes per hour) 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. Provide eyewash station.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.

Other Wear suitable protective clothing. Use of an impervious apron is recommended.

Respiratory protection In case of insufficient ventilation, wear suitable respiratory equipment. Chemical respirator with organic vapor cartridge.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance Granular.

Physical state Solid.

Form Solid.

Color Black.

Odor Odorless.

Odor threshold Not available.

pH Not available.

Melting point/freezing point Not available.

Initial boiling point and boiling range Not available.

Flash point Not available.

Evaporation rate Not available.

Flammability (solid, gas) Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Harmful if inhaled.
Skin contact	No adverse effects due to skin contact are expected.
Eye contact	Causes serious eye irritation.
Ingestion	Harmful if swallowed.
Symptoms related to the physical, chemical and toxicological characteristics	Nausea, vomiting. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. May cause respiratory irritation. Coughing.

Information on toxicological effects

Acute toxicity	In high concentrations, vapors are anesthetic and may cause headache, fatigue, dizziness and central nervous system effects. Harmful if inhaled. Harmful if swallowed. May cause respiratory irritation.
Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation	Causes serious eye irritation.
Respiratory or skin sensitization	
Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

IARC Monographs. Overall Evaluation of Carcinogenicity

QUARTZ (SIO2) (CAS 14808-60-7)	1 Carcinogenic to humans.
TITANIUM DIOXIDE (CAS 13463-67-7)	2B Possibly carcinogenic to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

US. National Toxicology Program (NTP) Report on Carcinogens

QUARTZ (SIO2) (CAS 14808-60-7)	Known To Be Human Carcinogen.

Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	May cause respiratory irritation.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not an aspiration hazard.
Chronic effects	Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Persistence and degradability	No data is available on the degradability of this product.
Bioaccumulative potential	No data available.
Mobility in soil	No data available.
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.

15. Regulatory information

US federal regulations	All components are on the U.S. EPA TSCA Inventory List. This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Barium Oxide (CAS 1304-28-5)	Listed.
MANGANESE DIOXIDE (MNO2) (CAS 1313-13-9)	Listed.
PHOSPHORUS (CAS 7723-14-0)	Listed.

SARA 304 Emergency release notification

PHOSPHORUS (CAS 7723-14-0)	1 LBS

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - Yes
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Chemical name	CAS number	Reportable quantity	Threshold planning quantity	Threshold planning quantity, lower value	Threshold planning quantity, upper value
PHOSPHORUS	7723-14-0	1	100 lbs		

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
MANGANESE DIOXIDE (MNO2)	1313-13-9	90 - 100
ALUMINIUM OXIDE	1344-28-1	<= 7
PHOSPHORUS	7723-14-0	<= 1
Barium Oxide	1304-28-5	<= 1

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

MANGANESE DIOXIDE (MNO2) (CAS 1313-13-9)
PHOSPHORUS (CAS 7723-14-0)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

PHOSPHORUS (CAS 7723-14-0)

US. California. Candidate Chemicals List. Safer Consumer Products Regulations (Cal. Code Regs, tit. 22, 69502.3, subd. (a))

IRON (CAS 7439-89-6)
PHOSPHORUS (CAS 7723-14-0)
QUARTZ (SIO2) (CAS 14808-60-7)
TITANIUM DIOXIDE (CAS 13463-67-7)

US. Massachusetts RTK - Substance List

ALUMINIUM OXIDE (CAS 1344-28-1)
CALCIUM OXIDE (CAS 1305-78-8)
MAGNESIUM OXIDE (CAS 1309-48-4)
PHOSPHORUS (CAS 7723-14-0)
QUARTZ (SIO2) (CAS 14808-60-7)
TITANIUM DIOXIDE (CAS 13463-67-7)

US. New Jersey Worker and Community Right-to-Know Act

ALUMINIUM OXIDE (CAS 1344-28-1)
Barium Oxide (CAS 1304-28-5)
CALCIUM OXIDE (CAS 1305-78-8)
MAGNESIUM OXIDE (CAS 1309-48-4)
MANGANESE DIOXIDE (MNO2) (CAS 1313-13-9)
PHOSPHORUS (CAS 7723-14-0)
Potassium Oxide (CAS 12136-45-7)
QUARTZ (SIO2) (CAS 14808-60-7)
TITANIUM DIOXIDE (CAS 13463-67-7)

US. Pennsylvania Worker and Community Right-to-Know Law

ALUMINIUM OXIDE (CAS 1344-28-1)
CALCIUM OXIDE (CAS 1305-78-8)
MAGNESIUM OXIDE (CAS 1309-48-4)
PHOSPHORUS (CAS 7723-14-0)

QUARTZ (SIO2) (CAS 14808-60-7)
TITANIUM DIOXIDE (CAS 13463-67-7)

US. Rhode Island RTK

ALUMINIUM OXIDE (CAS 1344-28-1)
Barium Oxide (CAS 1304-28-5)
MANGANESE DIOXIDE (MNO2) (CAS 1313-13-9)
PHOSPHORUS (CAS 7723-14-0)

US. California Proposition 65

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

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

QUARTZ (SIO2) (CAS 14808-60-7)	Listed: October 1, 1988
TITANIUM DIOXIDE (CAS 13463-67-7)	Listed: September 2, 2011

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	09-09-2014
Revision date	03-17-2015
Version #	03
Disclaimer	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 a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. 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.
Revision Information	Product and Company Identification: Alternate Trade Names Accidental release measures: Personal precautions, protective equipment and emergency procedures