

MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Material name BLACK BEAUTY® IRON
Version # 01
Issue date 23-April-2014
Revision date -
Supersedes date -
CAS # 67711-92-6
Product code Iron Silicate Granules
Product use Abrasives and Roofing Products and Other Aggregate Uses.
Manufacturer/Supplier Harsco
P.O. Box 0515, Camp Hill, PA 17001-0515
reedcs@harsco.com
717-506-4666
Emergency 855-393-9889
Access code 13793

2. Hazards Identification

Physical state Solid.
Appearance Black, uniform composition glassily solidified.
Emergency overview WARNING
Abrasive blasting agents may cause inflammation and pulmonary fibrosis. Dust may irritate the respiratory tract, skin and eyes.
OSHA regulatory status This product is hazardous according to OSHA 29 CFR 1910.1200.
Potential health effects
Routes of exposure Inhalation. Eye contact. Skin contact.
Eyes Dust in the eyes will cause irritation. May cause redness and pain.
Skin Dust may irritate skin.
Inhalation Abrasive blasting agents may cause inflammation and pulmonary fibrosis. Dust may irritate throat and respiratory system and cause coughing.
Ingestion Ingestion of dusts generated during working operations may cause nausea and vomiting.
Target organs Eyes. Respiratory system.
Chronic effects Frequent inhalation of fume/dust over a long period of time increases the risk of developing lung diseases.
Signs and symptoms Irritation of nose and throat. Irritation of eyes and mucous membranes.
Potential environmental effects 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.

3. Composition / Information on Ingredients

Components	CAS #	Percent
Iron silicate	67711-92-6	100
Constituents	CAS #	Percent
Iron oxide	1309-37-1	48-67
Silicon dioxide	7631-86-9	28-35
Aluminum oxide	1344-28-1	3-7
Calcium oxide	1305-78-8	0.3-6
Magnesium oxide	1309-48-4	0.5-2
Sulfur trioxide	7446-11-9	0.5-2
Disodium Oxide	1313-59-3	0.3-2

Constituents	CAS #	Percent
Potassium Oxide	12136-45-7	<1
Copper	7440-50-8	0-10
Titanium dioxide	13463-67-7	<1
Silicon dioxide, crystalline	14808-60-7	<0.1
Arsenic	7440-38-2	<0.1
Manganese	7439-96-5	0-0.05
Beryllium	7440-41-7	0-0.001
Cadmium	7440-43-9	0-0.001
Lead	7439-92-1	0-0.001

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First Aid Measures

First aid procedures

Eye contact

Do not rub eyes. Remove any contact lenses. Flush eyes thoroughly with water, taking care to rinse under eyelids. If irritation persists, continue flushing for 15 minutes, rinsing from time to time under eyelids. If discomfort continues, consult a physician.

Skin contact

Contact with dust: Wash with soap and water. Get medical attention if irritation develops or persists.

Inhalation

Move to fresh air. Get medical attention if discomfort persists.

Ingestion

Rinse mouth thoroughly if dust is ingested. Do not induce vomiting. Get medical attention if any discomfort continues.

Notes to physician

Treat symptomatically.

General advice

Show this safety data sheet to the doctor in attendance.

5. Fire Fighting Measures

Flammable properties

The product is non-combustible.

Extinguishing media

Suitable extinguishing media

Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media

None known.

Protection of firefighters

Specific hazards arising from the chemical

None known.

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

Move container from fire area if it can be done without risk. Cool containers with flooding quantities of water until well after fire is out.

General fire hazards

The product is non-combustible.

6. Accidental Release Measures

Personal precautions

Avoid generation and spreading of dust. Avoid inhalation of dust and contact with skin and eyes. Wear suitable protective clothing. Use personal protection recommended in Section 8 of the MSDS.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not contaminate water.

Methods for containment

Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air).

Methods for cleaning up

Collect dust using a vacuum cleaner equipped with HEPA filter. If not possible, gently moisten dust with water fog before it is collected with shovel, broom or the like. Avoid dust formation. After removal flush contaminated area thoroughly with water.

Never return spills to original containers for re-use.

Other information

Clean up in accordance with all applicable regulations.

7. Handling and Storage

Handling

Avoid inhalation of dust and contact with skin and eyes. Use only with adequate ventilation. Use work methods which minimize dust production. Keep the workplace clean. Observe good industrial hygiene practices.

Storage

Keep container tightly closed. Store away from incompatible materials.

8. Exposure Controls / Personal Protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Constituents	Type	Value	Form
Cadmium (CAS 7440-43-9)	TWA	0.01 mg/m ³ 0.002 mg/m ³	Respirable fraction.
Lead (CAS 7439-92-1)	TWA	0.05 mg/m ³	
Beryllium (CAS 7440-41-7)	TWA	0.00005 mg/m ³	Inhalable fraction.
Manganese (CAS 7439-96-5)	TWA	0.1 mg/m ³	Inhalable fraction.
		0.02 mg/m ³	Respirable fraction.
Silicon dioxide, crystalline (CAS 14808-60-7)	TWA	0.025 mg/m ³	Respirable fraction.
Arsenic (CAS 7440-38-2)	TWA	0.01 mg/m ³	
Copper (CAS 7440-50-8)	TWA	1 mg/m ³ 0.2 mg/m ³	Dust and mist. Fume.
Titanium dioxide (CAS 13463-67-7)	TWA	10 mg/m ³	
Magnesium oxide (CAS 1309-48-4)	TWA	10 mg/m ³	Inhalable fraction.
Calcium oxide (CAS 1305-78-8)	TWA	2 mg/m ³	
Aluminum oxide (CAS 1344-28-1)	TWA	1 mg/m ³	Respirable fraction.
Iron oxide (CAS 1309-37-1)	TWA	5 mg/m ³	Respirable fraction.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Constituents	Type	Value
Cadmium (CAS 7440-43-9)	TWA	0.005 mg/m ³
Lead (CAS 7439-92-1)	TWA	0.05 mg/m ³
Arsenic (CAS 7440-38-2)	TWA	0.01 mg/m ³

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

Constituents	Type	Value	Form
Manganese (CAS 7439-96-5)	Ceiling	5 mg/m ³	Fume.
Copper (CAS 7440-50-8)	PEL	1 mg/m ³ 0.1 mg/m ³	Dust and mist. Fume.
Titanium dioxide (CAS 13463-67-7)	PEL	15 mg/m ³	Total dust.
Magnesium oxide (CAS 1309-48-4)	PEL	15 mg/m ³	Total particulate.
Calcium oxide (CAS 1305-78-8)	PEL	5 mg/m ³	
Aluminum oxide (CAS 1344-28-1)	PEL	5 mg/m ³	Respirable fraction.
		15 mg/m ³	Total dust.
Iron oxide (CAS 1309-37-1)	PEL	10 mg/m ³	Fume.

US. OSHA Table Z-2 (29 CFR 1910.1000)

Constituents	Type	Value	Form
Cadmium (CAS 7440-43-9)	Ceiling	0.6 mg/m ³ 0.3 mg/m ³	Dust. Fume.
	TWA	0.2 mg/m ³ 0.1 mg/m ³	Dust. Fume.

US. OSHA Table Z-2 (29 CFR 1910.1000)

Constituents	Type	Value	Form
Beryllium (CAS 7440-41-7)	Ceiling	0.005 mg/m ³	
	TWA	0.002 mg/m ³	

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

Constituents	Type	Value	Form
Silicon dioxide, crystalline (CAS 14808-60-7)	TWA	0.3 mg/m ³	Total dust.
		0.1 mg/m ³	Respirable.
		2.4 millions of particle	Respirable.
Silicon dioxide (CAS 7631-86-9)	TWA	0.8 mg/m ³	
		20 mppcf	

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Constituents	Type	Value	Form
Cadmium (CAS 7440-43-9)	TWA	0.01 mg/m ³	
Lead (CAS 7439-92-1)	TWA	0.05 mg/m ³	
Beryllium (CAS 7440-41-7)	STEL	0.01 mg/m ³	
	TWA	0.002 mg/m ³	
Manganese (CAS 7439-96-5)	TWA	0.2 mg/m ³	
Silicon dioxide, crystalline (CAS 14808-60-7)	TWA	0.025 mg/m ³	Respirable particles.
Arsenic (CAS 7440-38-2)	TWA	0.01 mg/m ³	
Copper (CAS 7440-50-8)	TWA	1 mg/m ³	Dust and mist.
		0.2 mg/m ³	Fume.
Titanium dioxide (CAS 13463-67-7)	TWA	10 mg/m ³	
Magnesium oxide (CAS 1309-48-4)	TWA	10 mg/m ³	Fume.
Calcium oxide (CAS 1305-78-8)	TWA	2 mg/m ³	
Aluminum oxide (CAS 1344-28-1)	TWA	10 mg/m ³	
Iron oxide (CAS 1309-37-1)	TWA	5 mg/m ³	Respirable.

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Constituents	Type	Value	Form
Cadmium (CAS 7440-43-9)	TWA	0.01 mg/m ³	
		0.002 mg/m ³	Respirable.
Lead (CAS 7439-92-1)	TWA	0.05 mg/m ³	
Beryllium (CAS 7440-41-7)	STEL	0.01 mg/m ³	
	TWA	0.002 mg/m ³	
Manganese (CAS 7439-96-5)	TWA	0.2 mg/m ³	
Silicon dioxide, crystalline (CAS 14808-60-7)	TWA	0.025 mg/m ³	Respirable fraction.
Arsenic (CAS 7440-38-2)	TWA	0.01 mg/m ³	
Copper (CAS 7440-50-8)	TWA	1 mg/m ³	Dust and mist.
		0.2 mg/m ³	Fume.
Titanium dioxide (CAS 13463-67-7)	TWA	3 mg/m ³	Respirable fraction.
		10 mg/m ³	Total dust.
Magnesium oxide (CAS 1309-48-4)	STEL	10 mg/m ³	Respirable dust and/or fume.
		3 mg/m ³	Respirable dust and/or fume.
	TWA	10 mg/m ³	Inhalable fume.

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Constituents	Type	Value	Form
Silicon dioxide (CAS 7631-86-9)	TWA	4 mg/m3	Total
		1.5 mg/m3	Respirable.
Calcium oxide (CAS 1305-78-8)	TWA	2 mg/m3	
Aluminum oxide (CAS 1344-28-1)	TWA	1 mg/m3	Respirable.
Iron oxide (CAS 1309-37-1)	STEL TWA	10 mg/m3	Fume.
		5 mg/m3	Fume.
		5 mg/m3	Dust.
		3 mg/m3	Respirable fraction.
		10 mg/m3	Total dust.

Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)

Constituents	Type	Value	Form
Cadmium (CAS 7440-43-9)	TWA	0.01 mg/m3	
		0.002 mg/m3	Respirable fraction.
Lead (CAS 7439-92-1)	TWA	0.05 mg/m3	
Beryllium (CAS 7440-41-7)	TWA	0.00005 mg/m3	Inhalable fraction.
Manganese (CAS 7439-96-5)	TWA	0.1 mg/m3	Inhalable fraction.
		0.02 mg/m3	Respirable fraction.
Silicon dioxide, crystalline (CAS 14808-60-7)	TWA	0.025 mg/m3	Respirable fraction.
Arsenic (CAS 7440-38-2)	TWA	0.01 mg/m3	
Copper (CAS 7440-50-8)	TWA	1 mg/m3	Dust and mist.
		0.2 mg/m3	Fume.
Titanium dioxide (CAS 13463-67-7)	TWA	10 mg/m3	
Magnesium oxide (CAS 1309-48-4)	TWA	10 mg/m3	Inhalable fraction.
Calcium oxide (CAS 1305-78-8)	TWA	2 mg/m3	
Aluminum oxide (CAS 1344-28-1)	TWA	1 mg/m3	Respirable fraction.
Iron oxide (CAS 1309-37-1)	TWA	5 mg/m3	Respirable fraction.

Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

Constituents	Type	Value	Form
Cadmium (CAS 7440-43-9)	TWA	0.01 mg/m3	
Lead (CAS 7439-92-1)	TWA	0.05 mg/m3	
Beryllium (CAS 7440-41-7)	STEL TWA	0.01 mg/m3	
		0.002 mg/m3	
Manganese (CAS 7439-96-5)	TWA	0.2 mg/m3	
Silicon dioxide, crystalline (CAS 14808-60-7)	TWA	0.1 mg/m3	Respirable.
Arsenic (CAS 7440-38-2)	STEL TWA	0.05 mg/m3	
		0.01 mg/m3	
Copper (CAS 7440-50-8)	TWA	0.2 mg/m3	Fume.
Titanium dioxide (CAS 13463-67-7)	TWA	10 mg/m3	
Magnesium oxide (CAS 1309-48-4)	TWA	10 mg/m3	Inhalable fraction.
Silicon dioxide (CAS 7631-86-9)	TWA	10 mg/m3	
Calcium oxide (CAS 1305-78-8)	TWA	2 mg/m3	

Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

Constituents	Type	Value	Form
Aluminum oxide (CAS 1344-28-1)	TWA	1 mg/m ³	Respirable fraction.
Iron oxide (CAS 1309-37-1)	TWA	5 mg/m ³	Respirable fraction.

Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment)

Constituents	Type	Value	Form
Cadmium (CAS 7440-43-9)	TWA	0.025 mg/m ³	
Lead (CAS 7439-92-1)	TWA	0.05 mg/m ³	
Beryllium (CAS 7440-41-7)	TWA	0.00015 mg/m ³	
Manganese (CAS 7439-96-5)	STEL	3 mg/m ³	Fume.
	TWA	5 mg/m ³	Dust.
		1 mg/m ³	Fume.
Silicon dioxide, crystalline (CAS 14808-60-7)	TWA	0.1 mg/m ³	Respirable dust.
Arsenic (CAS 7440-38-2)	TWA	0.1 mg/m ³	
Copper (CAS 7440-50-8)	TWA	1 mg/m ³	Dust and mist.
		0.2 mg/m ³	Fume.
Titanium dioxide (CAS 13463-67-7)	TWA	10 mg/m ³	Total dust.
Magnesium oxide (CAS 1309-48-4)	TWA	10 mg/m ³	Fume.
Silicon dioxide (CAS 7631-86-9)	TWA	6 mg/m ³	Respirable dust.
Calcium oxide (CAS 1305-78-8)	TWA	2 mg/m ³	
Aluminum oxide (CAS 1344-28-1)	TWA	10 mg/m ³	Total dust.
Iron oxide (CAS 1309-37-1)	TWA	5 mg/m ³	Dust and fume.
		10 mg/m ³	Total dust.

Mexico. Occupational Exposure Limit Values

Constituents	Type	Value	Form
Cadmium (CAS 7440-43-9)	TWA	0.01 mg/m ³	Total dust.
		0.002 mg/m ³	Respirable dust.
Lead (CAS 7439-92-1)	TWA	0.15 mg/m ³	Dust and fume.
Beryllium (CAS 7440-41-7)	TWA	0.002 mg/m ³	
Manganese (CAS 7439-96-5)	STEL	3 mg/m ³	Fume.
	TWA	1 mg/m ³	Fume.
		0.2 mg/m ³	
Silicon dioxide, crystalline (CAS 14808-60-7)	TWA	0.1 mg/m ³	
Copper (CAS 7440-50-8)	STEL	2 mg/m ³	Fume.
		2 mg/m ³	Dust and mist.
	TWA	1 mg/m ³	Dust and mist.
		0.2 mg/m ³	Fume.
Titanium dioxide (CAS 13463-67-7)	STEL	20 mg/m ³	
	TWA	10 mg/m ³	
Magnesium oxide (CAS 1309-48-4)	TWA	10 mg/m ³	Fume.
Calcium oxide (CAS 1305-78-8)	TWA	2 mg/m ³	
Aluminum oxide (CAS 1344-28-1)	TWA	10 mg/m ³	
Iron oxide (CAS 1309-37-1)	STEL	10 mg/m ³	
	TWA	5 mg/m ³	

Exposure guidelines

Canada - British Columbia OELs: Skin designation

Beryllium (CAS 7440-41-7) Can be absorbed through the skin.

Canada - Manitoba OELs: Skin designation

Beryllium (CAS 7440-41-7) Can be absorbed through the skin.

Canada - Ontario OELs: Skin designation

Beryllium (CAS 7440-41-7) Can be absorbed through the skin.

Lead (CAS 7439-92-1) Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation

Beryllium (CAS 7440-41-7) Can be absorbed through the skin.

Engineering controls Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

Personal protective equipment

Eye / face protection Wear safety glasses with side shields. Use tight fitting goggles if dust is generated.

Skin protection Use protective gloves. Wear suitable protective clothing.

Respiratory protection Selection and use of respiratory protective equipment should be in accordance with OSHA General Industry Standard 29 CFR 1910.134; or in Canada with CSA Standard Z94.4.

General hygiene considerations Wash hands after handling. Routinely wash work clothing and protective equipment to remove contaminants. Handle in accordance with good industrial hygiene and safety practice.

9. Physical & Chemical Properties

Appearance Black, uniform composition glassily solidified.

Physical state Solid.

Form Uniform composition glassily solidified.

Color Black.

Odor Odorless.

Odor threshold Not available.

pH Not available.

Vapor pressure Not available.

Vapor density Not available.

Boiling point Not available.

Melting point/Freezing point > 2500 °F (> 1371.11 °C)

Solubility (water) Negligible.

Specific gravity 3.4

Flash point Not available.

Flammability limits in air, upper, % by volume Not available.

Flammability limits in air, lower, % by volume Not available.

Auto-ignition temperature Not available.

10. Chemical Stability & Reactivity Information

Chemical stability The product is stable and non reactive under normal conditions of use, storage and transport.

Conditions to avoid None known.

Incompatible materials Strong acids.

Hazardous decomposition products None known.

Possibility of hazardous reactions Hazardous polymerization does not occur.

11. Toxicological Information

Toxicological data

Constituents	Species	Test Results
Manganese (CAS 7439-96-5)		
Acute		
<i>Oral</i>		
LD50	Rat	9000 mg/kg
Sensitization	Not a skin or respiratory sensitizer.	
Acute effects	Abrasive blasting agents may cause inflammation and pulmonary fibrosis. Ingestion of dusts generated during working operations may cause nausea and vomiting.	
Local effects	May cause eye, skin and respiratory tract irritation.	
Chronic effects	Frequent inhalation of fume/dust over a long period of time increases the risk of developing lung diseases.	
Carcinogenicity	May cause cancer.	
ACGIH Carcinogens		
Aluminum oxide (CAS 1344-28-1)		A4 Not classifiable as a human carcinogen.
Arsenic (CAS 7440-38-2)		A1 Confirmed human carcinogen.
Beryllium (CAS 7440-41-7)		A1 Confirmed human carcinogen.
Cadmium (CAS 7440-43-9)		A2 Suspected human carcinogen.
Iron oxide (CAS 1309-37-1)		A4 Not classifiable as a human carcinogen.
Lead (CAS 7439-92-1)		A3 Confirmed animal carcinogen with unknown relevance to humans.
Magnesium oxide (CAS 1309-48-4)		A4 Not classifiable as a human carcinogen.
Manganese (CAS 7439-96-5)		A4 Not classifiable as a human carcinogen.
Silicon dioxide, crystalline (CAS 14808-60-7)		A2 Suspected human carcinogen.
Titanium dioxide (CAS 13463-67-7)		A4 Not classifiable as a human carcinogen.
IARC Monographs. Overall Evaluation of Carcinogenicity		
Arsenic (CAS 7440-38-2)		1 Carcinogenic to humans.
Beryllium (CAS 7440-41-7)		1 Carcinogenic to humans.
Cadmium (CAS 7440-43-9)		1 Carcinogenic to humans.
Iron oxide (CAS 1309-37-1)		3 Not classifiable as to carcinogenicity to humans.
Lead (CAS 7439-92-1)		2B Possibly carcinogenic to humans.
Silicon dioxide (CAS 7631-86-9)		3 Not classifiable as to carcinogenicity to humans.
Silicon dioxide, crystalline (CAS 14808-60-7)		1 Carcinogenic to humans.
Titanium dioxide (CAS 13463-67-7)		2B Possibly carcinogenic to humans.
US NTP Report on Carcinogens: Known carcinogen		
Arsenic (CAS 7440-38-2)		Known To Be Human Carcinogen.
Beryllium (CAS 7440-41-7)		Known To Be Human Carcinogen.
Cadmium (CAS 7440-43-9)		Known To Be Human Carcinogen.
Silicon dioxide, crystalline (CAS 14808-60-7)		Known To Be Human Carcinogen.
US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)		
Arsenic (CAS 7440-38-2)		Cancer
Cadmium (CAS 7440-43-9)		Cancer
Mutagenicity	Not classified.	
Reproductive effects	Not classified.	
Symptoms and target organs	Irritation of nose and throat. Irritation of eyes and mucous membranes. May cause respiratory tract irritation. Shortness of breath.	

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.
Environmental effects	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Persistence and degradability	The product is not biodegradable.
Bioaccumulation / Accumulation	The product is not bioaccumulating.

13. Disposal Considerations

Waste codes	The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Disposal instructions	Dispose in accordance with all applicable regulations.
Waste from residues / unused products	Dispose in accordance with all applicable regulations.
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport Information

DOT

Not regulated as a hazardous material by DOT.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

TDG

Not regulated as dangerous goods.

15. Regulatory Information

US federal regulations OSHA Hazard Communication Standard, 29 CFR 1910.1200.
All components are on the U.S. EPA TSCA Inventory List.

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

Not regulated.

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

Arsenic (CAS 7440-38-2)
Beryllium (CAS 7440-41-7)
Cadmium (CAS 7440-43-9)
Lead (CAS 7439-92-1)
Manganese (CAS 7439-96-5)

US EPCRA (SARA Title III) Section 302 - Extremely Hazardous Spill: Reportable quantity

Sulfur trioxide (CAS 7446-11-9) 100 lbs

US EPCRA (SARA Title III) Section 302 - Extremely Hazardous Substance: Threshold Planning Quantity

Sulfur trioxide (CAS 7446-11-9) 100 lbs

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: De minimis concentration

Aluminum oxide (CAS 1344-28-1) 1.0 %
Arsenic (CAS 7440-38-2) 0.1 %
Beryllium (CAS 7440-41-7) 0.1 %
Cadmium (CAS 7440-43-9) 0.1 %
Copper (CAS 7440-50-8) 1.0 %
Iron silicate (CAS 67711-92-6) 1.0 % N100
Lead (CAS 7439-92-1) 0.1 % Substance is not eligible for the de minimis exemption except for the purposes of supplier notification requirements.
Manganese (CAS 7439-96-5) 1.0 %

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Reportable threshold

Lead (CAS 7439-92-1) 100 lbs

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance

Aluminum oxide (CAS 1344-28-1) Listed.
Arsenic (CAS 7440-38-2) Listed.
Beryllium (CAS 7440-41-7) Listed.
Cadmium (CAS 7440-43-9) Listed.
Copper (CAS 7440-50-8) Listed.
Iron silicate (CAS 67711-92-6) N100 Listed.
Lead (CAS 7439-92-1) Listed.
Manganese (CAS 7439-96-5) Listed.

CERCLA (Superfund) reportable quantity (lbs) (40 CFR 302.4)

None

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
 Immediate Hazard - No
 Delayed Hazard - Yes
 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
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Sulfur trioxide	7446-11-9	100	100 lbs		
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SARA 311/312 Hazardous chemical Yes

Clean Water Act (CWA) Section 112(r) (40 CFR 68.130)
 Priority pollutant
 Toxic pollutant

Safe Drinking Water Act (SDWA)
 1.3 mg/l
 1.3 mg/l

Drug Enforcement Administration (DEA) (21 CFR 1308.11-15)
 Not controlled

Canadian regulations
 This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

WHMIS status
 Non-controlled

Inventory status

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

*A "Yes" indicates this product complies 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).

State regulations
 WARNING: This product contains chemical(s) known to the State of California to cause cancer and birth defects or other reproductive harm.

US - California Hazardous Substances (Director's): Listed substance

Aluminum oxide (CAS 1344-28-1)	Listed.
Arsenic (CAS 7440-38-2)	Listed.
Beryllium (CAS 7440-41-7)	Listed.
Cadmium (CAS 7440-43-9)	Listed.
Calcium oxide (CAS 1305-78-8)	Listed.
Copper (CAS 7440-50-8)	Listed.
Iron oxide (CAS 1309-37-1)	Listed.
Iron silicate (CAS 67711-92-6)	Listed.
Lead (CAS 7439-92-1)	Listed.
Magnesium oxide (CAS 1309-48-4)	Listed.
Manganese (CAS 7439-96-5)	Listed.
Silicon dioxide (CAS 7631-86-9)	Listed.

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Arsenic (CAS 7440-38-2)	Listed.
Beryllium (CAS 7440-41-7)	Listed.

Cadmium (CAS 7440-43-9) Listed.
Lead (CAS 7439-92-1) Listed.
Silicon dioxide, crystalline (CAS 14808-60-7) Listed.
Titanium dioxide (CAS 13463-67-7) Listed.

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

Arsenic (CAS 7440-38-2) Listed: February 27, 1987 Carcinogenic.
Beryllium (CAS 7440-41-7) Listed: October 1, 1987 Carcinogenic.
Cadmium (CAS 7440-43-9) Listed: October 1, 1987 Carcinogenic.
Lead (CAS 7439-92-1) Listed: October 1, 1992 Carcinogenic.
Silicon dioxide, crystalline (CAS 14808-60-7) Listed: October 1, 1988 Carcinogenic.
Titanium dioxide (CAS 13463-67-7) Listed: September 2, 2011 Carcinogenic.

US - California Proposition 65 - CRT: Listed date/Developmental toxin

Cadmium (CAS 7440-43-9) Listed: May 1, 1997 Developmental toxin.
Lead (CAS 7439-92-1) Listed: February 27, 1987 Developmental toxin.

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

Lead (CAS 7439-92-1) Listed: February 27, 1987 Female reproductive toxin.

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

Cadmium (CAS 7440-43-9) Listed: May 1, 1997 Male reproductive toxin.
Lead (CAS 7439-92-1) Listed: February 27, 1987 Male reproductive toxin.

US. Massachusetts RTK - Substance List

Aluminum oxide (CAS 1344-28-1) Listed.
Arsenic (CAS 7440-38-2) Listed.
Beryllium (CAS 7440-41-7) Listed.
Cadmium (CAS 7440-43-9) Listed.
Calcium oxide (CAS 1305-78-8) Listed.
Copper (CAS 7440-50-8) Listed.
Iron oxide (CAS 1309-37-1) Listed.
Lead (CAS 7439-92-1) Listed.
Magnesium oxide (CAS 1309-48-4) Listed.
Manganese (CAS 7439-96-5) Listed.
Silicon dioxide (CAS 7631-86-9) Listed.
Silicon dioxide, crystalline (CAS 14808-60-7) Listed.
Sulfur trioxide (CAS 7446-11-9) Listed.
Titanium dioxide (CAS 13463-67-7) Listed.

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

Aluminum oxide (CAS 1344-28-1)
Arsenic (CAS 7440-38-2)
Beryllium (CAS 7440-41-7)
Cadmium (CAS 7440-43-9)
Calcium oxide (CAS 1305-78-8)
Copper (CAS 7440-50-8)
Iron oxide (CAS 1309-37-1)
Iron silicate (CAS 67711-92-6)
Lead (CAS 7439-92-1)
Magnesium oxide (CAS 1309-48-4)
Manganese (CAS 7439-96-5)
Potassium Oxide (CAS 12136-45-7)
Silicon dioxide (CAS 7631-86-9)
Silicon dioxide, crystalline (CAS 14808-60-7)
Sulfur trioxide (CAS 7446-11-9)
Titanium dioxide (CAS 13463-67-7)

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

Aluminum oxide (CAS 1344-28-1)
Arsenic (CAS 7440-38-2)
Beryllium (CAS 7440-41-7)
Cadmium (CAS 7440-43-9)
Calcium oxide (CAS 1305-78-8)
Copper (CAS 7440-50-8)
Iron oxide (CAS 1309-37-1)
Lead (CAS 7439-92-1)
Magnesium oxide (CAS 1309-48-4)
Manganese (CAS 7439-96-5)
Silicon dioxide (CAS 7631-86-9)

Silicon dioxide, crystalline (CAS 14808-60-7)

Sulfur trioxide (CAS 7446-11-9)

Titanium dioxide (CAS 13463-67-7)

Mexico regulations

This safety data sheet was prepared in accordance with the Official Mexican Standard (NOM-018-STPS-2000).

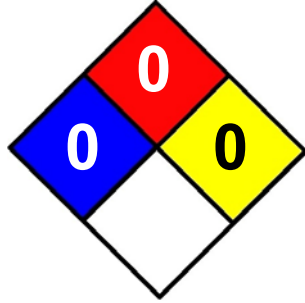
16. Other Information

Further information

HMIS® is a registered trade and service mark of the NPCA.

A HMIS® Health rating including an * indicates a chronic hazard.

NFPA Ratings



Disclaimer

The information in the sheet was written based on the best knowledge and experience currently available.