

Safety Data Sheet

Material Name: Iron Silicate



Section 1 - IDENTIFICATION

Material Name:

Iron Silicate

Trade Name:

Black Diamond

Recommended Use

Abrasives, Roofing Granules and other aggregate uses.

Restrictions on Use

None known.

Manufacturer Information

US Minerals, Inc.
18635 West Creek Drive
Tinley Park, IL 60477

Phone: (800) 803-2803
Fax: 219-864-4675
Emergency # (800) 424-9300 (ChemTrec)

Section 2 - HAZARDS IDENTIFICATION

OSHA (29 CFR 1910.1200) Classification

Health: Not Classified
Environmental: Not Classified
Physical: Not Classified

Emergency Overview

Black Diamond Iron Silicate (also called granulated copper slag) is not flammable, combustible or explosive; and poses no unusual hazard in the unused condition. Dust may irritate the upper respiratory tract, eyes, and skin. Prolonged or repeated exposure to high airborne concentrations may cause lung damage. Refer to Section 3 "*Composition / Information on Ingredients*" for a listing of metals that are present in Black Diamond Iron Silicate. Appropriate care should be exercised in the storage and disposal of this product.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

| CAS | Component | Percent |
|------------|------------------------------------|---------|
| 1309-37-1 | Iron oxide | 45-60 |
| 60676-86-0 | Amorphous Fused Silicon Dioxide | 30-40 |
| 1305-78-8 | Calcium oxide | 1-7 |
| 1344-28-1 | Aluminum oxide | 2-7 |
| 7440-66-6 | Zinc | 2-4 |
| 7440-50-8 | Copper | 0-1 |
| 7439-96-5 | Manganese | 0-0.6 |
| 7440-38-2 | Arsenic | 0-0.5 |
| 7439-92-1 | Lead | 0-0.4 |
| 14808-60-7 | Crystalline Silica as Quartz | 0-0.6 |
| 14464-46-1 | Crystalline Silica as Cristobalite | <0.01 |

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| | | |
|-----------|-----------|-----------|
| 7440-41-7 | Beryllium | 0-0.00005 |
|-----------|-----------|-----------|

Section 4 - FIRST AID MEASURES

Inhalation

Remove to fresh air. Get medical attention if symptoms occur.

Skin

Product is not a skin sensitizer. Wash with water and soap. Remove contaminated clothing and footwear. Get medical advice if symptoms occur.

Eyes

Product is not an eye irritant. Do not rub eyes. Immediately wash eyes with plenty of water. Check for and remove any contact lenses. If irritation persists, get medical attention.

Ingestion

Wash mouth out if appropriate. Do not induce vomiting. Give water to drink. Get medical attention if symptoms occur.

Notes to Physician:

Treat symptomatically.

Comments:

Show Safety Data Sheet to the physician in attendance.

Section 5 - FIRE FIGHTING MEASURES

Flammable Class:

Product is not combustible.

Suitable Extinguishing Media

Use extinguishing agents appropriate for surrounding fire.

Hazardous Combustion Products

Combustion: oxides of metals; see Section 3.

Fire Fighting Measures

Use extinguishing agents appropriate for surrounding fire.

Special Protective Equipment and Precautions for Firefighters

Wear full protective firefighting gear including self-contained breathing apparatus (SCBA).

Section 6 - ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Wear personal protective clothing and equipment, see Section 8. Avoid release to the environment.

Methods and Materials for Containment and Cleaning Up

Collect spilled material in appropriate container for disposal. Avoid dispersal of dust into the air; i.e., air sweeping of surfaces with compressed air. If sweeping of a contaminated area is necessary, use a dust suppressant agent. Wet down area with water.

References to other sections

Section 1 for emergency contact information.
Section 8 for information on personal protective equipment.
Section 13 for Waste Disposal.

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Section 7 - HANDLING AND STORAGE

Precautions for Safe Handling

Avoid inhalation of dust and contact with eyes and skin. Use work methods that minimize dust generation. Use with adequate ventilation. Wash thoroughly after handling. Wear protective gloves/clothing and eye/face protection, as necessary.

Conditions for Safe Storage, including any Incompatibilities

Store away from incompatible materials such as strong acids; e.g., hydrofluoric acid.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Exposure Limits

Iron oxide (CAS #1309-37-1)

ACGIH: 5 mg/m³ TWA (respirable fraction)

NIOSH: 5 mg/m³ TWA (as Fe, dust and fume)

OSHA: 10 mg/m³ TWA (fume); 15 mg/m³ TWA (total dust); 5 mg/m³ TWA (respirable fraction)

Mexico: 5 mg/m³ TWA LMPE-PPT
10 mg/m³ STEL [LMPE-CT] (as Fe)

Amorphous Fused Silicon Dioxide (CAS # 60676-86-0)

NIOSH: 6 mg/m³ TWA

OSHA: 80 mg/m³ / % SiO₂ TWA

Calcium oxide (CAS #1305-78-8)

ACGIH: 2 mg/m³ TWA

NIOSH: 2 mg/m³ TWA

OSHA: 5 mg/m³ TWA

Mexico: 2 mg/m³ TWA LMPE-PPT

Aluminum oxide (CAS # 1344-28-1)

OSHA: 15 mg/m³ TWA (total dust); 5 mg/m³ TWA (respirable fraction)

Mexico: 10 mg/m³ TWA LMPE-PPT

Copper (CAS # 7440-50-8)

ACGIH: 0.2 mg/m³ TWA (fume); 1 mg/m³ TWA (dusts and mist)

NIOSH: 1 mg/m³ TWA (dust and mist); 0.1 mg/m³ TWA (fume)

OSHA: 0.1 mg/m³ TWA (fume); 1 mg/m³ TWA (dust and mist)

Mexico: 0.2 mg/m³ TWA LMPE-PPT (fume); 1 mg/m³ TWA LMPE-PPT (dust and mist)
2 mg/m³ STEL [LMPE-CT] (fume); 2 mg/m³ STEL [LMPE-CT] (dust and mist)

Appropriate Engineering Controls

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

Personal Protective Equipment

Eyes/Face Protection

Wear safety glasses with side shields. Use tight fitting safety goggles (as appropriate) if dust is generated.

Skin Protection

Use protective gloves. Wear protective clothing, as appropriate.

Respiratory Protection

Select and use respiratory protective equipment in accordance with OSHA Standard 29 CFR 1910.134.

Work Hygiene Practices

Wash hands after handling the product. Routinely wash work clothing and protective equipment to remove contaminants.

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Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|-------------------------------|------------------------|------------------------|------------------------------|
| Physical State: | Solid | Appearance: | Black, granular shiny solid |
| Color: | Black | Physical Form: | Solid |
| Odor: | No characteristic odor | Odor Threshold: | Not available |
| pH: | Not available | Melting Point: | Not available |
| Boiling Point: | Not applicable | Flash Point: | Non-flammable; non-explosive |
| Decomposition: | Not available | Evaporation Rate: | Not available |
| Flammability Class: | Non - Flammable | LEL: | Not available |
| UEL: | Not available | Vapor Pressure: | Not applicable |
| Vapor Density (air = 1): | Not applicable | Density: | Not available |
| Specific Gravity (water = 1): | Not available | Water Solubility: | Marginal |
| Log KOW: | Not available | Coeff. Water/Oil Dist: | Not available |
| Viscosity: | Not available | | |

Section 10 - STABILITY AND REACTIVITY

Reactivity

No reactivity hazard is expected.

Chemical Stability

Stable under normal conditions of temperatures and pressure.

Possibility of Hazardous Reactions

None known.

Conditions to Avoid

None known.

Incompatible Materials

Strong acids; e.g., hydrofluoric acid.

Hazardous Decomposition

None known.

Section 11 - TOXICOLOGICAL INFORMATION

Acute and Chronic Toxicity

Components - LD50:

Iron oxide (CAS # 1309-37-1): Oral LD50 Rat >10000 mg/kg

Amorphous Fused Silicon Dioxide (CAS # 60676-86-0): Oral LD50 Rat >5000 mg/kg; Dermal LD50 Rabbit >2000 mg/kg

Calcium oxide (CAS # 1305-78-8): Oral LD50 Rat 500 mg/kg

Aluminum oxide (CAS # 1344-28-1): Oral LD50 Rat >5000 mg/kg

Information on Likely Routes of Exposure

Inhalation: Dust may cause mechanical irritation of upper respiratory.

Skin Contact: Dust may cause mechanical irritation of skin.

Eye Contact: Dust may cause mechanical irritation of eyes.

Immediate Effects

Dust may cause mechanical irritation of upper respiratory tract, eyes, and skin.

Delayed Effects

None known.

Medical Conditions Aggravated by Exposure

Respiratory, eye, or skin disorders.

Respiratory Sensitization

No data available.

Dermal Sensitization

No data available.

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Carcinogenicity

Component Carcinogenicity

Iron oxide (CAS # 1309-37-1)

ACGIH: A4 - Not Classifiable as a Human Carcinogen

IARC: Supplement 7 [1987]; Monograph 1 [1972] (Group 3 (not classifiable))

DFG: Category 3B (could be carcinogenic for man, with the exception of non-bioavailable ferrous oxides)

Amorphous Fused Silicon Dioxide (CAS # 60676-86-0)

IARC: Monograph 68 [1997]; Supplement 7 [1987] (Group 3 (not classifiable))

Mutagenic Data

No data available.

Reproductive Effects Data

No data available.

Tumorigenic Data

No data available.

Target Organ Toxicity

Irritation of nose and throat. Irritation of eyes and mucous membranes. May cause respiratory tract irritation.

Aspiration Hazard

No data available.

Section 12 - ECOLOGICAL INFORMATION

Ecotoxicity

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 information available for the product.

Bioaccumulative Potential

No information available for the product.

Mobility

No information available for the product.

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Method

Dispose in accordance with all applicable regulations.

Section 14 - TRANSPORT INFORMATION

US DOT Information

Shipping Name: Not Regulated.

IMDG Information

Shipping Name: Not Regulated.

Section 15 - REGULATORY INFORMATION

Components

U.S. Federal Regulations

This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 311/312 (40 CFR 370.21), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), and TSCA 12(b).

Aluminum oxide (CAS # 1344-28-1)

SARA 313: 1.0 % de minimis concentration (fibrous forms)

Zinc (CAS # 7440-66-6)

SARA 313: 1.0 % de minimis concentration (dust or fume only)

CERCLA: 454 kg final RQ (no reporting of releases of this hazardous substance is required if the diameter

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of the pieces of the solid metal released is >100 µm); 1000 lb final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm).

Copper (CAS #7440-50-8)

SARA 313: 1.0 % de minimis concentration

CERCLA: 5000 lb final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm); 2270 kg final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm).

SARA 311/312 Hazardous Categories

Acute Health: Yes. Chronic Health: Yes. Fire: No. Pressure: No. Reactive: No.

U.S. State Regulations

Components that appear on one or more of the following state hazardous substances lists:

| Component | CAS # | CA | MA | MN | NJ | PA |
|---------------------------------|------------|-----|-----|-----|-----|-----|
| Iron oxide | 1309-37-1 | Yes | Yes | Yes | Yes | Yes |
| Amorphous Fused Silicon Dioxide | 60676-86-0 | Yes | Yes | Yes | Yes | Yes |
| Calcium oxide | 1305-78-8 | Yes | Yes | Yes | Yes | Yes |
| Aluminum oxide | 1344-28-1 | Yes | Yes | Yes | Yes | Yes |
| Zinc | 7440-66-6 | Yes | Yes | No | Yes | Yes |
| Copper | 7440-50-8 | Yes | Yes | Yes | Yes | Yes |

Component - Inventory

| Component | CAS | US | CA | EU | AU | PH | JP | KR | CN | NZ |
|---------------------------------|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Iron oxide | 1309-37-1 | Yes | DSL | EIN | Yes | Yes | Yes | Yes | Yes | Yes |
| Amorphous Fused Silicon Dioxide | 60676-86-0 | Yes | DSL | EIN | Yes | Yes | Yes | Yes | Yes | Yes |
| Calcium oxide | 1305-78-8 | Yes | DSL | EIN | Yes | Yes | Yes | Yes | Yes | Yes |
| Aluminum oxide | 1344-28-1 | Yes | DSL | EIN | Yes | Yes | Yes | Yes | Yes | Yes |
| Zinc | 7440-66-6 | Yes | DSL | EIN | Yes | Yes | No | Yes | Yes | Yes |
| Copper | 7440-50-8 | Yes | DSL | EIN | Yes | Yes | No | Yes | Yes | Yes |

Section 16 - OTHER INFORMATION

Web Sites with information about health effects from occupational exposure to the chemical substances contained in this product and associated engineering controls and personal protective equipment:

OSHA Website: <http://www.osha.gov>

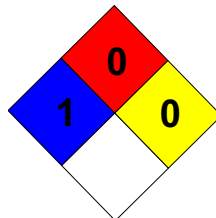
NIOSH Website: <http://www.cdc.gov/niosh>

ACGIH Website: <http://www.acgih.org>

ATSDR Website: <http://www.astdr.cdc.gov/toxprofiles>

NFPA Ratings: Health: 1 Fire: 0 Reactivity: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe



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Key / Legend

ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSL - Domestic Substances List; EEC - European Economic Community; EINECS - European Inventory of Existing Commercial Chemical Substances; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; JP - Japan; Kow - Octanol/water partition coefficient; KR - Korea; LEL - Lower Explosive Limit; LOLI - List Of Lists™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PH - Philippines; RCRA - Resource Conservation and Recovery Act; RID - European Rail Transport; RTECS - Registry of Toxic Effects of Chemical Substances®; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; US - United States

Other Information

Disclaimer: Supplier gives no warranty whatsoever, including the warranties of merchantability or of fitness for a particular purpose. Any product purchased is sold on the assumption the purchaser shall determine the quality and suitability of the product. Supplier expressly disclaims any and all liability for incidental, consequential or any other damages arising out of the use or misuse of this product. No information provided shall be deemed to be a recommendation to use any product in conflict with any existing patent rights.

User's Responsibility

The OSHA Hazard Communication Standard 29 CFR 1910.1200 requires that this Safety Data Sheet is available to your employees who handle or may be exposed to this product. Educate and train your employees regarding applicable precautions. Instruct your employees to handle this product properly.