



## SECTION V. Fire Fighting Measures

Product is nonflammable, non-explosive and stable under normal conditions of use, storage and transportation. Use fire-extinguishing media that is appropriate for surrounding materials. Move product containers from fire area if it can be done without risk. Cool containers by flooding with water until heat is dissipated.

## SECTION VI. Accidental Release Measures

**Spill Response Procedures:** *PATRIOT - BLAST* Elite Abrasives are classified as non-hazardous. Sweep up spilled material and dispose in a sanitary landfill or industrial disposal site. Avoid generating dust. Wet methods and vacuuming are preferred.

## SECTION VII. Handling and Storage

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

**Handling:** Follow Safety Data Sheet and label precautions.

**Storage:** Keep container tightly closed. Store away from incompatible materials.

## SECTION VIII. Exposure Controls / Personal Protection

<b>Component</b>	<b>OSHA</b>	<b>ACGIH</b>	<b>Ontario</b>	<b>Quebec</b>
	<b>PEL (mg/m<sup>3</sup>)</b>	<b>TLV (mg/m<sup>3</sup>)</b>	<b>OEL (mg/m<sup>3</sup>)</b>	<b>OEL (mg/m<sup>3</sup>)</b>
Iron Oxide (1309-37-1)	10 mg/m <sup>3</sup> (Fume)	5 mg/m <sup>3</sup> R	5 mg/m <sup>3</sup> R	5 mg/m <sup>3</sup>
Silica, Amorphous (7631-86-9)	80 mg/m <sup>3</sup> % SiO <sub>2</sub>	3 mg/m <sup>3</sup> R	10 mg/m <sup>3</sup> I 3 mg/m <sup>3</sup> R	10 mg/m <sup>3</sup>
Aluminum Oxide (1344-28-1)	15 mg/m <sup>3</sup> 5 mg/m <sup>3</sup> R	1 mg/m <sup>3</sup> R	1 mg/m <sup>3</sup> R	10 mg/m <sup>3</sup>
Calcium Oxide (1305-78-8)	5 mg/m <sup>3</sup>	2 mg/m <sup>3</sup>	2 mg/m <sup>3</sup>	2 mg/m <sup>3</sup>
Magnesium Oxide (1309-48-4)	Not Established	Not Established	10 mg/m <sup>3</sup> I	10 mg/m <sup>3</sup> (Fume)
Sulfur Trioxide (7446-11-9)	Not Established	Not Established	Not Established	Not Established
Sodium Oxide (1313-59-3)	Not Established	Not Established	Not Established	Not Established
Copper (7440-50-8)	1 mg/m <sup>3</sup> (Dust)	1 mg/m <sup>3</sup> (Dust)	1 mg/m <sup>3</sup>	1 mg/m <sup>3</sup>
Zinc as Zinc Oxide (1314-13-2)	15 mg/m <sup>3</sup> 5 mg/m <sup>3</sup> R	2 mg/m <sup>3</sup> R (TWA) 10 mg/m <sup>3</sup> R (STEL)	2 mg/m <sup>3</sup> R (TWA) 10 mg/m <sup>3</sup> R (STEL)	10 mg/m <sup>3</sup>
Arsenic (7440-38-2)	0.01 mg/m <sup>3</sup>	0.01 mg/m <sup>3</sup>	0.01 mg/m <sup>3</sup> (TWA) 0.05 mg/m <sup>3</sup> (STEL)	0.01 mg/m <sup>3</sup>
Lead (7439-92-1)	0.05 mg/m <sup>3</sup>	0.05 mg/m <sup>3</sup>	0.05 mg/m <sup>3</sup>	0.05 mg/m <sup>3</sup>
Molybdenum (7439-98-7)	15 mg/m <sup>3</sup> (Dust)	10 mg/m <sup>3</sup> I 3 mg/m <sup>3</sup> R	10 mg/m <sup>3</sup> I 3 mg/m <sup>3</sup> R	10 mg/m <sup>3</sup>
Manganese (7439-96-5)	5 mg/m <sup>3</sup> C (Fume)	0.1 mg/m <sup>3</sup> I 0.02 mg/m <sup>3</sup> R	0.2 mg/m <sup>3</sup>	0.2 mg/m <sup>3</sup>
Nickel (7440-02-0)	1 mg/m <sup>3</sup> (Metal)	1.5 mg/m <sup>3</sup> I (Elemental)	1.0 mg/m <sup>3</sup> I (Elemental)	1 mg/m <sup>3</sup> (Metal)
Cadmium (7440-43-9)	15 mg/m <sup>3</sup> 5 mg/m <sup>3</sup> R	0.01 mg/m <sup>3</sup> 0.002 mg/m <sup>3</sup> R	0.01 mg/m <sup>3</sup> 0.002 mg/m <sup>3</sup> R	0.025 mg/m <sup>3</sup>

**Eye Protection:** Wear safety glasses with side shields. Use tight fitting goggles if dust is generated.

**Skin Protection:** Use protective gloves. Wear suitable protective clothing.

**Work Practices, Hygienic Practices:** Practice good personal hygiene. Wash or shower after use. Launder contaminated clothing before reuse.

**Ventilation and Engineering Controls:** Use process enclosures, local exhaust ventilation or other engineering controls to keep airborne levels below recommended exposure limits.

**Respiratory Protection (type):** 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.

**Comments:** Proper and safe use of the material is solely the purchaser's responsibility. The manufacturer extends no warranties and makes no representations as to the suitability of the product for the purchaser's intended purpose or the consequences of purchaser's actions.

## SECTION IX. Physical and Chemical Properties

<b>Physical Form:</b>	Solid (angular/granular)	<b>Specific Gravity (H<sub>2</sub>O = 1):</b>	3.4 g/cc (typical)
<b>Solubility in Water:</b>	Negligible	<b>Boiling Point(F):</b>	Not applicable
<b>Appearance:</b>	Black shiny solid	<b>Evaporation Rate:</b>	Not applicable
<b>Odor:</b>	None	<b>Vapor Density/Pressure:</b>	Not applicable

## SECTION X. Reactivity Data

**Stability:** This product is stable and non-reactive under normal conditions of use, storage and transport.

**Conditions to Avoid:** None known.

**Possibility of Hazardous Reactions:** None.

**Hazardous Decomposition Products:** None known.

**Incompatible Materials:** Hydrofluoric acid.

## SECTION XI. Toxicological Information

**Routes Of Entry:** Inhalation, ingestion, and skin absorption.

### Health Hazards

**Acute:** Can cause respiratory inflammation resembling pneumonia. Contact with skin that has been scraped or cut may cause rashes or ulcers. Eye irritant from dust or particulates.

**Chronic:** Inhalation of dust over a long period of time increases the risk of developing lung diseases, including pneumoconiosis.

### Symptoms Of Overexposure

**Inhaled:** Shortness of breath, coughing, reduced pulmonary function, chest pain.

**Contact with eyes or skin:** Irritation, possible skin rash.                      **Swallowed:** Gastro-intestinal discomfort.

### Carcinogenicity

**IARC:** Copper slag (CAS 67711-92-6) is not listed by IARC.

**NTP:** Copper slag (CAS 67711-92-6) is not listed by the National Toxicology Program in their Annual Report.

**OSHA:** Copper slag (CAS 67711-92-6) is not listed by NIOSH on their Occupational Cancer List.

### ACGIH Carcinogens

**Aluminum oxide (CAS 1344-28-1):** A4 Not classifiable as a human carcinogen.

**Arsenic (CAS 7440-38-2):** A1 Confirmed human carcinogen.

**Cadmium (CAS 7440-43-9):** A2 Suspected human carcinogen.

**Copper (CAS 7440-50-8):** No designation listed.

**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 human carcinogen.

**Nickel (CAS 7440-02-0):** A5 Not suspected as a human carcinogen.

**Silica, amorphous (CAS 7631-86-9):** No designation listed.

**Zinc (CAS 7440-66-6):** No designation listed.

## SECTION XII. Ecological Information

**Eco-Toxicological Information:** This 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.

**Bioaccumulation/Accumulation:** This product is not bio-accumulating.

**Distribution:** Not available.

**Aquatic Toxicity:** None known.

**Chemical Fate Information:** Not available.

## SECTION XIII. Disposal Considerations

**Disposal Method:** Dispose in accordance with all applicable regulations.

**General Comments:** TCLP testing of unused product indicates that it is not hazardous waste by characteristic.

### SECTION XIV. Transport Information

**Dot Shipping Name:** Non-regulated Material.  
**Dot Hazard Class:** Non-regulated Material.  
**General Comments:** Unused product is not regulated as a hazardous material by DOT, and it is not regulated as dangerous goods by IATA, IMDG or TDG.

### SECTION XV. Regulatory Information

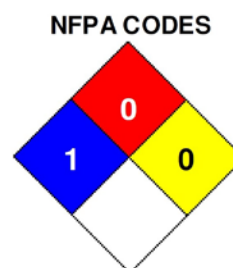
**WHMIS 2015 Classification:** This Safety Data Sheet (SDS) has been prepared to comply with this requirement.  
**OSHA:** This SDS has been prepared to comply with the Hazard Communication Standard, 29 CFR 1910.1200.  
**SARA:** Arsenic, cadmium, copper, lead, manganese, nickel and zinc are subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act.  
**TSCA:** All components of this product are listed on the Toxic Substance Control Act inventory list.  
**CALIFORNIA PROPOSITION 65:** WARNING - This product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.  
**RCRA Status:** Not regulated.  
**OSHA Hazard Comm. Rule:** Regulated.  
**Clean Water Act:** Not covered by any water quality criteria under Section 304.  
**Carcinogen:** Copper slag (CAS No. 67711-92-6) is not listed by IARC, NIOSH or the NTP as a known or suspected carcinogen. However based upon the presence of arsenic and cadmium, the product would be classified as a Category 2 Carcinogen pursuant to the GHS Classification System.  
**CANADA**  
**WHMIS 2015 Classification:** This Safety Data Sheet (SDS) has been prepared to comply with this requirement.  
**WHMIS Hazard Symbol And Classification:** Not Controlled.  
**WHMIS (Workplace Hazardous Materials Information System):** Not controlled.  
**WHMIS Class:** This product has been classified in accordance with the hazard criteria of the CPR and the Safety Data Sheet contains all of the information required by the CPR.  
**Domestic Substance List (Inventory):** Listed on Inventory.

### SECTION XVI. Other Information

**Prepared By:** Mark C. Mummert, Ph.D., PE, CIH (#8415 CP)

**HMIS RATING**

<b>HEALTH</b>	1
<b>FLAMMABILITY</b>	0
<b>PHYSICAL HAZARD</b>	0
<b>PERSONAL PROTECTION</b>	A



**DISCLAIMER:** All data or information regarding the product contained in this Safety Data Sheet (SDS) is offered by the manufacturer in good faith as accurate, but is furnished without guaranty. While the information contained in the SDS is based upon research and analysis, the manufacturer makes no representation as to the accuracy of the information. The conditions of the use of this product, and the suitability of the product for your particular application, are beyond the control of Ensio Resources, Inc. All risks of the use of the product are therefore assumed by you, the user. It is also your responsibility to pass on to your employees and /or customers the information contained in this SDS, and give them appropriate warnings and safe handling instructions as necessary to make the product safe for its intended uses.