



1) Identification

Effective Date: 01/04/2005

Product Name: High Silicon Cast Iron Anodes

2) Composition

Element	Range WT %
Silicon (Si)	14.2—14.75%
Chromium (Cr)	3.25—5.0%
Manganese (Mn)	1.5%
Carbon (C)	0.7—1.10%
Molybdenum (Mo)	0.2%
Copper (Cu)	0.5%
Iron (Fe)	Remainder

3) Physical Properties

Physical Form:	Solid
Boiling Point:	2,862°C or 5,182°F for iron
Melting Point:	1,538°C or 2,800°F
Vapor Pressure:	N/A
Vapor Density:	N/A
Soluble in water:	N/A
Odor:	None
Specific Gravity:	7.0
Appearance:	Silver

4) Exposure Limits

Compound	OSHA-PEL (1989)	ACGIH-TLV (1991)
Silicon (Si)	5 mg/m ³ (respiratory)	3 mg/m ³
Chromium (Cr)	1 mg/m ³	0.5 mg/m ³
Manganese (Mn)	5 mg/m ³	5 mg/m ³ (dust only)
Molybdenum (Mo)	5 mg/m ³ (respiratory)	10 mg/m ³
Copper (Cu)	1 mg/m ³	1 mg/m ³ (dust only)
Iron (Fe)	10 mg/m ³ (dust or fumes)	5 mg/m ³ (fumes only)

5) Fire and Explosion Hazard Data

Flash Point (Method Used):	N/A (N/A)
Flammable Limits:	N/A (N/A)
LFL: N/A	UEL: N/A
Extinguishing Media:	Dry sand or metal extinguishing powders; Low pressure CO ₂
Special Fire Fighting Procedures:	Use NIOSHA/MSHA-approved self-contained breathing apparatus & full protective clothing if involved in fire.
Unusual Fire and Explosion Hazards:	None.

6) Reactivity Data

Stability: Stable

Incompatibility (Materials to Avoid): In some instances may be incompatible with strong oxidizers.

Hazardous Decomposition or Byproducts: At temperatures above the melting point, metallic oxide fumes may evolve.

Hazardous Polymerization: Will not occur.

7) Health Hazard Data

Route(s) of Entry:

Eyes: Mechanical injury only. During grinding, dust may irritate eyes.

Skin Contact: Mechanical injury only. Molten material will burn skin.

Inhalation: Fumes or dust may cause irritation to upper respiratory system.

Ingestion: Unlikely due to physical state. Dusts produced incidental to industrial handling are not likely to cause serious injury; however, ingestion of larger amounts could cause serious injury.

Health Hazards (Acute and Chronic): Acute. Excessive inhalation of freshly formed fumes may produce symptoms known as metal fume fever or "zinc shakes" an acute self-limiting condition without recognized complications.

Carcinogenicity: N/A

Signs and Symptoms of Exposure: Respiratory Tract irritation from dust.

Medical Conditions Generally Aggravated by Exposure: May be allergic, may aggravate respiratory problems ie: emphysema & asthma.

Emergency and First Aid Procedures: Treat as an Emergency. Remove from exposure, bed rest and aspirin may afford some relief, recovery is complete in 24 to 48 hours. Refer to a physician.

8) Precautions for Safe Handling and Use

Steps to be taken in case material is released or spilled: Bulk material may be returned to process. Any normal cleanup procedure is applicable.

Precautions to be taken in Handling and Storage: Avoid inhalation or ingestion of dust, fume and/or mist. Do not consume food, beverages or tobacco in workplace. Practice good housekeeping and personal hygiene procedures to prevent accumulation of dust & to keep airborne dust to a minimum. Store away from incompatible materials. Should waste disposal be necessary; follow Federal, State and Local regulations.

9) Control Measures (Other Precautions)

Ventilation: Local Exhaust To keep below TLV

Mechanical (General): To keep below TLV

Special: Store dry

Protective Clothing or Equipment: Gloves; if dust present. Safety glasses; if dusty, eyewash. Steel toe footwear.

Respiratory Protection (Specify Type): NIOSH/MSHA approved respirator for toxic dust, fume, mist.

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