

Material Safety Data Sheet

FLINT - FERROCERIUM (UN1323)

G. C. Fuller Mfg. Co., Inc.

Manufacturer
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Identity (Trade Name As Used On Label)

MSDS Number*
69523-06-4

CAS Number*
October 1, 2003

Date Prepared

Prepared By*

Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

SECTION 1 - MATERIAL IDENTIFICATION AND INFORMATION

COMPONENTS — Chemical Name & Common Names (Hazardous Components 1% or greater; Carcinogens 0.1% or greater)	%*	OSHA PEL	ACGIH TLV	OTHER LIMITS RECOMMENDED
Rare Earth Metals / Mischmetal	78			
* Cerium	39	NA	NA	
* Lanthanum	18	NA	NA	
* Neodymium	14	NA	NA	
* Praseodymium	7	NA	NA	
Iron (Oxide Fume)	20	10mg/m ³	5mg/m ³	
Magnesium (Oxide Fume)	2	15mg/m ³	10mg/m ³	
Non-Hazardous Ingredients				
TOTAL	100			

SECTION 2 - PHYSICAL / CHEMICAL CHARACTERISTICS

Boiling Point	about 6800° F	Specific Gravity (H ₂ O = 1)	6.35
Vapor Pressure (mm Hg and Temperature)	NA	Melting Point	about 2000° F
Vapor Density (Air = 1)	NA	Evaporation Rate (_____ = 1)	NA
Solubility in Water	Insoluble	Water Reactive	see note on water reactivity (Exhibit B)
Appearance and Odor	cylindrical pellets, no odor		

SECTION 3 - FIRE AND EXPLOSION HAZARD DATA

Flash Point and Method Used	None	Auto-Ignition Temperature	900° F	Flammability Limits in Air % by Volume	NA	LEL	NA	UEL	NA
Extinguisher Media	Lighter Flints do not burn								
Special Fire Fighting Procedures	None								
Unusual Fire and Explosion Hazards	see note on flammability of Ferrocium in powder form (Exhibit B)								

*Optional

SECTION 4 - REACTIVITY HAZARD DATA

STABILITY

- Stable
 Unstable

Conditions
To Avoid

see note on Water Reactivity - Will dissolve in acid. Cerium is a strong reducing agent.

Incompatibility
(Materials to Avoid)

Acids, strong oxidizers, strong bases, halogens, phosphorus, sulfur

Hazardous

Decomposition Products None

HAZARDOUS POLYMERIZATION

- May Occur
 Will Not Occur

Conditions
To Avoid

NA

SECTION 5 - HEALTH HAZARD DATA

PRIMARY ROUTES OF ENTRY

- Inhalation
 Skin Absorption
 Ingestion
 Not Hazardous

CARCINOGEN LISTED IN

- NTP
 IARC Monograph
 OSHA
 Not Listed

HEALTH HAZARDS

Acute

see note on hHealth Hazards associated with Rare Earth Metals and Magnesium (Exhibit A)

Chronic

Signs and Symptoms
of Exposure

Medical Conditions

Generally Aggravated by Exposure None Known

EMERGENCY FIRST AID PROCEDURES - Seek medical assistance for further treatment, observation and support if necessary.

Eye Contact

Remove particles from eye and flush with large amounts of fresh water.

May cause irritation due to abrasion.

Skin Contact

Wash with soap and water. Remove contaminated clothing and launder.

May cause irritation due to abrasion.

Inhalation

Remove victim from fumes and seek medical attention.

Inhalation of material in powder form may cause irritation.

Ingestion

Give one or two glasses of milk. Seek immediate medical aid.

No adverse effects expected under normal usage.

SECTION 6 - CONTROL AND PROTECTIVE MEASURES

Respiratory Protection
(Specify Type)

In the presence of dust or powder use NIOSH approved Schedule 21C respirator.

Protective Gloves

When handling powder or dust.

Eye Protection

Use safety glasses to prevent contact irritation.

VENTILATION TO BE USED

- Local Exhaust
 Other (specify) None
 Mechanical (general)
 Special None

Other Protective
Clothing and Equipment

Appropriate clothing to protect against physical hazards.

Hygienic Work
Practices

General work/safety hygienic procedures

SECTION 7 - PRECAUTIONS FOR SAFE HANDLING AND USE / LEAK PROCEDURES

Steps to be Taken If Material
Is Spilled Or Released

Avoid crushing pellets into dust. Striking with metallic objects may cause sparking.

Avoid exposure to acids. Avoid contact with water in the presence of powder or dust.

Waste Disposal
Methods

In accordance with appropriate Federal, State and local regulations.

Precautions to be Taken
in Handling and Storage

Store in clean dry area. Prolonged exposure to moisture may cause pellets to degenerate into powder.

Other Precautions and/or Special Hazards

Wash hands after handling, before eating. Avoid inhalation of dust. Avoid skin contact with dust. Do not ingest.

NFPA
Rating*

Health___ Flammability___ Reactivity___ Special___

HMIS
Rating*

Health___ Flammability___ Reactivity___ Personal Protection___

*Optional

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Reorder No. 2217-2

SECTION V - HEALTH HAZARD DATA

MISCHMETAL

HEALTH HAZARDS - Acute and Chronic

Chronic exposure to mischmetal may decrease the coagulatory properties of the blood and, therefore can delay blood clotting and hemorrhaging may result. Cerium may cause polycythemia (overabundance of red blood cells). Acute exposure may yield flu-type symptoms several hours after exposure.

Carcinogenicity: NTP? IARC Monograph? OSHA Regulations? Mischmetal and individual components have not been identified as known or suspected carcinogens by NTP, IARC or OSHA.

Signs and Symptoms of Exposure: Flu-type symptoms consisting of chills and fever occurring several hours later. Rare Earth metal fumes affect the central nervous system similar to that of an extensive welding operation.

MAGNESIUM

HEALTH HAZARDS - Acute and Chronic

Chronic exposure to magnesium or oxide dust should be a low health risk by inhalation and should be treated as nuisance dust. Exposure to magnesium and oxide fume dust burning can result in metal fume fever similar to but milder than that induced by zinc oxide fumes.

Carcinogenicity: NTP? IARC Monographs? OSHA Regulations? Magnesium has not been identified as a known or suspected carcinogen.

Signs and Symptoms of Exposure: Temporary symptoms can include fever, chills, nausea, vomiting and muscular pain. Onset of symptoms occur 4-12 hours after exposure and is usually complete in 24-48 hours. Meeting exposure limits in Section II should prevent fume fever from occurring.

ZINC

HEALTH HAZARDS - Acute and Chronic

Chronic exposure to zinc metal or oxide dust may cause irritation to eyes, nose and throat; metallic taste in mouth; metal fume fever or produce flu-like symptoms.

Carcinogenicity: NTP? IARC Monographs? OSHA Regulations? Zinc has not been identified as a known or suspect carcinogen.

Signs and Symptoms of Exposure: Flu-type symptoms consisting of fever, chills, nausea, vomiting and muscular pain. Prevention by meeting exposure limits in Section II is easily attained.

PLEASE NOTE:

The information and recommendations contained herein are offered for the user's consideration and examination and it is the user's responsibility to satisfy him/herself that they are suitable and complete for his/her particular use. G. C. Fuller Mfg. Co., Inc. does not warrant or guarantee the accuracy or reliability of the information and recommendations herein and shall not be liable for any loss or damage arising out of the user thereof.

Exhibit B
Material Safety Data Sheet
Ferrocerium (Flint)
October 1, 2003

Flammability of Ferrocerium in Powder Form:

Ferrocerium is flammable in powder form as are most metals, i.e. Aluminum and Magnesium. Ferrocerium in pellet form is not flammable and although, in fact, the auto-ignition point is specified by the manufacturer of the Ferrocerium to be 900 degrees Fahrenheit, these pellets have been subjected to 1700 degrees Fahrenheit over a prolonged period of time without flammability or deterioration.

Water Reactivity of Ferrocerium:

Ferrocerium pellets will degenerate into powder over an extended period of time, usually measured in years. The presence of moisture accelerates this deterioration. The pellets are coated with a moisture resistant lacquer to extend shelf life. It is recommended that Ferrocerium pellets be disposed of if they show signs of deterioration as the resulting powder is flammable.

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