

# Material Safety Data Sheet

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Lighter Flints - Ferro Cerium

Identity (Trade Name As Used On Label)

MSDS Number\*  
 69523-06-4

CAS Number\*

Date Prepared  
 January 1, 2008 007

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 <sup>3</sup>	5mg/m <sup>3</sup>	
Magnesium (Oxide Fume)	2	15mg/m <sup>3</sup>	10mg/m <sup>3</sup>	
Non-Hazardous Ingredients				
TOTAL	100			

## SECTION 2 - PHYSICAL / CHEMICAL CHARACTERISTICS

Boiling Point	6800° F	Specific Gravity (H <sub>2</sub> 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

<b>STABILITY</b> <input checked="" type="checkbox"/> Stable <input type="checkbox"/> 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	
<b>HAZARDOUS POLYMERIZATION</b> <input type="checkbox"/> May Occur <input checked="" type="checkbox"/> Will Not Occur	Conditions To Avoid NA

### SECTION 5 - HEALTH HAZARD DATA

<b>PRIMARY ROUTES OF ENTRY</b>	<input checked="" type="checkbox"/> Inhalation <input type="checkbox"/> Skin Absorption	<input type="checkbox"/> Ingestion <input type="checkbox"/> Not Hazardous	<b>CARCINOGEN LISTED IN</b>	<input type="checkbox"/> NTP <input type="checkbox"/> IARC Monograph	<input type="checkbox"/> OSHA <input checked="" type="checkbox"/> Not Listed
<b>HEALTH HAZARDS</b>	Acute see note on Health Hazards associated with Rare Earth Metals and Magnesium (Exhibit A) Chronic				
Signs and Symptoms of Exposure					
Medical Conditions Generally Aggravated by Exposure None known					
<b>EMERGENCY FIRST AID PROCEDURES</b> - 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 laundry. 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		
<b>VENTILATION TO BE USED</b>	<input checked="" type="checkbox"/> Local Exhaust in dusty areas <input type="checkbox"/> Other (specify) None	<input checked="" type="checkbox"/> Mechanical (general) use for general control	<input type="checkbox"/> 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. 22172

## 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 use thereof.

Exhibit B  
Material Safety Data Sheet  
Ferrocerium (Flint)  
~~January 11, 2008~~

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.