

# Material Safety Data Sheet

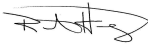
May be used to comply with  
OSHA's Hazard Communication Standard,  
29 CFR 1910.1200. This Standard must be  
consulted for specific requirements.

## U.S. Department of Labor

Occupational Safety and Health Administration  
(Non-Mandatory Form)  
Form Approved  
OMB No. 1218-0072

IDENTITY ( <i>As Used on Label and List</i> )  <b>Lighter Flints – Ferro Cerium</b> * MSDS Number: 69523-06-4	<b>Note:</b> Ferro Cerium is non-regulated under provision UN1323 SPA42 under authorization of the International Air Transport Association and Federal Department of Transportation 49CFR UN1323 SP172.102 #59
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### Section I

<b><u>Manufacturer's Name</u></b> G. C. Fuller Mfg. Co., Inc.	<b><u>Emergency Telephone Number</u></b>
<b><u>Address (Number, Street, City, State, and ZIP Code)</u></b> 1 Shurlite Drive	<b><u>Telephone Number for Information</u></b> 812-539-2831
Lawrenceburg, IN 47025	<b><u>Date Prepared</u></b> January 1, 2013
USA	<b><u>Signature of Preparer (optional)</u></b> 

### Section II - Hazard Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity; Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)
Rare Earth Metals / Mischmetal	N/A	N/A		78%
* Cerium	N/A	N/A		39%
* Lanthanum	N/A	N/A		18%
* Neodymium	N/A	N/A		14%
* Praseodymium	N/A	N/A		7%
Iron (Oxide Fume)	10mg/m <sup>3</sup>	5mg/m <sup>3</sup>		20%
Magnesium (Oxide Fumes)	15mg/m <sup>3</sup>	10mg/m <sup>3</sup>		2%

### Section III - Physical/Chemical Characteristics

<b><u>Boiling Point</u></b>	6,800 ° F	<b><u>Specific Gravity (H<sub>2</sub>O = 1)</u></b>	6.35
<b><u>Vapor Pressure (mm Hg.)</u></b>	N/A	<b><u>Melting Point</u></b>	2,000 ° F
<b><u>Vapor Density (AIR = 1)</u></b>	N/A	<b><u>Evaporation Rate (Butyl Acetate = 1)</u></b>	N/A
<b><u>Solubility in Water</u></b>  Insoluble, for information on water reactivity see Exhibit B			
<b><u>Appearance and Odor</u></b>  Cylindrical Pellets, no odor			

### Section IV - Fire and Explosion Hazard Data

<b><u>Flash Point (Method Used)</u></b>	<b><u>Flammable Limits</u></b>	<b><u>LEL</u></b>	<b><u>UEL</u></b>
None	None, Auto ignition temperature 900° F	N/A	N/A
<b><u>Extinguishing Media</u></b>  Lighter Flints DO NOT Burn.			
<b><u>Special Fire Fighting Procedures</u></b>  None			
<b><u>Unusual Fire and Explosion Hazards</u></b>  See note on flammability of Ferro Cerium in powder form (Exhibit B)			

### Section V - Reactivity Data

<b><u>Stability</u></b>	Unstable		<b><u>Conditions to Avoid</u></b>
	Stable <b>X</b>		See note on water reactivity – WILL dissolve in acid. Cerium is a strong reducing agent.
<b><u>Incompatibility (Materials to Avoid)</u></b> Acids, Strong Oxidizers, Strong Bases, Halogens, Phosphorus, Sulfur			
<b><u>Hazardous Decomposition or Byproducts</u></b> None			
<b><u>Hazardous Polymerization</u></b>	May Occur		Conditions to Avoid
	Will Not Occur <b>X</b>		

## Section VI - Health Hazard Data

<b><u>Route(s) of Entry:</u></b>	<b><u>Inhalation?</u></b> Yes	<b><u>Skin?</u></b> No	<b><u>Ingestion?</u></b> No
<b><u>Health Hazards (Acute and Chronic)</u></b>			
See note on Health Hazards associated with Rare Earth Minerals and Magnesium. (Exhibit A)			
<b><u>Carcinogenicity:</u></b>	<b><u>NTP?</u></b> No	<b><u>IARC Monographs?</u></b> No	<b><u>OSHA Regulated?</u></b> No
* Not Listed			
<b><u>Signs and Symptoms of Exposure</u></b>			
None Known			
<b><u>Medical Conditions Generally Aggravated by Exposure</u></b>			
None Known			
<b><u>Emergency and First Aid Procedures</u></b>			
Seek Medical assistance for further treatment, observation and support if necessary.			
<b><u>Eye Contact:</u></b> Remove particles from eye and flush with large amounts of fresh water. May cause irritation due to abrasion.			
<b><u>Skin Contact:</u></b> Wash with soap and water. Remove contaminated clothing and launder. May cause irritation due to abrasion.			
<b><u>Inhalation:</u></b> Remove victim from fumes and seek medical attention. Inhalation of material in powder form may cause irritation.			
<b><u>Ingestion:</u></b> Give one or two glasses of milk. Seek medical aid. No adverse effects expected under normal usage.			

## Section VII - Precautions for Safe Handling and Use

<b><u>Steps to Be Taken in Case Material is Released or Spilled</u></b>
Avoid crushing pellets into dust. Striking with metallic objects may cause sparking. Avoid exposure to acid. Avoid contact with water in the presence of powder or dust.
<b><u>Waste Disposal Method</u></b>
In accordance with appropriate Federal, State, and Local Regulations.
<b><u>Precautions to Be taken in Handling and Storing</u></b>
Store in clean dry area. Prolonged exposure to moisture may cause pellets to degenerate into powder.
<b><u>Other Precautions</u></b>
Wash hands after handling, before eating. Avoid inhalation of dust. Avoid skin contact with dust. Do not ingest.

## Section VIII - Control Measures

<b><u>Respiratory Protection (<i>Specify Type</i>)</u></b>		
In the presence of dust or powder use NIOSH approved Schedule 21C respirator.		
<b><u>Ventilation</u></b>	<b><u>Local Exhaust</u></b> Yes	<b><u>Special</u></b> None
	<b><u>Mechanical (<i>General</i>)</u></b> Yes Use for general control.	<b><u>Other</u></b> None

<b><u>Protective Gloves</u></b> When handling powder or dust.	<b><u>Eye Protection</u></b> Use safety glasses to prevent contact irritation.
<b><u>Other Protective Clothing or Equipment</u></b> Appropriate clothing to protect against physical hazards.	
<b><u>Work/Hygienic Practices</u></b> General work / safety hygienic procedures.	

Each MSDS must be reviewed for correctness and completeness every three years.

**Reviewed by:** Robert Haneberg

**Reviewed by:** Sandy LaClair

**Revision date:** 10/24/2012

**Revision date:** 10/24/2012

## 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.

#### IATA and Federal DOT Classification for Flint (Ferro cerium)

Our spark lighters and renewals contain a very small amount of flint (Ferro cerium) in SOLID pellet form (3.5mm X 7mm) with a lacquer coating. Ferro cerium in this form is not classified as a dangerous good. The IATA regulations give this type of Ferro cerium a classification of UN1323 with a special provision of SPA42 which states “Ferro cerium in pellet form with a coating to prevent breakdown and containing not less than 10% iron is NOT REGULATED.” Further, Federal DOT also classifies Ferro cerium as non-hazardous under 49 CFR UN1323 Special Provisions 172.102 #59 which states “Ferro cerium, stabilized against corrosion, with a minimum iron content of 10% is not subject to the requirements of the subchapter.”

#### Flammability of Ferro cerium in Powder Form:

Ferro cerium is flammable in powder form as are most metals, i.e. Aluminum and Magnesium. Ferro cerium in pellet form is not flammable and although, in fact, the auto-ignition point is specified by the manufacturer of the Ferro cerium 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 Ferro cerium:

Ferro cerium 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 Ferro cerium pellets be disposed of if they show signs of deterioration as the resulting powder is flammable.