

## Material Safety Data Sheet

MRE MSDS No.: MSDS-Flint-2003-0120

Issue Date: January 20, 2003

Issue Place: Shenzhen

### 1 Identification of substance

- Product details

- Trade name: Flint

- Manufacturer/Supplier:

Metall Rare Earth Limited

Address:

1528 Guojishizhang Jiaoliuzhongxin,

Shizhouzhong Road,

Shenzhen 518053, China

Telephone: +86-755-8610 1616 Telefax: +86-755-8610 1626

### 2 Composition/Data on components:

- Chemical characterization:

**Designation: (CAS#)** Cerium (CAS# 7440-45-1), 39% approx.  
Lanthanum (CAS#7439-91-0), 18% approx.  
Praseodymium (CAS#7440-10-0), 7% approx.  
Neodymium (CAS#7440-00-8), 14% approx.  
Iron (CAS#7439-89-6), 20% approx.  
Magnesium (CAS#7439-95-4), 2% approx.

### 3 Physical/Chemical Characteristics

- Appearance: cylindrical rods

- Boiling Point: approx.

- Melting Point: approx.

- Form: Solid.

- Colour: Grey

- Smell: Odourless

- Melting point/Melting range: 2000°F

- Boiling point/Boiling range: 6800°F

- Sublimation temperature / start: Not determined

- Flash point: Not applicable

- Inflammability (solid, gaseous) Product is not inflammable.

- Ignition temperature: Not determined
- Decomposition temperature: Not determined
- Danger of explosion: Product is not explosive.
- Critical values for explosion:
  - Lower: Not determined
  - Upper: Not determined
- Steam pressure: Not determined
- Density at room temperature 6.35 g/cm<sup>3</sup>
- Solubility in / Miscibility with
- Water: Insoluble

#### 4 Hazards identification

- Flash Point and Method Used: None
- Auto-Ignition Temperature: 900 °F
- Flammability limits in Air: N/A
- Extinguisher Media: Lighter Flints do not burn
- Information pertaining to particular dangers for man and environment:

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

#### 5 First aid measures

- **After inhalation**  
Remove victim from fumes and seek medical attention.
- **After skin contact**  
Instantly wash with water and soap and rinse thoroughly. Remove contaminated clothing and launder.
- **After eye contact**  
Rinse opened eye for several minutes under running water. Then consult doctor.
- **After swallowing** Seek medical treatment.

#### 6 Fire fighting measures

- **Suitable extinguishing agents** Extinguishing powder. Do not use water.
- **For safety reasons unsuitable extinguishing agents**

- on the skin: Powder: irritant effect
- on the eye: Powder: irritant effect
- Sensitization: No sensitizing effect known.
- Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

#### 12 Ecological information:

- General notes:

Do not allow material to be released to the environment without proper governmental permits.

Generally not hazardous for water.

#### 13 Disposal considerations

- Product:

- Recommendation

Consult state, local or national regulations for proper disposal.

Hand over to disposers of hazardous waste.

Must be specially treated under adherence to official regulations.

- Uncleaned packagings:

- Recommendation:

Disposal must be made according to official regulations.

#### 14 Transport information

- Land transport ADR/RID and GGVS/GGVE (cross-border/domestic)

- ADR/RID-GGVS/E Class: None

- Maritime transport IMDG/GGVSea:

- IMDG/GGVSea Class: None

- Air transport ICAO-TI and IATA-DGR:

- ICAO/IATA Class: None

- Transport/Additional information:

Water.

Halocarbon extinguisher

• **Protective equipment:**

Wear self-contained breathing apparatus.

Wear full protective suit.

## 7 Accidental release measures

• **Person-related safety precautions:**

Wear protective equipment. Keep unprotected persons away.

• **Measures for environmental protection:**

Do not allow material to be released to the environment without proper governmental permits.

• **Measures for cleaning/collecting:** Collect mechanically.

• **Additional information:**

See Section 8 for information on safe handling

See section 9 for information on personal protection equipment.

See Section 13 for information on disposal.

## 8 Handling and storage

• **Handling**

• **Information for safe handling:**

Keep containers tightly sealed.

Store in cool, dry place in tightly closed containers.

No special precautions necessary if used correctly.

• **Information about protection against explosions and fires:**

Fine powder: highly flammable

• **Storage**

• **Requirements to be met by storerooms and containers:**

No special requirements.

• **Information about storage in one common storage facility:**

Do not store together with acids.

Store away from oxidizing agents.

Store away from halogens.

Do not store together with alkalis (caustic solutions).

• **Further information about storage conditions:**

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

## 9 Exposure controls and personal protection

- **Additional information about design of technical systems:**

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

- **Additional information:** No data

- **Personal protective equipment**

- **General protective and hygienic measures**

The usual precautionary measures should be adhered to in handling the chemicals.

Keep away from foodstuffs, beverages and food.

Instantly remove any soiled and impregnated garments.

Wash hands during breaks and at the end of the work.

- **Breathing equipment**

- **Protection of hands:** Impervious gloves

- **Eye protection:** Safety glasses

- **Body protection:** Protective work clothing.

## 10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:**

No decomposition if used and stored according to specifications.

- **Materials to be avoided:**

Acids

Halogens

Bases

Water/moisture

Light

- **Dangerous reactions:** Contact with acids releases flammable gases

- **Dangerous products of decomposition:** Metal oxide

## 11 Toxicological information

- **Acute toxicity:**

- **Primary irritant effect:**

#### 15 Regulatory information

- **Designation according to EC guidelines:**  
Observe the normal safety regulations when handling chemicals
  
- **National regulations**
  
- **Information about limitation of use:**  
For use only by technically qualified individuals.
  
- **Water hazard class:** Generally not hazardous for water.

#### 16 Other information:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgment of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.