



MATERIAL SAFETY DATA SHEET

Ferro Corporation
Electronic Material System
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1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

Product Name: CLC B4/1 Cercoa Liquid Cerium Gal Jug Date of Preparation: 06/01/2005
Synonyms: Aqueous slurry.
CAS-No.: Mixture
Product code: 1014858

2. HAZARD IDENTIFICATION

Emergency Overview

Caution
May cause eye/skin irritation. Avoid contact with the skin and the eyes.

NFPA 704

| | |
|-------------------------------|-----------------------|
| Colour: red brown | Health: 1 |
| Physical state: Slurry | Fire: 0 |
| Odour: Slight | Instability: 0 |

Potential Health Effects

Principle routes of exposure: Eye contact. Skin contact.

Eye contact: May cause slight irritation.

Skin contact: Prolonged skin contact may cause skin irritation and/or dermatitis.

Inhalation: Breathing of mists, vapors, or fumes may irritate the nose, throat and lungs.

Ingestion: May irritate digestive tract.

3. COMPOSITION/INFORMATION ON INGREDIENTS

| Components | CAS Number | Weight % |
|--------------------|------------|----------|
| Bastnasite | 68909-13-7 | 40 - 50% |
| Barium sulfate | 7727-43-7 | 1 - 5% |
| Calcium Carbonate | 1317-65-3 | 1 - 5% |
| Strontium Fluoride | 7783-48-4 | 1 - 5% |
| Fluorspar | 7789-75-5 | 1 - 5% |

4. FIRST AID MEASURES

Eye contact: Rinse immediately with plenty of water, also under the eyelids. Get medical attention if irritation develops.

Skin contact: Wash off immediately with soap and plenty of water. Remove and wash contaminated clothing before re-use. If symptoms persist, call a physician.

Inhalation: Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. If symptoms persist, call a physician.

Ingestion: Drink plenty of water. Consult a physician if necessary. Do not induce vomiting without medical advice.

Notes to physician: Treat symptomatically. Lanthanides, because of their high density, can produce abnormalities on chest x-ray. Lanthanides, generally are not felt to be fibrogenic and the lesions typically have little or no clinical significance. However, occasional cases of pneumoconiosis have been reported.

5. FIRE-FIGHTING MEASURES

Flash point: Non combustible

Suitable extinguishing media: Use dry chemical, CO₂, water spray or "alcohol" foam.

Hazardous decomposition products: None reasonably foreseeable.

Special protective equipment for firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, NIOSH (approved or equivalent) and full protective gear.

Unusual hazards: None known.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Evacuate area of all unnecessary personnel. Avoid contact with skin, eyes and clothing. Use personal protective equipment.

Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Do not flush into surface water or sanitary sewer system.

Methods for cleaning up: Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container. Dispose of promptly. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Handling: Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing.

Storage: Keep container tightly closed in a dry and well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure limits:

| Components | OSHA | ACGIH |
|--------------------|--|----------------------------------|
| Bastnasite | Not established | Not established |
| Barium sulfate | 15 mg/m ³ TWA (total dust) 5 mg/m ³ TWA (respirable) | 10 mg/m ³ TWA |
| Calcium Carbonate | 15 mg/m ³ TWA (total dust); 5 mg/m ³ TWA (respirable fraction) | 10 mg/m ³ TWA |
| Strontium Fluoride | 2.5 mg/m ³ TWA as F | 2.5 mg/m ³ TWA (as F) |
| Fluorspar | 2.5 mg/m ³ TWA (as F) | 2.5 mg/m ³ TWA (as F) |

OSHA particulate (not otherwise regulated) limit: 5 mg/m³ (respirable); 15 mg/m³ (total).

Engineering measures: Ensure adequate ventilation, especially in confined areas.

Eye protection: Safety glasses with side-shields.

Skin and body protection: Lightweight protective clothing.

Hand protection: Impervious gloves.

Respiratory protection: Use NIOSH approved respirator when ventilation is inadequate.

9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|----------------------------------|-----------|--------------------------|-------------------|
| Colour: | red brown | Physical state: | Slurry |
| Odour: | Slight | Molecular weight: | No data available |
| Boiling point/range (°C): | 100. | pH: | 7.7 |

| | | | |
|-----------------------------------|-------------------|-------------------------------------|-------------------|
| Freezing point/range (°C): | 0.0 | Specific gravity (Water =1): | 1.500 |
| Vapor pressure (mmHg): | No data available | Evaporation rate (Water =1): | No data available |
| Water solubility (mg/l): | No data available | VOC content (%) | No data available |

10. STABILITY AND REACTIVITY

Stability: Stable at normal conditions.

Polymerization: Will not occur.

Hazardous decomposition products: None under normal use.

Materials to avoid: Strong oxidizing agents.

Conditions to avoid: None known

11. TOXICOLOGICAL INFORMATION

Acute toxicity:

No data is available on the product itself.

Bastnasite

NIOSH - LD50s and LC50s: > 5 g/kg Oral LD50 Rat

Barium sulfate

ACGIH - Carcinogens: A4 - Not Classifiable as a Human Carcinogen

A4 - Not Classifiable as a Human Carcinogen (as Ba)

Fluorspar

NIOSH - LD50s and LC50s: = 4250 mg/kg Oral LD50 Rat

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products: Waste must be disposed of in accordance with federal, state and local environmental control regulations. Where possible recycling is preferred to disposal or incineration.

12. ECOLOGICAL INFORMATION

No data is available on the product itself

Aquatic toxicity: Not determined

Persistence and degradability: Not determined

14. TRANSPORT INFORMATION

DOT

Proper shipping name: Not regulated.

TDG (Canada)

Proper shipping name: Not regulated.

15. REGULATORY INFORMATION

U.S. Regulations:

Not subject to the provisions of SARA 313 Title III

Not subject to TSCA 12(b) Export Notification

State Regulations

This product or its ingredients have been evaluated for New Jersey, Pennsylvania, and California Prop 65 supplier notification requirements. Substances that are subject to notification requirements, if any, are listed below. This product contains a trace amount of a lead compound (<0.1%) and a very low level of Naturally Occurring Radioactive Material (NORM)..

| Components | NJRTK: | PARTK: | Cal Prop65: |
|-------------------|--|--------|--|
| Lead compounds | 2266 (inorganic: 0.1%; organic: 1.0%) | Listed | Carcinogen, developmental toxicity. |
| Calcium Carbonate | N/A | Listed | N/A |
| Thorium Phosphate | N/A | N/A | Radionuclides |
| Fluorspar | sn 0319 | N/A | N/A |

Canadian WHMIS

WHMIS hazard class: D2B Toxic materials.

Components

Lead compounds

WHMIS Ingredient Disclosure:

1%

International Inventories

TSCA 8(b): Listed or exempt.
Canadian DSL: Listed or exempt.
EINECS: Listed or exempt.
Phillipines (PICCS): Not listed.
Japan (ENCS): Not listed.
Korea (KECL): Listed.
China (IECS): Listed.
Australia (AICS): Listed.

16. OTHER INFORMATION

For Industrial Use Only

HMIS

Health: 1

Fire: 0

Physical hazard: 0

PPE: X

Prepared by: Ferro Technical Center

The information and recommendations contained in this Material Safety Data Sheet have been compiled from sources believed to be reliable and to represent the most reasonable current opinion on the subject when the MSDS was prepared. No warranty, guaranty or representation is made as to the correctness or sufficiency of the information. The user of this product must decide what safety measures are necessary to safely use this product, either alone or in combination with other products, and determine its environmental regulatory compliance obligations under any applicable federal or state laws.

End of Safety Data Sheet

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