



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: Precision Cerium Oxide 4285 Date of Preparation: 10/03/06
Synonyms: Rare Earth Polishing Compound.
CAS-No.: Mixture

2. HAZARD IDENTIFICATION

Emergency Overview

Caution
Product dust may be irritating to eyes, skin and respiratory system. Avoid dust formation.

NFPA 704

Colour:	Red brown	Health:	1
Physical state:	Powder	Fire:	0
Odour:	Odorless	Instability:	0

Potential Health Effects

Principle routes of exposure: Inhalation. Ingestion.

Eye contact: May cause irritation.

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

Inhalation: Dust irritating to respiratory tract.

Ingestion: May irritate digestive tract.

Chronic toxicity: Repeated or prolonged exposure to the substance can produce lung damage.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS Number	Weight %
Rare Earth Oxide		20 - 30%
Rare Earth Fluoride		10 - 20%

Rare Earth Oxide is a mixture of Cerium Oxide (1306-38-3), Lanthanum Oxide (1312-81-8), Praseodymium Oxide (12037-29-5), and Neodymium Oxide (1313-97-9). Rare Earth Fluoride is a mixture of Cerium Fluoride (7758-88-5) and Lanthanum Fluoride (13709-38-1). This material contains very low levels of Naturally Occurring Radioactive Material (NORM).

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. Call a physician immediately.

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

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 extinguishing measures that are appropriate to local circumstances and the surrounding environment.

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: Avoid dust formation. 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: Clean up promptly by scoop or vacuum. Wear personal protective equipment. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Handling: Handle in accordance with good industrial hygiene and safety practice. Avoid dust formation. Avoid contact with skin, eyes and clothing. Wash hands thoroughly before eating, drinking or smoking.

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

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure limits:

Components	OSHA	ACGIH
Rare Earth Oxide	15 mg/m ³ Total; 5 mg/m ³ Respirable	10 mg/m ³ Total; 3 mg/m ³ Respirable
Rare Earth Fluoride	2.5 mg/m ³ as F	2.5 mg/m ³ as F

Engineering measures: Provide appropriate exhaust ventilation at machinery and at places where dust or fumes can be generated.

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.

Hygiene measures: Wash contaminated clothing before re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Colour: Red brown

Odour: Odorless

Boiling point/range (°C): No data available

Melting point/range (°C): > 2300

Vapor pressure (mmHg): No data available

Physical state: Powder

Molecular weight: No data available

pH: No data available

Specific gravity (Water =1): 5.400

Evaporation rate (Water =1): No data available

Water solubility (mg/l): Insoluble

VOC content (%) 0.00 %

10. STABILITY AND REACTIVITY

Stability: Stable at normal conditions.

Polymerization: Will not occur.

Hazardous decomposition products: None under normal use.

Materials to avoid: Strong acids.

Conditions to avoid: None known.

11. TOXICOLOGICAL INFORMATION

Acute toxicity: No data is available on the product itself

Carcinogenic effects:
Not listed by IARC, NTP or OSHA as a carcinogen.

Rare Earth Oxide

NIOSH - LD50s and LC50s: > 5 g/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. This product contains Naturally Occuring Radioactive Materials (NORM). Consult and comply with current regulations.

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.

Components	NJRTK:	PARTK:	Cal Prop65:
Rare Earth Oxide	N/A	N/A	Radionuclides
Rare Earth Fluoride	N/A	N/A	Radionuclides

Canadian WHMIS

WHMIS hazard class: D2B Toxic materials.

Components

Rare Earth Fluoride

WHMIS Ingredient Disclosure:

1%

International Inventories

- TSCA 8(b): Listed or exempt.
- Canadian DSL: Listed or exempt.
- EINECS: Listed or exempt.
- Phillipines (PICCS): Listed.
- Japan (ENCS): 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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