

Europium



MATERIAL SAFETY DATA SHEET

I. PRODUCT IDENTIFICATION

Manufacturer/Supplier:

ESPI Metals

1050 Benson Way, Ashland, OR 97520

Toll Free (800) 638-2581 * Fax (541) 488-8313

E-Mail: sales@espimetals.com

Product Name: Europium

Formula: Eu

CAS Number: 7440-53-1

II. HAZARDOUS INGREDIENTS

Hazardous Component: Europium

Percent (%): 0-100

OSHA/PEL: N/E

ACGIH/TLV: N/E

HMIS Ratings:

Health: 2

Flammability: 4

Reactivity: 2

III. PHYSICAL DATA

Boiling Point: 1527 °C

Melting Point: 822 °C

Specific Gravity: 5.244 g/cc

Solubility in H₂O: Insoluble

Appearance and Odor: Gray powder, silver colored solid, no odor.

IV. FIRE AND EXPLOSION HAZARDS DATA

Flash Point: N/A

Flammability: Highly flammable

Autoignition Temperature: N/A

Flammable Limits: Lower: N/A Upper: N/A

Extinguishing Media: Dry powder, Class D Extinguisher. DO NOT USE WATER.

Special Firefighting Procedures: Firefighters must wear full face, self-contained breathing apparatus and full protective clothing to prevent contact with skin and eyes.

Unusual Fire and Explosion Hazards: Flammable when wet and highly oxidizable in air. May be spontaneously combustible in air in finely divided form. Will immediately react with water liberating flammable, explosive hydrogen gas.

V. HEALTH HAZARD INFORMATION

Effects of Exposure:

To the best of our knowledge the chemical, physical and toxicological properties of europium have not been thoroughly investigated and recorded.

Europium is considered a rare earth metal. These metals are moderately to highly toxic. The symptoms of toxicity of the rare earth elements include writhing, ataxia, labored respiration, walking on the toes with arched back and sedation. The rare earth elements exhibit low toxicity by ingestion exposure. However, the intraperitoneal route is highly toxic while the subcutaneous route is poison to moderately toxic. The production of lung and skin granulomas after exposure to them requires extensive protection to prevent such exposure. (Sax, Dangerous Properties of Industrial Materials)

Acute Effects:

Inhalation: May cause irritation to the upper respiratory system.

Ingestion: Considered to have low toxicity by ingestion.

Skin: May cause irritation.

Eye: May cause moderate irritation.

Chronic Effects:

Inhalation: May cause writhing, ataxia, labored respiration, sedation, pulmonary edema and lung granuloma.

Ingestion: May act as a blood anticoagulant.

Skin: No chronic health effects recorded.

Eye: No chronic health effects recorded.

Target Organs: May affect the blood.

Medical Conditions Generally Aggravated by Exposure: Pre-existing lung disorders.

Carcinogenicity: **NTP:** No **IARC:** No **OSHA:** No **ACGIH:** No

EMERGENCY AND FIRST AID PROCEDURES:

INHALATION: Remove victim to fresh air, keep warm and quiet, give oxygen if breathing is difficult, seek medical attention.

INGESTION: Give 1-2 glasses of milk or water and induce vomiting, seek medical attention. Never induce vomiting or give anything by mouth to an unconscious person.

SKIN: Remove contaminated clothing, brush material off skin, wash with plenty of soap and water. Seek medical attention.

EYE: Immediately flush eyes, including under upper and lower lids, with plenty of water for at least 15 minutes

using an eyewash fountain. Seek medical attention.

VI. REACTIVITY DATA

Stability: Stable

Conditions to Avoid: Water/moisture, dusting conditions, electric arcs, open flame, spark.

Incompatibility (Material to Avoid): Air, water/moisture, oxidizing agents, halogens, strong acids, acid chlorides.

Hazardous Decomposition Products: Hydrogen gas

Hazardous Polymerization: Will not occur.

VII. SPILL OR LEAK PROCEDURES

Steps to be Taken in Case Material is Released or Spilled: Wear appropriate respiratory and protective equipment specified in section VIII. Isolate spill area, provide ventilation and extinguish sources of ignition. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for proper disposal. Take care not to raise dust. Use non-sparking tools.

Waste Disposal Method: Dispose of in accordance with Local, State and Federal regulations.

VIII. SPECIAL PROTECTION INFORMATION

Respiratory Protection: NIOSH approved respirator.

Ventilation: Handle and store in an inert gas such as argon. Handle in a controlled, dry atmosphere. Use local exhaust to maintain concentration of exposure at low levels. General exhaust is not recommended.

Protective Gloves: Rubber gloves.

Eye Protection: Safety glasses

Other Protective Clothing or Equipment: Protective gear suitable to prevent contamination.

IX. SPECIAL PRECAUTIONS

Precautions to Be Taken in Handling and Storage: Store in tightly closed containers. Store in an area that is dry. Avoid breathing dusts or vapors. Avoid direct or prolonged contact with skin and eyes. Use non-sparking tools and grounded/bonded equipment and containers when transferring. Store under inert gas.

Other Precautions: Dry powders can build static electricity charges when subjected to the friction of conveying, mixing or sliding. Provide adequate precautions, such as electrical grounding, or inert atmospheres when material is used in the presence of flammable materials to prevent ignition. This material is subject to rapid oxidation in air and will ignite in the presence of moisture. Keep away from water! Pinholes may occur in thin foils as metal ages.

Work Practices: Implement engineering and work practice controls to reduce and maintain concentration of exposure at low levels. Use good housekeeping and sanitation practices. Do not use tobacco or food in work area. Wash thoroughly before eating and smoking. Do not blow dust off clothing or skin with compressed air. Maintain eyewash capable of sustained flushing, safety drench shower and facilities for washing.

DOT Regulations:

Solid Forms:

Hazard Class: 4.1

Identification Number: UN3178

Packing Group: II

Proper Shipping Name: Flammable solid, inorganic, n.o.s. (Europium)

Powder and Foil:

Hazard Class: 4.3

Identification Number: UN3132

Packing Group: I

Proper Shipping Name: Water reactive solid, flammable, n.o.s. (Europium)

Warning Statements: FLAMMABLE SOLID AS COARSE FLAKE, POWDER, DUST OR FUME. REDUCING AGENT. REACTS WITH WATER AND DILUTE ACIDS TO PRODUCE FLAMMABLE, EXPLOSIVE HYDROGEN GAS. DUST IN HIGH CONCENTRATIONS MAY CAUSE SKIN, EYE AND RESPIRATORY TRACT IRRITATION.

The above information is believed to be correct, but does not purport to be all inclusive and shall be used only as a guide. ESPI shall not be held liable for any damage resulting from handling or from contact with the above product.

Issued by: S. Dierks

Revised/Verified: October 2010