

**Chemical Name or Synonym:**

ERBIUM-PRASEODYMIUM FOIL or PRASEODYMIUM-ERBIUM FOIL

**Chemical Symbol:**

ErPr

**2. COMPOSITION/INFORMATION ON INGREDIENTS**

Component	CAS Registrati on Number	OSHA Hazar d?	Weight Percen tage
ERBIUM	7440-52-0	Yes	49-51
PRASEODYMI UM	7440-10-0	Yes	49-51
TANTALUM	7440-25-7	Yes	<0.5

**3. HAZARDS IDENTIFICATION****A. EMERGENCY OVERVIEW:****Physical Appearance and Odor:**

Lustrous gray, silvery foil solid, odorless. Will develop greenish oxide coating if exposed to air.

**Warning Statements:**

FLAMMABLE SOLID. UNDER FIRE CONDITIONS, MAY REACT WITH WATER TO PRODUCE FLAMMABLE, EXPLOSIVE HYDROGEN GAS. FINE DUSTS IN HIGH CONCENTRATIONS ARE IGNITABLE AND MAY BE IRRITABLE TO EYES, SKIN OR THE RESPIRATORY TRACT.

**NOTE:** For purposes of this MSDS, occupational exposure to metals or alloys is taken to mean dusts, fumes, or solutions containing metals that become airborne or can spill on the skin or in the eye. Occupational exposure to metals or alloys does not include solid products (i.e., ingots or castings), provided no particle generating operations, such as grinding or cutting, occur. In most industrial situations, the significant routes of exposure would include inhalation, or skin and eye contact.

**B. POTENTIAL HEALTH EFFECTS:****Acute Eye:**

Non-irritating. May cause foreign body irritation only.

**Acute Skin:**

Skin absorption not likely. Essentially non-irritating.

**Acute Inhalation:**

Low acute inhalation toxicity. May cause upper respiratory tract irritation.

**Acute Ingestion:**

Low acute oral toxicity.

**Chronic Effects:**

This product does not contain any ingredient designated by IARC, NTP, ACGIH or OSHA as probable or suspected human carcinogens.

#### **4. FIRST AID MEASURES**

##### **FIRST AID MEASURES FOR ACCIDENTAL:**

###### **Eye Exposure:**

Rinse particulate matter from eye. Seek medical attention if irritation develops or persists or if visual changes occur.

###### **Skin Exposure:**

In case of contact, wash skin with plenty of soap and water. Seek medical attention if irritation develops or persists.

###### **Inhalation:**

If respiratory irritation or distress occurs remove victim to fresh air. Seek medical attention if respiratory irritation or distress continues.

###### **Ingestion:**

If victim is conscious and alert, give 1-2 glasses of water to drink. Do not give anything by mouth to an unconscious person. Seek medical attention. Do not leave victim unattended.

##### **MEDICAL CONDITIONS POSSIBLY AGGRAVATED BY EXPOSURE:**

Inhalation of product may aggravate existing chronic respiratory problems such as asthma, emphysema or bronchitis.

##### **NOTES TO PHYSICIAN:**

All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

Treat symptomatically. No specific antidote available.

#### **5. FIRE FIGHTING MEASURES**

##### **FIRE HAZARD DATA:**

###### **Flash Point:**

Not applicable.

###### **Extinguishing Media:**

Recommended: Dry chemical, Class D extinguisher. Not recommended: Water.

###### **Special Fire Fighting Procedures:**

Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing.

**Unusual Fire and Explosion Hazards:**

Product is a flammable solid. Thin foils can be ignited by spark or static electricity. Under fire conditions, may react with water liberating flammable, explosive hydrogen gas. This product, in a powder or dust form, when mixed with air in critical proportions and in the presence of an ignition source, may present an explosion hazard.

**Hazardous Decomposition Materials (Under Fire Conditions):**

None known.

## **6. ACCIDENTAL RELEASE MEASURES**

**Evacuation Procedures and Safety:**

Wear appropriate protective gear for the situation. See Personal Protection information in Section 8.

**Containment of Spill:**

Follow procedure described below under Cleanup and Disposal of Spill.

**Cleanup and Disposal of Spill:**

Sweep up and place in an appropriate closed container (see Section 7: Handling and Storage). Vacuuming should be prohibited. Use non-sparking tools. Clean up residual material by washing area with water.

**Environmental and Regulatory Reporting:**

Do not flush to drain. Spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies.

## **7. HANDLING AND STORAGE**

**Minimum/Maximum Storage Temperatures:**

Not available.

**Handling:**

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. Subject to rapid oxidation in air and will deteriorate in

the presence of moisture. Will "fingerprint" easily. Provide adequate precautions, such as electrical grounding, or inert atmospheres when material is used in the presence of flammable materials to prevent ignition.

**Storage:**

Store in tightly closed containers under vacuum, inert gas or mineral oil. Store in an area that is dry.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Introductory Remarks:**

These recommendations provide general guidance for handling this product. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. While developing safe handling procedures, do not overlook the need to clean equipment and piping systems for maintenance and repairs. Waste resulting from these procedures should be handled in accordance with Section 13: Disposal Considerations.

Assistance with selection, use and maintenance of worker protection equipment is generally available from equipment manufacturers.

**Exposure Guidelines:**

No exposure limits were found for this product or any of its ingredients.

**Engineering Controls:**

Where engineering controls are indicated by use conditions or a potential for excessive exposure exists, the following traditional exposure control techniques may be used to effectively minimize employee exposures: General area dilution/exhaust ventilation.

**Respiratory Protection:**

When respirators are required, select NIOSH/MSHA approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industrial recommendations.

Under normal conditions, in the absence of other airborne contaminants, the following devices should provide protection from this material up to the conditions specified by the appropriate OSHA, WHMIS or ANSI standard(s): Air-purifying (half-mask/full-face) respirator with cartridges/canister approved for use against dusts, mists and fumes.

**Eye/Face Protection:**

Eye and face protection requirements will vary dependent upon work environment conditions and material handling practices. Appropriate ANSI Z87 approved equipment should be selected for the particular use intended for this material.

It is generally regarded as good practice to wear a minimum of safety glasses with side shields when working in industrial environments.

**Skin Protection:**

Skin contact should be minimized through use of gloves and suitable long-sleeved clothing (i.e., shirts and pants). Consideration must be given both to durability as well as permeation resistance.

**Work Practice Controls:**

Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this material:

- 1) Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored.
- 2) Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics, or using the toilet.
- 3) Wash exposed skin promptly to remove accidental splashes of contact with this material.

## **9. PHYSICAL AND CHEMICAL PROPERTIES**

Physical and Chemical properties here represent typical properties of this product. Contact the business area using the Product Information phone number in Section 1 for its exact specifications.

**Physical Appearance:**

Lustrous gray, silvery foil solid.

**Odor:**

Odorless.

**pH:**

Not applicable.

**Density:**

5.9 g/cc @ 25° C. (77° F.)

**Water Solubility:**

Insoluble

**Melting Point:**

Not available

**Boiling Point:**

Not available.

**Vapor Pressure:**

Not applicable.

**Vapor Density:**

Not applicable.

**Molecular Weight:**

154.1 g/mole

## **10. STABILITY AND REACTIVITY**

**Chemical Stability:**

This material is stable under normal handling and storage conditions described in Section 7.

**Conditions To Be Avoided:**

dusting conditions  
electric arcs  
open flame  
spark

**Materials/Chemicals To Be Avoided:**

air  
moisture  
strong acids  
strong oxidizing agents  
acid chlorides  
halogens

**The Following Hazardous Decomposition Products Might Be Expected:**

Decomposition type: Hydrolysis  
Products: Hydrogen

**Hazardous Polymerization Will Not Occur.**

**11. TOXICOLOGICAL INFORMATION**

**Acute Eye Irritation:**

No test data found for product.

**Acute Skin Irritation:**

No test data found for product.

**Acute Dermal Toxicity:**

No test data found for product.

**Acute Respiratory Irritation:**

No test data found for product.

**Acute Inhalation Toxicity:**

No test data found for product.

**Acute Oral Toxicity:**

No test data found for product.

**Chronic Toxicity:**

This product does not contain any substances that are considered by OSHA, NTP, IARC or ACGIH to be probable or suspected human carcinogens.

No additional test data found for product.

**12. ECOLOGICAL INFORMATION**

**Ecotoxicological Information**

No data found for product.

**Chemical Fate Information:**

No data found for product.

### **13. DISPOSAL CONSIDERATIONS**

**Waste Disposal Method:**

Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate. Please be advised that state and local requirements for waste disposal may be more restrictive or otherwise different from federal laws and regulations. Consult state and local regulations regarding the proper disposal of this material.

**Container Handling and Disposal:**

Any containers or equipment used should be decontaminated immediately after use.

EPA Hazardous Waste - NO

### **14. TRANSPORTATION INFORMATION**

**Transportation Status: IMPORTANT! Statements below provide additional data on listed DOT classification**

The listed Transportation Classification does not address regulatory variations due to changes in package size, mode of shipment or other regulatory descriptors.

**US Department of Transportation Classification:**

FLAMMABLE SOLID, INORGANIC, N.O.S.

Hazard Class: 4.1, PGII

Subsidiary Hazard: None

**Technical Shipping Name:**

FLAMMABLE SOLID, INORGANIC, N.O.S. (Erbium-Praseodymium foil, 1:1 wt%), 4.1, UN3132, II

REQUIRED LABELS: 4 (Flammable solid)

NORTH AMERICAN EMERGENCY RESPONSE GUIDE #133

### **15. REGULATION INFORMATION**

**Inventory Status**

Inventory	Status
UNITED STATES (TSCA)	Y
CANADA (DSL)	Y
EUROPE (EINECS/ELINCS)	Y
AUSTRALIA (AICS)	Y
JAPAN (MITI)	E
SOUTH KOREA (KECL)	N

Y = All ingredients are on the inventory.

E = All ingredients are on the inventory or exempt from listing.

P = One or more ingredients fall under the polymer exemption or are on the "no longer polymer" list. All other ingredients are on the inventory or exempt from listing.

N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing.

#### **FEDERAL REGULATIONS**

##### **TSCA Inventory Status:**

All functional components of this product are listed on the TSCA Inventory.

##### **SARA Title III Hazard Classes:**

Fire Hazard	YES
Reactive Hazard	YES
Release of Pressure	NO
Acute Health Hazard	NO
Chronic Health Hazard	NO

#### **STATE REGULATIONS:**

This product does not contain any components that are regulated under California Proposition 65.

## **16. OTHER INFORMATION**

#### **National Fire Protection Association (NFPA) Hazard Ratings:**

- 1 Health Hazard Rating - Slight
- 3 Flammability Rating - Serious
- 2 Instability Rating - Moderate
- 0 \* NO WATER

#### **National Paint & Coating Hazardous Materials Identification:**

- 1 Health Hazard Rating - Slight
- 3 Flammability Rating - Serious
- 2 Reactivity Rating - Moderate

#### **Reason for Revisions:**

Not applicable.

#### **Key Acronyms Used:**

ACGIH - American Conference of Governmental Industrial Hygienists



OSHA - Occupational Safety and Health Administration  
NIOSH - National Institute for Occupational Safety and Health  
MSHA - Mine Safety and Health Administration  
WHMIS - Workplace Hazardous Materials Information System  
TSCA - Toxic Substances Control Act  
SARA - Superfund Amendments and Reauthorization Act of 1986  
NTP - National Toxicology Program  
IARC -International Agency for Research on Cancer

**Disclaimer:**

The information herein is given in good faith, but no warranty, expressed or implied, is made.