Dysprosium

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: Dysprosium

Formula: Dy

CAS Number: 7429-91-6

II. HAZARDOUS INGREDIENTS

Hazardous Components: Dysprosium

Percent (%): 0-100

OSHA/PEL: N/E

ACGIH/TLV: N/E

HMIS Ratings (Powder):

Health: 2

Flammability: 3

Reactivity: 2

III. PHYSICAL DATA

Boiling Point: 2562 ºC

Melting Point: 1412 ºC

Specific Gravity: 8.55 g/cc @ 25

Solubility in H_2O: Insoluble

Appearance and Odor: Silver metallic solid or powder, no odor.

IV. FIRE AND EXPLOSION HAZARDS DATA

Flash Point: N/A

Autoignition Temperature: No data

Flammable Limits: **Lower**: No data **Upper**: No data

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.

Unusual Fire & Explosion Hazard: Dysprosium will burn under fire conditions. May react with water liberating flammable, explosive hydrogen gas. Thin foils may ignite by spark or static electricity. Like most dry chemicals, in a powder or dust form, this product (when mixed with air in critical proportions and in the presence of an ignition source) may present an explosion hazard. Dysprosium metal is an active reducing agent. May react violently in air and to halogens.

V. HEALTH HAZARD INFORMATION

Effects of Exposure:

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

Dysprosium is considered a rare earth metal. These metals are moderately to highly toxic. The symptoms of toxicity of the rare earth metals include writhing, ataxia, labored respiration, walking on the toes with arched back and sedation. 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 respiratory tract and mucous membrane. Dusts may cause asthma attacks and lung damage such as lung granulomas. Large doses may cause writhing, loss of muscle coordination, labored respiration, sedation, hypotension, and cardiovascular collapse.

Ingestion: May cause gastrointestinal irritation.

Skin: May cause irritation, rashes and skin granulomas.

Eye: May cause irritation.

Chronic Effects:

Inhalation: Prolonged or repeated inhalation may cause writhing, loss of muscle coordination, labored respiration, sedation, hypotension, and cardiovascular collapse.

Ingestion: May affect the coagulation rate of the blood.

Skin: May cause dermatitis, sensitivity to heat, itching and skin lesions.

Eye: No chronic health effects recorded.

Target Organs: May affect the respiratory system, blood and skin.

Medical Conditions Possibly Aggravated by Overexposure: Pre-existing respiratory disorders.

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

EMERGENCY AND FIRST AID PROCEDURES:

INHALATION: Remove to fresh air, keep warm and quiet, give oxygen if breathing is difficult and seek medical attention if respiratory irritation develops or persists.

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 affected area with soap and water. Seek

medical attention if irritation develops or persists.

EYE: Flush eyes with lukewarm water, including under upper and lower eyelids, for at least 15 minutes using an eyewash fountain. Seek medical attention if irritation develops or persists.

VI. REACTIVITY DATA

Stability: Stable

Conditions to Avoid: Air and moisture sensitive.

Incompatibility (Material to Avoid): Strong acids, strong oxidizing materials, halogens, acid chlorides, water/ moisture and air.

Hazardous Decomposition Products: Metal oxide fume, 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 gear specified in section VIII. Eliminate all sources of ignition. Evacuate area. Provide ventilation. Sweep into appropriate container. Avoid creating dust. Wash spill area after material pickup is complete. Do not flush to drain. Use non-sparking tools.

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

VIII. SPECIAL PROTECTION INFORMATION

Respiratory Protection: In dusting conditions, use a NIOSH approved respirator.

Ventilation: Handle in a dry, controlled atmosphere. Handle in an inert gas such as argon. Use local exhaust as needed to maintain airborne exposure below control limits. 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 a cool, dry place in tightly closed containers. Air and moisture sensitive. Store away from oxidizers and other materials listed under incompatibility. STORE UNDER ARGON OR OTHER INERT ENVIRONMENT. Avoid breathing dusts. Avoid direct or prolonged contact with skin and eyes. Do not rub eyes with soiled hands.

Other Precautions: Avoid creating dusts as this product, like most materials in powder form, is capable of creating a dust explosion. Use non-sparking tools and grounded/bonded equipment and containers when transferring. Foils are subject to oxidation at elevated temperatures and will deteriorate in the presence of moisture. Will 'fingerprint' easily. Pinholes may occur in thin foils as metal ages.

Warning Statements: FLAMMABLE SOLID WHEN IN A POWDER OR THIN FOIL. ALL FORMS WILL REACT WITH DILUTE ACIDS EMITTING FLAMMABLE/EXPLOSIVE HYDROGEN GAS.

Work Practices: Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored. Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics, or using the toilet. Wash exposed skin promptly to remove accidental splashes of contact with this material. Maintain a sink, safety shower and eyewash fountain in the work area. Have oxygen readily available.

TSCA Listed: Yes

DOT Regulations:

Solid Forms:

Hazard Class: None

Thin Foil:

Hazard Class: 4.1

Identification Number: UN3178

Packing Group: II

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

Powder:

Hazard Class: 4.1

Identification Number: UN3089

Packing Group: II

Proper Shipping Name: Metal powder, flammable, n.o.s. (Dysprosium)

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: May 2011