

# Rhenium



## 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](mailto:sales@espimetals.com)

**Product Name:** Rhenium

**Formula:** Re

**CAS Number:** 7440-15-5

## II. HAZARDOUS INGREDIENTS

**Hazardous Component:** Rhenium

**Percent (%):** 0-100

**OSHA/PEL:** N/E

**ACGIH/TLV:** N/E

**HMIS Ratings (Powder):**

**Health:** 1

**Flammability:** 3

**Reactivity:** 1

## III. PHYSICAL DATA

**Boiling Point:** 5627 °C

**Melting Point:** 3180 °C

**Specific Gravity:** 20.53 g/cc

**Solubility in H<sub>2</sub>O:** Insoluble

**Appearance and Odor:** Silver-gray solid to black powder, no odor.

## **IV. FIRE AND EXPLOSION HAZARDS DATA**

**Flash Point:** N/A

**Autoignition Temperature:** N/E

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

**Extinguishing Media:** **Powder Fires:** Class D extinguisher or special powder for metal fires. Do not use water.

**Solid Material Fires:** Non-flammable. Use extinguishing media suitable for surrounding material and type of fire.

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

**Unusual Fire & Explosion Hazard:** Flammable in the form of dust or powder when exposed to heat or flame. Ignites in oxygen at 300 °C. Violent reaction with fluorine at 125 °C. Contact with acids can generate flammable hydrogen gas.

## **V. HEALTH HAZARD INFORMATION**

### **Effects of Exposure:**

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

No toxic effects are known for rhenium metal. Rhenium compounds may be irritating to the eyes and respiratory tract.

### **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 and pulmonary edema.

**Ingestion:** Mucous membrane irritation.

**Skin:** Dust or powder may cause skin irritation.

**Eye:** Dust or powder may irritate eyes.

**Chronic Effects:** No chronic health effects recorded

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

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

## **EMERGENCY AND FIRST AID PROCEDURES:**

**INHALATION:** Remove from exposure, keep warm and quiet, give oxygen if breathing is difficult and seek medical attention.

**INGESTION:** Give 1-2 glasses of milk or water and induce vomiting, and 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 mild soap and water. If irritation persists, seek medical attention.

**EYE:** Flush eyes with lukewarm water, including under upper and lower eyelids, for at least 15 minutes. Seek medical attention if irritation persists.

## **VI. REACTIVITY DATA**

**Stability:** Stable

**Conditions to Avoid:** None

**Incompatibility (Material to Avoid):** Strong oxidizing agents, fluorine, and strong acids.

**Hazardous Decomposition Products:** Oxides of rhenium, hydrogen.

**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. Remove all sources of ignition and provide ventilation. Sweep or scoop up and place in a closed container for disposal. Do not generate dust during cleanup. Use non-sparking tools.

**Waste Disposal Method:** Dispose of all waste in accordance with federal, state, and local laws.

## **VIII. SPECIAL PROTECTION INFORMATION**

**Respiratory Protection:** NIOSH-approved respirator in dusting conditions.

**Ventilation:** Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

**Protective Gloves:** Rubber gloves

**Eye Protection:** Safety glasses or goggles.

**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 area. Store in a tightly sealed container. Wash thoroughly after handling. Do not store together with oxidizing or acidic materials.

**Other Precautions:** Powder: Keep ignition sources away. Protect against electrostatic charges.

**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:**

<b>Hazard Class:</b>	None
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#### **Powder:**

<b>Hazard Class:</b>	4.1
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<b>Identification Number:</b>	UN3089
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<b>Packing Group:</b>	III
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<b>Proper Shipping Name:</b>	Metal powder, flammable, n.o.s. (Rhenium)
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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

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