

Palladium



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: Palladium

Formula: Pd

CAS Number: 7440-05-3

II. HAZARDOUS INGREDIENTS

Hazardous Component: Palladium

Percent (%): 100

OSHA/PEL: N/E

ACGIH/TLV: N/E

HMIS Rating (Powder):

Health: 1

Flammability: 2

Reactivity: 1

III. PHYSICAL DATA

Boiling Point: 2970 °C

Melting Point: 1554 °C

Specific Gravity: 12.02

Solubility in H₂O: Insoluble

Appearance and Odor: Gray-black powder, bright metallic solid, no odor.

IV. FIRE AND EXPLOSION HAZARDS DATA

Flash Point: N/A

Autoignition Temperature: N/E

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

Extinguishing Media: Flammable in powdered form. Do not use water, CO₂ or halogenated extinguishers. Use dry powder extinguishing agents, dry sand or dry ground dolomite.

Special Fire Fighting Procedures: Firefighters must wear full face, self-contained breathing apparatus with full protective clothing to prevent contacts with skin and eyes. Fumes from fire are hazardous. Isolate runoff to prevent environmental pollution.

Unusual Fire & Explosion Hazard: May have an explosive reaction with hydrogen + hydrogen peroxide. May have a reaction with formic acid or sodium tetrahydroborate, releasing flammable and explosive hydrogen gas. May have a violent reaction with isopropyl alcohol and OF₂S. Under the proper conditions it undergoes hazardous reactions with aluminum, arsenic, carbon, methanol, ozonides and sulfur. Highly flammable as a finely divided powder.

V. HEALTH HAZARD INFORMATION

Effects of Exposure:

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

Palladium metal may be a skin sensitizer. In the laboratory, palladium appears to bind to many cell components; blocks the action of a number of enzymes and interferes with use of energy by nerves and muscles; induces lung malfunction and produces abnormal fetuses. Lethal intravenous doses cause appetite loss, hemolysis, renal deposition and bone marrow damage.

Acute Effects: _

Inhalation: Powder or dust may cause abrasive irritation to the respiratory system.

Ingestion: Poorly absorbed by the body when ingested.

Skin: May cause abrasive irritation and possibly may be a skin sensitizer.

Eye: May cause abrasive irritation.

Chronic Effects: Inhalation may induce lung malfunction and produce abnormal fetuses. No other chronic health effects recorded.

Medical Conditions, if any, Aggravated by the Chemical: Pre-existing respiratory disorders.

Target Organs: No target organs recorded.

Carcinogenicity: **NTP:** No **IARC:** No **OSHA:** No **EPA:** 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 if symptoms persist.

INGESTION: Give 1-2 glasses of milk or water and induce vomiting, seek medical attention if symptoms persist. 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. Seek medical attention if irritation persists.

EYES: Flush eyes with lukewarm water, lifting upper and lower eyelids, for at least 15 minutes. Seek medical attention if symptoms persist.

VI. REACTIVITY DATA

Stability: Stable

Conditions to Avoid: None

Incompatibility (Material to Avoid): Hydrogen, strong oxidizers, acids, bases, flammable gases and organic liquids.

Hazardous Decomposition Products: Palladium oxide, 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 and provide ventilation. 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.

Waste Disposal Method: Dispose of according to Local, State, and Federal regulations.

VIII. SPECIAL PROTECTION INFORMATION

Respiratory Protection: For working with powders or with processes that produce dust or fume, use a NIOSH approved dust-mist-vapor respirator.

Ventilation: Use local exhaust to maintain concentrations of exposure at low levels. General exhaust is recommended.

Protective Gloves: Rubber gloves.

Eye Protection: Safety 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 tightly sealed container, in a cool, dry, well-ventilated area. Wash thoroughly after handling.

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.

TSCA Listed: Yes

DOT Regulations:

Solid:

Hazard Class:	None
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Powders:

Hazard Class:	4.1
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Identification Number:	3089
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Packing Group:	II
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Proper Shipping Name:	Metal powder, flammable, n.o.s. (palladium)
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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

Revised/Verified: June 2011