TED PELLA, INC.
Microscopy Products for Science and Industry

Material Safety Data Sheet

Product No. 26-10, 26-2, 26-50, 29-46, 91119, 91219, 91581, 9572 Palladium Products, Evaporation Materials, Preformed Shapes, Targets, Wire

Issue Date (10-10-11)
Review Date (06-26-12)

Section 1: Product and Company Identification

Product Name: Palladium Products, Evaporation Materials, Preformed Shapes, Targets, Wire
Synonym: None
Company Name
Ted Pella, Inc., P.O. Box 492477, Redding, CA 96049-2477
Domestic Phone (800) 237-3526 (Mon-Thu. 6:00AM to 4:30PM PST; Fri 6:00AM to 4:00PM PST)
International Phone (01) (530) 243-2200 (Mon-Thu. 6:00AM to 4:30PM PST; Fri 6:00AM to 4:00PM PST)
Chemtrec Emergency Number 1-800-424-9300 24 hrs a day.

Section 2: Composition / Information on Ingredients

Principle Hazardous Component(s) (chemical and common name(s)) (Cas. No)	%	OSHA PEL mg/m3	ACGIH TLV mg/m3	NTP	IARC	OSHA regulated
Palladium(7440-05-3)	~100	NE*	NE*	No	No	No

Palladium Powder*

Section 3: Hazard Identification

Emergency overview
Appearance: Bright to Silver gray, lustrous malleable and ductile solid material. Disc, sheets, wire, pellets and powder
Immediate effects: Palladium Metal: Low toxicity. The alloys in solid form are generally not considered hazardous. However, if the process involves grinding, melting, cutting or any other process that causes a release of dust or fumes, hazardous levels of airborne particulates could be generated. Palladium Powder: Flammable solid.
Ingestion and inhalation may have irritating effects.
Potential health effects
Primary Routes of entry: Inhalation, Ingestion and Skin and Eye contact of dust, powders
Signs and Symptoms of Overexposure: ND
Eyes: Exposure to dust of pure metallic finely-divided form may cause irritation to the eyes.
Skin: Exposure to dust of pure metallic finely-divided form may cause skin irritation.
Ingestion: Ingestion may have irritating effects. May be harmful.

Inhalation: Inhalation of dust or finely-divided form may have irritating effects.
Chronic Exposure: ND
Chemical Listed As Carcinogen Or Potential Carcinogen: None.
See Toxicological Information (Section11)
Potential environmental effects
See Ecological Information (Section 12)

Section 4: First Aid Measures
If accidental overexposure is suspected
Eye(s) Contact: Flush eyes with lukewarm water for 15 minutes. If irritation persists, contact physician.
Skin Contact: Wash thoroughly with soap and water. If irritation persists, contact physician.
Inhalation: Remove to fresh air. If not breathing, give artificial respiration, preferably mouth to mask. If breathing is difficult, oxygen should be administered by qualified personnel. Contact physician.
Ingestion: Procedures normally not required. If large quantities are ingested, contact physician.
Note to physician
Treatment: ND
Medical Conditions generally Aggravated by Exposure: Individuals who may have had allergic reactions to metals or sensitivity, may encounter skin rash or dermatitis, if skin contact
with this product occurs. Persons with impaired pulmonary functions may incur further impairment if dust or fumes are inhaled.

Section 5: Fire Fighting Measures
Flash Point: Non-flammable as a solid. Palladium metal powder: NA
Flammable Limits: NA
Auto-ignition point: NA
Fire Extinguishing Media: Palladium metal: This material is non-combustible. Use appropriate extinguishing agent for surrounding fires. Do not use water to extinguish fires around operations involving molten metal, due to the potential for steam explosion.
Special Fire Fighting Procedures: Self-contained breathing apparatus should be worn when fighting metal dust fires. High levels of dust or fine particles in the air may ignite or explode.
Unusual Fire and Explosion Hazards: Dust, powder and fumes are flammable or explosive when exposed to heat, to flame or by chemical reaction with oxidizing agents.
Hazardous combustion products: ND
DOT Class: Palladium metal powder: Flammable solid.

Section 6: Accidental Release Measures
Steps to be Taken in Case Material is Released or Spilled: In solid form this material poses no special clean-up problems. Use normal clean up procedures; wet sweeping or HEPA vacuum, for clean up of dust or powder. Do not use compressed air for cleaning.

Waste Disposal Methods: Dispose of waste according to Federal, State and Local Regulations.

Section 7: Handling and Storage
Precautions to be taken in Handling and Storage: Do not create dust. In solid form this material poses no special problems. Store metal in a dry area. Do not store adjacent to acids, oxidizing agents.
Storage temperature: NA
Storage Pressure: NA

Section 8: Exposure Controls / Personal Protection
Engineering Controls
Ventilation required: Use mechanical local exhaust ventilation adequate to maintain airborne concentrations of all components and their decomposition products to within their respective OSHA PELS.
Personal Protection Equipment
Respiratory protection: Not normally required. Use an appropriate NIOSH approved respirator if airborne dust concentration exceed the OSHA, PEL or ACGIH , TLV.
Protective gloves: Wear protective gloves.
Skin protection: Wear protective clothing adequate to prevent contact.
Eye protection: Wear eye protection (safety glasses or dust proof goggles) to prevent contact with dust.
Additional clothing and/or equipment: Eyewash station.
Exposure Guidelines
See Composition/Information on Ingredients (Section2)

Section 9 Physical and Chemical Properties
Appearance and Physical State: Bright to Silver gray, lustrous malleable and ductile solid material. Disc, sheets, wire, pellets and powder.
Odor (threshold): None
Specific Gravity (H_2O=1): 12.02
Vapor Pressure (mm Hg): NA
Vapor Density (air=1): NA
Percent Volatile by volume: NA

Evaporation Rate (butyl acetate=1): NA
Boiling Point: 3167°C (5732.6°F)
Freezing point / melting point: 1555.5°C (2831.9°F)
pH: NA
Solubility in Water: Insoluble.
Atomic Weight: 106.42

Section 10: Stability and Reactivity
Stability: Stable.
Conditions to Avoid: Incompatible materials. Avoid conditions which create dust or fumes.

Materials to Avoid (Incompatibility): Oxidizing agents, strong acids, halogens and bases. Palladium undergoes a violent reaction with arsenic, methanol, ethanol, and alcohols.
Hazardous Decomposition Products: ND
Hazardous Polymerization: Will not occur.

Section 11: Toxicological Information
Results of component toxicity test performed: There is no information on the toxicity of this metal. Under normal use of the solid form of this material there are few health hazards. Welding, cutting grinding or any process creating dust, fume or oxide may cause hazardous levels of certain elements
Human experience: ND
This product **does not** contain any compounds listed by NTP or IARC or regulated by OSHA as a carcinogen.

Section 12: Ecological Information
Ecological Information: In solid form this material poses no special environmental problems. Metal powder or dust in may have significant impact on air and water quality.
Chemical Fate Information: ND

Section 13 Disposal Considerations
RCRA 40 CFR 261 Classification: Recycle palladium products.
Federal, State and local laws governing disposal of materials can differ. Ensure proper disposal compliance with proper authorities before disposal.

Section 14: Transportation Information
Solid Platinum forms as pellets, sheets, targets wire are not regulated.
Platinum metal powder is regulated.
US DOT Information: Proper shipping name: Metal, Powder, Flammable, n.o.s. (Palladium Powder)
Hazard Class: 4.1
Packaging group: III
UN Number: UN3089
IATA: Proper shipping name: Metal, Powder, Flammable, n.o.s. (Palladium Powder)
Hazard Class: 4.1
Packing group: III
UN Number: UN3089
IMO: Proper shipping name: Metal, Powder, Flammable, n.o.s. (Palladium Powder)
Hazard Class: 4.1
UN Number: UN3089
Packing group: III
Marine Pollutant: No
Canadian TDG: Proper shipping name: Metal, Powder, Flammable, n.o.s. (Palladium Powder)

Section 15: Regulatory Information
United States Federal Regulations

MSDS complies with OSHA's Hazard Communication Rule 29, CFR 1910.1200.
SARA: Section 302: No
SARA Title III: Section 311/312 Powders: Fire Hazard, Acute Health Hazard. Section 313: None
RCRA: No
TSCA: Palladium metal powder is listed TSCA inventory 8(b).
CERCLA: None listed.

State Regulations

California Proposition 65: No

International Regulations

Canada WHMIS: Palladium powder: CLASS B-4: Flammable solid.
Europe EINECS Numbers: 231-115-6

Section 16: Other Information

Label Information: ND
European Risk and Safety Phrases: ND
European symbols needed: ND
Canadian WHMIS Symbols: ND
HMIS® Hazard Rating: Palladium Metal Powder, Health: **2**; Flammability: **3**; Physical: **3;** Chronic Health: *
HMIS® Hazard Rating: Palladium Metal, Health: **1**; Flammability: **0**; Physical: **0**
NFPA Hazard Rating: Palladium Metal Powder, Health: **2**; Fire: **3**; Reactivity: **3;**
NFPA Hazard Rating: Palladium Metal, Health: **1**; Fire: 0; Reactivity: **0**
(0=least, 1=Slight, 2=Moderate, 3=High, 4=Extreme)

Abbreviations used in this document

NE= Not established
NA= Not applicable
NIF= No Information Found
ND= No Data

Disclaimer

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