

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	Palladium, Enriched Palladium
Chemical Formula	Pd
Molecular Weight	106.42 g/mol
CAS No.	7440-05-3
EC No.	231-115-6
Supplier Address*	ISOFLEX USA PO Box 29475 San Francisco CA 94129 United States
Telephone	+1 415-440-4433
Fax	+1 415-563-4433
Emergency Phone Number (both supplier and manufacturer)	+1 707-766-4207 *May include subsidiaries or affiliate companies/divisions
Email	iusa@isoflex.com
Website	www.isoflex.com
Preparation Information	ISOFLEX USA Product Safety +1 415-440-4433

2. HAZARDS IDENTIFICATION

Emergency Overview:

OSHA Hazards: No known OSHA hazards

NFPA Ratings: (0 = Minimal; 1 = Slight; 2 = Moderate; 3 = Serious; 4 = Severe)

Health Hazard = 0 Flammability = 0 Reactivity = 0



HMIS Ratings: (0 = Minimal; 1 = Slight; 2 = Moderate; 3 = Serious; 4 = Severe)

Health Hazard = 0 Flammability = 0 Physical Hazard = 0

HEALTH HAZARD	0
FLAMMABILITY	0
PHYSICAL HAZARD	0

Potential Health Effects

<i>Inhalation</i>	May be harmful if inhaled; may cause respiratory tract irritation
<i>Skin</i>	May be harmful if absorbed through skin; may cause skin irritation
<i>Eyes</i>	May cause eye irritation
<i>Ingestion</i>	May be harmful if swallowed

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name:	Palladium
CAS No.:	7440-05-3
Chemical Formula:	Pd
Molecular Weight:	106.42 g/mol

4. FIRST AID MEASURES

<i>Inhalation Exposure</i>	If breathed in, move person into fresh air. If not breathing, give artificial respiration.
<i>Dermal Exposure</i>	Wash off with soap and plenty of water.
<i>Eye Exposure</i>	Flush eyes with water as a precaution.
<i>Oral Exposure</i>	Never give anything by mouth to an unconscious person. Rinse mouth with water.

5. FIREFIGHTING MEASURES

<i>Suitable Extinguishing Media</i>	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
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Firefighting

<i>Protective Equipment</i>	Wear self-contained breathing apparatus for firefighting if necessary.
<i>Further Information</i>	The product itself does not burn.

6. ACCIDENTAL RELEASE MEASURES

<i>Personal Precautions</i>	Avoid dust formation. Avoid breathing vapors, mist or gas.
<i>Environmental Precautions</i>	No special environmental precautions required.
<i>Methods for Cleaning Up</i>	Sweep up and shovel. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

<i>Handling</i>	Provide appropriate exhaust ventilation at places where dust is formed.
<i>Storage</i>	Keep container tightly closed in a dry and well-ventilated place.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<i>Exposure Guidelines</i>	Contains no substances with occupational exposure limit values.
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Personal Protective Equipment

<i>Respiratory Protection</i>	Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
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<i>Hand Protection</i>	Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
<i>Eye Protection</i>	Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
<i>Skin and Body Protection</i>	Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific workplace. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
<i>General Hygiene Measures</i>	General industrial hygiene practice

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

<i>Physical State</i>	Solid
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Safety Data

Molecular Weight:	106.42 g/mol
pH:	No data available
Melting Point:	1554 °C (2829 °F)
Boiling Point:	2970 °C (5378 °F)
Flash Point:	Not applicable
Ignition Temperature:	No data available
Lower Explosion Limit:	No data available
Upper Explosion Limit:	No data available
Density:	12.02 g/cm ³
Water Solubility:	No data available

10. STABILITY AND REACTIVITY

<i>Chemical Stability</i>	Stable under recommended storage conditions
<i>Conditions to Avoid</i>	No data available
<i>Materials to Avoid</i>	Strong acids, halogens
<i>Hazardous Decomposition Products</i>	Nature of decomposition products not known

11. TOXICOLOGICAL INFORMATION

<i>Acute Toxicity</i>	No data available
<i>Skin Corrosion/Irritation</i>	No data available
<i>Serious Eye Damage/Eye Irritation</i>	No data available
<i>Respiratory or Skin Sensitization</i>	No data available
<i>Germ Cell Mutagenicity</i>	No data available

Carcinogenicity*IARC*

No component of this product present at levels greater than or equal to 0.1% is identified as a probable, possible or confirmed human carcinogen by IARC.

ACGIH

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive Toxicity

No data available

Specific Target Organ Toxicity / Single Exposure (GHS)

No data available

Specific Target Organ Toxicity / Repeated Exposure (GHS)

No data available

Aspiration Hazard

No data available

Potential Health Effects*Inhalation*

May be harmful if inhaled; may cause respiratory tract irritation

Ingestion

May be harmful if swallowed

Skin

May be harmful if absorbed through skin; may cause skin irritation

Eyes

May cause eye irritation

12. ECOLOGICAL INFORMATION

In solid form this product poses no special environmental problems. Metal powder or dust may have significant impact on air and water quality.

13. DISPOSAL CONSIDERATIONS

Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Recycle products when possible (RCRA 40 CFR 261). Ensure proper disposal compliance with federal state and local laws before disposal.

Contaminated Packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION**DOT (US)**

Proper Shipping Name:

Metal, Powder, Flammable, n.o.s. (Palladium Powder)

Hazard Class:

4.1

Packaging Group:

III

UN No.:

UN3089

IATA

Proper Shipping Name:

Metal, Powder, Flammable, n.o.s. (Palladium Powder)

Hazard Class:

4.1

Packaging Group:

III

UN No.:

UN3089

IMO

Proper Shipping Name: Metal, Powder, Flammable, n.o.s. (Palladium Powder)
Hazard Class: 4.1
Packaging Group: III
UN No.: UN3089
Marine Pollutant: No

Canadian TDG

Proper Shipping Name: Metal, Powder, Flammable, n.o.s. (Palladium Powder)

15. REGULATORY INFORMATION

OSHA Hazards No known OSHA hazards

DSL Status All components of this product are on the Canadian DSL list.

SARA 302 Components No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards Powders: Fire hazard, acute health hazard.

RCRA No

TSCA Palladium metal powder is listed TSCA inventory 8(b).

CERCLA None listed

Massachusetts Right to Know Components No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right to Know Components Palladium / CAS No. 7440-05-3 / *Revision Date*: None

New Jersey Right to Know Components Palladium / CAS No. 7440-05-3 / *Revision Date*: None

California Prop. 65 Components This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

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

16. OTHER INFORMATION

Prepared By ISOFLEX USA
PO Box 29475
San Francisco CA 94129
United States

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Revision Number 2

Revision Note Required review and update

ISOFLEX USA's Commonly Used Abbreviations and Acronyms*

ACGIH	American Conference of Governmental Industrial Hygienists
ADR	European Agreement Concerning the International Carriage of Dangerous Goods by Road
AICS	Australian Inventory of Chemical Substances
ALARA	As Low As Is Reasonably Achievable
AMU	Atomic Mass Unit
ANSI	American National Standards Institute
BLS	Basic Life Support
BOD5	Biochemical Oxygen Demand
CAM	Continuous Air Monitor
CAS	Chemical Abstracts Service (division of the American Chemical Society)
CEN	European Committee for Standardization
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CLP	Classification, Labelling and Packaging (European Union)
COD	Chemical Oxygen Demand
CPR	Controlled Products Regulations (Canada)
CWA	Clean Water Act (USA)
DAC	Derived Air Concentration (USA)
DOE	United States Department of Energy (USA)
DOT	United States Department of Transportation (USA)
DSL	Domestic Substances List (Canada)
EC50	Half Maximal Effective Concentration
ECL	Korean Existing Chemicals List
EINECS	European Inventory of Existing Commercial Chemical Substances
EHS	Environmentally Hazardous Substance
ELINCS	European List of Notified Chemical Substances
EMS	Emergency Response Procedures for Ships Carrying Dangerous Goods
EPA	Environmental Protection Agency (USA)
EPCRA	Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986
GHS	Globally Harmonized System
HMIS	Hazardous Materials Identification System (USA)
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IBC	Intermediate Bulk Containers
ICAO	International Civil Aviation Organization
IDLH	Immediately Dangerous to Life or Health
IECSC	Inventory of Existing Chemical Substances Produced or Imported in China
IMDG	International Maritime Code for Dangerous Goods
LC50	Lethal concentration, 50 percent
LD50	Lethal dose, 50 percent
LDLO	Lethal Dose Low
LOEC	Lowest-Observed-Effective Concentration
MARPOL	International Convention for the Prevention of Pollution from Ships
MSHA	Mine Safety and Health Administration (USA)
NCRP	National Council on Radiation Protection & Measurements (USA)
NDSL	Non-Domestic Substances List (Canada)
NFPA	National Fire Protection Association (USA)
NIOSH	National Institute for Occupational Safety and Health (USA)
NOEC	No Observed Effect Concentration
N.O.S.	Not Otherwise Specified
NRC	Nuclear Regulatory Commission (USA)
NTP	National Toxicology Program (USA)
OSHA	Occupational Safety and Health Administration (USA)
PBT	Persistent Bioaccumulative and Toxic Chemical
PEL	Permissible Exposure Limit
PICCS	Philippines Inventory of Chemicals and Chemical Substances
PIH	Poisonous by Inhalation Hazard
RCRA	Resource Conservation and Recovery Act (USA)

RCT	Radiation Control Technician
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals (Europe)
RID	Regulations Concerning the International Transport of Dangerous Goods by Rail
RQ	Reportable Quantity
RTECS	Registry of Toxic Effects of Chemical Substances
SARA	Superfund Amendments and Reauthorization Act (USA)
SNUR	Significant New Use Rule (TSCA)
TDG	Transportation of Dangerous Goods (Canada)
TIH	Toxic by Inhalation Hazard
TLV	Threshold Limit Value
TPQ	Threshold Planning Quantity
TSCA	Toxic Substances Control Act
TWA	Time Weighted Average
UN	United Nations (Number)
VOC	Volatile Organic Compound
vPvB	Very Persistent Very Bioaccumulative Chemical
WGK	Wassergefährdungsklassen (Germany: Water Hazard Classes)
WHMIS	Workplace Hazardous Materials Information System

*One or more of the above-listed items may not appear in this document.

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