

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	Palladium(II) Nitrate Dihydrate
Chemical Formula	$N_2O_6Pd \cdot 2H_2O$
Molecular Weight	266.46 g/mol
CAS No.	32916-07-7
EC No.	233-265-8
Supplier Address*	ISO FLEX 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)	Infotrac/ +1 800-535-5053 *May include subsidiaries or affiliate companies/divisions
Email	iusa@isoflex.com
Website	www.isoflex.com
Preparation Information	ISO FLEX USA Product Safety +1 415-440-4433

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Oxidizing solids (Category 2), H272

Skin corrosion (Category 1B), H314

Serious eye damage (Category 1), H318

For the full text of the H-Statements mentioned in this Section, see Section 16.

GHS Label elements, including precautionary statements



Signal word **Danger**

Hazard Statements

H272 May intensify fire; oxidizer.
H314 Causes severe skin burns and eye damage.

Precautionary Statements

P210 Keep away from heat.
P220 Keep/store away from clothing/combustible materials.
P221 Take any precaution to avoid mixing with combustibles.
P260 Do not breathe dust or mist.
P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin/hair with water/shower.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
P363 Wash contaminated clothing before reuse.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P405 Store locked up.
P501 Dispose of contents/container to an approved waste disposal plant.

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

Health Hazard = 3 Flammability = 0 Instability = 2 Physical Hazards = OX



Hazards not otherwise classified (HNOC) or not covered by GHS: None

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name: Palladium(II) Nitrate Dihydrate
CAS No.: 32916-07-7
EC No.: 233-265-8
Chemical Formula: $N_2O_6Pd \cdot 2H_2O$
Molecular Weight: 266.46 g/mol

Hazardous Components

Component	Classification	Concentration
Palladium dinitrate dihydrate	Ox. Sol. 2; Skin Corr. 1B; Eye Dam. 1; H272, H314, H318	90-100%

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

<i>General Advice</i>	Consult a physician. Show this SDS to the doctor in attendance. Move out of dangerous area.
<i>Inhalation Exposure</i>	If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
<i>Dermal Exposure</i>	Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.
<i>Eye Exposure</i>	Flush eyes with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.
<i>Oral Exposure</i>	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.
<i>Most Important Symptoms</i>	(Acute and delayed) The most important known symptoms and effects are described in the labelling (see Section 2) and/or in Section 11.

5. FIREFIGHTING MEASURES

<i>Suitable Extinguishing Media</i>	Dry powder/Dry sand
<i>Special Hazards</i>	No data available
Firefighting	
<i>Protective Equipment</i>	Wear self-contained breathing apparatus for firefighting if necessary.
<i>Further Information</i>	Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

<i>Personal Precautions</i>	Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
<i>Environmental Precautions</i>	Do not let product enter drains.
<i>Methods for Cleaning Up</i>	Sweep up and shovel. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see Section 13). Keep in suitable, closed containers for disposal.
<i>Reference to Other Sections</i>	For disposal see Section 13.

7. HANDLING AND STORAGE

<i>Handling</i>	Avoid formation of dust and aerosols. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs. Provide appropriate exhaust ventilation at places where dust is formed. Keep away from sources of ignition – NO SMOKING. Keep away from heat.
<i>Storage</i>	Keep container tightly closed in a dry and well-ventilated place. Storage class (TRGS 510): 5.1B: Oxidizing hazardous materials.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control Parameters	Contains no substances with occupational exposure limit values. Hazardous components without workplace control parameters.
Exposure Controls	Handle in accordance with good industrial hygiene and safety practices. Wash hands before breaks and at the end of the workday.
Personal Protective Equipment	
<i>Respiratory Protection</i>	Respiratory protection is not required. Where risk assessment shows protection from nuisance levels of dusts are appropriate, 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).
<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 (face shield and safety glasses) 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

Physical State Solid

Safety Data

Molecular Weight:	266.46 g/mol
pH:	No data available
Melting Point:	No data available
Boiling Point:	No data available
Flash Point:	No data available
Ignition Temperature:	No data available
Lower Explosion Limit:	No data available
Upper Explosion Limit:	No data available
Density:	No data available
Water Solubility:	No data available
Oxidizing Properties:	The substance or mixture is classified as oxidizing with the Category 2.

10. STABILITY AND REACTIVITY

<i>Reactivity</i>	No data available
<i>Chemical Stability</i>	Stable under recommended storage conditions
<i>Hazardous Reactions</i>	No data available
<i>Conditions to Avoid</i>	No data available
<i>Incompatible Materials</i>	No data available
<i>Hazardous Decomposition Products</i>	Nature of decomposition products not known

11. TOXICOLOGICAL INFORMATION

<i>Acute Toxicity</i>	Inhalation: Corrosive to respiratory system
<i>Skin Corrosion/Irritation</i>	No data available
<i>Serious Eye Damage/Eye Irritation</i>	Causes serious eye damage.
<i>Respiratory or Skin Sensitization</i>	No data available
<i>Germ Cell Mutagenicity</i>	No data available
Carcinogenicity	
<i>IARC</i>	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.
<i>NTP</i>	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.
<i>OSHA</i>	No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.
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	
Additional Information	RTECS: Not available Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Hazards include spasm, inflammation and edema of the larynx; spasm, inflammation and edema of the bronchi; pneumonitis, pulmonary edema, burning sensation, cough, wheezing, laryngitis, shortness of breath, headache, nausea. To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.

12. ECOLOGICAL INFORMATION

Toxicity	Toxicity to algae: IC – <i>Desmodesmus subspicatus</i> (green algae) – 0.064 mg/l – 72 h
Results of PBT/vPvB Assessment	PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

13. DISPOSAL CONSIDERATIONS*Product*

Offer surplus and non-recyclable solutions to a licensed disposal company. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated Packaging

Dispose of as unused product.

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

Proper Shipping Name:	Nitrates, inorganic, n.o.s.
Hazard Class:	5.1
Packing Group:	II
UN No.:	UN1477
Reportable Quantity (RQ):	
Poison Inhalation Hazard:	No

IMDG

Proper Shipping Name:	NITRATES, INORGANIC, N.O.S.
Hazard Class:	5.1
Packing Group:	II
UN No.:	UN1477
EMS No.:	F-A, S-Q

IATA

Proper Shipping Name:	Nitrates, inorganic, n.o.s.
Hazard Class:	5.1
Packaging Group:	II
UN No.:	UN1477

15. REGULATORY INFORMATION

SARA 302 Components	This material does not contain any components with a section 302 EHS TPQ.
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	Reactivity Hazard, Acute Health Hazard, Chronic Health Hazard
Massachusetts Right to Know Components	No components are subject to the Massachusetts Right to Know Act.
Pennsylvania Right to Know Components	Palladium dinitrate dihydrate / CAS No. 10102-05-3 / Revision Date: 2007-03-01

16. OTHER INFORMATION

Full text of H-Statements referred to under Sections 2 and 3

Eye Dam. H272	Serious eye damage
H314	May intensify fire; oxidizer.
H318	Causes severe skin burns and eye damage.
Ox. Sol.	Causes serious eye damage.
Skin Corr.	Oxidizing solids
	Skin corrosion

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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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