

E0232

Oak Ridge National Laboratory
Oak Ridge, Tennessee 37831

IBO-MSDS-04753

MATERIAL SAFETY DATA SHEET

The issuance of this document complies with the U. S. Department of Labor, Occupational Safety and Health Administration's (OSHA) Hazard Communication Standard 29 CFR 1910.1200. Standard must be consulted for specific requirements.

<u>Definitions:</u>	<u>ACGIH</u>	American Conference of Governmental Industrial Hygienists	
	<u>NIOSH</u>	National Institute for Occupational Safety and Health	
	<u>NE</u>	Not Established	<u>NISS</u> Not In Sources Searched
	<u>NA</u>	Not Applicable	<u>TLV</u> Threshold Limit Value
	<u>TWA</u>	Time Weighted Average	<u>PEL</u> Permissible Exposure Limit

IDENTITY (As used on label and list): Palladium (-102, -104, -105, -106, -108, -110) Metal Powder

SECTION I. Manufacturer's IdentificationManufacturer's Name:

UT-Battelle
c/o Oak Ridge National Laboratory
Isotope Business Office
P. O. Box 2008
Oak Ridge, Tennessee 37831

Emergency Telephone Number:

Lab Shift Superintendent (865) 574-6606

Telephone Number for Assistance:

Isotope Business Office (865) 574-6984

Date Prepared: 06-March-1987Date Reviewed: 25-July-2003**SECTION II. Hazardous Ingredients/Identity Information**Exposure Limits:

OSHA:

NE

ACGIH TLV:

NE

NIOSH:

NE

Immediately Dangerous to Life and Health:

NE

Chemical Formula:

Pd

CAS Registry Number:

007440-05-3

RTECS Number:

NISS

Health Hazard Rating:

2, moderate health hazard

DOT Class:

4.1, Flammable Solid

Fire Hazard Rating:

1, slightly flammable

DOT Label:

Flammable Solid

Reactivity Rating:

0, nonreactive

DOT Number:

UN 3089

SECTION III. Physical/Chemical CharacteristicsPhysical Description:

Silver-white metal or black powder, odorless.

Molecular Weight (naturally occurring):

106.42

Melting Point:

1555°C

Vapor Pressure:

NISS

Boiling Point:

3167°C

Vapor Density:

NISS

Specific Gravity:

12.02 (water=1)

Percent Volatiles:

NISS

Evaporation Rate:

NISS

Solubility:

Insoluble in water.

SECTION IV. Fire and Explosion Hazard DataFlash Point (method):

NISS

Lower Flammability Limit:

NISS

Autoignition Temperature:

NISS

Upper Flammability Limit:

NISS

Extinguishing Media:

Extinguishing media suitable for surrounding material.

Firefighting Procedures:

Firefighting techniques should concentrate on controlling the spread of the fire to other combustible materials. Wear pressure-demand, self-contained breathing apparatus and full firefighting protective clothing.

Fire and Explosion Hazards:

May produce hazardous vapors under fire conditions. Finely divided dust may explode.

SECTION V. Reactivity DataStability:

Unstable: _____

Stable: _____

XConditions to Avoid:

Heat or flame when in form of dust.

Incompatibility (materials to avoid):

Aluminum, hydrogen and isopropyl alcohol, oxygen difluoride, sulfur.

Hazardous Decomposition or Byproducts:

NISS

Hazardous Polymerization:

May Occur: _____

Will Not Occur: _____

X

SECTION VI. Health Hazard Data

<u>Routes of Entry:</u>	Inhalation: <u>NISS</u>	Skin: <u> </u>	Ingestion: <u> </u>
<u>Signs and Symptoms of Exposure:</u>			
<u>Acute Inhalation:</u>	NISS		
<u>Acute Swallowing:</u>	NISS		
<u>Acute Skin Contact:</u>	Irritant.		
<u>Acute Eye Contact:</u>	Irritant.		
<u>Chronic:</u>	NISS		
<u>Health Hazards (Target organs/systems):</u>			
<u>Acute:</u>	Eyes, hematopoietic system (blood forming), kidneys (nephrotoxin), liver (hepatotoxin), reproductive system, respiratory system, skin (cutaneous hazard).		
<u>Chronic:</u>	NISS		
<u>Emergency and First Aid Procedures:</u>			
<u>Inhalation:</u>	Remove to fresh air. No emergency care anticipated.		
<u>Swallowing:</u>	Induce vomiting only after massive ingestion.		
<u>Skin contact:</u>	Remove contaminated clothing and wash skin with plenty of water.		
<u>Eye contact:</u>	Flush eyes at once with water for at least 15 minutes. Get medical aid.		
<u>Physicians' notes:</u>	NISS		

Carcinogenicity: NTP No IARC Monographs NO OSHA Regulated No

Medical Conditions Generally Aggravated by Exposure: NISS

SECTION VII. Precautions for Safe Handling and Use

Steps to be Taken in Case Material is Released or Spilled: Notify safety personnel of leaks or spills. Remove spills by vacuuming or wet sweeping in order to keep airborne dust at a minimum.

Waste Disposal Method: Collect in an appropriate container for salvage or disposal. Treat unsalvageable waste as a toxic solid in accordance with federal, state, and local regulations.

Precautions to be Taken in Handling and Storing: Store in closed container in a cool, dry, well-ventilated, low fire-risk area. Protect container from physical damage.

Other Precautions: Avoid breathing dust. Avoid skin and eye contact. Eyewash stations and washing facilities should be accessible to areas of use.

SECTION VIII. Control Measures

<u>Respiratory Protection (specify type):</u>	Use a NIOSH-approved inorganic dust respirator when dust levels are high.
<u>Ventilation:</u>	
<u>Local Exhaust:</u>	Employ to keep dust levels low.
<u>Mechanical (general):</u>	Employ to keep dust levels low.
<u>Special:</u>	NISS
<u>Other:</u>	NISS
<u>Protective Gloves:</u>	Compatible chemical resistant gloves.
<u>Eye Protection:</u>	Wear approved chemical safety goggles/glasses.
<u>Other Protective Clothing or Equipment:</u>	Wear protective clothing.
<u>Work/Hygienic Practices:</u>	Wash thoroughly after handling.

DISCLAIMER

The information and opinions presented herein are based on data believed to be accurate and current as of the date of this Material Safety Data Sheet. Oak Ridge National Laboratory and the U.S. Department of Energy make no warranty or representation, express or implied, as to the accuracy or completeness of the foregoing data and safety information. The information in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to the use in combination with any other material or in any process. Oak Ridge National Laboratory and the U.S. Department of Energy assume no responsibility for any damage or injury resulting from abnormal use, from any failure to adhere to recommended practices, or from any hazards inherent in the nature of the material. It is the user's obligation to determine the conditions of safe use of this material. Actual conditions of use and handling of this material may require considerations of information other than, or in addition to, that which is provided herein.