

SAFETY DATA SHEET

Product No. Palladium Targets and Products
Issue Date (04-21-2015)
Review Date (03-21-2025) Rev.: 03

Section 1: Product and Company Identification

Product Name: Palladium Products, Evaporation Materials, Targets, Wire, Preformed Shapes

Synonym: None

Company Name

Ted Pella, Inc., P.O. Box 492477, Redding, CA 96049-2477

Inside USA and Canada 1-800-237-3526 (Mon-Thu. 6:00AM to 4:30PM PST; Fri 6:00AM to 4:00PM PST)

Outside USA and Canada 1-530-243-2200 (Mon-Thu. 6:00AM to 4:30PM PST; Fri 6:00AM to 4:00PM PST)

CHEMTREC USA and Canada Emergency Contact Number 1-800-424-9300 24 hours a day

CHEMTREC Outside USA and Canada Emergency Contact Number +1-703-741-5970 24 hours a day

Section 2: Hazard Identification

Classification according to Regulation (EC) No 1272/2008

The substance is not classified as hazardous to health or the environment according to CLP regulation.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC:

Not Applicable

Information concerning hazards for humans and environment:

Not Applicable; No information known.

Hazards not otherwise classified:

No information known.

GHS Label Elements: Not applicable
Signal Word: Not applicable
Hazard Pictograms: Not applicable
Hazard Statements: Not applicable
WHMIS classification: Not controlled

Precautionary Statements:

Keep away from heat.
Keep/Store away from clothing/combustible materials.
Take any precaution to avoid mixing with combustibles.
Wear protective gloves/protective clothing/eye protection/face protection.
In case of fire: Use CO₂, powder, or water spray for extinction.
Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazardous Materials Identification System)

HMIS rating (scale 0-4)

HEALTH	0	Acute effects = 0
FIRE	0	Flammability = 0
REACTIVITY	0	Physical Hazard = 0

Other Hazards:

Results of PBT and vPvB assessment:

PBT: Not applicable

vPvB: Not applicable

Classification complies with OSHA Hazard Communication Standard (29 CFR 1910.1200) and is consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Section 3: Composition / Information on Ingredients

<u>Component</u>	<u>CAS Number</u>	<u>EC Number</u>	<u>% w/w</u>
Palladium	7440-05-3	231-115-6	≤100%

Section 4: First Aid Measures

General advice:	No special measures required.
Inhalation:	Seek medical treatment in case of complaints.
Skin Contact:	Generally, the product does not irritate skin.
Eye(s) Contact:	Rinse opened eye for several minutes under running water. Symptoms persist, consult a doctor.
Ingestion:	If symptoms persist, consult a doctor.
Note to physician:	No further relevant information available.

Section 5: Fire Fighting Measures

Suitable extinguishing media:	Special powder for metal fires. Do not use water.
Unsuitable extinguishing media:	Water.
Hazardous Combustion Products:	Metal oxide fumes.
Firefighters Protective Equipment:	No special measures required.

Section 6: Accidental Release Measures

Personal precautions, protective equipment and emergency procedure:	Not required
Environmental precautions:	
Do not allow material to be release to the environment without governmental permits.	
Do not allow material to reach sewage system or any water course.	
Do not allow to penetrate the ground/soil.	
Methods and material for containment and cleaning up:	Pick up Mechanically.
Prevention of secondary hazards:	No special measures required.
Reference for other sections	
See Section 7 on Safe Handling:	
See Section 8 for Personal Protection Equipment.	
See Section 13 for Disposal Information.	

Section 7: Handling and Storage

Precautions for safe handling	Store in a cool, dry place in tightly closed containers. Keep containers tightly sealed.
Common Storage Facility:	Do not store with acids Store away from oxidizing agents.
Information about protection against explosions and fire:	No special measures required.
Additional Information:	No further information available.
Specific end use(s):	No further relevant information available.

Section 8: Exposure Controls / Personal Protection

This product does not contain any relevant quantities of materials with critical values that have to be monitored in the workplace.

Exposure Controls:	The standard precautionary measures for handling chemicals should be followed. Maintain appropriate working environment.
Body Protection:	Protective work clothing.
Breathing Equipment:	Not required.
Eye Protection:	Safety Glasses.
Protection of hands:	Not required.

Section 9 Physical and Chemical Properties

Physical state	Solid in various forms
Color	Silver Grey
Odor	Not determined
Odor threshold	Not determined
pH	Not applicable
Melting point/range	No data available
Boiling point/range	2831°F / 1554.9°C
Flash point	5733°F / 3167°C
Sublimation Temperature/Start	Not determined
Flammability (solid, gas)	Not determined
Ignition temperature	Not determined
Auto Igniting	Not determined
Danger of Explosion	Product does not present an explosion hazard
Upper explosion/flammability limit	Not determined
Lower explosion/flammability limit	Not determined
Vapor pressure	Not applicable
Density @ 20°C (68°F)	12.02 g/cm ³
Relative density	Not applicable
Vapor density	Not applicable
Evaporation rate	Not applicable
Solubility in H ₂ O	Not determined
Partition coefficient (n-octanol/water)	Not determined
Viscosity, dynamic	Not applicable
Viscosity, kinematic	Not applicable

Section 10: Stability and Reactivity

Reactivity:	No known information.
Chemical stability:	Stable under recommended storage conditions.
Thermal decomposition/conditions to be avoided	Decomposition will not occur if used and stored according to specifications.
Possibility of hazardous reactions:	Reacts with strong oxidizing agents.
Incompatible materials:	Acids: Oxidizing agents.
Hazardous decomposition products:	Metal oxide fume

Section 11: Toxicological Information

Acute Toxicity:	The Register of Toxic Effects off Chemical Substances (RTECS) contains acute toxicity data for this material
LD/LC50 values for classification:	No Data
Skin irritation or Corrosion:	No effects known:
Eye irritation:	May cause irritation
Sensitization:	No sensitizing effects known
Germ cell mutagenicity:	No known effects
Carcinogenicity:	No classification data on carcinogenic properties of this material is available from EPA, IARC, NTP, OSHA or ACGIH.
Reproductive toxicity:	No effects known:
Specific target organ toxicity-repeated exposure:	No effects known
Specific target organ toxicity-single exposure:	No effects known
Aspiration Hazard:	No effects known
Other Information:	None available

Section 12: Ecological Information

Toxicity

Aquatic toxicity:	No other further information available.
Persistence and degradability:	No other further information available.
Bioaccumulative potential:	No other further information available.
Mobility in soil:	No other further information available.

Additional Ecological information

General Cautions:

Do not allow material to be released to the environment without proper governmental permits.
Avoid transfer into the environment.

Results of PBT and vPvB assessment:

PBT:	Not Applicable
vBvB:	Not Applicable
Other adverse effects	No further relevant information available

Section 13 Disposal Considerations

Recommendations: Consult state, local or national regulations to ensure proper disposal.

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

Section 14: Transportation Information

<u>US DOT:</u>	Not regulated for hazardous material transportation.
<u>ADN:</u>	Not regulated for hazardous material transportation.
<u>IATA:</u>	Not regulated for hazardous material transportation.
<u>IMDG:</u>	Not regulated for hazardous material transportation.
Marine Pollutant:	No
Canadian TDG:	Not regulated for hazardous material transportation.

Transport in bulk according to Annex II of MARPOL 73/78 an the IBC Code

Not applicable for product as supplied.

Special precautions for user

The transport classification(s) provided herein are for information purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet (SDS). Transportation classifications may vary by mode of transportation, package size, and variations in regional or country regulations.

Section 15: Regulatory Information

Safety, health and environmental regulations/legislation specific for substance or mixture

GHS Label Elements:

Hazard Pictograms:	Not Applicable
Signal Word:	Not Applicable
Hazard Statements:	Not Applicable

All components are Listed in the US (EPA) Toxic Substances Control Act Chemical substance inventory

All components are Listed on the Canadian Domestic Substances List (DSL)

SARA Section 313 (Specific Toxic Chemical Listings): Substance is not listed.

California Proposition 65:

Prop 65- Chemicals known to cause cancer:	Substance is not listed
Prop 65- Developmental toxicity,	Substance is not listed
Prop 65- Developmental toxicity, female	Substance is not listed
Prop 65- Developmental toxicity, male	Substance is not listed
Information about limitation of use:	For use only by technically qualified individuals.

Substance of Very High Concern (SVHC) Substance is not listed

According to REACH Regulations (EC) No. 1907/2006:

The conditions and restrictions according to Article 67 and Annex XVII of the Regulation (EC) No. 1907/2006 (REACH) for manufacturing, placing on the market use must be observed. Substance is not listed

Annex XIV of the REACH Regulations (requiring Authorization for use): Substance is not listed

Chemical Safety Assessment

A chemical Safety Assessment has not been carried out

Section 16: Other Information

This Safety Data Sheet (SDS) is intended to comply with the OSHA Hazard Communication Standard (29 CFR 1910.1200) and is consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

Full text of other abbreviations

ACGIH:	USA. ACGIH Threshold Limit Values (TLV)
ACGIH BEI:	ACGIH - Biological Exposure Indices (BEI)
NIOSH REL:	USA. NIOSH Recommended Exposure Limits
OSHA Z-1:	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
OSHA Z-2:	USA. Occupational Exposure Limits (OSHA) - Table Z-2
US WEEL:	USA. Workplace Environmental Exposure Levels (WEEL)
ACGIH / TWA:	8-hour, time-weighted average
ACGIH / STEL:	Short-term exposure limit
NIOSH REL/TWA:	Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
NIOSH REL/ST:	STEL - 15-minute TWA exposure that should not be exceeded at any time during a workday
OSHA Z-1 / TWA:	8-hour time weighted average
OSHA Z-2/TWA:	8-hour time weighted average
OSHA Z-2/CEIL:	Acceptable ceiling concentration
OSHA Z-2/Peak:	Acceptable maximum peak above the acceptable ceiling concentration for an 8-hr shift
US WEEL/TWA:	8-hr TWA

AICS - Australian Inventory of Chemical Substances;

AIIC - Australian Inventory of Industrial Chemicals;
ASTM - American Society for the Testing of Materials;
bw - Body weight;
CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act;
CMR - Carcinogen, Mutagen or Reproductive Toxicant;
DIN - Standard of the German Institute for Standardization;
DOT - Department of Transportation;
DSL - Domestic Substances List (Canada);
EC_x - Concentration associated with x% response;
EHS - Extremely Hazardous Substance;
EL_x - Loading rate associated with x% response;
EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan);
ErC_x - Concentration associated with x% growth rate response;
ERG - Emergency Response Guide;
GHS - Globally Harmonized System;
GLP - Good Laboratory Practice;
HMIS - Hazardous Materials Identification System;
IARC - International Agency for Research on Cancer;
IATA - International Air Transport Association;
IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk;
IC₅₀ - Half maximal inhibitory concentration;
ICAO - International Civil Aviation Organization;
IECSC - Inventory of Existing Chemical Substances in China;
IMDG - International Maritime Dangerous Goods;
IMO - International Maritime Organization;
ISHL - Industrial Safety and Health Law (Japan);
ISO - International Organization for Standardization;
KECI - Korea Existing Chemicals Inventory;
LC₅₀ - Lethal Concentration to 50 % of a test population;
LD₅₀ - Lethal Dose to 50% of a test population (Median Lethal Dose);
MARPOL - International Convention for the Prevention of Pollution from Ships;
MSHA - Mine Safety and Health Administration;
n.o.s. - Not Otherwise Specified;
NFPA - National Fire Protection Association;
NO(A)EC - No Observed (Adverse) Effect Concentration;
NO(A)EL - No Observed (Adverse) Effect Level;
NOELR - No Observable Effect Loading Rate;
NTP - National Toxicology Program;
NZIoC - New Zealand Inventory of Chemicals;
OECD - Organization for Economic Co-operation and Development;
OPPTS - Office of Chemical Safety and Pollution Prevention;
PBT - Persistent, Bioaccumulative and Toxic substance;
PICCS - Philippines Inventory of Chemicals and Chemical Substances;
(Q)SAR - (Quantitative) Structure Activity Relationship;
RCRA - Resource Conservation and Recovery Act;
REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorization and Restriction of Chemicals;
RQ - Reportable Quantity;
RTECS - Registry of Toxic Effects of Chemical Substances;
SADT - Self-Accelerating Decomposition Temperature;
SARA - Superfund Amendments and Reauthorization Act;
SDS - Safety Data Sheet;
TCSI - Taiwan Chemical Substance Inventory;

TSCA - Toxic Substances Control Act (United States);

UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods;

vPvB - Very Persistent and Very Bioaccumulative

Disclaimer

Ted Pella, Inc. makes no warranty of any kind regarding the information furnished herein. Users should independently determine the suitability and completeness of information from all sources. While this data is presented in good faith and believed to be accurate, it should be considered only as a supplement to other information gathered by the user. It is the User's responsibility to assure the proper use and disposal of these materials as well as the safety and health of all personnel who may work with or otherwise come in contact with these materials.