

Product name: Palladium Target, 99.99% pure in various forms
Document Nr.: SDS00170PD5704

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Section 1: Identification of the substance or mixture and the company

1.1. Product Identifier

Palladium (Pd) Target, 99.99% pure in various manufactured forms. EC #: 231-115-6 CAS #: 7440-05-3
The substance is not subject to registration according to REACH

1.2 Relevant applications of the material and uses advised against

Target material for vacuum deposition (sputtering and evaporation)

1.3. Company details

Rave Scientific
100 Franklin Square Dr.
Suite 101
Somerset, NJ 08873
Telephone: 1-732-898-3828
Email: info@ravescientific.com
Web: www.ravescientific.com

1.4 Emergency telephone number

Rave Scientific: 1-732-898-3828

Section 2: Hazards identification

2.1. Classification of the substance or mixture according to Regulation EC Nr. 1272/2008 (CLP)

This substance does not meet the criteria for classification in accordance with regulation Nr. 1272/2008/EC

2.2 Labelling elements in accordance to Regulation EC. Nr 1272/2008

Not required

2.3 Other hazards

According to the results of its assessment, this substance is not a PBT or vPvB. (Contd. on page 2)

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Section 3: Composition / information on components

3.1. Substances

Palladium (Pd) target, 99.99% pure in various forms.

EC #: 231-115-6

CAS #: 7440-05-3

3.2 Mixtures

Not applicable

Section 4: First aid measures

4.1. Description of first aid measures

Contact with eyes:	No special measures necessary
Contact with skin:	No special measures necessary
Inhalation:	There is no major dust generation. No special measures necessary
Ingestion:	No special measures necessary

4.2. Important symptoms and effects, either immediate or delayed

Symptoms and effects are not known to date

4.3. Indication of any immediate medical attention and special treatment

None

Section 5: Firefighting Measures

5.1. Extinguishing media

Water, foam, dry extinguishing powder, ABC-powder
Do not use water jet

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5.2 Special hazards arising from the substance or mixture

Non-combustible

5.3 Advice to firefighters

In case of fire and/or explosion do not breathe fumes. Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus

Section 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

No special measures are necessary

6.2 Environmental precautions

Keep away from drains, surface and ground water

6.3 Methods and material for containment and clean up

Pick up mechanically

6.4 Reference to other sections

For further information see section 7, 8 and 13.

Section 7: Handling and storage

7.1. Precautions for safe handling

No special measures are necessary

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7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry place

7.3 Specific end uses(s)

No information available.

Section 8: Exposure control and personal protection

8.1. Control parameters

Occupational exposure limits (OEL)

Substance	CAS	Country	TWA	STEL	Ceiling-C	Source
Palladium	7440-05-3	EU	Not available	Not available	Not available	

8.2 Exposure controls

Control procedures: Wash hands before breaks and at the end of the work
Maintain appropriate working environment

Personal protection: Protective work clothing

Inhalation: Usually no personal reparative protection necessary

Hands and skin: Suitable gloves

Eyes: Wear safety goggles with side protection or full-face protection

Section 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance/physical state: Solid in various forms
Colour: Grey metallic
Odour: None
pH: Not applicable
Melting point/range: 1555°C

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Boiling point/range:	2963°C	(Contd. of page 4)
Flash point:	Not determined	
Evaporation rate:	Not available	
Explosion limits: upper limit:	Not determined	
lower limit:	Not determined	
Vapour pressure:	Not applicable	
Relative density:	12.02 g/cm ³ @ 20°C	
Solubility in water:	Practically insoluble	
Auto-ignition:	Not determined	
Viscosity:	Not applicable	

9.2 Other information

None

Section 10: Stability and reactivity

10.1. Reactivity

This material is not reactive under normal ambient conditions

10.2 Chemical stability

Stable under recommended storage conditions

10.3 Possibility of hazardous reactions

None known

10.4 Conditions to avoid

There are no specific conditions known which have to be avoided

10.5 Incompatible materials

There is no additional information available

10.6 Hazardous decomposition products

Non-combustible

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Section 11: Toxicological information

11.1. Information on toxicological effects

Information on hazard classes as defined in Regulation (EC) Nr. 1272/2008

Inhalation:	Not classified
Skin contact:	Not classified
Eye contact:	Not classified
Sensitisation:	Not classified
Germ cell mutagenicity:	Not classified
Carcinogenicity:	Not classified
Specific target organ toxicity – single exposure:	Not classified
Specific target organ toxicity – repeated exposure:	Not classified
Reproductive toxicity:	Not classified

Symptoms related to the physical, chemical and toxicological characteristics

If swallowed:	No data available
If in eyes:	No data available
If inhaled:	No data available
If on skin:	No data available
Other information:	No data available

11.2. Endocrine disrupting properties

Not listed

11.3. Information on other hazards

There is no additional information

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Section 12: Ecological information

12.1. Aquatic toxicity

Shall not be classified as hazardous to the aquatic environment

12.2 Persistence and degradability

No information available

12.3 Bio-accumulative potential

Does not significantly accumulate in organisms - BCF = 70 (ECHA)

12.4 Mobility in soil

No information available

12.5 Results of PBT and vPvB assessment

Not applicable

12.6 Endocrine disrupting properties

Not listed

12.7 Other adverse effects

No information available

Section 13: Disposal considerations

13.1. Waste treatment methods

Product: This material and its container must be disposed of in a safe way.
Do not discharge into drains or the environment, dispose to an authorised waste collection point.

National regulations: Disposal should be in accordance with local, state or national legislation.

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Section 14: Transport information

14.1. UN number

UN-number: N/A

14.2 UN proper shipping name

Proper shipping name: N/A

14.3 Transport hazard class(es)

Class: N/A
ADR/RID-Classification code: N/A

14.4 Packing group

Packing: N/A

14.5 Incompatible materials

ADR/RID- Environmentally hazardous: N/A
IMDG-Marine pollutant: N/A
IATA/ICAO-Environmentally hazardous: N/A

14.6 Special precautions for user

ADR/RID-Tunnel code: N/A
IMDG-Ems: N/A
IATA/ICAO-PAX: N/A
IATA/ICAO-CAO: N/A

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC code

Not applicable

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Section 15: Regulatory information

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

Restrictions according to REACH, Annex XVII: not listed

List of substances subject to authorization (REACH, Annex XIV)/SVHC – candidate list: not listed

15.2 Chemical safety assessment

No information available

Section 16: Other information

RoHS Directive Compliant

This product is fully compliant with the directive 2100/65/EU Annex II (RoHS). It does not contain any lead, cadmium, mercury, hexavalent chromium, PBB's or PBDE's.

WEEE

This product is not a piece of electrical or electronic equipment, and it therefore not governed by Directive 2002/96/EC on waste electrical and electronic equipment (WEEE)

Abbreviations:

Asp. Tox	Aspiration hazard
Carc.	Carcinogenicity
Exp.	Exposure
Flam.	Flammable
GHS	Global Harmonised System of Classification of Labelling Chemicals
Irrit.	Irritant
N/A	Not applicable
N/E	Not estimated
LD50	Lethal dose 50% corresponds to causing 50% lethality during a specific time
PBT	Persistent Bio-accumulative and Toxic
WEL	Workplace Exposure Limit
Repr.	Reproductive toxicant
RoHS	Restriction of Hazardous Substance
vPvB	very Persistent and very Bio-accumulative
WEEE	Waste Electrical and Electronic Equipment

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This product should be stored, handled and used in accordance with good industrial hygiene practices and in accordance with any legal regulation.

The information contained herewith is based on the present state of our knowledge and is intended to describe the product from the point of view of safety requirements. It does not guarantee any specific properties.

It is the responsibility of the user to query and verify any information seeming suspect or where doubt on the validity may exist. The buyer assumes all responsibility of using and handling the product in accordance with local, state, federal and international regulations.

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