

**Product name:** Gold/Palladium target, 99.99% pure in various forms  
**Document Nr.:** SDS00170AP5704

**Date:** October 5<sup>th</sup>, 2022  
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## Section 1: Identification of the substance or mixture and the company

### 1.1. Product Identifier

Gold (Au)/Palladium (Pd) target material in various forms.  
Gold: EC #: 231-165-9 - CAS #: 7440-57-5 / Palladium: 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](mailto:info@ravescientific.com)  
Web: [www.ravescientific.com](http://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****3.2 Mixtures**

Identifier	Weight %	Name	Symbol	Classification
EC: 231-165-9 CAS: 7440-57-5	60-80	Gold	Au	Not classified
EC: 231-115-6 CAS: 7440-05-3	40-20%	Palladium	Pd	Not classified

**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: 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

Not required

### 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)

This information is 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 / yellowish
Odour:	None
pH	Not applicable
Melting point/range:	1460°C
Boiling point/range:	2808/3167°C
Flash point:	Not determined

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Evaporation rate:	Not available	(Contd. of page 4)
Explosion limits: upper limit:	Not determined	
lower limit:	Not determined	
Vapour pressure:	Not applicable	
Relative density:	16.38 – 17.84 g/cm <sup>3</sup> @ 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

<b>Acutely toxic:</b>	Not classified
<b>Inhalation:</b>	Not classified
<b>Skin contact:</b>	Not classified
<b>Eye contact:</b>	Not classified
<b>Sensitisation:</b>	Not classified
<b>Germ cell mutagenicity:</b>	Not classified
<b>Carcinogenicity:</b>	Not classified
<b>Reproductive toxicity:</b>	Not classified

Symptoms related to the physical, chemical and toxicological characteristics

<b>If swallowed:</b>	No data available
<b>If in eyes:</b>	No data available
<b>If inhaled:</b>	No data available
<b>If on skin:</b>	No data available
<b>Other information:</b>	No data available

## 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

No information available

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## 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.

## Section 14: Transport information

### 14.1. UN number

UN-number: N/A

### 14.2 UN proper shipping name

Proper shipping name: N/A

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## 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

## 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

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## **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
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

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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