

**MATERION****1. Chemical and company identification**

Name of chemical (Product name)	Tantalum Targets
Company name	Materion Advanced Materials Germany GmbH
Address	Borsigstrasse 10 Alzenau 63755 Germany
Contact person	Hermann Schmiing
Telephone	49.60.23.91.82.0
e-mail address	Materion.Germany@materion.com
Emergency telephone number	49.60.23.91.82.0
Reference number	G66

2. Hazards identification

GHS classification	
Physical hazards	The product is not classified according to GHS.
Health hazards	Specific target organ toxicity, single exposure Category 3 respiratory tract irritation
Environmental hazards	The product is not classified according to GHS.

GHS label elements**Symbols****Signal words**

Warning

Hazard statement

May cause respiratory irritation.

Precautionary statement**Prevention**

Observe good industrial hygiene practices.

Response

If inhaled: Remove person to fresh air and keep comfortable for breathing.

Storage

Store away from incompatible materials.

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

Other hazards which do not result in classification

None known.

Supplemental information

For further information, please contact the Product Stewardship Department at +1.216.383.4019.

Main symptoms and emergency overview**Main symptoms**

Upper respiratory tract irritation.

Emergency overview

May cause respiratory irritation.

3. Composition/information on ingredients

Substance or mixture Substance

Components	CAS Number	Gazette notification		Concentration (%)
		ENCS no.	ISHL no.	
Tantalum	7440-25-7			100

Chemical formula Ta (7440-25-7)

4. First aid measures

If inhaled	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a poison center or doctor/physician if you feel unwell.
If on skin	Wash off with soap and water. Get medical attention if irritation develops and persists.
If in eyes	Do not rub eyes. Rinse with water. Get medical attention if irritation develops and persists.
If swallowed	Rinse mouth. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Dusts may irritate the respiratory tract, skin and eyes. None known.

Protection of first-aid responders

If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

Notes to physician

Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

5. Fire-fighting measures

Extinguishing media

Dry powder. Dry sand.

Extinguishing media to avoid

Do not use water jet as an extinguisher, as this will spread the fire. Carbon dioxide (CO₂).

Specific hazards

This product is not flammable.

Special fire fighting procedures

Move containers from fire area if you can do so without risk.

Protection of fire-fighters

Use protective equipment appropriate for surrounding materials.

General fire hazards

No unusual fire or explosion hazards noted.

Specific methods

Use standard firefighting procedures and consider the hazards of other involved materials.

6. Accidental release measures

Personal precautions, protective equipment and emergency measures

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of dust. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Environmental precautions

Avoid discharge into drains, water courses or onto the ground.

Methods or materials for containment and cleaning up

Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Collect dust using a vacuum cleaner equipped with HEPA filter. The product is immiscible with water and will spread on the water surface. Stop the flow of material, if this is without risk.

Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. Following product recovery, flush area with water.

Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

7. Handling and storage

Handling

Technical measures (e.g. Local and general ventilation)

Provide appropriate exhaust ventilation at places where dust is formed.

Safe handling advice

Observe good industrial hygiene practices. Use personal protection recommended in Section 8 of the SDS.

Contact avoidance measures

Strong oxidizing agents. Fluorine. For further information, please refer to section 10 of the SDS.

Hygiene measures

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

Storage

Safe storage conditions

Store away from incompatible materials (see Section 10 of the SDS).

Safe packaging materials

Store in original tightly closed container.

8. Exposure controls/personal protection

Occupational exposure limits

Japan. OELs - JSOH (Japan Society of Occupational Health: Recommendation of Occupational Exposure Limits)

Material	Type	Value	Form
Tantalum Targets	TWA	8 mg/m ³	Total dust.
		2 mg/m ³	Respirable dust.

Japan. OELs - JSOH (Japan Society of Occupational Health: Recommendation of Occupational Exposure Limits)

Components	Type	Value	Form
Tantalum (CAS 7440-25-7)	TWA	8 mg/m ³	Total dust.
		2 mg/m ³	Respirable dust.

Engineering measures Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. If engineering measures are not sufficient to maintain concentrations of dust particulates below the Occupational Exposure Limit (OEL), suitable respiratory protection must be worn. If material is ground, cut, or used in any operation which may generate dusts, use appropriate local exhaust ventilation to keep exposures below the recommended exposure limits.

Personal protective equipment

- Respiratory protection** In case of insufficient ventilation, wear suitable respiratory equipment.
- Hand protection** Wear gloves to prevent metal cuts and skin abrasions during handling.
- Eye protection** Wear approved safety glasses, goggles, face shield and/or welder’s helmet when risk of eye injury is present, particularly during operations that generate dust, mist or fume.
- Skin and body protection** Wear suitable protective clothing.

9. Physical and chemical properties

Appearance

- Physical state** Solid.
- Form** Powder.
- Color** Dark grey.
- Odor** None.
- Odor threshold** Not applicable.
- pH** Not applicable.
- Melting point/Freezing point** 5424.8 °F (2996 °C) / Not applicable.
- Boiling point, initial boiling point, and boiling range** Not applicable.
- Flash point** Not applicable.
- Combustion characteristics (solid, gas)** Not applicable.
- Upper/lower flammability or explosive limits**
 - Flammability limit - lower (%)** Not applicable.
 - Flammability limit - upper (%)** Not applicable.
 - Explosive limit - lower (%)** Not applicable.
 - Explosive limit - upper (%)** Not applicable.
- Vapor pressure** Not applicable.
- Vapor density** Not available.
- Evaporation rate** Not applicable.
- Specific gravity** 14.49
- Solubility(ies)**
 - Solubility (water)** Insoluble
- Partition coefficient (n-octanol/water)** Not applicable.
- Auto-ignition temperature** Not applicable.
- Decomposition temperature** Not applicable.

Viscosity (Coefficient of viscosity) Not applicable.

Other information

Density 14.49 g/cm³
Explosive properties Not explosive.
Flammability Not applicable.
Molecular formula Ta
Molecular weight 180.95 g/mol
Oxidizing properties Not oxidizing.
Relative density Not applicable.

10. Stability and reactivity

Reactivity The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability Material is stable under normal conditions.
Possibility of hazardous reactions No dangerous reaction known under conditions of normal use.
Conditions to avoid Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Contact with incompatible materials.
Incompatible materials Strong oxidizing agents. Fluorine.
Hazardous decomposition products No hazardous decomposition products are known.

11. Toxicological information

Acute toxicity Not known.
Skin corrosion/irritation Not likely, due to the form of the product.
Serious eye damage/eye irritation None known.
Respiratory or skin sensitization
Respiratory sensitization Not a respiratory sensitizer.
Skin sensitization This product is not expected to cause skin sensitization.
Germ cell mutagenicity Not classified.
Carcinogenicity Not classifiable as to carcinogenicity to humans.
Reproductive toxicity This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure May cause respiratory irritation.
Specific target organ toxicity - repeated exposure Not classified.
Aspiration hazard Not an aspiration hazard.

12. Ecological information

Ecotoxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Persistence and degradability No data is available on the degradability of this substance.
Bioaccumulation No data available.
Mobility in soil The product is immiscible with water and will spread on the water surface.
Hazardous to the ozone layer No data available.
Other hazardous effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Dispose in accordance with all applicable regulations.

Residual waste Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

Local disposal regulations Contract with a disposal operator licensed by the Law on Disposal and Cleaning. Dispose of contents/container in accordance with local/regional/national/international regulations. When your own wastewater treatment plant is not available, collect entire waste and then charge to a licensed industrial waste management professional with manifests for industrial waste.

14. Transport information

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

National regulations Follow regulation in section 15 for domestic transportation.

15. Regulatory information

Industrial Safety and Health Act

Notifiable substances

TANTALUM AND TANTALUM OXIDES Table 9 Ordinance No. 338

Labeling substances

TANTALUM (POWDER)
TANTALUM AND TANTALUM OXIDES

Poisonous and Deleterious Substances Control Act

Specified poisonous substances

Not regulated.

Poisonous substances

Not regulated.

Deleterious substances

Not regulated.

Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc.

Class I specified chemical substances

Not regulated.

Class II specified chemical substances

Not regulated.

Monitoring chemical substances

Not regulated.

Priority Assessment Chemical Substances (PACs)

Not regulated.

Reporting Exempted Substances

Not regulated.

Law concerning Pollutant Release and Transfer Register

Specified class 1 substances (substance name, ordinance number and content)

Not regulated.

Class 1 substances (substance name, ordinance number and content)

Not regulated.

Class 2 substances (substance name, ordinance number and content)

Not regulated.

Ship Safety Law, Dangerous Goods Marine Transport and Storage Rule Not regulated.

Air Law, Enforcement Rule Not regulated.

Explosives Control Act

Not regulated.

16. Other information

Bibliography

ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices
HSDB® - Hazardous Substances Data Bank
IARC Monographs. Overall Evaluation of Carcinogenicity
National Toxicology Program (NTP) Report on Carcinogens
Japan Society for Occupational Health, Recommendation of Occupational Exposure Limits
Japan Chemical Industry Association (JCIA) GHS Guideline, June 2012
JIS Z 7252:2014 Classification of chemicals based on “Globally Harmonized System of Classification and Labelling of Chemicals (GHS)”
JIS Z 7253:2012 Hazard communication of chemicals based on GHS - Labelling and Safety Data Sheet (SDS)

This document has been prepared using data from sources considered to be technically reliable and the information is believed to be correct. Materion makes no warranties, expressed or implied, as to the accuracy of the information contained herein. Materion cannot anticipate all conditions under which this information and its products may be used and the actual conditions of use are beyond its control. The user is responsible to evaluate all available information when using this product for any particular use and to comply with all Federal, State, Provincial and Local laws, statutes and regulations.