



# MATERIAL SAFETY DATA SHEET

**MATERION**

## 1. Chemical product and company identification

**A. Product name** Tantalum Aluminum Targets

**Other means of identification**

SDS number G50

**B. Recommended use and Limitations on use**

**Recommended use** Industrial uses: Uses of substances as such or in preparations at industrial sites

**Limitations on use** Consumer uses: Private households (= general public = consumers)

**C. Supplier information**

**Company name** Materion Advanced Materials

**Address** 6070 Parkland Boulevard  
Mayfield Heights OH 44124  
United States

**Telephone** EH&S 1.216.383.4019

**Email** ehs@materion.com

**Contact person** Theodore Knudson

**Emergency telephone number** See Section 16.

**Importer**

**Company name** See above.

**MSDS number** G50

## 2. Hazards identification

**A. Hazard category/Classification**

**Physical hazards** Not classified.

**Health hazards** Acute toxicity, oral Category 4  
Specific target organ toxicity, single exposure Category 3 respiratory tract irritation  
Specific target organ toxicity, repeated exposure Category 1 (Lung)

**Environmental hazards** Not classified.

**B. Warning label items including precautionary statement**

• **Pictogram**



• **Signal word** Danger

• **Hazard statement**

H302 Harmful if swallowed.  
H335 May cause respiratory irritation.  
H372 Causes damage to organs (respiratory system) through prolonged or repeated exposure by inhalation.

• **Precautionary statement**

**Prevention**

P260 Observe good industrial hygiene practices.  
Do not breathe dust.  
P271 Use only outdoors or in a well-ventilated area.

**Response**

P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.  
P330 Rinse mouth.

P304 + P340  
P312

IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
Call a POISON CENTER or doctor/physician if you feel unwell.

#### Storage

P403 + P233  
P405

Store in a well-ventilated place. Keep container tightly closed.  
Store locked up.

#### Disposal

P501

Dispose of contents/container (in accordance with related regulations).

#### C. Other hazards not included in the hazard category criteria (e.g. dust explosion hazard)

None known.

#### Supplemental information

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

### 3. Composition/information on ingredients

Chemical identity	Common and alternative names	CAS number	ID number	Content in percent (%)
Tantalum		7440-25-7	KE-33006	86 - 88
Aluminum		7429-90-5	KE-00881	14 - 16

### 4. First aid measures

#### A. In case of eye contact

Do not rub eyes.

#### B. In case of skin contact

Wash off with soap and water. Get medical attention if irritation develops and persists.

#### C. In case of inhalation

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.

#### D. In case of swallowing

If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical advice/attention if you feel unwell.

#### E. Note to physician

Treat symptomatically. Keep victim warm.

#### Most important symptoms/effects, acute and delayed

Dusts may irritate the respiratory tract, skin and eyes. Under normal conditions of intended use, this material does not pose a risk to health.

#### General advice

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. Show this safety data sheet to the doctor in attendance.

### 5. Fire-fighting measures

#### A. Suitable (and unsuitable) extinguishing media

##### Suitable extinguishing media

Dry powder. Dry sand. Carbon dioxide (CO2).

##### Unsuitable extinguishing media

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

#### B. Specific hazards arising from the chemical (example: hazardous combustion products)

Non-combustible, substance itself does not burn.

#### C. Specific methods of fire-fighting

##### Special protective equipment for firefighters

Wear suitable protective equipment.

##### Special fire fighting procedures

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

#### 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

#### A. Personal precautions, protective equipment and emergency measures

Keep unnecessary personnel away. Do not breathe dust.

#### B. Environmental precautions

No special environmental precautions required.

### C. Methods and 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. Sweep up or vacuum up spillage and collect in suitable container for disposal.

## 7. Handling and storage

### A. Precautions for safe handling

Keep formation of airborne dusts to a minimum. Provide appropriate exhaust ventilation at places where dust is formed. Do not taste or swallow. Avoid breathing dust. Observe good industrial hygiene practices.

### B. Conditions for safe storage (including any incompatibilities)

Store locked up. Store away from incompatible materials (see Section 10 of the MSDS).

## 8. Exposure controls/personal protection

### A. Exposure limit values, biological limit values, etc

#### Korea. OELs. Standards for Exposure to Chemical Substances and Physically Hazardous Factors

Components	Type	Value	Form
Aluminum (CAS 7429-90-5)	TWA	5 mg/m <sup>3</sup>	Fume.
		2 mg/m <sup>3</sup>	
		10 mg/m <sup>3</sup>	
Tantalum (CAS 7440-25-7)	TWA	5 mg/m <sup>3</sup>	Dust.
			Fume.

#### US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Aluminum (CAS 7429-90-5)	TWA	1 mg/m <sup>3</sup>	Respirable fraction.

### Biological limit values

No biological exposure limits noted for the ingredient(s).

### B. Appropriate engineering controls

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.

### C. Personal protective equipment

- **Respiratory protection** Not available.
- **Eye protection** Not available.
- **Hand protection** Wear gloves to prevent metal cuts and skin abrasions during handling.
- **Body protection** Wear suitable protective clothing.

### Hygiene measures

Keep away from food and drink. 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.

## 9. Physical and chemical properties

### A. Appearance

Physical state	Solid.
Form	Powder.
Color	Grey.

### B. Odor

None.

### C. Odor threshold

Not applicable.

### D. pH

Not applicable.

### E. Melting point/freezing point

Melting point	1220 °F (660 °C) estimated
Freezing point	Not applicable.

F. Boiling point, initial boiling point, and boiling range	Not applicable.
G. Flash point	Not applicable.
H. Evaporation rate	Not applicable.
I. Flammability (solid, gas)	None known.
J. Upper/lower limit on flammability or explosive limits	
Flammability limit - lower (%)	Not applicable.
Flammability limit - lower (%) temperature	Not applicable.
Flammability limit - upper (%)	Not applicable.
Flammability limit - upper (%) temperature	Not applicable.
Explosive limit - lower (%)	Not applicable.
Explosive limit - lower (%) temperature	Not applicable.
Explosive limit - upper (%)	Not applicable.
Explosive limit - upper (%) temperature	Not applicable.
K. Vapor pressure	Not applicable.
L. Solubility	
Solubility (water)	Insoluble.
M. Vapor density	Not applicable.
N. Specific gravity	Not applicable.
O. n-octanol/water partition coefficient	Not applicable.
P. Auto-ignition temperature	Not applicable.
Q. Decomposition temperature	Not applicable.
R. Viscosity	Not applicable.
S. Molecular weight	Not available.

#### Other data

Density	13.57 g/cm <sup>3</sup> estimated
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.

## 10. Stability and reactivity

**Reactivity** The product is stable and non-reactive under normal conditions of use, storage and transport.

### A. Stability and hazardous reaction potential

Stability	Material is stable under normal conditions.
Hazardous reaction potential	No dangerous reaction known under conditions of normal use.

**B. Conditions to avoid (e.g. static discharge, shock or vibration, etc)** Contact with incompatible materials.

**C. Incompatible materials** Acids. Strong oxidizing agents. Fluorine.

**D. Hazardous decomposition products** No hazardous decomposition products are known.

## 11. Toxicological information

### A. Information on likely routes of exposure

- **Respiratory organs** Prolonged inhalation may be harmful.
- **Skin** Not likely, due to the form of the product.

- **Eyes** Not likely, due to the form of the product.
- **Mouth** Harmful if swallowed.

## B. Information on health hazards

- **Acute toxicity (list all possible routes of exposure)** Harmful if swallowed.
- **Corrosivity or irritation to the skin** Not likely, due to the form of the product.
- **Serious eye damage/eye irritation** None known.
- **Respiratory sensitization** Not a respiratory sensitizer.
- **Skin sensitization** Not a skin sensitizer.
- **Carcinogenic properties /Carcinogenicity** Not classifiable as to carcinogenicity to humans.
- **Mutagenic properties /Mutagenicity** Not classified.
- **Reproductive toxicity** Not classified.
- **Specific target organ toxicity - single exposure** May cause respiratory irritation.
- **Specific target organ toxicity - repeated exposure** Causes damage to organs through prolonged or repeated exposure.
- **Aspiration hazard** Not an aspiration hazard.

## 12. Ecological information

### A. 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.

Product	Species	Test Results
Tantalum Aluminum Targets <b>Aquatic</b> <i>Acute</i> Fish	LC50 Fish	1.9375 mg/l, 96 hours estimated
<b>Hazardous to the aquatic environment, acute hazard</b>	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.	

### B. Persistence/degradability

No data is available on the degradability of any ingredients in the mixture.

### C. Bioaccumulative potential

No data available.

### D. Mobility in soil

The product is immiscible with water and will spread on the water surface.

### E. Other adverse 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

### A. Method of disposal

Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container (in accordance with related regulations).

### B. Disposal considerations (including disposal of contaminated containers or 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.

### Waste code

The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

## 14. Transport information

### IATA

- A. **UN number** Not applicable.
- B. **UN proper shipping name** Not applicable.

**C. Transport hazard class(es)**

**Class** Not applicable.

**Subsidiary risk** -

**D. Packing group** Not applicable.

**E. Environmental hazards** No.

**F. Special precautions for user** Not applicable.

**IMDG**

**A. UN number** Not applicable.

**B. UN proper shipping name** Not applicable.

**C. Transport hazard class(es)**

**Class** Not applicable.

**Subsidiary risk** -

**D. Packing group** Not applicable.

**E. Environmental hazards**

**Marine pollutant** No.

**EmS** Not applicable.

**F. Special precautions for user** Not applicable.

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

**15. Regulatory information****A. Restrictions under the Industrial Safety and Health Law****Harmful Substances Prohibited from Manufacturing**

Not regulated.

**Harmful Substances Requiring Permission for Manufacture or Use**

Not regulated.

**Controlled Hazardous Substances**

Aluminum (CAS 7429-90-5)

**Harmful Substances Requiring Special Medical Examination**

Aluminum (CAS 7429-90-5)

**Workplace Environmental Monitoring Harmful Materials**

Aluminum (CAS 7429-90-5)

**Occupational Exposure Limit**

Aluminum (CAS 7429-90-5)

Tantalum (CAS 7440-25-7)

**B. Restrictions under the Chemicals Control Law (Previously Toxic Chemicals Control Law)****Accidental Release Prevention Substances**

Not regulated.

**Act on the Registration and Evaluation of Chemicals****Banned Toxic Chemicals**

Not regulated.

**Designated Existing Chemicals Subject to Registration (PEC) (MoE No. 2015-92)**

Not listed.

**Restricted Chemical Substances**

Not regulated.

**Toxic Chemicals**

Not regulated.

**C. Restrictions under the Dangerous Substance Safety Management Act****D. Restrictions under the Wastes Control Act****Halogenated Materials in Waste Organic Solvents**

Not regulated.

## Hazardous Substances

Not regulated.

## E. Restrictions under other foreign or domestic laws

### Clean Air Conservation Act

#### Air Pollutants

Aluminum (CAS 7429-90-5)

Tantalum (CAS 7440-25-7)

**Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides (Rules on PIC, MoE No. 2014-252, Dec. 31, 2014; Standards for Pesticides, RDA No. 2014-26), as amended**

Not listed.

#### Specific Air Pollutants

Not regulated.

## Further information

This material safety data sheet was prepared in accordance with Article 41 of the Industrial Safety and Health Law.

## Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Korea	Existing Chemicals List (ECL)	Yes

\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

## 16. Other information

### A. Source of information

ACGIH  
EPA: ACQUIRE database  
NLM: Hazardous Substances Data Base  
US. IARC Monographs on Occupational Exposures to Chemical Agents  
Korea. Accidental Release Prevention Substances (Presidential Decree of Toxic Chemical Control Law, Executive Order No. 19203)  
Korea. Dangerous Substances Threshold Quantity (Presidential Decree of Dangerous Substances Safety Management Act No. 18406, Schedule 1)  
Korea. Harmful Substances Prohibited from Manufacturing (Presidential Decree on the Industrial Safety and Health Act (No. 13053), Article 29)  
Korea. Harmful Substances Requiring Permission for Manufacture or Use (Presidential Decree on the Industrial Safety and Health Act (No. 13053), Article 30)  
Korea. OELs. Regulation for Permitted Concentration of Hazardous Substances (Ministry of Labor (MOL) Public Notice No. 1986-45, as amended)  
Korea. Prohibited Chemical Substances (TCCL Article 11)  
Korea. Regulated volatile organic compounds (VOCs) (MOE Notice No. 2001-36, March 8, 2001, as amended)  
Korea. Restricted Chemical Substances (TCCL Article 11)  
Korea. Toxic Chemical Control Law (TCCL), Existing Chemicals Inventory (KECI)  
Korea. Toxic Chemical Control Law (TCCL), pre-1997 List  
Korea. Toxic Chemicals (TCCL Article 10)  
Korea. Toxic Release Inventory (TRI) Chemicals (TCCL Article 14)  
Korea. Accidental Release Prevention Substances (Pres. Decree of Toxic Chemical Control Law, Ex. Order No. 19203, Tables 2 & 3, Dec 28, 2005)  
Korea. OELs (ISHL Article 42; MOL Public Notice No. 1986-45, as amended through MOEL Notice 2013-38, August 14, 2013)  
Korea. Prohibited Chemical Substances (AREC "K-REACH" Article 27; Designation of Toxic, Restricted or Banned Chemicals Appendices 4 and 5)  
Korea. Restricted Chemical Substances (AREC "K-REACH" Article 27; Designation of Toxic, Restricted or Banned Chemicals Appendices 2 and 3)  
KECI, January 27, 2015, amended through MoE 2016-138, July 13, 2016  
Korea. Toxic Chemicals (AREC "K-REACH" Article 20; Designation of Toxic, Restricted or Banned Chemicals Appendix 1)  
Korea. Toxic Release Inventory (TRI) Chemicals (MOE Public Notice No. 2002-166, Nov. 8, 2002)

### B. Issue date

10-30-2019

### C. Number of revisions and date of most recent revision

09-21-2021 (02 revision)

**Further information**

Transportation Emergency  
Call Chemtrec at:  
International: 703.741.5970  
Spain: 900.868.538  
Switzerland: 0800.564.402  
Chemtrec's toll free, mobile-enabled number in Germany – 0800 1817059

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**Other information**

Revised information in Section 16.