



# SAFETY DATA SHEET

**MATERION**

## 1. Identification of the chemical and information about the manufacturer or supplier

### 1.1 Identification of the chemical products

1.1.1 Technical name            **Titanium Targets**

#### Other means of identification

SDS number                    G49

CAS number                    7440-32-6

### 1.1.2 Recommended use of the chemical and restrictions on use

**Recommended use**            Manufacture of computer, electronic and optical products, electrical equipment  
Scientific research and development  
Other: Manufacture of medical and defense equipment

**Limitations on use**            Professional uses: Public domain (administration, education, entertainment, services, craftsmen)  
Consumer uses: Private households (= general public = consumers)

### 1.2 Manufacturer/Importer/Supplier/Distributor information

#### 1.2.1 Manufacturer

**Company name**                Materion Advanced Materials

1.2.2 Address (post and legal) 6070 Parkland Boulevard  
Mayfield Heights, OH 44124  
United States

**Website**                        www.materion.com

**Contact person**                Theodore Knudson

#### 1.2.3 Telephone, including Emergency consultations and time limits

**Telephone**                      EH&S                                    1.216.383.4019

**Emergency phone  
number**                        See Section 16.

#### 1.2.4 Fax

1.2.5 E-mail                      ehs@materion.com

## 2. Hazard(s) identification

### 2.1. Hazard identification of chemical product as a whole (classification according to GOST 12.1.007-76 and GHS)

**Classification according to  
GOST 12.1.007-76**                According to GHS criteria.

#### GHS classification

**Physical hazards**                Not classified.

**Health hazards**                 Not classified.

**Environmental hazards**        Not classified.

### 2.2 Labeling elements in compliance with GOST 31340-2013

2.2.1 Signal word                None.

2.2.2 Symbols                    None.

2.2.3 Hazard statement        The material as sold in solid form is generally not considered hazardous. However, if the process involves grinding, melting, cutting or any other process that causes a release of dust or fumes, hazardous levels of airborne particulate could be generated.

#### Precautionary statement

**Prevention**                      Observe good industrial hygiene practices.

**Response**                        Wash hands after handling.

**Storage**                         Store away from incompatible materials.

**Disposal**                        Dispose of waste and residues in accordance with local authority requirements.

**Other hazards**                 None known.

### 3. Composition/information on ingredients

#### 3.1 Information on product as a whole

3.1.1 Chemical name (IUPAC)	None.
3.1.2 Chemical formula	Ti (7440-32-6)
3.1.3 General description of the composition (taking into account the brand assortment; preparation method)	Not available.

#### 3.2 Components

Components	Concentration by weight (%)	Hygienic standards in the working area			CAS-No.	EC No.
		MAC, mg/m3	TSEL, mg/m3	Hazard classification		
Titanium Targets	100	None.	10 Aerosol.	4	7440-32-6	231-142-3

Class 4 (low-hazard substance)

### 4. First-aid measures

#### 4.1. Observed symptoms

4.1.1 In case of exposure via inhalation	Not likely, due to the form of the product.
4.1.2 In contact with skin	No adverse effects due to skin contact are expected.
4.1.3 In contact with eyes	Not relevant, due to the form of the product.
4.1.4 In case of exposure via ingestion	Expected to be a low ingestion hazard.

#### 4.2 First-aid measures to be provided to victims

4.2.1 In case of exposure via inhalation	Move to fresh air. Call a physician if symptoms develop or persist.
4.2.2 In contact with skin	Wash off with soap and water. Get medical attention if irritation develops and persists.
4.2.3 In contact with eyes	Rinse with water. Get medical attention if irritation develops and persists.
4.2.4 In case of exposure via ingestion	Rinse mouth. Get medical attention if symptoms occur.
4.2.5 Contraindications	Not available.

#### General advice

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

### 5. Fire-fighting and explosion safety measures and means

5.1 General characteristics of fire-explosion properties	No unusual fire or explosion hazards noted.
5.2 Fire-explosion indicators	None known.
5.3 Combustion and/or thermal destruction products and hazards arising from these	None known.
5.4 Recommended extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO <sub>2</sub> ).
5.5 Forbidden extinguishing media	None known.
5.6 Special protective equipment for firefighters	Wear suitable protective equipment.
5.7 Specific extinguishing methods	Use standard firefighting procedures and consider the hazards of other involved materials.
Special fire fighting procedures	Use water spray to cool unopened containers.

## 6. Accident and emergency prevention and response measures and their consequences

### 6.1 Measures to prevent harmful effects on people, environment, buildings, constructions, etc. in case of accidents and emergencies

**6.1.1 General required actions in case of an accident or emergency** Keep unnecessary personnel away. For personal protection, see section 8 of the SDS.

**6.1.2 Personal protection equipment in case of the accident** Use personal protection recommended in Section 8 of the SDS.

### 6.2 Procedures for the elimination of accidents and emergencies

**6.2.1 Procedures in case of leaks, spills, splashes** Not available.

**6.2.2 Actions in case of fire** Not available.

**Methods and materials for containment and cleaning up** Stop the flow of material, if this is without risk. For waste disposal, see section 13 of the SDS.

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

## 7. Storage and handling requirements of chemicals during loading and unloading

### 7.1 Safety precautions when handling chemical products

**7.1.1 Technical safety measures** No specific recommendations.

**7.1.2 Environmental protection measures** Use personal protection recommended in Section 8 of the SDS.

**7.1.3 Recommended safe handling and transportation advice** Observe good industrial hygiene practices.

**Local and general ventilation** Provide adequate ventilation.

### 7.2 Chemical storage requirements

**7.2.1 Terms and conditions for safe storage** Store away from incompatible materials (see Section 10 of the SDS).

**7.2.2 Packaging** Store in original tightly closed container.

**7.3 Safety measures and storage requirements at domestic use** The product is not intended for domestic use.

## 8. Equipment for monitoring exposure and personal protective equipment

### 8.1 Parameters of the working area that require monitoring

#### Occupational exposure limits

Hygiene Norm GN 2.2.5.1313-03. Executive No. 76 of 30 April 2003. Maximum allowable concentration (MAC) of harmful substances in the air of working zones, as amended

Material	Type	Value	Form
Titanium Targets (CAS 7440-32-6)	TWA	10 mg/m <sup>3</sup>	Aerosol.

**8.2 Measures to ensure the content of harmful substances in the working area below the exposure level concentration** Not available.

**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.

### 8.3 Worker personal protective equipment

**8.3.1 General recommendations** Use personal protective equipment as required.

**8.3.2 Respiratory protection** In case of insufficient ventilation, wear suitable respiratory equipment.

### 8.3.3 Protective equipment

Eye/face protection	Wear safety glasses with side shields (or goggles).
Hand protection	Wear gloves to prevent metal cuts and skin abrasions during handling.
Other	Wear suitable protective clothing.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.

**8.3.4 Personal protection equipment in case of domestic use** The product is not intended for domestic use.

**General hygiene considerations** 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

### 9.1 Physical appearance

Physical state	Solid.
Form	Solid.
Color	Silver
Odor	None.
Odor threshold	Not applicable.

### 9.2 Parameters characterizing basic properties of the product

pH	Not applicable.
Melting point/freezing point	3034,4 °F (1668 °C) / Not applicable.
Initial boiling point and boiling range	Not applicable.
Flash point	Not applicable.
Auto-ignition temperature	Not applicable.
Decomposition temperature	Not applicable.
Upper/lower flammability or explosive limits	
Explosive limit - lower (%)	Not applicable.
Explosive limit - lower (%) temperature	Not applicable.
Explosive limit - upper (%)	Not applicable.
Explosive limit - upper (%) temperature	Not applicable.
Vapor pressure	< 0,0000001 kPa (77 °F (25 °C))
Vapor density	Not applicable.
Density	4,51 g/cm <sup>3</sup> estimated at 20 °C
Viscosity	Not applicable.
Solubility(ies)	
Solubility (water)	Insoluble.
Partition coefficient (n-octanol/water)	Not applicable.
Other data	
Explosive properties	Not explosive.
Flammability	Not applicable.
Evaporation rate	Not applicable.
Flammability (solid, gas)	None known.
Molecular formula	Ti
Molecular weight	47,9 g/mol
Oxidizing properties	Not oxidizing.

## 10. Stability and reactivity

**10.1 Chemical stability** Material is stable under normal conditions.

<b>Hazardous decomposition products</b>	No hazardous decomposition products are known.
<b>10.2 Reactivity</b>	The product is stable and non-reactive under normal conditions of use, storage and transport.
<b>10.3 Conditions to avoid</b>	Contact with incompatible materials.
<b>Possibility of hazardous reactions</b>	No dangerous reaction known under conditions of normal use.
<b>Incompatible materials</b>	Ammonia. Chlorine.

## 11. Toxicological information

<b>11.1 General exposure characteristics</b>	None known.
<b>11.2 Routes of exposure</b>	None known.
<b>11.3 Affected/target organs, tissues and systems of humans</b>	
<b>Specific target organ toxicity - single exposure</b>	Not classified.
<b>Specific target organ toxicity - repeated exposure</b>	Not classified.
<b>11.4 Information on health hazards in case of direct exposure to the product and its effect</b>	
<b>Effect on upper respiratory tract irritation</b>	Not available.
<b>Respiratory or skin sensitization</b>	Not available.
<b>Respiratory sensitization</b>	Not a respiratory sensitizer.
<b>Skin sensitization</b>	Not a skin sensitizer.
<b>Skin corrosion/irritation</b>	Not classified.
<b>Serious eye damage/eye irritation</b>	None known.
<b>Aspiration hazard</b>	Not an aspiration hazard.
<b>11.5 Information on long-term hazardous health effects</b>	
<b>Carcinogenicity</b>	Not classified.
<b>Reproductive toxicity</b>	Not classified.
<b>Mutagenicity</b>	Not classified.
<b>Cumulativeness</b>	Not available.
<b>Chronic effects</b>	None known.
<b>11.6 Acute toxicity data</b>	None known.

## 12. Environmental impact information

<b>12.1 General description of the impact on the environment</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>12.2 Routes of exposure to environment</b>	Adverse effects may be caused by large spill in the environment as a result of accidents during transportation, storage, use, handling, depressurization of the container or/and the uncontrolled waste disposal.
<b>12.3 The most important characteristics of the environmental impact</b>	
<b>12.3.1 Hygienic standards</b>	Not available.
<b>12.3.2 Ecotoxicity</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>12.3.3 Biomigration and transformation of the environment due to the biodegradation or other processes</b>	
<b>Persistence and degradability</b>	No data is available on the degradability of any ingredients in the mixture.
<b>Bioaccumulative potential</b>	No data available.
<b>Mobility in soil</b>	No data available.
<b>Other adverse effects</b>	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

### 13. Recommendations for waste (residues) disposal

- 13.1 Safety precautions when handling the waste generated during use, storage, transportation** Collect and reclaim or dispose in sealed containers at licensed waste disposal site.
- 13.2 Information on the location and disposal methods, recycling or disposal of product waste, including packaging** Dispose in accordance with all applicable regulations.
- 13.3 Recommendation on the waste disposal generated during its domestic use** 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 from residues / unused products** 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).

### 14. Transport information

#### ADR

Not regulated as dangerous goods.

#### 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.

### 15. National and international regulatory information

#### 15.1 National legislation

- 15.1.1 Laws of the Russian Federation** On technical regulation.  
On sanitary and epidemiological welfare of the population.  
On Environmental Protection.  
On Air Protection.

#### 15.1.2 Information about the documentation, regulatory requirements for the protection of human health and environment

Sanitary-Epidemiological Rules, 1.2.2353-08, Chemical substances, mixtures and products which are carcinogenic factors, 21 April 2008

Not listed.

#### 15.2 International Conventions and Agreements

##### Stockholm Convention

Not applicable.

##### Rotterdam Convention

Not applicable.

##### Montreal Protocol

Not applicable.

##### Kyoto protocol

Not applicable.

##### Basel Convention

Not applicable.

#### International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes

Country(s) or region	Inventory name	On inventory (yes/no)*
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	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

### 16.1 Information on revision of the SDS

Issue date	06-18-2021
Version #	01
Previous SDS number	Not applicable.

### 16.2 List of references used in compiling the safety data sheet

GOST 19433-88. Dangerous goods. Classification and marking.  
GOST 12.1.004-91. Occupational safety standards system. Fire safety. General requirements.  
GOST 12.1.044-89. Occupational safety standards system. Fire and explosion hazard of substances and materials. Nomenclature of substances and materials. Nomenclature of indices and methods of their determination.  
GOST 32425-2013 Mixtures classification of hazard for environmental.  
GOST 31340-2013 Labeling of chemicals. General requirements.  
GOST 32419-2013 Classification of chemical products. General requirements.  
GOST 32423-2013 Mixtures classification of hazard for health.  
GOST 30333-2007 Chemical production safety passport. General requirements.  
GOST 32424-2013 Classification of chemicals for environmental hazards. General principles.  
GOST 12.1.007-76 Occupational safety standard system. Noxious substances. Classification and general safety requirements.  
Hygiene Norm GN 2.2.5.1313-03. Executive No. 76 of 30 April 2003. Maximum allowable concentration (MAC) of harmful substances in the air of working zones, as amended.

### 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

### List of abbreviations

Not available.

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