



# CHEMICAL PRODUCT SAFETY DATA SHEET

Prepared in accordance with GB/T 16483 and GB/T 17519.

**MATERION**

Product name: Tungsten Titanium Alloy

Issue date: 08-22-2018

Version #: 01

SDS No: G02

## SECTION 1 Chemical product and company identification

Chinese name of chemical	钨钛合金
English name of chemical	Tungsten Titanium Alloy
Manufacturer/Supplier	Materion Advanced Materials Germany GmbH
Address	Borsigstrasse 10 Alzenau, 63755 Germany
Contact person	Hermann Schmiing
Telephone	49.60.23.91.82.0
e-mail	Materion.Germany@materion.com
Emergency telephone number	49.60.23.91.82.0
Issue date	08-22-2018
SDS No	G02

## SECTION 2 Hazards identification

Emergency overview	The products are classified as articles and, as such, do not present a physical or health hazard in the present form. If the products are processed or handled in ways that generate particles (dust, fume, particles and/or powder), a potential health hazard could exist and risk management measures must be taken to minimize risk.
Hazard categories	Not classified.
Label elements	
Pictograms	None.
Signal word	None.
Hazard statement	None.
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.
Physical and chemical hazards	The product is stable and non-reactive under normal conditions of use, storage and transport. No unusual fire or explosion hazards noted.
Health hazards	Expected to be a low ingestion hazard. Direct contact with eyes may cause temporary irritation.
Environmental hazards	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.
Supplemental information	For further information, please contact the Product Stewardship Department at +1.216.383.4019.

## SECTION 3 Composition/information on ingredients

Substance/mixture	Mixture	
Chemical name	Concentration (%)	CAS Number
Tungsten	85 - 95	7440-33-7
Titanium	5 - 15	7440-32-6

**SECTION 4 First aid measures**

<b>Inhalation</b>	Move to fresh air. Call a physician if symptoms develop or persist.
<b>Skin contact</b>	Wash off with soap and water. Get medical attention if irritation develops and persists.
<b>Eye contact</b>	Remove contact lenses, if present and easy to do. If eye irritation persists: Get medical advice/attention.
<b>Ingestion</b>	Rinse mouth. Get medical attention if symptoms occur.
<b>Most important symptoms and health effects</b>	Irritation of eyes.
<b>Personal protection for first-aid responders</b>	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.
<b>Notes to physician</b>	Treat symptomatically.

**SECTION 5 Fire-fighting measures**

<b>Extinguishing media</b>	DRY sand, sodium chloride powder, graphite powder or Met-L-X powder.
<b>Extinguishing media to avoid</b>	None.
<b>Specific hazards</b>	This product is not flammable.
<b>Special fire fighting procedures</b>	Move containers from fire area if you can do so without risk.
<b>Protection of fire-fighters</b>	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
<b>General fire hazards</b>	No unusual fire or explosion hazards noted.
<b>Specific methods</b>	Use standard firefighting procedures and consider the hazards of other involved materials.

**SECTION 6 Accidental release measures**

<b>Personal precautions, protective equipment and emergency procedures</b>	
<b>For non-emergency personnel</b>	Not available.
<b>For emergency responders</b>	Keep unnecessary personnel away.
<b>Environmental precautions</b>	Avoid discharge into drains, water courses or onto the ground.
<b>Clean-up methods and materials and containment measures</b>	Clean up in accordance with all applicable regulations.
<b>Prevention of secondary hazards</b>	Not available.

**SECTION 7 Handling and storage**

<b>Handling</b>	Observe good industrial hygiene practices.
<b>Storage</b>	Store in original tightly closed container.

**SECTION 8 Exposure controls/personal protection****Exposure limits**

China OELs. Occupational Exposure Limits for Hazardous Agents in the Workplace, Chemical Hazardous Agents (GBZ 2.1-2007)

Components	Type	Value
Tungsten (CAS 7440-33-7)	PC-STEL	10 mg/m <sup>3</sup>
	PC-TWA	5 mg/m <sup>3</sup>

<b>Biological limit values</b>	No biological exposure limits noted for the ingredient(s).
<b>Monitoring methods</b>	Follow standard monitoring procedures.
<b>Engineering measures</b>	Good general ventilation (typically 10 air changes per hour) 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.
<b>Personal protective equipment</b>	
<b>Respiratory protection</b>	In case of insufficient ventilation, wear suitable respiratory equipment.
<b>Hand protection</b>	Wear appropriate chemical resistant gloves.

---

<b>Eye protection</b>	Wear safety glasses with side shields (or goggles).
<b>Skin and body protection</b>	Wear suitable protective clothing.
<b>Hygiene measures</b>	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking.

## SECTION 9 Physical and chemical properties

### Appearance

<b>Physical state</b>	Solid.
<b>Form</b>	Solid.
<b>Color</b>	Grey.
<b>Odor</b>	None.
<b>Odor threshold</b>	Not applicable.
<b>pH</b>	Not applicable.
<b>Melting point/freezing point</b>	3632 - 4532 °F (2000 - 2500 °C) estimated / Not applicable.
<b>Boiling point, initial boiling point, and boiling range</b>	7232 °F (4000 °C) estimated
<b>Flash point</b>	Not applicable.
<b>Flammability limit - lower (%)</b>	Not applicable.
<b>Flammability limit - upper (%)</b>	Not applicable.
<b>Flammability limit - upper (%) temperature</b>	Not applicable.
<b>Explosive limit - lower (%)</b>	Not applicable.
<b>Explosive limit - lower (%) temperature</b>	Not applicable.
<b>Explosive limit - upper (%)</b>	Not applicable.
<b>Explosive limit - upper (%) temperature</b>	Not applicable.
<b>Vapor pressure</b>	0.00001 hPa estimated
<b>Vapor density</b>	Not applicable.
<b>Relative density</b>	Not applicable.
<b>Density</b>	18.00 g/cm <sup>3</sup>
<b>Solubility(ies)</b>	
<b>Solubility (water)</b>	Insoluble.
<b>Partition coefficient (n-octanol/water)</b>	Not applicable.
<b>Auto-ignition temperature</b>	Not applicable.
<b>Decomposition temperature</b>	Not applicable.
<b>Evaporation rate</b>	Not applicable.
<b>Flammability (solid, gas)</b>	Not applicable.
<b>Other data</b>	
<b>Explosive properties</b>	Not explosive.
<b>Oxidizing properties</b>	Not oxidizing.
<b>Viscosity</b>	Not applicable.

## SECTION 10 Stability and reactivity

<b>Reactivity</b>	The product is stable and non-reactive under normal conditions of use, storage and transport.
<b>Stability</b>	Material is stable under normal conditions.
<b>Possibility of hazardous reactions</b>	No dangerous reaction known under conditions of normal use.
<b>Conditions to avoid</b>	Contact with incompatible materials.

---

<b>Incompatible materials</b>	Acids. Caustics.
<b>Hazardous decomposition products</b>	Not applicable.

## SECTION 11 Toxicological information

<b>Acute toxicity</b>	None known.
<b>Routes of exposure</b>	None known.
<b>Skin corrosion/irritation</b>	Not relevant, due to the form of the product.
<b>Serious eye damage/eye irritation</b>	Not likely, due to the form of the product.
<b>Respiratory or skin sensitization</b>	
<b>Respiratory sensitization</b>	Not a respiratory sensitizer.
<b>Skin sensitizer</b>	This product is not expected to cause skin sensitization.
<b>Germ cell mutagenicity</b>	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
<b>Carcinogenicity</b>	Not classifiable as to carcinogenicity to humans.
<b>Toxic to reproduction</b>	This product is not expected to cause reproductive or developmental effects.
<b>Specific target organ toxicity following single exposure</b>	Not classified.
<b>Specific target organ toxicity following repeated exposure</b>	Not classified.
<b>Aspiration hazard</b>	Not an aspiration hazard.
<b>Chronic effects</b>	No known chronic or acute health risks.

## SECTION 12 Ecological information

<b>Ecotoxicity</b>	The product is not classified as environmentally hazardous.
<b>Persistence and degradability</b>	
<b>Bioaccumulation</b>	No data available.
<b>Mobility in soil</b>	No data available for this product.
<b>Other hazardous 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.

## SECTION 13 Disposal considerations

<b>Residual waste</b>	Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste facility. Processing, use or contamination of this product may change the waste management options.
<b>Contaminated packaging</b>	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.
<b>Local disposal regulations</b>	Collect and reclaim or dispose in sealed containers at licensed waste disposal site.

## SECTION 14 Transport information

### CNDG

Not regulated as dangerous goods.

### IATA

Not regulated as dangerous goods.

### IMDG

Not regulated as dangerous goods.

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

## SECTION 15 Regulatory information

### Law of the People's Republic of China on Prevention and Control of Occupational Diseases

#### Classification of occupational disease hazards

Tungsten (CAS 7440-33-7)

### Regulations on the Control over Safety of Dangerous Chemicals

#### Catalog of Hazardous Chemicals

TITANIUM METAL POWDER [CONTAINING WATER NOT LESS THAN 25%, PARTICLE SIZE IS LESS THAN 53 MICRONS IF PRODUCED BY MECHANICALLY; PARTICLE SIZE IS LESS THAN 840 MICRONS IF PRODUCED BY CHEMICAL METHODS] (CAS 7440-32-6)

### Provision on the Environmental Administration of New Chemical Substances

#### China Inventory of Existing Chemical Substances

Country(s) or region	Inventory name	On inventory (yes/no)*
China	Inventory of Existing Chemical Substances in China (IECSC)	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).

#### Other regulations

This safety data sheet conforms to the following laws, regulations and standards:  
 Regulations on the Control over Safety of Dangerous Chemicals  
 Regulations on Labor Protection in Workplaces Where Toxic Products Are Used  
 Measures for the Safe Use of Chemicals in Workplaces  
 Safety Data Sheet for Chemical Products - Content and Order of Sections (GB/T 16483-2008)  
 General Rules for Preparation of Precautionary Labels for Chemicals (GB15258-2009 )  
 Packing Symbol of Dangerous Goods(GB190-2009)  
 Packing - Pictorial Marking for Handling of Goods (GB/T191-2009)

#### International regulations

##### Stockholm Convention

Not applicable.

##### Rotterdam Convention

Not applicable.

##### Montreal Protocol

Not applicable.

##### Kyoto protocol

Not applicable.

##### Basel Convention

Not applicable.

## SECTION 16 Other information

#### References

EPA: AQUIRE database  
 GB6944-2012: Classification and Code of Dangerous Goods.  
 GB12268-2012: List of Dangerous Goods.  
 NLM: Hazardous Substances Data Base  
 US. IARC Monographs on Occupational Exposures to Chemical Agents

#### Disclaimer

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.