



# SAFETY DATA SHEET

**MATERION**

## 1. Identification

**Product identifier** TiOx Targets

**Other means of identification**  
**SDS number** G47

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

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

### Manufacturer/Importer/Supplier/Distributor information

#### Manufacturer

**Company name** Materion Advanced Materials Germany GmbH

**Address** Borsigstrasse 10  
Germany

**Telephone** 49.60.23.91.82.0

**Website** www.materion.com

**E-mail** Materion.Germany@materion.com

**Contact person** Hermann Schmiing

**Emergency phone number** 49.60.23.91.82.0

**Supplier** See above.

## 2. Hazard identification

**Physical hazards** Not classified.

**Health hazards** Not classified.

**Environmental hazards** Not classified.

**Label elements**

**Hazard symbol** None.

**Signal word** None.

**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.

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

## 3. Composition/information on ingredients

### Substances

| Chemical name | Common name and synonyms | CAS number | %   |
|---------------|--------------------------|------------|-----|
| TiOx          |                          | 51745-87-0 | 100 |

## 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>  | Rinse with water. Get medical attention if irritation develops and persists.                                     |
| <b>Ingestion</b>  | Rinse mouth. Get medical attention if symptoms occur.  |
| <b>Most important symptoms/effects, acute and delayed</b>                     | Direct contact with eyes may cause temporary irritation.   |
| <b>Indication of immediate medical attention and special treatment needed</b> | Treat symptomatically.   |
| <b>General information</b>  | Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. |

## 5. Fire-fighting measures

|  |  |
|--|--|
| <b>Suitable extinguishing media</b>                                  | Water fog. Foam. Dry chemical powder. Carbon dioxide (CO <sub>2</sub> ).                   |
| <b>Unsuitable extinguishing media</b>                                | None known.  |
| <b>Specific hazards arising from the chemical</b>                    | None known.  |
| <b>Special protective equipment and precautions for firefighters</b> | Wear suitable protective equipment.  |
| <b>Fire fighting equipment/instructions</b>                          | Use water spray to cool unopened containers.   |
| <b>Specific methods</b>  | Use standard firefighting procedures and consider the hazards of other involved materials. |
| <b>General fire hazards</b>  | No unusual fire or explosion hazards noted.  |

## 6. Accidental release measures

|  |  |
|--|--|
| <b>Personal precautions, protective equipment and emergency procedures</b> | Keep unnecessary personnel away. For personal protection, see section 8 of the SDS.                |
| <b>Methods and materials for containment and cleaning up</b>               | Stop the flow of material, if this is without risk. For waste disposal, see section 13 of the SDS. |
| <b>Environmental precautions</b>   | Avoid discharge into drains, water courses or onto the ground.                                     |

## 7. Handling and storage

|   |  |
|---|--|
| <b>Precautions for safe handling</b>                                | Observe good industrial hygiene practices. |
| <b>Conditions for safe storage, including any incompatibilities</b> | Keep locked up.                            |

## 8. Exposure controls/personal protection

|   |   |
|---|---|
| <b>Occupational exposure limits</b>     | No exposure limits noted for ingredient(s).   |
| <b>Biological limit values</b>          | No biological exposure limits noted for the ingredient(s).  |
| <b>Appropriate engineering controls</b> | 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. |

### Individual protection measures, such as personal protective equipment

|                               |   |
|-------------------------------|---|
| <b>Eye/face protection</b>    | Wear safety glasses with side shields (or goggles).                       |
| <b>Skin protection</b>        |   |
| <b>Hand protection</b>        | Wear gloves to prevent metal cuts and skin abrasions during handling.     |
| <b>Other</b>                  | Wear suitable protective clothing.  |
| <b>Respiratory protection</b> | In case of insufficient ventilation, wear suitable respiratory equipment. |

|                                       |   |
|---------------------------------------|---|
| <b>Thermal hazards</b>                | Wear appropriate thermal protective clothing, when necessary.   |
| <b>General hygiene considerations</b> | 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

### Appearance

|   |                        |
|---|------------------------|
| <b>Physical state</b>                               | Solid.                 |
| <b>Form</b>   | Solid.                 |
| <b>Color</b>  | Black.                 |
| <b>Odor</b>   | None.                  |
| <b>Odor threshold</b>                               | Not applicable.        |
| <b>pH</b>   | Not applicable.        |
| <b>Melting point/freezing point</b>                 | 3317 °F (1825 °C)      |
| <b>Initial boiling point and boiling range</b>      | Not applicable.        |
| <b>Flash point</b>                                  | Not applicable.        |
| <b>Evaporation rate</b>                             | Not applicable.        |
| <b>Flammability (solid, gas)</b>                    | None known.            |
| <b>Upper/lower flammability or explosive limits</b> |                        |
| <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>                               | Not applicable.        |
| <b>Vapor pressure temp.</b>                         | Not applicable.        |
| <b>Vapor density</b>                                | Not applicable.        |
| <b>Relative density</b>                             | Not applicable.        |
| <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>Viscosity</b>                                    | Not applicable.        |
| <b>Other information</b>                            |                        |
| <b>Density</b>                                      | 3.90 g/cm <sup>3</sup> |
| <b>Explosive properties</b>                         | Not explosive.         |
| <b>Explosivity</b>                                  | Not applicable.        |
| <b>Oxidizing properties</b>                         | Not oxidizing.         |

## 10. Stability and reactivity

|   |   |
|---|---|
| <b>Reactivity</b>                         | The product is stable and non-reactive under normal conditions of use, storage and transport. |
| <b>Chemical 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>           | Ammonia. Chlorine.                             |
| <b>Hazardous decomposition products</b> | No hazardous decomposition products are known. |

## 11. Toxicological information

### Information on likely routes of exposure

|                     |  |
|---------------------|--|
| <b>Inhalation</b>   | Not likely, due to the form of the product.          |
| <b>Skin contact</b> | No adverse effects due to skin contact are expected. |
| <b>Eye contact</b>  | Not relevant, due to the form of the product.        |
| <b>Ingestion</b>    | Expected to be a low ingestion hazard.               |

**Symptoms related to the physical, chemical and toxicological characteristics** None known.

### Information on toxicological effects

|   |                               |
|---|-------------------------------|
| <b>Acute toxicity</b>                                     | None known.                   |
| <b>Skin corrosion/irritation</b>                          | Not classified.               |
| <b>Serious eye damage/eye irritation</b>                  | None known.                   |
| <b>Respiratory or skin sensitization</b>                  |                               |
| <b>Respiratory sensitization</b>                          | Not a respiratory sensitizer. |
| <b>Skin sensitization</b>                                 | Not a skin sensitizer.        |
| <b>Germ cell mutagenicity</b>                             | Not classified.               |
| <b>Carcinogenicity</b>                                    | Not classified.               |
| <b>Reproductive toxicity</b>                              | Not classified.               |
| <b>Specific target organ toxicity - single exposure</b>   | Not classified.               |
| <b>Specific target organ toxicity - repeated exposure</b> | Not classified.               |
| <b>Aspiration hazard</b>                                  | Not an aspiration hazard.     |
| <b>Chronic effects</b>                                    | None known.                   |

## 12. Ecological information

|                                      |  |
|--------------------------------------|--|
| <b>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>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. Disposal considerations

|  |  |
|--|--|
| <b>Disposal instructions</b>                 | Collect and reclaim or dispose in sealed containers at licensed waste disposal site.   |
| <b>Local disposal regulations</b>            | Dispose in accordance with all applicable regulations.   |
| <b>Hazardous waste code</b>                  | The waste code should be assigned in discussion between the user, the producer and the waste disposal company.   |
| <b>Waste from residues / unused products</b> | 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.

**14. Transport information****TDG**

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. Regulatory information****Canadian regulations****Controlled Drugs and Substances Act**

Not regulated.

**Export Control List (CEPA 1999, Schedule 3)**

Not listed.

**Greenhouse Gases**

Not listed.

**Precursor Control Regulations**

Not regulated.

**International regulations****Stockholm Convention**

Not applicable.

**Rotterdam Convention**

Not applicable.

**Kyoto protocol**

Not applicable.

**Montreal 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)                     | No                     |
| Canada               | Domestic Substances List (DSL)   | Yes                    |
| Canada               | Non-Domestic Substances List (NDSL)                                    | No                     |
| China                | Inventory of Existing Chemical Substances in China (IECSC)             | Yes                    |
| 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  | No                     |
| Philippines          | Philippine Inventory of Chemicals and Chemical Substances (PICCS)      | No                     |

| Country(s) or region        | Inventory name                                | On inventory (yes/no)* |
|-----------------------------|---|------------------------|
| Taiwan                      | Taiwan Chemical Substance Inventory (TCSI)    | Yes                    |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory | No                     |

\*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

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