



# SAFETY DATA SHEET

**MATERION**

## 1. Identification

**Product identifier** Titanium Oxide/Niobium Oxide Targets

**Other means of identification**

**SDS number** G44

**Manufacturer/Importer/Supplier/Distributor information**

**Manufacturer**

**Company name** Materion Advanced Materials

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

**Telephone** EH&S 1.216.383.4019

**Website** www.materion.com

**E-mail** ehs@materion.com

**Contact person** Theodore Knudson

**Emergency phone number** See Section 16.

## 2. Hazard(s) identification

**Physical hazards** Not classified.

**Health hazards** Not classified.

**Environmental hazards** Not classified.

**OSHA defined hazards** Not classified.

**Label elements**

**Hazard symbol** None.

**Signal word** None.

**Hazard statement** Not available.

**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.

**Hazard(s) not otherwise classified (HNOC)** None known.

**Supplemental information** For further information, please contact the Product Stewardship Department at +1.800.862.4118.

## 3. Composition/information on ingredients

**Mixtures**

| Chemical name        | Common name and synonyms             | CAS number | %  |
|----------------------|--------------------------------------|------------|----|
| Niobium oxide        | Niobium oxide (NbO)<br>Niobium oxide | 12034-57-0 | 50 |
| Titanium oxide (TiO) |                                      | 12137-20-1 | 50 |

## 4. First-aid measures

**Inhalation** Move to fresh air. Call a physician if symptoms develop or persist.

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

**Eye contact** 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>                     | None known.  |
| <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 (CO2).                                |
| <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>                                | Avoid prolonged exposure. 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>  | This mixture has no ingredients that have PEL, TLV, or other recommended exposure limit.<br>The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit.<br>At this time, the other constituents have no known exposure limits.   |
| <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. |
| <b>Individual protection measures, such as personal protective equipment</b> |   |
| <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 appropriate chemical resistant 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.   |

**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

### Appearance

**Physical state** Solid.  
**Form** Solid.  
**Color** Grey.

**Odor** None.

**Odor threshold** Not applicable.

**pH** Not applicable.

**Melting point/freezing point** > 2732 °F (> 1500 °C) / Not applicable.

**Initial boiling point and boiling range** Not applicable.

**Flash point** Not applicable.

**Evaporation rate** Not applicable.

**Flammability (solid, gas)** None known.

### 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** Not applicable.

**Vapor density** Not applicable.

**Relative density** Not applicable.

### Solubility(ies)

**Solubility (water)** Insoluble.

**Partition coefficient  
(n-octanol/water)** Not applicable.

**Auto-ignition temperature** Not applicable.

**Decomposition temperature** Not applicable.

**Viscosity** Not applicable.

### Other information

**Density** 4.20 - 6.00 g/cm<sup>3</sup>

**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.

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

**Possibility of hazardous reactions** No dangerous reaction known under conditions of normal use.

**Conditions to avoid** Contact with incompatible materials.

**Incompatible materials** Ammonia. Chlorine.

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

## 11. Toxicological information

### Information on likely routes of exposure

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

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

### Information on toxicological effects

|                                   |                               |
|-----------------------------------|-------------------------------|
| Acute toxicity                    | None known.                   |
| Skin corrosion/irritation         | Not classified.               |
| Serious eye damage/eye irritation | None known.                   |
| Respiratory or skin sensitization |                               |
| Respiratory sensitization         | Not a respiratory sensitizer. |
| Skin sensitization                | Not a skin sensitizer.        |
| Germ cell mutagenicity            | Not classified.               |
| Carcinogenicity                   | Not classified.               |

#### IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

#### OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

#### US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

|  |                           |
|--|---------------------------|
| Reproductive toxicity                              | Not classified.           |
| Specific target organ toxicity - single exposure   | Not classified.           |
| Specific target organ toxicity - repeated exposure | Not classified.           |
| Aspiration hazard                                  | Not an aspiration hazard. |
| Chronic effects                                    | None known.               |

## 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 any ingredients in the mixture.   |
| Bioaccumulative potential     | No data available.   |
| Mobility in soil              | No data available.   |
| 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

|                                       |  |
|---------------------------------------|--|
| Disposal instructions                 | Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Incinerate the material under controlled conditions in an approved incinerator.   |
| Local disposal regulations            | Dispose in accordance with all applicable regulations.   |
| 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). |

**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

### DOT

Not regulated as dangerous goods.

### IATA

Not regulated as dangerous goods.

### IMDG

Not regulated as dangerous goods.

## 15. Regulatory information

### US federal regulations

#### Toxic Substances Control Act (TSCA)

##### TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

#### CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

#### SARA 304 Emergency release notification

Not regulated.

#### OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

### Superfund Amendments and Reauthorization Act of 1986 (SARA)

#### SARA 302 Extremely hazardous substance

Not listed.

**SARA 311/312 Hazardous chemical** No (Exempt)

#### SARA 313 (TRI reporting)

Not regulated.

### Other federal regulations

#### Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

#### Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

**Safe Drinking Water Act (SDWA)** Not regulated.

## 16. Other information, including date of preparation or last revision

**Issue date** 05-03-2019

**Revision date** 09-17-2021

**Version #** 02

**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

**Other information** Revised information in Section 16.

**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.