



# 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            **Zirconium Dioxide Targets**

#### Other means of identification

SDS number                    G64

CAS number                    1314-23-4

### 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**            None known.

### 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**                Class 4 (low-hazard substance)

#### 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 substance does not meet the criteria for classification.

#### 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

100% of the substance consists of component(s) of unknown acute oral toxicity. 100% of the substance consists of component(s) of unknown acute dermal toxicity. 100% of the substance consists of component(s) of unknown acute hazards to the aquatic environment. 100% of the substance consists of component(s) of unknown long-term hazards to the aquatic environment. For further information, please contact the Product Stewardship Department at +1.216.383.4019.

## 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	O2Zr (1314-23-4)
3.1.3 General description of the composition (taking into account the brand assortment; preparation method)	Not available.

### 3.2 Components

Components	Hygienic standards in the working area					CAS-No.	EC No.
	Concentration by weight (%)	MAC, mg/m3	TSEL, mg/m3	Hazard classification			
Zirconium Dioxide Targets	100	None.	6 Aerosol.	4	1314-23-4	215-227-2	

Class 4 (low-hazard substance)

## 4. First-aid measures

### 4.1. Observed symptoms

4.1.1 In case of exposure via inhalation	No adverse effects due to inhalation are expected.
4.1.2 In contact with skin	Due to lack of data the classification is not possible.
4.1.3 In contact with eyes	Due to lack of data the classification is not possible.
4.1.4 In case of exposure via ingestion	Due to lack of data the classification is not possible.

### 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	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	Get medical advice/attention if you feel unwell.
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	Not available.
5.3 Combustion and/or thermal destruction products and hazards arising from these	No unusual fire or explosion hazards noted.
5.4 Recommended extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).
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** Keep unnecessary personnel away.

### 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** The product is immiscible with water and will sediment in water systems. Stop the flow of material, if this is without risk. Following product recovery, flush area with water. For waste disposal, see section 13 of the SDS.

**Environmental precautions** No special environmental precautions required.

## 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** Not available.

**7.1.3 Recommended safe handling and transportation advice** Avoid prolonged exposure.

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

### 7.2 Chemical storage requirements

**7.2.1 Terms and conditions for safe storage** Store in original tightly closed container. 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** No specific recommendations. 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
Zirconium Dioxide Targets (CAS 1314-23-4)	TWA	6 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

<b>8.3.1 General recommendations</b>	Use personal protective equipment as required.
<b>8.3.2 Respiratory protection</b>	In case of insufficient ventilation, wear suitable respiratory equipment.
<b>8.3.3 Protective equipment</b>	
<b>Eye/face protection</b>	Wear safety glasses with side shields (or goggles).
<b>Hand protection</b>	Wear appropriate chemical resistant gloves.
<b>Other</b>	Wear suitable protective clothing.
<b>Thermal hazards</b>	Wear appropriate thermal protective clothing, when necessary.
<b>8.3.4 Personal protection equipment in case of domestic use</b>	The product is not intended for domestic use.
<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

### 9.1 Physical appearance

<b>Physical state</b>	Solid.
<b>Form</b>	Solid.
<b>Color</b>	Grey.
<b>Odor</b>	None.
<b>Odor threshold</b>	Not applicable.

### 9.2 Parameters characterizing basic properties of the product

<b>pH</b>	Not applicable.
<b>Melting point/freezing point</b>	4892 °F (2700 °C) / Not applicable.
<b>Initial boiling point and boiling range</b>	Not applicable.
<b>Flash point</b>	Not applicable.
<b>Auto-ignition temperature</b>	Not applicable.
<b>Decomposition temperature</b>	Not applicable.
<b>Upper/lower flammability or explosive limits</b>	
<b>Flammability limit - lower (%)</b>	Not applicable.
<b>Flammability limit - upper (%)</b>	Not applicable.
<b>Explosive limit - lower (%)</b>	Not applicable.
<b>Explosive limit - upper (%)</b>	Not applicable.
<b>Vapor pressure</b>	Not applicable.
<b>Vapor density</b>	Not applicable.
<b>Density</b>	Not available.
<b>Viscosity</b>	Not applicable.
<b>Solubility(ies)</b>	
<b>Solubility (water)</b>	Insoluble.
<b>Partition coefficient (n-octanol/water)</b>	Not applicable.
<b>Other data</b>	
<b>Explosive properties</b>	Not explosive.
<b>Flammability</b>	Not applicable.
<b>Evaporation rate</b>	Not applicable.
<b>Flammability (solid, gas)</b>	Not applicable.
<b>Molecular formula</b>	O2Zr

Molecular weight	123,22 g/mol
Oxidizing properties	Not oxidizing.
Partition coefficient (oil/water)	Not applicable.
Relative density	5,89 g/ml at 25 °C

## 10. Stability and reactivity

10.1 Chemical stability	Material is stable under normal conditions.
Hazardous decomposition products	No hazardous decomposition products are known.
10.2 Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
10.3 Conditions to avoid	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Contact with incompatible materials.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Incompatible materials	None known.

## 11. Toxicological information

11.1 General exposure characteristics	None known.
11.2 Routes of exposure	Not available.
11.3 Affected/target organs, tissues and systems of humans	
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
11.4 Information on health hazards in case of direct exposure to the product and its effect	
Effect on upper respiratory tract irritation	Not available.
Respiratory or skin sensitization	Not available.
Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	Not a skin sensitizer.
Skin corrosion/irritation	Due to lack of data the classification is not possible.
Serious eye damage/eye irritation	Due to lack of data the classification is not possible.
Aspiration hazard	Due to lack of data the classification is not possible.
11.5 Information on long-term hazardous health effects	
Carcinogenicity	Not classifiable as to carcinogenicity to humans.
Reproductive toxicity	Not classified.
Mutagenicity	Not classified.
Cumulativeness	Not available.
Chronic effects	Not available.
11.6 Acute toxicity data	Not known.
Further information	This product has no known adverse effect on human health.

## 12. Environmental impact information

12.1 General description of the impact on the environment	Not classified as an environmental hazard.
12.2 Routes of exposure to environment	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.

### 12.3 The most important characteristics of the environmental impact

**12.3.1 Hygienic standards** Not available.

**12.3.2 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.

#### 12.3.3 Biomigration and transformation of the environment due to the biodegradation or other processes

**Persistence and degradability** No data is available on the degradability of this product.

**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. 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
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)	Yes
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**

<b>Issue date</b>	10-30-2019
<b>Revision date</b>	09-23-2021
<b>Version #</b>	02
<b>Previous SDS number</b>	Revised information in Section 16.
<b>Revision information</b>	Product and Company Identification: Product and Company Identification Other information: Further information Other information: Previous SDS number

**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 31340-2013 Labeling of chemicals. General requirements.  
 GOST 32419-2013 Classification of chemical products. General requirements.  
 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.

**Disclaimer**

The information in the sheet was written based on the best knowledge and experience currently available.