



PRODUCT INFORMATION SHEET

MATERION

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

| | |
|---|---------------------------|
| Trade name or designation of the mixture | Niobium Zirconium Targets |
| Registration number | - |
| Document number | G65 |
| Synonyms | None. |
| Issue date | 27-February-2020 |
| Version number | 02 |
| Revision date | 23-September-2021 |
| Supersedes date | 27-February-2020 |

1.3. Details of the supplier of the product information sheet

Supplier

| | |
|-----------------------|--|
| Company name | Materion Advanced Materials |
| Address | 6070 Parkland Boulevard Mayfield Heights, OH 44124 United States |
| Division | |
| Telephone | 1.216.383.4019 |
| e-mail | ehs@materion.com |
| Contact person | Theodore Knudson |

1.4. Emergency telephone number See Section 16.

1.2. Relevant identified uses of the substance or mixture and uses advised against

| | |
|-----------------------------|--|
| Identified uses | Manufacture of computer, electronic and optical products, electrical equipment Scientific research and development Other: Manufacture of medical and defense equipment |
| Uses advised against | Professional uses: Public domain (administration, education, entertainment, services, craftsmen) Consumer uses: Private households (= general public = consumers) |

1.3. Details of the supplier of the safety data sheet

Supplier

| | |
|-----------------------|--|
| Company name | Materion Advanced Materials |
| Address | 6070 Parkland Boulevard Mayfield Heights, OH 44124 United States |
| Division | |
| Telephone | 1.216.383.4019 |
| e-mail | ehs@materion.com |
| Contact person | Theodore Knudson |

1.4. Emergency telephone number See Section 16.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

Classification according to Regulation (EC) No 1272/2008 as amended

This mixture does not meet the criteria for classification according to Regulation (EC) 1272/2008 as amended.

Hazard summary Not classified for health hazards. However, occupational exposure to the mixture or substance(s) may cause adverse health effects.

2.2. Label elements

Label according to Regulation (EC) No. 1272/2008 as amended

Contains: Niobium

| | |
|--------------------------|---|
| Hazard pictograms | None. |
| Signal word | None. |
| Hazard statements | 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 statements

| | |
|-------------------|--|
| 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. |

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

2.3. Other hazards Not a PBT or vPvB substance or mixture.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

General information

| Chemical name | % | CAS-No. / EC No. | REACH Registration No. | Index No. | Notes |
|--|---------|------------------------|------------------------|-----------|-------|
| Niobium | 45 - 55 | 7440-03-1 231-113-5 | - | - | |
| Classification: - | | | | | |
| Other components below reportable levels | 45 - 55 | | | | |

SECTION 4: First aid measures

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

4.1. Description of 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. |
| Ingestion | Rinse mouth. Get medical attention if symptoms occur. |

4.2. Most important symptoms and effects, both acute and delayed Exposure may cause temporary irritation, redness, or discomfort.

4.3. Indication of any immediate medical attention and special treatment needed Treat symptomatically.

SECTION 5: Firefighting measures

General fire hazards No unusual fire or explosion hazards noted.

5.1. Extinguishing media

| | |
|---------------------------------------|-----------------------|
| Suitable extinguishing media | Dry powder. Dry sand. |
| Unsuitable extinguishing media | Water. |

5.2. Special hazards arising from the substance or mixture This product is not flammable.

5.3. Advice for firefighters

| | |
|--|--|
| Special protective equipment for firefighters | Wear suitable protective equipment. |
| Special firefighting procedures | Use standard firefighting procedures and consider the hazards of other involved materials. |

Specific methods Move containers from fire area if you can do so without risk. Use standard firefighting procedures and consider the hazards of other involved materials.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** Keep unnecessary personnel away. For personal protection, see section 8 of the PIS.
- For emergency responders** Keep unnecessary personnel away. Use personal protection recommended in Section 8 of the PIS.

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

6.3. Methods and material for containment and cleaning up Stop the flow of material, if this is without risk. Following product recovery, flush area with water.

6.4. Reference to other sections For personal protection, see section 8 of the PIS. For waste disposal, see section 13 of the PIS.

SECTION 7: Handling and storage

7.1. Precautions for safe handling Observe good industrial hygiene practices.

7.2. Conditions for safe storage, including any incompatibilities Store away from incompatible materials (see Section 10 of the PIS).

7.3. Specific end use(s) Not available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

Italy. Occupational Exposure Limits

| Components | Type | Value |
|--|------|----------------------|
| ZIRCONIUM POWDER, DRY (NON PYROPHORIC) (CAS 7440-67-7) | STEL | 10 mg/m ³ |
| | TWA | 5 mg/m ³ |

Biological limit values No biological exposure limits noted for the ingredient(s).

Recommended monitoring procedures Follow standard monitoring procedures.

Derived no effect levels (DNELs) Not available.

Predicted no effect concentrations (PNECs) Not available.

8.2. Exposure controls

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.

Individual protection measures, such as personal protective equipment

General information Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

Eye/face protection Wear approved safety glasses, goggles, face shield and/or welder's helmet when risk of eye injury is present, particularly during operations that generate dust, mist or fume.

Skin protection

- **Hand protection** Wear gloves to prevent metal cuts and skin abrasions during handling.

- **Other** Wear suitable protective clothing.

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

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

Hygiene measures 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.

Environmental exposure 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.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

| | |
|-----------------------|---------------|
| Physical state | Solid. |
| Form | Solid. |
| Colour | Grayish-white |

Odour None.

Odour threshold Not applicable.

pH Not applicable.

Melting point/freezing point 1857 °C (3374,6 °F) estimated / 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

Flammability limit - lower (%) Not applicable.

Flammability limit - lower (%) temperature Not applicable.

Flammability limit - upper (%) Not applicable.

Flammability limit - upper (%) temperature Not applicable.

Explosive limit - lower (%) Not applicable.

Explosive limit - lower (%) temperature Not applicable.

Explosive limit – upper (%) Not applicable.

Explosive limit - upper (%) temperature Not applicable.

Vapour pressure Not applicable.

Vapour 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.

Explosive properties Not explosive.

Oxidising properties Not oxidising.

9.2. Other information

Density Not applicable.

SECTION 10: Stability and reactivity

10.1. Reactivity The product is stable and non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability Material is stable under normal conditions.

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

10.4. Conditions to avoid Contact with incompatible materials.

10.5. Incompatible materials Strong oxidising agents.

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

SECTION 11: Toxicological information

General information Occupational exposure to the substance or mixture may cause adverse effects.

Information on likely routes of exposure

| | |
|---------------------|--|
| Inhalation | No adverse effects due to inhalation are expected. |
| 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 None known.

11.1. Information on toxicological effects

| | |
|---|---|
| Acute toxicity | None known. |
| Skin corrosion/irritation | Not likely, due to the form of the product. |
| Serious eye damage/eye irritation | Not likely, due to the form of the product. |
| Respiratory sensitisation | Not a respiratory sensitizer. |
| Skin sensitisation | Not a skin sensitizer. |
| Germ cell mutagenicity | Not classified. |
| Carcinogenicity | Not classified. |
| 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. |
| Mixture versus substance information | No information available. |
| Other information | Not available. |

SECTION 12: Ecological information

| | |
|--|--|
| 12.1. Toxicity | 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. |
| 12.2. Persistence and degradability | No data is available on the degradability of any ingredients in the mixture. |
| 12.3. Bioaccumulative potential | No data available. |
| Partition coefficient n-octanol/water (log Kow) | Not available. |
| Bioconcentration factor (BCF) | Not available. |
| 12.4. Mobility in soil | No data available. |
| 12.5. Results of PBT and vPvB assessment | Not a PBT or vPvB substance or mixture. |
| 12.6. 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. |

SECTION 13: Disposal considerations

13.1. Waste treatment methods

| | |
|-------------------------------------|--|
| Residual waste | 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. |
| EU waste code | The Waste code should be assigned in discussion between the user, the producer and the waste disposal company. |
| Disposal methods/information | Collect and reclaim or dispose in sealed containers at licensed waste disposal site. |
| Special precautions | Dispose in accordance with all applicable regulations. |

SECTION 14: Transport information

ADR

14.1. - 14.6.: Not regulated as dangerous goods.

RID

14.1. - 14.6.: Not regulated as dangerous goods.

ADN

14.1. - 14.6.: Not regulated as dangerous goods.

IATA

14.1. - 14.6.: Not regulated as dangerous goods.

IMDG

14.1. - 14.6.: Not regulated as dangerous goods.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

EU regulations

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended

Not listed.

Regulation (EU) 2019/1021 On persistent organic pollutants (recast), as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended

Not listed.

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended

Not listed.

Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended

Not listed.

Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA

Not listed.

Authorisations

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended

Not listed.

Restrictions on use

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended

Not listed.

Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended.

Not listed.

Other EU regulations

Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended

Not listed.

Other regulations

The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended.

National regulations

Follow national regulation for work with chemical agents in accordance with Directive 98/24/EC, as amended.

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

List of abbreviations

Not available.

References

Not available.

Information on evaluation method leading to the classification of mixture

The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.

Training information

Follow training instructions when handling this material.

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

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