



# PRODUCT INFORMATION SHEET

**MATERION**

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

### 1.1. Product identifier

|   |                           |
|---|---------------------------|
| <b>Trade name or designation of the mixture</b> | Iridium Ruthenium Targets |
| <b>Registration number</b>                      | -                         |
| <b>Document number</b>                          | G07                       |
| <b>Synonyms</b>                                 | None.                     |
| <b>Issue date</b>                               | 09-November-2018          |
| <b>Version number</b>                           | 03                        |
| <b>Revision date</b>                            | 24-June-2021              |
| <b>Supersedes date</b>                          | 28-January-2021           |

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

|                             |   |
|-----------------------------|---|
| <b>Identified uses</b>      | Industrial uses: Uses of substances as such or in preparations at industrial sites<br>Manufacture of computer, electronic and optical products, electrical equipment<br>General manufacturing, e.g. machinery, equipment, vehicles, other transport equipment<br>Scientific research and development<br>Other: Manufacture of medical and defense equipment |
| <b>Uses advised against</b> | Professional uses: Public domain (administration, education, entertainment, services, craftsmen)<br>Consumer uses: Private households (= general public = consumers)  |

### 1.3. Details of the supplier of the safety data sheet

#### Supplier

|                       |  |
|-----------------------|--|
| <b>Company name</b>   | Materion Advanced Materials              |
| <b>Address</b>        | 6070 Parkland Boulevard<br>United States |
| <b>Division</b>       |  |
| <b>Telephone</b>      | 1.216.383.4019                           |
| <b>e-mail</b>         | ehs@materion.com                         |
| <b>Contact person</b> | Theodore Knudson                         |

### 1.4. Emergency telephone number

See Section 16.

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

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

|                       |  |
|-----------------------|--|
| <b>Hazard summary</b> | 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 or powder) and/or chemical compounds, a potential health hazard could exist and risk management measures must be taken to minimize risk. |
|-----------------------|--|

### 2.2. Label elements

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

|                          |   |
|--------------------------|---|
| <b>Contains:</b>         | Iridium, Ruthenium  |
| <b>Hazard pictograms</b> | None.   |
| <b>Signal word</b>       | None.   |
| <b>Hazard statements</b> | 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

|                   |   |
|-------------------|---|
| <b>Prevention</b> | Observe good industrial hygiene practices.  |
| <b>Response</b>   | Wash hands after handling.  |
| <b>Storage</b>    | Store away from incompatible materials.   |
| <b>Disposal</b>   | Dispose of waste and residues in accordance with local authority requirements.<br>Refer to manufacturer/supplier for information on recovery/recycling. |

P502

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

**2.3. Other hazards** None known.

## SECTION 3: Composition/information on ingredients

### 3.2. Mixtures

#### General information

| Chemical name            | %       | CAS-No. / EC No.       | REACH Registration No. | Index No. | Notes |
|--------------------------|---------|------------------------|------------------------|-----------|-------|
| Iridium                  | 30 - 70 | 7439-88-5<br>231-095-9 | -                      | -         |       |
| <b>Classification:</b> - |         |                        |                        |           |       |
| Ruthenium                | 30 - 70 | 7440-18-8<br>231-127-1 | -                      | -         |       |
| <b>Classification:</b> - |         |                        |                        |           |       |

## 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 with soap and water. Get medical attention if irritation develops and persists.  
**Eye contact** Rinse with water. Get medical attention if irritation develops or persists.  
**Ingestion** Rinse mouth. If ingestion of a large amount does occur, call a poison control centre immediately.

**4.2. Most important symptoms and effects, both acute and delayed** None known.

**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** Water fog. Foam. Dry chemical powder. Carbon dioxide (CO<sub>2</sub>).

**Unsuitable extinguishing media** Do not use water as an extinguisher.

**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** Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

**Special firefighting procedures** Use water spray to cool unopened containers.

**Specific methods** 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

|  |  |
|--|--|
| <b>7.1. Precautions for safe handling</b>                                | Observe good industrial hygiene practices. |
| <b>7.2. Conditions for safe storage, including any incompatibilities</b> | Not available.                             |
| <b>7.3. Specific end use(s)</b>  | Not applicable.                            |

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

|   |  |
|---|--|
| <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>Recommended monitoring procedures</b>          | Follow standard monitoring procedures.                     |
| <b>Derived no effect levels (DNELs)</b>           | Not available.   |
| <b>Predicted no effect concentrations (PNECs)</b> | Not available.   |

#### 8.2. Exposure controls

|   |   |
|---|---|
| <b>Appropriate engineering controls</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. |
|---|---|

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

|  |   |
|--|---|
| <b>General information</b>             | Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the 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>          | No personal respiratory protective equipment normally required. In case of insufficient ventilation, wear suitable respiratory equipment.   |
| <b>Thermal hazards</b>                 | Wear appropriate thermal protective clothing, when necessary.   |
| <b>Hygiene measures</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. |
| <b>Environmental exposure controls</b> | Environmental manager must be informed of all major releases.   |

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

##### Appearance

|  |   |
|--|---|
| <b>Physical state</b>                          | Solid.  |
| <b>Form</b>                                    | Solid.  |
| <b>Colour</b>                                  | Grey metallic.                                  |
| <b>Odour</b>                                   | None.   |
| <b>Odour threshold</b>                         | Not applicable.                                 |
| <b>pH</b>                                      | Not applicable.                                 |
| <b>Melting point/freezing point</b>            | 2446 °C (4434,8 °F) estimated / Not applicable. |
| <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.                                     |

## 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.

**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** 22,42 g/cm<sup>3</sup> estimated

## 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** Not available.

### 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** Due to lack of data the classification is not possible.

**Skin corrosion/irritation** Not relevant, 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** This product is not expected to cause skin sensitisation.

**Germ cell mutagenicity** Not classified.

**Carcinogenicity** This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

**Reproductive toxicity** This product is not expected to cause reproductive or developmental effects.

**Specific target organ toxicity - single exposure** Not classified.

|   |                           |
|---|---------------------------|
| <b>Specific target organ toxicity - repeated exposure</b> | Not classified.           |
| <b>Aspiration hazard</b>                                  | Not an aspiration hazard. |
| <b>Mixture versus substance information</b>               | Not applicable.           |
| <b>Other information</b>                                  | Not applicable.           |

## SECTION 12: Ecological information

|  |  |
|--|--|
| <b>12.1. Toxicity</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>12.2. Persistence and degradability</b>             | Not available.   |
| <b>12.3. Bioaccumulative potential</b>                 | Not available.   |
| <b>Partition coefficient n-octanol/water (log Kow)</b> | Not available.   |
| <b>Bioconcentration factor (BCF)</b>                   | Not available.   |
| <b>12.4. Mobility in soil</b>                          | Not available.   |
| <b>12.5. Results of PBT and vPvB assessment</b>        | Not a PBT or vPvB substance or mixture.  |
| <b>12.6. Other adverse effects</b>                     | Not available.   |

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

|                                     |  |
|-------------------------------------|--|
| <b>Residual waste</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). |
| <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>EU waste code</b>                | The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.   |
| <b>Disposal methods/information</b> | Collect and reclaim or dispose in sealed containers at licensed waste disposal site.   |

## 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. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006, as amended.

**National regulations**

Follow national regulation for work with chemical agents.

**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**

Not available.

**Full text of any H-statements not written out in full under Sections 2 to 15**

None.

**Revision information**

Product and Company Identification: Product and Company Identification  
Physical & Chemical Properties: Multiple Properties

**Training information**

Not available.

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