



# 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** Cobalt Tungsten Targets  
**Registration number** -  
**Document number** G70  
**Synonyms** None.  
**Issue date** 22-January-2020  
**Version number** 02  
**Revision date** 24-September-2021  
**Supersedes date** 22-January-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

##### Health hazards

|                           |            |   |
|---------------------------|------------|---|
| Acute toxicity, oral      | Category 4 | H302 - Harmful if swallowed.  |
| Respiratory sensitisation | Category 1 | H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled. |

|  |   |   |
|--|---|---|
| Skin sensitisation                               | Category 1                              | H317 - May cause an allergic skin reaction. |
| Carcinogenicity                                  | Category 1B                             | H350 - May cause cancer.                    |
| Specific target organ toxicity - single exposure | Category 3 respiratory tract irritation | H335 - May cause respiratory irritation.    |

**Hazard summary** Harmful if swallowed. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction. May cause cancer. May cause irritation to the respiratory system.

## 2.2. Label elements

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

**Contains:** Cobalt, Tungsten

#### Hazard pictograms



**Signal word** Danger

#### Hazard statements

|      |  |
|------|--|
| H302 | Harmful if swallowed.  |
| H317 | May cause an allergic skin reaction.                                       |
| H334 | May cause allergy or asthma symptoms or breathing difficulties if inhaled. |
| H335 | May cause respiratory irritation.  |
| H350 | May cause cancer.  |

### Precautionary statements

#### Prevention

|      |  |
|------|--|
| P201 | Obtain special instructions before use.                                    |
| P202 | Do not handle until all safety precautions have been read and understood.  |
| P261 | Avoid breathing dust/fume/gas/mist/vapours/spray.                          |
| P264 | Wash thoroughly after handling.  |
| P270 | Do not eat, drink or smoke when using this product.                        |
| P271 | Use only outdoors or in a well-ventilated area.                            |
| P272 | Contaminated work clothing should not be allowed out of the workplace.     |
| P280 | Wear protective gloves/protective clothing/eye protection/face protection. |
| P284 | Wear respiratory protection.   |

#### Response

|             |  |
|-------------|--|
| P301 + P312 | IF SWALLOWED: Call a POISON CENTRE/doctor if you feel unwell.              |
| P330        | Rinse mouth.   |
| P302 + P352 | IF ON SKIN: Wash with plenty of water.                                     |
| P304 + P340 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. |
| P308 + P313 | IF exposed or concerned: Get medical advice/attention.                     |
| P333 + P313 | If skin irritation or rash occurs: Get medical advice/attention.           |
| P342 + P311 | If experiencing respiratory symptoms: Call a POISON CENTRE/doctor.         |
| P362 + P364 | Take off contaminated clothing and wash it before reuse.                   |

#### Storage

|             |  |
|-------------|--|
| P403 + P233 | Store in a well-ventilated place. Keep container tightly closed. |
| P405        | Store locked up.   |

#### Disposal

|      |   |
|------|---|
| P501 | Dispose of contents/container in accordance with local/regional/national/international regulations. |
|------|---|

### 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 |
|--|---------|------------------------|------------------------|--------------|-------|
| Cobalt   | 85 - 95 | 7440-48-4<br>231-158-0 | 01-2119517392-44-0000  | 027-001-00-9 |       |
| <b>Classification:</b> Acute Tox. 4;H302, Skin Sens. 1;H317, Resp. Sens. 1;H334, Carc. 1B;H350, Repr. 2;H361 |         |                        |                        |              |       |

| Chemical name | %      | CAS-No. / EC No.       | REACH Registration No. | Index No. | Notes |
|---------------|--------|------------------------|------------------------|-----------|-------|
| Tungsten      | 5 - 15 | 7440-33-7<br>231-143-9 | -                      | -         |       |

**Classification:** -

## SECTION 4: First aid measures

|  |  |
|--|--|
| <b>General information</b>   | IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse.   |
| <b>4.1. Description of first aid measures</b>  |  |
| <b>Inhalation</b>  | Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If experiencing respiratory symptoms: Call a poison center or doctor/physician. |
| <b>Skin contact</b>  | Remove contaminated clothing immediately and wash skin with soap and water. In case of eczema or other skin disorders: Seek medical attention and take along these instructions.   |
| <b>Eye contact</b>   | Rinse with water. Get medical attention if irritation develops and persists.   |
| <b>Ingestion</b>   | Rinse mouth. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical advice/attention if you feel unwell.  |
| <b>4.2. Most important symptoms and effects, both acute and delayed</b>                | May cause respiratory irritation. May cause an allergic skin reaction.   |
| <b>4.3. Indication of any immediate medical attention and special treatment needed</b> | Provide general supportive measures and treat symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed.   |

## SECTION 5: Firefighting measures

|   |  |
|---|--|
| <b>General fire hazards</b>                                       | No unusual fire or explosion hazards noted.  |
| <b>5.1. Extinguishing media</b>                                   |  |
| <b>Suitable extinguishing media</b>                               | Powder. Dry sand.  |
| <b>Unsuitable extinguishing media</b>                             | Water.   |
| <b>5.2. Special hazards arising from the substance or mixture</b> | This product is not flammable.   |
| <b>5.3. Advice for firefighters</b>                               |  |
| <b>Special protective equipment for firefighters</b>              | Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. |
| <b>Special firefighting procedures</b>                            | Use water spray to cool unopened containers.   |
| <b>Specific methods</b>   | Use standard firefighting procedures and consider the hazards of other involved materials.   |

## SECTION 6: Accidental release measures

|   |  |
|---|--|
| <b>6.1. Personal precautions, protective equipment and emergency procedures</b> |  |
| <b>For non-emergency personnel</b>  | Keep unnecessary personnel away. For personal protection, see section 8 of the PIS.  |
| <b>For emergency responders</b>   | Keep unnecessary personnel away. Use personal protection recommended in Section 8 of the PIS.  |
| <b>6.2. Environmental precautions</b>   | Prevent further leakage or spillage if safe to do so.  |
| <b>6.3. Methods and material for containment and cleaning up</b>                | Stop the flow of material, if this is without risk.<br><br>Large Spills: Wet down with water and dike for later disposal.<br><br>Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal. For waste disposal, see section 13 of the PIS. |

**6.4. Reference to other sections** Not available.

## 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

**Slovakia. OELs. Regulation No. 300/2007 concerning protection of health in work with chemical agents**

| Material                 | Type | Value                  |
|--------------------------|------|------------------------|
| Cobalt Tungsten Targets  | TWA  | 6 mg/m <sup>3</sup>    |
| Components               | Type | Value                  |
| Cobalt (CAS 7440-48-4)   | TWA  | 0,05 mg/m <sup>3</sup> |
| Tungsten (CAS 7440-33-7) | TWA  | 5 mg/m <sup>3</sup>    |

#### Biological limit values

**Slovakia. BLVs (Biological Limit Value). Regulation no. 355/2006 concerning protection of workers exposed to chemical agents, Annex 2**

| Components             | Value      | Determinant | Specimen            | Sampling Time |
|------------------------|------------|-------------|---------------------|---------------|
| Cobalt (CAS 7440-48-4) | 20,03 µg/g | Cobalt      | Creatinine in urine | *             |
|                        | 30 µg/l    | Cobalt      | Urine               | *             |

\* - For sampling details, please see the source document.

**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 (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

**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** 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.   |
| <b>Odour</b>  | None.   |
| <b>Odour threshold</b>                              | Not applicable.                               |
| <b>pH</b>   | Not applicable.                               |
| <b>Melting point/freezing point</b>                 | 1495 °C (2723 °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.                                   |
| <b>Upper/lower flammability or explosive limits</b> |   |
| <b>Flammability limit - lower (%)</b>               | Not applicable.                               |
| <b>Flammability limit - lower (%) temperature</b>   | Not applicable.                               |
| <b>Flammability limit - upper (%)</b>               | Not applicable.                               |
| <b>Flammability limit - upper (%) temperature</b>   | Not applicable.                               |
| <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>Vapour pressure</b>                              | Not applicable.                               |
| <b>Vapour 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 available.                                |
| <b>Auto-ignition temperature</b>                    | Not applicable.                               |
| <b>Decomposition temperature</b>                    | Not applicable.                               |
| <b>Viscosity</b>                                    | Not applicable.                               |
| <b>Explosive properties</b>                         | Not explosive.                                |
| <b>Oxidising properties</b>                         | Not oxidising.                                |
| <b>9.2. Other information</b>                       |   |
| <b>Density</b>                                      | 18,70 g/cm <sup>3</sup> estimated             |
| <b>Partition coefficient (oil/water)</b>            | Not applicable.                               |

## SECTION 10: Stability and reactivity

|   |   |
|---|---|
| <b>10.1. Reactivity</b>                         | The product is stable and non-reactive under normal conditions of use, storage and transport. |
| <b>10.2. Chemical stability</b>                 | Material is stable under normal conditions.   |
| <b>10.3. Possibility of hazardous reactions</b> | No dangerous reaction known under conditions of normal use.                                   |
| <b>10.4. Conditions to avoid</b>                | Contact with incompatible materials.  |
| <b>10.5. Incompatible materials</b>             | Strong oxidising agents.  |
| <b>10.6. Hazardous decomposition products</b>   | 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

|                     |   |
|---------------------|---|
| <b>Inhalation</b>   | May cause sensitisation by inhalation.      |
| <b>Skin contact</b> | May cause sensitisation by skin contact.    |
| <b>Eye contact</b>  | Not likely, due to the form of the product. |
| <b>Ingestion</b>    | Expected to be a low ingestion hazard.      |

**Symptoms** May cause respiratory irritation. May cause an allergic skin reaction.

### 11.1. Information on toxicological effects

|  |  |
|--|--|
| <b>Acute toxicity</b>                    | Not known.   |
| <b>Skin corrosion/irritation</b>         | May be irritating to the skin.   |
| <b>Serious eye damage/eye irritation</b> | Not likely, due to the form of the product.                                |
| <b>Respiratory sensitisation</b>         | May cause allergy or asthma symptoms or breathing difficulties if inhaled. |
| <b>Skin sensitisation</b>                | May cause sensitisation by skin contact.                                   |
| <b>Germ cell mutagenicity</b>            | Not classified.  |
| <b>Carcinogenicity</b>                   | Not classifiable as to carcinogenicity to humans.                          |

#### IARC Monographs. Overall Evaluation of Carcinogenicity

Cobalt (CAS 7440-48-4) 2B Possibly carcinogenic to humans.

|   |                           |
|---|---------------------------|
| <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>Mixture versus substance information</b>               | No information available. |
| <b>Other information</b>                                  | Not available.            |

## SECTION 12: Ecological information

|  |   |
|--|---|
| <b>12.1. Toxicity</b>                                  | May cause long lasting harmful effects to aquatic life.   |
| <b>12.2. Persistence and degradability</b>             | No data is available on the degradability of this substance.  |
| <b>12.3. Bioaccumulative potential</b>                 | No data 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>                          | No data 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>                     | 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

|                               |  |
|-------------------------------|--|
| <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.   |

**Disposal methods/information**

Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

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

|   |   |
|---|---|
| <b>National regulations</b>             | According to Directive 92/85/EEC as amended, pregnant women should not work with the product, if there is the least risk of exposure.   |
| <b>15.2. Chemical safety assessment</b> | Young people under 18 years old are not allowed to work with this product according to EU Directive 94/33/EC on the protection of young people at work, as amended. Follow national regulation on the protection of workers from the risks of exposure to carcinogens and mutagens at work, in accordance with Directive 2004/37/EC, as amended.<br>No Chemical Safety Assessment has been carried out. |

## SECTION 16: Other information

|  |   |
|--|---|
| <b>List of abbreviations</b>   | Not available.  |
| <b>References</b>  | Not available.  |
| <b>Information on evaluation method leading to the classification of mixture</b> | Not applicable.   |
| <b>Training information</b>  | Follow training instructions when handling this material.   |
| <b>Further information</b>   | Transportation Emergency<br>Call Chemtrec at:<br>International: 703.741.5970<br>Spain: 900.868.538<br>Switzerland: 0800.564.402<br>Chemtrec's toll free, mobile-enabled number in Germany – 0800 1817059  |
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