



# SAFETY DATA SHEET

**MATERION**

## 1. Identification

|                                      |   |
|--------------------------------------|---|
| <b>Product identifier</b>            | <b>Silver Targets</b>   |
| <b>Other means of identification</b> |   |
| SDS number                           | G09   |
| CAS number                           | 7440-22-4   |
| <b>Recommended use</b>               | 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>Recommended restrictions</b>      | Professional uses: Public domain (administration, education, entertainment, services, craftsmen)<br>Consumer uses: Private households (= general public = consumers)  |

## Manufacturer/Importer/Supplier/Distributor information

### Manufacturer

|                               |  |                |
|-------------------------------|--|----------------|
| <b>Company name</b>           | Materion Advanced Materials  |                |
| <b>Address</b>                | 6070 Parkland Boulevard<br>Mayfield Heights, OH 44124<br>United States |                |
| <b>Telephone</b>              | EH&S   | 1.216.383.4019 |
| <b>Website</b>                | www.materion.com   |                |
| <b>E-mail</b>                 | ehs@materion.com   |                |
| <b>Contact person</b>         | Theodore Knudson   |                |
| <b>Emergency phone number</b> | See Section 16.  |                |
| <b>Supplier</b>               | See above.   |                |

## 2. Hazard identification

|                                 |   |
|---------------------------------|---|
| <b>Physical hazards</b>         | Not classified.   |
| <b>Health hazards</b>           | Not classified.   |
| <b>Environmental hazards</b>    | Not classified.   |
| <b>Label elements</b>           |   |
| <b>Hazard symbol</b>            | None.   |
| <b>Signal word</b>              | None.   |
| <b>Hazard statement</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. |
| <b>Precautionary statement</b>  |   |
| <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. Dispose of contents/container (in accordance with related regulations).  |
| <b>Other hazards</b>            | None known.   |
| <b>Supplemental information</b> | For further information, please contact the Product Stewardship Department at +1.216.383.4019.  |

## 3. Composition/information on ingredients

### Substances

| Chemical name  | Common name and synonyms | CAS number | %   |
|----------------|--------------------------|------------|-----|
| Silver Targets |                          | 7440-22-4  | 100 |

#### 4. First-aid measures

|   |   |
|---|---|
| <b>Inhalation</b>   | Move to fresh air. Call a physician if symptoms develop or persist.   |
| <b>Skin contact</b>   | Wash off with soap and water. Get medical attention if irritation develops and persists.  |
| <b>Eye contact</b>  | 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>                     | Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Direct contact with eyes may cause temporary irritation. May cause respiratory irritation. Skin irritation. May cause redness and pain. |
| <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 (CO <sub>2</sub> ).                      |
| <b>Unsuitable extinguishing media</b>                                | Do not use water as an extinguisher.  |
| <b>Specific hazards arising from the chemical</b>                    | This product is not flammable.  |
| <b>Special protective equipment and precautions for firefighters</b> | Self-contained breathing apparatus and full protective clothing must be worn in case of fire. |
| <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.                               |
| <b>Methods and materials for containment and cleaning up</b>               | Stop the flow of material, if this is without risk.            |
| <b>Environmental precautions</b>   | Avoid discharge into drains, water courses or onto the ground. |

#### 7. Handling and storage

|   |  |
|---|--|
| <b>Precautions for safe handling</b>                                | Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Provide adequate ventilation. Avoid contact with eyes, skin, and clothing. Should be handled in closed systems, if possible. Wear appropriate personal protective equipment. Handle and open container with care. Observe good industrial hygiene practices. Use care in handling/storage. |
| <b>Conditions for safe storage, including any incompatibilities</b> | Not available.   |

#### 8. Exposure controls/personal protection

##### Occupational exposure limits

##### US. ACGIH Threshold Limit Values

| Material                       | Type | Value                 | Form           |
|--------------------------------|------|-----------------------|----------------|
| Silver Targets (CAS 7440-22-4) | TWA  | 0.1 mg/m <sup>3</sup> | Dust and fume. |

**Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)**

| Material                       | Type | Value     |
|--------------------------------|------|-----------|
| Silver Targets (CAS 7440-22-4) | TWA  | 0.1 mg/m3 |

**Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)**

| Material                       | Type | Value      |
|--------------------------------|------|------------|
| Silver Targets (CAS 7440-22-4) | STEL | 0.03 mg/m3 |
|                                | TWA  | 0.01 mg/m3 |

**Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)**

| Material                       | Type | Value     | Form           |
|--------------------------------|------|-----------|----------------|
| Silver Targets (CAS 7440-22-4) | TWA  | 0.1 mg/m3 | Dust and fume. |

**Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)**

| Material                       | Type | Value     | Form           |
|--------------------------------|------|-----------|----------------|
| Silver Targets (CAS 7440-22-4) | TWA  | 0.1 mg/m3 | Dust and fume. |

**Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety)**

| Material                       | Type | Value     |
|--------------------------------|------|-----------|
| Silver Targets (CAS 7440-22-4) | TWA  | 0.1 mg/m3 |

**Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21)**

| Material                       | Type      | Value     |
|--------------------------------|-----------|-----------|
| Silver Targets (CAS 7440-22-4) | 15 minute | 0.3 mg/m3 |
|                                | 8 hour    | 0.1 mg/m3 |

|  |   |
|--|---|
| <b>Biological limit values</b>   | No biological exposure limits noted for the ingredient(s).  |
| <b>Exposure guidelines</b>   | No exposure standards allocated.  |
| <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. General ventilation normally adequate. Eye wash facilities and emergency shower must be available when handling this product. |
| <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 suitable protective 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.   |
| <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.   |

**9. Physical and chemical properties****Appearance**

|                       |                 |
|-----------------------|-----------------|
| <b>Physical state</b> | Solid.          |
| <b>Form</b>           | Various shapes. |

|   |  |
|---|--|
| <b>Color</b>  | Silver.                                    |
| <b>Odor</b>   | None.                                      |
| <b>Odor threshold</b>                               | Not applicable.                            |
| <b>pH</b>   | Not applicable.                            |
| <b>Melting point/freezing point</b>                 | 1760.9 °F (960.5 °C) / 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 - upper (%)</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>Vapor pressure</b>                               | Not applicable.                            |
| <b>Vapor 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 applicable.                            |
| <b>Auto-ignition temperature</b>                    | Not applicable.                            |
| <b>Decomposition temperature</b>                    | Not applicable.                            |
| <b>Viscosity</b>                                    | Not applicable.                            |
| <b>Other information</b>                            |  |
| <b>Density</b>                                      | 10.49 g/cm <sup>3</sup> estimated at 15 °C |
| <b>Explosive limit</b>                              | Not applicable.                            |
| <b>Explosive properties</b>                         | Not applicable.                            |
| <b>Explosivity</b>                                  | Not applicable.                            |
| <b>Molecular formula</b>                            | Ag   |
| <b>Molecular weight</b>                             | 107.86 g/mol                               |
| <b>Oxidizing properties</b>                         | Not oxidizing.                             |

## 10. Stability and reactivity

|   |   |
|---|---|
| <b>Reactivity</b>                         | The product is stable and non-reactive under normal conditions of use, storage and transport. |
| <b>Chemical stability</b>                 | Material is stable under normal conditions.   |
| <b>Possibility of hazardous reactions</b> | No dangerous reaction known under conditions of normal use.                                   |
| <b>Conditions to avoid</b>                | Contact with incompatible materials.  |
| <b>Incompatible materials</b>             | Strong acids. May react with strong bases or oxidizing agents.                                |

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

## 11. Toxicological information

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

### Information on toxicological effects

**Acute toxicity** None known.  
**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 or skin sensitization**  
**Respiratory sensitization** Not a respiratory sensitizer.  
**Skin sensitization** Not a skin sensitizer.  
**Germ cell mutagenicity** Not classified.  
**Carcinogenicity** This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.  
**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** Not expected to be hazardous by WHMIS criteria.  
**Further information** None known.

## 12. Ecological information

**Ecotoxicity** Not expected to be harmful to aquatic organisms. 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 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. Disposal considerations

**Disposal instructions** Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations.  
**Local disposal regulations** Dispose in accordance with all applicable regulations.  
**Hazardous waste code** The waste code should be assigned in discussion between the user, the producer and the waste disposal company.  
**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). Not applicable.

**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****TDG**

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. Regulatory information****Canadian regulations****Controlled Drugs and Substances Act**

Not regulated.

**Export Control List (CEPA 1999, Schedule 3)**

Not listed.

**Greenhouse Gases**

Not listed.

**Ontario. Toxic Substances. Toxic Reduction Act, 2009. Regulation 455/09 (July 1, 2011)**

Silver Targets (CAS 7440-22-4)

**Precursor Control Regulations**

Not regulated.

**International regulations****Stockholm Convention**

Not applicable.

**Rotterdam Convention**

Not applicable.

**Kyoto protocol**

Not applicable.

**Montreal Protocol**

Not applicable.

**Basel Convention**

Not applicable.

**International Inventories**

| <b>Country(s) or region</b> | <b>Inventory name</b>  | <b>On inventory (yes/no)*</b> |
|-----------------------------|--|-------------------------------|
| 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)               | No                            |
| Korea                       | Existing Chemicals List (ECL)  | Yes                           |
| New Zealand                 | New Zealand Inventory  | Yes                           |

| Country(s) or region        | Inventory name  | On inventory (yes/no)* |
|-----------------------------|---|------------------------|
| 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

|                            |   |
|----------------------------|---|
| <b>Issue date</b>          | 11-05-2019  |
| <b>Revision date</b>       | 06-25-2021  |
| <b>Version #</b>           | 03  |
| <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 |

**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.

Information for this safety data sheet was obtained from sources considered technically accurate and reliable. While every effort has been made to ensure full disclosure of product hazards, in some cases data is not available and is so stated. Since conditions of actual product use are beyond control of the supplier, it is assumed that users of this material have been fully trained according to the mandatory requirements of WHMIS. No warranty, expressed or implied, is made and supplier will not be liable for any losses, injuries or consequential damages which may result from the use of or reliance on any information contained in this form. If user requires independent information on ingredients in this or any other material, we recommend contact with the Canadian Centre for Occupational Health and Safety (CCOHS) in Hamilton, Ontario (1-800-263-8466) or CSST in Montreal, Quebec (514-873-3990).