



SAFETY DATA SHEET

MATERION

1. Identification

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| Product identifier | ITO Targets |
| Other means of identification SDS number | G42 |
| Recommended use | Manufacture of computer, electronic and optical products, electrical equipment Scientific research and development Other: Manufacture of medical and defense equipment |
| Recommended restrictions | Professional uses: Public domain (administration, education, entertainment, services, craftsmen) Consumer uses: Private households (= general public = consumers) |

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

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

2. Hazard identification

| | |
|---------------------------------|---|
| Physical hazards | Not classified. |
| Health hazards | Not classified. |
| Environmental hazards | Not classified. |
| Label elements | |
| Hazard symbol | None. |
| Signal word | None. |
| Hazard statement | 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 statement | |
| Prevention | Observe good industrial hygiene practices. |
| Response | Wash hands after handling. |
| Storage | Store away from incompatible materials. |
| Disposal | Dispose of contents/container in accordance with local/regional/national/international regulations. |
| Other hazards | None known. |
| Supplemental information | For further information, please contact the Product Stewardship Department at +1.216.383.4019. |

3. Composition/information on ingredients

Mixtures

| Chemical name | Common name and synonyms | CAS number | % |
|------------------|---|------------|---------|
| Indium Compounds | Indium oxide (In ₂ O ₃) INDIUM OXIDE Diindium trioxide INDIUM (III) OXIDE | 1312-43-2 | 80 - 99 |
| Tin Compounds | Tin oxide (SnO ₂) Tin dioxide Stannic oxide | 18282-10-5 | 1 - 20 |

4. First-aid measures

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|---|---|
| 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. |
| Most important symptoms/effects, acute and delayed | None known. |
| Indication of immediate medical attention and special treatment needed | Treat symptomatically. |
| General information | 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. |

5. Fire-fighting measures

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| Suitable extinguishing media | Extinguish with alcohol-resistant foam, carbon dioxide or dry powder. |
| Unsuitable extinguishing media | None known. |
| Specific hazards arising from the chemical | This product is not flammable. |
| Special protective equipment and precautions for firefighters | Use protective equipment appropriate for surrounding materials. |
| Fire fighting equipment/instructions | Use standard firefighting procedures and consider the hazards of other involved materials. Use water spray to cool unopened containers. |
| Specific methods | Use standard firefighting procedures and consider the hazards of other involved materials. |
| General fire hazards | No unusual fire or explosion hazards noted. None known. |

6. Accidental release measures

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|--|---|
| Personal precautions, protective equipment and emergency procedures | Keep unnecessary personnel away. Ensure suitable personal protection (including respiratory protection) during removal of spillages in a confined area. |
| Methods and materials for containment and cleaning up | Stop the flow of material, if this is without risk. For waste disposal, see section 13 of the SDS. |
| Environmental precautions | Collect spillage. |

7. Handling and storage

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| Precautions for safe handling | Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. |
| Conditions for safe storage, including any incompatibilities | Keep locked up. Store away from incompatible materials (see Section 10 of the SDS). |

8. Exposure controls/personal protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

| Components | Type | Value |
|----------------------------------|------|-----------|
| Indium Compounds (CAS 1312-43-2) | TWA | 0.1 mg/m3 |
| Tin Compounds (CAS 18282-10-5) | TWA | 2 mg/m3 |

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

| Components | Type | Value |
|----------------------------------|------|-----------|
| Indium Compounds (CAS 1312-43-2) | TWA | 0.1 mg/m3 |
| Tin Compounds (CAS 18282-10-5) | TWA | 2 mg/m3 |

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

| Components | Type | Value |
|----------------------------------|------|-----------|
| Indium Compounds (CAS 1312-43-2) | TWA | 0.1 mg/m3 |
| Tin Compounds (CAS 18282-10-5) | TWA | 2 mg/m3 |

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

| Components | Type | Value |
|----------------------------------|------|-----------|
| Indium Compounds (CAS 1312-43-2) | TWA | 0.1 mg/m3 |
| Tin Compounds (CAS 18282-10-5) | TWA | 2 mg/m3 |

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

| Components | Type | Value |
|----------------------------------|------|-----------|
| Indium Compounds (CAS 1312-43-2) | TWA | 0.1 mg/m3 |

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

| Components | Type | Value |
|----------------------------------|------|-----------|
| Indium Compounds (CAS 1312-43-2) | TWA | 0.1 mg/m3 |
| Tin Compounds (CAS 18282-10-5) | TWA | 2 mg/m3 |

Biological limit values

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

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

Eye/face protection

Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection

Wear protective gloves.

Other

Wear suitable protective clothing.

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment.

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|---------------------------------------|---|
| Thermal hazards | Wear appropriate thermal protective clothing, when necessary. |
| General hygiene considerations | 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

Appearance

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|---|---|
| Physical state | Solid. |
| Form | Solid. |
| Color | Black. |
| Odor | None. |
| Odor threshold | Not applicable. |
| pH | Not applicable. |
| Melting point/freezing point | 2966 °F (1630 °C) 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 | |
| Explosive limit - lower (%) | Not applicable. |
| Explosive limit - lower (%) temperature | Not applicable. |
| Explosive limit - upper (%) | Not applicable. |
| Explosive limit - upper (%) temperature | Not applicable. |
| Vapor pressure | Not applicable. |
| Vapor 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. |
| Other information | |
| Density | 6.95 g/cm ³ estimated |
| Explosive properties | Not explosive. |
| Oxidizing properties | Not oxidizing. |

10. Stability and reactivity

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|---|---|
| Reactivity | The product is stable and non-reactive under normal conditions of use, storage and transport. |
| Chemical stability | Material is stable under normal conditions. |
| Possibility of hazardous reactions | No dangerous reaction known under conditions of normal use. |
| Conditions to avoid | Contact with incompatible materials. |
| Incompatible materials | Chlorine. None known. |

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 likely, 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 likely, due to the form of the product.
Serious eye damage/eye irritation None known.
Respiratory or skin sensitization
Respiratory sensitization Not a respiratory sensitizer.
Skin sensitization 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.
Chronic effects None known.

12. Ecological information

Ecotoxicity Not relevant, due to the form of the product.
Persistence and degradability No data is available on the degradability of any ingredients in the mixture.
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 Collect and reclaim or dispose in sealed containers at licensed waste disposal site.
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).
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 This product has been classified in accordance with the hazard criteria of the HPR and the SDS contains all the information required by the HPR.

Controlled Drugs and Substances Act

Not regulated.

Export Control List (CEPA 1999, Schedule 3)

Not listed.

Greenhouse Gases

Not listed.

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

| 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) | No |

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

| | |
|---------------------|---|
| Issue date | 04-25-2019 |
| Revision date | 08-25-2021 |
| Version # | 03 |
| Further information | Transportation Emergency Call Chemtrec at: International: 703.741.5970 Spain: 900.868.538 Switzerland: 0800.564.402 |

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