



# SAFETY DATA SHEET

**MATERION**

## 1. Identification

|  |  |              |
|--|--|--------------|
| Product identifier                                     | Thulium Sulfide (tm2s3)  |              |
| Other means of identification                          |  |              |
| SDS number   | 2CF  |              |
| Materion Code  | 2CF  |              |
| CAS number   | 12166-30-2   |              |
| Manufacturer/Importer/Supplier/Distributor information |  |              |
| Manufacturer   |  |              |
| Company name   | Materion Advanced Chemicals Inc.   |              |
| Address  | 407 N 13th Street<br>1316 W. St. Paul Avenue<br>Milwaukee, WI 53233<br>United States |              |
| Telephone  | 414.212.0257   |              |
| E-mail   | advancedmaterials@materion.com   |              |
| Contact person   | Noreen Atkinson  |              |
| Emergency phone number                                 | Chemtrec   | 800.424.9300 |

## 2. Hazard(s) identification

|                       |                 |
|-----------------------|-----------------|
| Physical hazards      | Not classified. |
| Health hazards        | Not classified. |
| Environmental hazards | Not classified. |
| OSHA defined hazards  | Not classified. |

### Label elements

|                  |  |
|------------------|--|
| Hazard symbol    | None.  |
| Signal word      | None.  |
| Hazard statement | The substance does not meet the criteria for classification. |

### Precautionary statement

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

|   |             |
|---|-------------|
| Hazard(s) not otherwise classified (HNOC) | None known. |
|---|-------------|

Supplemental information For further information, please contact the Product Stewardship Department at +1.800.862.4118.

## 3. Composition/information on ingredients

### Substances

| Chemical name           | Common name and synonyms | CAS number | %        |
|-------------------------|--------------------------|------------|----------|
| Thulium Sulfide (tm2s3) |                          | 12166-30-2 | 90 - 100 |

\*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

## 4. 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. |

|   |  |
|---|--|
| <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>                     | Direct contact with eyes may cause temporary irritation.   |
| <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 jet as an extinguisher, as this will spread the fire.                        |
| <b>Specific hazards arising from the chemical</b>                    | During fire, gases hazardous to health may be formed.   |
| <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. For personal protection, see section 8 of the SDS.   |
| <b>Methods and materials for containment and cleaning up</b>               | Stop the flow of material, if this is without risk. Following product recovery, flush area with water. For waste disposal, see section 13 of the SDS. |
| <b>Environmental precautions</b>   | Avoid discharge into drains, water courses or onto the ground.  |

## 7. Handling and storage

|   |   |
|---|---|
| <b>Precautions for safe handling</b>                                | Observe good industrial hygiene practices.  |
| <b>Conditions for safe storage, including any incompatibilities</b> | Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS). |

## 8. Exposure controls/personal protection

|  |   |
|--|---|
| <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>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. |
| <b>Control parameters</b>  | Follow standard monitoring procedures.  |
| <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 appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.   |
| <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.   |

**General hygiene considerations** 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

**Physical state** Solid.  
**Form** Solid.  
**Color** Not available.

**Odor** Not available.

**Odor threshold** Not available.

**pH** Not available.

**Melting point/freezing point** Not available.

**Initial boiling point and boiling range** Not available.

**Flash point** Not available.

**Evaporation rate** Not available.

**Flammability (solid, gas)** Not available.

### Upper/lower flammability or explosive limits

**Flammability limit - lower (%)** Not available.

**Flammability limit - upper (%)** Not available.

**Explosive limit - lower (%)** Not available.

**Explosive limit - upper (%)** Not available.

**Vapor pressure** Not available.

**Vapor density** Not available.

**Relative density** Not available.

### Solubility(ies)

**Solubility (water)** Not available.

**Partition coefficient (n-octanol/water)** Not available.

**Auto-ignition temperature** Not available.

**Decomposition temperature** Not available.

**Viscosity** Not available.

### Other information

**Explosive properties** Not explosive.

**Molecular formula** S3Tm2

**Oxidizing properties** Not oxidizing.

## 10. Stability and reactivity

**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** Strong oxidizing agents.

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

## 11. Toxicological information

### Information on likely routes of exposure

|                     |  |
|---------------------|--|
| <b>Inhalation</b>   | No adverse effects due to inhalation are expected.       |
| <b>Skin contact</b> | No adverse effects due to skin contact are expected.     |
| <b>Eye contact</b>  | Direct contact with eyes may cause temporary irritation. |
| <b>Ingestion</b>    | Expected to be a low ingestion hazard.                   |

**Symptoms related to the physical, chemical and toxicological characteristics** Direct contact with eyes may cause temporary irritation.

### Information on toxicological effects

|  |  |
|--|--|
| <b>Acute toxicity</b>                    | Not available.   |
| <b>Skin corrosion/irritation</b>         | Prolonged skin contact may cause temporary irritation.   |
| <b>Serious eye damage/eye irritation</b> | Direct contact with eyes may cause temporary irritation.   |
| <b>Respiratory or skin sensitization</b> |  |
| <b>Respiratory sensitization</b>         | Not a respiratory sensitizer.  |
| <b>Skin sensitization</b>                | This product is not expected to cause skin sensitization.  |
| <b>Germ cell mutagenicity</b>            | No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic. |
| <b>Carcinogenicity</b>                   | This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.                                  |

#### IARC Monographs. Overall Evaluation of Carcinogenicity

Not listed.

#### OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not regulated.

#### US. National Toxicology Program (NTP) Report on Carcinogens

Not listed.

|   |  |
|---|--|
| <b>Reproductive toxicity</b>                              | This product is not expected to cause reproductive or developmental effects. |
| <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.  |

## 12. Ecological information

|                                      |  |
|--------------------------------------|--|
| <b>Ecotoxicity</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>Persistence and degradability</b> | No data is available on the degradability of this product.   |
| <b>Bioaccumulative potential</b>     | No data available.   |
| <b>Mobility in soil</b>              | No data available.   |
| <b>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.            |

## 13. Disposal considerations

|                                   |  |
|-----------------------------------|--|
| <b>Disposal instructions</b>      | Collect and reclaim or dispose in sealed containers at licensed waste disposal site.                           |
| <b>Local disposal regulations</b> | Dispose in accordance with all applicable regulations.   |
| <b>Hazardous waste code</b>       | The waste code should be assigned in discussion between the user, the producer and the waste disposal company. |



**Disclaimer**

Materion Advanced Chemicals Inc. cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. 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.