



# SAFETY DATA SHEET

**MATERION**

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

### 1.1. Product identifier

**Name of the substance** Tantalum Powder  
**Identification number** 231-135-5 (EC number)  
**Registration number** -  
**Document number** H03  
**Synonyms** 190D Pure Ta  
**Issue date** 09-May-2022  
**Version number** 01

### 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

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

#### Supplier

**Company name** Materion Newton Inc.  
**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

**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 Newton Inc.  
**Address** 6070 Parkland Boulevard  
Mayfield, Heights, OH 44124  
United States  
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**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 substance 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

This substance does not meet the criteria for classification according to Regulation (EC) 1272/2008 as amended.

#### Physical hazards

Flammable solids Category 2 H228 - Flammable solid.

#### Health hazards

Skin corrosion/irritation Category 2 H315 - Causes skin irritation.  
Serious eye damage/eye irritation Category 2 H319 - Causes serious eye irritation.

**Hazard summary**

Exposure to powder or dusts may be irritating to eyes, nose and throat. Not classified for health hazards. However, occupational exposure to the mixture or substance(s) may cause adverse health effects. 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.

**2.2. Label elements****Label according to Regulation (EC) No. 1272/2008 as amended****Hazard pictograms****Signal word**

Warning

**Hazard statements**

H228 Flammable solid.  
 H315 Causes skin irritation.  
 H319 Causes serious eye irritation.  
 H335 May cause respiratory irritation.

**Precautionary statements****Prevention**

P240 Ground/bond container and receiving equipment.  
 P261 Avoid breathing dust.  
 P264 Wash thoroughly after handling.  
 P280 Wear protective gloves/protective clothing/eye protection/face protection.

**Response**

P304 + P340 If inhaled: Remove person to fresh air and keep comfortable for breathing.  
 P302 + P352 IF ON SKIN: Wash with plenty of soap and water.  
 P305 + P351 + P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 P370 + P378 In case of fire: Use appropriate media to extinguish.

**Storage**

P403 + P233 Store away from incompatible materials.  
 Store in a well-ventilated place. Keep container tightly closed.

**Disposal**

Dispose of waste and residues in accordance with local authority requirements.

**Supplemental label information**

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

**2.3. Other hazards**

This substance does not meet vPvB / PBT criteria of Regulation (EC) No 1907/2006, Annex XIII.

**SECTION 3: Composition/information on ingredients****3.1. Substances****General information**

| Chemical name | %   | CAS-No. / EC No.       | REACH Registration No. | Index No. | Notes |
|---------------|-----|------------------------|------------------------|-----------|-------|
| Tantalum      | 100 | 7440-25-7<br>231-135-5 | -                      | -         |       |

**Classification:** -

**SECTION 4: First aid measures****General information**

If you feel unwell, seek medical advice (show the label where possible).

**4.1. Description of first aid measures****Inhalation**

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a physician if symptoms develop or persist.

**Skin contact**

Wash off immediately with plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.

**Eye contact**

Immediately flush with plenty of water for up to 15 minutes. Remove any contact lenses and open eyes wide apart.

**Ingestion**

Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.

- 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** Dry sand, sodium chloride powder, graphite powder or Met-L-X powder.
- Unsuitable extinguishing media** Carbon dioxide (CO<sub>2</sub>). Water Spray or Fog
- 5.2. Special hazards arising from the substance or mixture** Not established.
- 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** Move containers from fire area if you can do so without risk.
- 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. Wear appropriate protective equipment and clothing during clean-up. 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** Avoid the generation of dusts during clean-up. Collect dust using a vacuum cleaner equipped with HEPA filter. The product is immiscible with water and will spread on the water surface. Stop the flow of material, if this is without risk.
- Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. Following product recovery, flush area with water.
- 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** For personal protection, see section 8 of the PIS. For waste disposal, see section 13 of the PIS.

## SECTION 7: Handling and storage

- 7.1. Precautions for safe handling** Minimise dust generation and accumulation. Provide appropriate exhaust ventilation at places where dust is formed. Avoid prolonged exposure. Practice good housekeeping.
- 7.2. Conditions for safe storage, including any incompatibilities** Store in tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).
- 7.3. Specific end use(s)** Not available.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### Occupational exposure limits

**Germany. DFG MAK List (advisory OELs). Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area (DFG)**

| Material        | Type | Value                 | Form                 |
|-----------------|------|-----------------------|----------------------|
| Tantalum Powder | TWA  | 4 mg/m <sup>3</sup>   | Inhalable fraction.  |
|                 |      | 0,3 mg/m <sup>3</sup> | Respirable fraction. |

**Germany. DFG MAK List (advisory OELs). Commission for the Investigation of Health Hazards of Chemical Compounds in the Work Area (DFG)**

| <b>Components</b>        | <b>Type</b> | <b>Value</b>                                 | <b>Form</b>                                 |
|--------------------------|-------------|--|---|
| Tantalum (CAS 7440-25-7) | TWA         | 4 mg/m <sup>3</sup><br>0,3 mg/m <sup>3</sup> | Inhalable fraction.<br>Respirable fraction. |

**Germany. TRGS 900, Limit Values in the Ambient Air at the Workplace**

| <b>Material</b> | <b>Type</b> | <b>Value</b>                                   | <b>Form</b>                                 |
|-----------------|-------------|--|---|
| Tantalum Powder | AGW         | 10 mg/m <sup>3</sup><br>1,25 mg/m <sup>3</sup> | Inhalable fraction.<br>Respirable fraction. |

| <b>Components</b>        | <b>Type</b> | <b>Value</b>                                   | <b>Form</b>                                 |
|--------------------------|-------------|--|---|
| Tantalum (CAS 7440-25-7) | AGW         | 10 mg/m <sup>3</sup><br>1,25 mg/m <sup>3</sup> | Inhalable fraction.<br>Respirable fraction. |

**Biological limit values** No biological exposure limits noted for the ingredient(s).

**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 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. If engineering measures are not sufficient to maintain concentrations of dust particulates below the OEL (occupational exposure limit), suitable respiratory protection must be worn. If material is ground, cut, or used in any operation which may generate dusts, use appropriate local exhaust ventilation to keep exposures below the recommended exposure limits.

### 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 contact with particulate or solutions.

- **Other** Wear suitable protective clothing.

**Respiratory protection** Wear respirator with dust filter.

**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

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. Fume scrubbers, filters or engineering modifications to the process equipment may be necessary to reduce emissions to acceptable levels.

## SECTION 9: Physical and chemical properties

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

#### Appearance

**Physical state** Solid.

**Form** Powder.

**Colour** Dark grey.

**Odour** None.

**Odour threshold** Not applicable.

**pH** Not applicable.

**Melting point/freezing point** 2996 °C (5424,8 °F) / 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>               | Flammable solid. |

**Upper/lower flammability or explosive limits**

|   |                 |
|---|-----------------|
| <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 pressure temp.</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 applicable. |
| <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.  |

**9.2. Other information**

|                          |  |
|--------------------------|--|
| <b>Density</b>           | 14,49 g/cm <sup>3</sup><br>16,60 g/cm <sup>3</sup> |
| <b>Flash point class</b> | Not applicable.                                    |
| <b>Molecular formula</b> | Ta   |
| <b>Molecular weight</b>  | 180,95 g/mol                                       |

**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. Fluorine.  |
| <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>   | Dust may irritate respiratory system. |
| <b>Skin contact</b> | Dust or powder may irritate the skin. |

|   |   |
|---|---|
| <b>Eye contact</b>  | Dust may irritate the eyes.   |
| <b>Ingestion</b>  | Expected to be a low ingestion hazard.                                      |
| <b>Symptoms</b>   | None known.   |
| <b>11.1. Information on toxicological effects</b>         |   |
| <b>Acute toxicity</b>                                     | None known.   |
| <b>Skin corrosion/irritation</b>                          | May cause skin irritation.  |
| <b>Serious eye damage/eye irritation</b>                  | May cause eye irritation.   |
| <b>Respiratory sensitisation</b>                          | Not a respiratory sensitizer.   |
| <b>Skin sensitisation</b>                                 | Due to partial or complete lack of data the classification is not possible. |
| <b>Germ cell mutagenicity</b>                             | Not classified.   |
| <b>Carcinogenicity</b>                                    | Not classifiable as to carcinogenicity to humans.                           |
| <b>Reproductive toxicity</b>                              | Due to partial or complete lack of data the classification is not possible. |
| <b>Specific target organ toxicity - single exposure</b>   | Respiratory tract irritation.   |
| <b>Specific target organ toxicity - repeated exposure</b> | Due to partial or complete lack of data the classification is not possible. |
| <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>                                  | Due to partial or complete lack of data the classification for hazardous to the aquatic environment, is not possible.   |
| <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

|                                      |  |
|--------------------------------------|--|
| <b>13.1. Waste treatment methods</b> |  |
| <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.   |
| <b>Special precautions</b>           | Dispose in accordance with all applicable regulations.   |

## SECTION 14: Transport information

|                                      |                                 |
|--------------------------------------|---------------------------------|
| <b>ADR</b>                           |                                 |
| <b>14.1. UN number</b>               | UN3089                          |
| <b>14.2. UN proper shipping name</b> | METAL POWDER, FLAMMABLE, N.O.S. |

**14.3. Transport hazard class(es)**

**Class** 4.1  
**Subsidiary risk** -  
**Label(s)** 4.1  
**Hazard No. (ADR)** 40  
**Tunnel restriction code** E

**14.4. Packing group** II

**14.5. Environmental hazards** No.

**14.6. Special precautions for user** Not available.

**RID**

**14.1. UN number** UN3089

**14.2. UN proper shipping name** METAL POWDER, FLAMMABLE, N.O.S.

**14.3. Transport hazard class(es)**

**Class** 4.1  
**Subsidiary risk** -  
**Label(s)** 4.1

**14.4. Packing group** II

**14.5. Environmental hazards** No.

**14.6. Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.

**ADN**

**14.1. UN number** UN3089

**14.2. UN proper shipping name** METAL POWDER, FLAMMABLE, N.O.S.

**14.3. Transport hazard class(es)**

**Class** 4.1  
**Subsidiary risk** -  
**Label(s)** 4.1

**14.4. Packing group** II

**14.5. Environmental hazards** No.

**14.6. Special precautions for user** Read safety instructions, SDS and emergency procedures before handling.

**IATA**

**14.1. UN number** UN3089

**14.2. UN proper shipping name** Metal powder, flammable, n.o.s.

**14.3. Transport hazard class(es)**

**Class** 4.1  
**Subsidiary risk** -

**14.4. Packing group** II

**14.5. Environmental hazards** No.

**ERG Code** 3L

**14.6. Special precautions for user** Not available.

**Other information**

**Passenger and cargo aircraft** Allowed with restrictions.

**Cargo aircraft only** Allowed with restrictions.

**IMDG**

**14.1. UN number** UN3089

**14.2. UN proper shipping name** METAL POWDER, FLAMMABLE, N.O.S.

**14.3. Transport hazard class(es)**

**Class** 4.1  
**Subsidiary risk** -

**14.4. Packing group** II

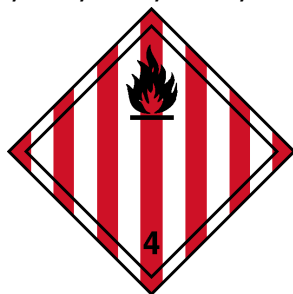
#### 14.5. Environmental hazards

Marine pollutant No.

EmS F-G, S-G

14.6. Special precautions for user Not available.

ADN; ADR; IATA; IMDG; RID



## 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**

Tantalum (CAS 7440-25-7)

**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 in accordance with Directive 98/24/EC, as amended.

**Pregnancy group** C

**MAK Liste III** Category 4



**Water hazard class****AwSV**

Non-hazardous to water

**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 applicable.

**Training information**

Follow training instructions when handling this material.

**Further information**

Transportation Emergency

Call Chemtrec at:

US: 800.424.9300

International: 703.741.5970

Spain: 900.868.538

Switzerland: 0800.564.402

Chemtrec's toll free, mobile-enabled number in Germany – 0800 1817059

South Korea Toll-free Number – 080-880-0468

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