



SAFETY DATA SHEET

MATERION

1. Product and company identification

Name of the chemical **Titanium Product**

Other means of identification
SDS number 013

Recommended use of the chemical and restrictions on use
Recommended use Not available.
Recommended restrictions None known.

Manufacturer/Importer/Supplier/
Distributor information Materion Advanced Materials Group

Address 42 Mt. Ebo Road South
Brewster NY 10509
United States

Telephone Supplier Phone 1+845.279.0900

E-mail Not available.

Contact person Not available.

Emergency telephone number Chemtrec 1+703.527.3887

2. Hazards identification

Hazard classification

Physical hazards Flammable solids Category 2
Self-heating substances and mixtures Category 1

Health hazards Not classified.

Environmental hazards Not classified.

Label elements

Symbols 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 None.

Other hazards None known.

Supplemental information None.

3. Composition/information on ingredients

| Substance | CAS Number | Concentration (%) |
|-----------|------------|-------------------|
| Titanium | 7440-32-6 | 99.9 - 100 |

4. First aid measures

First aid measures for different exposure routes

Inhalation Not available.

Skin contact Not available.

Eye contact Not available.

Ingestion Not available.

Most important symptoms and effects Not available.

Personal protection for first-aid responders Not available.

Notes to physician Not available.

5. Fire-fighting measures

Extinguishing media DRY sand, sodium chloride powder, graphite powder or Met-L-X powder.

Extinguishing media to avoid None.

Specific hazards during fire fighting None.

Special fire fighting procedures Use water spray to cool unopened containers.

Protection of fire-fighters None.

6. Accidental release measures

Personal precautions Keep unnecessary personnel away. For personal protection, see section 8 of the SDS.

Environmental precautions Not available.

Spill cleanup methods Dike far ahead of spill for later disposal. Following product recovery, flush area with water. For waste disposal, see section 13 of the SDS.

7. Handling and storage

Handling Not available.

Storage Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Exposure limits

No exposure limits noted for ingredient(s).

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

Appropriate engineering controls Not available.

Individual protection measures, such as personal protective equipment

Eye/face protection Not available.

Skin protection

Hand protection Not available.

Other Not available.

Respiratory protection Not available.

Thermal hazards Not available.

9. Physical and chemical properties

Appearance

Physical state Solid.

Form Solid.

Color Not available.

Odor Not available.

Odor threshold Not available.

Melting point/freezing point 3034.4 °F (1668 °C)

pH Not available.

Boiling point, initial boiling point, and boiling range 5948.6 °F (3287 °C)

Flammability (solid, gas) Not available.

Flash point Not available.

Decomposition temperature Not available.

Auto-ignition temperature 482 °F (250 °C)
2192 °F (1200 °C)

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 | < 0.0000001 kPa at 25 °C |
| Vapor density | Not available. |
| Density | 4.51 g/cm ³ estimated at 20 °C |
| Solubility(ies) | |
| Solubility (water) | Not available. |
| Partition coefficient (n-octanol/water) | Not available. |
| Evaporation rate | Not available. |
| Other data | |
| Molecular formula | Ti |
| Molecular weight | 47.9 g/mol |
| Specific gravity | 4.51 at 20 °C |

10. Stability and reactivity

| | |
|------------------------------------|--------------------------------------|
| Stability | Not available. |
| Possibility of hazardous reactions | Not available. |
| Conditions to avoid | Contact with incompatible materials. |
| Incompatible materials | None. |
| Hazardous decomposition products | None. |

11. Toxicological information

Information on likely routes of exposure

| | |
|--------------|----------------|
| Inhalation | Not available. |
| Skin contact | Not available. |
| Eye contact | Not available. |
| Ingestion | Not available. |

Symptoms Not available.

Information on toxicological effects

| | |
|--|----------------|
| Acute toxicity | Not available. |
| Respiratory or skin sensitization | |
| Respiratory sensitization | Not available. |
| Skin sensitization | Not available. |
| Germ cell mutagenicity | Not available. |
| Carcinogenicity | Not available. |
| Reproductive toxicity | Not available. |
| Specific target organ toxicity - single exposure | Not available. |
| Specific target organ toxicity - repeated exposure | Not available. |
| Aspiration hazard | Not available. |
| Chronic effects | Not available. |

12. Ecological information

| | |
|-------------------------------|--|
| Ecotoxicity | No ecotoxicity data noted for the ingredient(s). |
| Persistence and degradability | Not available. |
| Bioaccumulation | Not available. |
| Mobility in soil | Not available. |
| Other hazardous effects | Not available. |

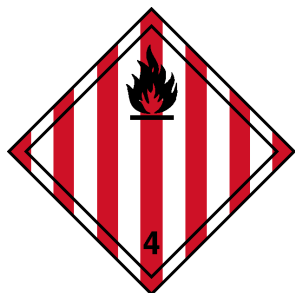
13. Disposal considerations

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|-----------------------------------|--|
| Disposal instructions | Collect and reclaim or dispose in sealed containers at licensed waste disposal site. |
| Residual waste | 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. |
| Local disposal regulations | Dispose in accordance with all applicable regulations. |

14. Transport information

| | |
|---|--|
| IATA | |
| UN number | UN1352 |
| UN proper shipping name | Titanium powder, wetted with 25% or more water (a visible excess of water must be present) (a) mechanically produced: particle size less than 53 microns; (b) chemically produced: particle size less than 840 microns |
| Transport hazard class(es) | |
| Class | 4.1 |
| Subsidiary risk | - |
| Packing group | II |
| Environmental hazards | No. |
| ERG Code | 3L |
| Special precautions for user | Read safety instructions, SDS and emergency procedures before handling. |
| Other information | |
| Passenger and cargo aircraft | Allowed with restrictions. |
| Cargo aircraft only | Allowed with restrictions. |
| IMDG | |
| UN number | UN1352 |
| UN proper shipping name | TITANIUM POWDER, WETTED with not less than 25% water (a visible excess of water must be present) (a) mechanically produced, having a particle size less than 53 microns; (b) chemically produced, having a particle size less than 840 microns |
| Transport hazard class(es) | |
| Class | 4.1 |
| Subsidiary risk | - |
| Packing group | II |
| Environmental hazards | |
| Marine pollutant | No. |
| EmS | F-A, S-J |
| Special precautions for user | Read safety instructions, SDS and emergency procedures before handling. |
| Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code | Not available. |

IATA; IMDG



15. Regulatory information

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|---|
| Applicable regulations |
| Methods and Facilities Standards for the Storage, Clearance and Disposal of Industrial Waste |
| Not listed. |

Titanium (CAS 7440-32-6)

Rules on Road Transportation Safety

Regulated.

International regulations

Stockholm Convention

Not applicable.

Rotterdam Convention

Not applicable.

Montreal Protocol

Not applicable.

Kyoto protocol

Not applicable.

Basel Convention

Not applicable.

16. Other information

References

Not available.

Issued by

Not available.

Prepared by

Not available.

Disclaimer

Materion Advanced Materials Group 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. The information in the sheet was written based on the best knowledge and experience currently available.

Issue date

02-12-2018

Revision information

Product and Company Identification: Product Review
Hazards Identification: Shared US and Canadian Categories
Composition / Information on Ingredients: Ingredients
Transport Information: Material Transportation Information