

**Material Safety Data Sheet**

According to OSHA and ANSI

Printing date 05/27/2011

Reviewed on 01/22/2007

**1 Identification of the substance/mixture and of the company/undertaking****Product identifier****Product name:** Tantalum (IV) sulfide**Stock number:** 12829**CAS Number:**

12143-72-5

**Relevant identified uses of the substance or mixture and uses advised against.****Sector of Use** SU24 Scientific research and development**Details of the supplier of the safety data sheet****Manufacturer/Supplier:**

Alfa Aesar, A Johnson Matthey Company

Johnson Matthey Catalog Company, Inc.

30 Bond Street

Ward Hill, MA 01835-8099

Tel: 800-343-0660

Fax: 800-322-4757

Email: tech@alfa.com

www.alfa.com

**Information Department:** Health, Safety and Environmental Department**Emergency telephone number:**

During normal hours the Health, Safety and Environmental Department at (800) 343-0660. After normal hours call Carechem 24 at (866) 928-0789.

**2 Hazards identification****Classification of the substance or mixture**

The substance is not classified according to the Globally Harmonized System (GHS).

**Classification according to Directive 67/548/EEC or Directive 1999/45/EC** Not applicable**Information concerning particular hazards for human and environment:** Not applicable**Label elements****Labelling according to EU guidelines:**

Observe the general safety regulations when handling chemicals

**Classification system****HMIS ratings (scale 0-4)****(Hazardous Materials Identification System)**

|            |   |
|------------|---|
| HEALTH     | 2 |
| FIRE       | 1 |
| REACTIVITY | 1 |

Health (acute effects) = 2

Flammability = 1

Reactivity = 1

**Other hazards****Results of PBT and vPvB assessment****PBT:** Not applicable.**vPvB:** Not applicable.**3 Composition/information on ingredients****Chemical characterization:** Substances**(CAS#) Description:**

Tantalum (IV) sulfide (CAS# 12143-72-5), 100%

**4 First aid measures****Description of first aid measures****After inhalation**

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

**After skin contact**

Immediately wash with water and soap and rinse thoroughly.

Seek immediate medical advice.

**After eye contact**

Rinse opened eye for several minutes under running water. Then consult a doctor.

**After swallowing** Seek medical treatment.**5 Firefighting measures****Extinguishing media****Suitable extinguishing agents**

Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

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**For safety reasons unsuitable extinguishing agents** Halogenated extinguisher**Special hazards arising from the substance or mixture**

In case of fire, the following can be released:

Hydrogen sulfide

Metal oxide

Sulfur oxides (SO<sub>x</sub>)**Advice for firefighters****Protective equipment:**

Wear self-contained respirator.

Wear fully protective impervious suit.

**6 Accidental release measures****Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

**Environmental precautions:**

Do not allow material to be released to the environment without proper governmental permits.

**Methods and material for containment and cleaning up:** Pick up mechanically.**Reference to other sections**

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

**7 Handling and storage****Handling****Precautions for safe handling**

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

No special precautions are necessary if used correctly.

**Information about protection against explosions and fires:**

Reacts with acids forming hydrogen sulfide

**Conditions for safe storage, including any incompatibilities****Storage****Requirements to be met by storerooms and receptacles:** No special requirements.**Information about storage in one common storage facility:**

Store away from oxidizing agents.

Do not store together with acids.

**Further information about storage conditions:**

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

**8 Exposure controls/personal protection****Additional information about design of technical systems:**

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

**Control parameters****Components with limit values that require monitoring at the workplace:** Not required.**Additional information:** No data**Exposure controls****Personal protective equipment****General protective and hygienic measures**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

**Breathing equipment:** Use suitable respirator when high concentrations are present.**Protection of hands:** Impervious gloves**Eye protection:** Safety glasses**Body protection:** Protective work clothing.

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**9 Physical and chemical properties****Information on basic physical and chemical properties****General Information****Appearance:**

|                  |                 |
|------------------|-----------------|
| Form:            | Powder          |
| Color:           | Black           |
| Odor:            | Odorless        |
| Odour threshold: | Not determined. |

pH-value: Not applicable.

**Change in condition**

|                                  |                            |
|----------------------------------|----------------------------|
| Melting point/Melting range:     | >1300°C (>2372 °F) ((dec)) |
| Boiling point/Boiling range:     | Not determined             |
| Sublimation temperature / start: | Not determined             |

Flash point: Not applicable

Flammability (solid, gaseous) Product is not flammable.

Ignition temperature: Not determined

Decomposition temperature: Not determined

Auto igniting: Not determined.

Danger of explosion: Product does not present an explosion hazard.

**Explosion limits:**

|        |                |
|--------|----------------|
| Lower: | Not determined |
| Upper: | Not determined |

Vapor pressure: Not applicable.

|                  |                 |
|------------------|-----------------|
| Density:         | Not determined  |
| Relative density | Not determined. |
| Vapour density   | Not applicable. |
| Evaporation rate | Not applicable. |

**Solubility in / Miscibility with**

Water: Insoluble

Segregation coefficient (n-octanol/water): Not determined.

**Viscosity:**

|            |                 |
|------------|-----------------|
| dynamic:   | Not applicable. |
| kinematic: | Not applicable. |

Other information No further relevant information available.

**10 Stability and reactivity****Reactivity****Chemical stability****Thermal decomposition / conditions to be avoided:**

Decomposition will not occur if used and stored according to specifications.

**Possibility of hazardous reactions**

Reacts with oxidizing agents

Reacts with acids forming hydrogen sulfide

**Incompatible materials:**

Acids

Oxidizing agents

Halogens

Alkali metals

**Hazardous decomposition products:**

Hydrogen sulfide

Metal oxide fume

Sulfur oxides (SOx)

**11 Toxicological information****Information on toxicological effects****Acute toxicity:****Primary irritant effect:**

on the skin: May cause irritation

on the eye: May cause irritation

Sensitization: No sensitizing effects known.

Subacute to chronic toxicity: Tantalum compounds may cause skin and eye irritation.

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**Subacute to chronic toxicity:**

Sulfides show variable toxicity. The alkaline sulfides are similar in action to alkalies. They cause irritation of the skin and are corrosive by ingestion. The heavy metal sulfides are generally insoluble and show little toxic action except through the liberation of hydrogen sulfide. Hydrogen sulfide, if generated, is toxic, a severe irritant and flammable. Effects include conjunctivitis, headache, nausea, dizziness, coughing, pulmonary edema and possibly death.

**Additional toxicological information:**

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.  
No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

**12 Ecological information****Toxicity**

**Aquatic toxicity:** No further relevant information available.

**Persistence and degradability** No further relevant information available.

**Behavior in environmental systems:**

**Bioaccumulative potential** No further relevant information available.

**Mobility in soil** No further relevant information available.

**Additional ecological information:****General notes:**

Do not allow material to be released to the environment without proper governmental permits.

**Results of PBT and vPvB assessment**

**PBT:** Not applicable.

**vPvB:** Not applicable.

**Other adverse effects** No further relevant information available.

**13 Disposal considerations****Waste treatment methods**

**Recommendation** Consult state, local or national regulations to ensure proper disposal.

**Uncleaned packagings:**

**Recommendation:** Disposal must be made according to official regulations.

**14 Transport information**

Not a hazardous material for transportation.

**DOT regulations:**

**Hazard class:** None

**Land transport ADR/RID (cross-border)**

**ADR/RID class:** None

**Maritime transport IMDG:**

**IMDG Class:** None

**Marine pollutant:** No

**Air transport ICAO-TI and IATA-DGR:**

**ICAO/IATA Class:** None

**Special precautions for user** Not applicable.

**Transport/Additional information:** Not dangerous according to the above specifications.

**Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.

**15 Regulatory information**

**Safety, health and environmental regulations/legislation specific for the substance or mixture**

**Product related hazard informations:**

Observe the general safety regulations when handling chemicals

**National regulations**

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

**Information about limitation of use:** For use only by technically qualified individuals.

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**Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.**16 Other information**

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

**Department issuing MSDS:** Health, Safety and Environmental Department.**Contact:**

Zachariah C. Holt

Global EHS Manager

**Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

CAS: Chemical Abstracts Service (division of the American Chemical Society)

HMIS: Hazardous Materials Identification System (USA)

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