

# Safety Data Sheet

According to OSHA and ANSI

Printing date 01/31/2013

Reviewed on 02/12/2007

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

**Product identifier****Product name:** Tungsten (IV) oxide**Stock number:** 40367**CAS Number:**

12036-22-5

**EC number:**

234-842-7

**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****Classification according to Regulation (EC) No 1272/2008**

GHS07

STOT SE 3 H335 May cause respiratory irritation.

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**Classification according to Directive 67/548/EEC or Directive 1999/45/EC**

Xi; Irritant

R37: Irritating to respiratory system.

**Information concerning particular hazards for human and environment:** Not applicable**Label elements****Labelling according to Regulation (EC) No 1272/2008**

The substance is classified and labelled according to the CLP regulation.

**Hazard pictograms**

GHS07

**Signal word** Warning**Hazard statements**

H335 May cause respiratory irritation.

**Precautionary statements**

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P312 Call a POISON CENTER or doctor/physician if you feel unwell.

P405 Store locked up.

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

**Hazard description:****WHMIS classification** Not controlled**Classification system****HMIS ratings (scale 0-4)****(Hazardous Materials Identification System)**

HEALTH	1
FIRE	0
REACTIVITY	0

Health (acute effects) = 1

Flammability = 0

Reactivity = 0

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**Other hazards**  
**Results of PBT and vPvB assessment**  
**PBT:** Not applicable.  
**vPvB:** Not applicable.

### 3 Composition/information on ingredients

**Chemical characterization: Substances**  
**CAS# Description:**  
 12036-22-5 Tungsten (IV) oxide  
**Identification number(s):**  
**EC number:** 234-842-7

### 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.  
**Information for doctor**  
**Most important symptoms and effects, both acute and delayed**  
 No further relevant information available.  
**Indication of any immediate medical attention and special treatment needed**  
 No further relevant information available.

### 5 Firefighting measures

**Extinguishing media**  
**Suitable extinguishing agents**  
 CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray.  
**For safety reasons unsuitable extinguishing agents** Halogenated extinguisher  
**Special hazards arising from the substance or mixture**  
 If this product is involved in a fire, the following can be released:  
**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:** Ensure adequate ventilation.  
**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.  
 Ensure good ventilation at the workplace.  
**Information about protection against explosions and fires:** No information known.  
**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.

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Store away from halogens.

**Further information about storage conditions:**

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

**Specific end use(s)** No further relevant information available.

### 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:**

Tungsten and compounds (as W)

	mg/m <sup>3</sup>
ACGIH TLV	1; 3-STEEL (soluble compounds) 5; 10-STEEL (insoluble compounds)
Belgium TWA	5; 10-STEEL
Denmark TWA	5
Finland TWA	5
Korea TLV	5; 10-STEEL
Netherlands MAC-TGG	5
Norway TWA	5
Poland TWA	5
Russia	2-STEEL
Sweden NGV	5
Switzerland MAK-W	5
United Kingdom TWA	5; 10-STEEL

**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.

Maintain an ergonomically appropriate working environment.

**Breathing equipment:** Use suitable respirator when high concentrations are present.**Protection of hands:**

Impervious gloves

Check protective gloves prior to each use for their proper condition.

The selection of suitable gloves not only depends on the material, but also on quality.

Quality will vary from manufacturer to manufacturer.

**Eye protection:** Safety glasses**Body protection:** Protective work clothing.

### 9 Physical and chemical properties

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

<b>Form:</b>	Powder
<b>Color:</b>	Brown
<b>Odor:</b>	Odorless
<b>Odor threshold:</b>	Not determined.

**pH-value:** Not applicable.**Change in condition**

<b>Melting point/Melting range:</b>	1500-1600°C (2732-2912 °F) ((in N <sub>2</sub> ))
<b>Boiling point/Boiling range:</b>	1430°C (2606 °F) ((approx))
<b>Sublimation temperature / start:</b>	800°C (1472 °F)

**Flash point:** Not applicable**Flammability (solid, gaseous)** Not determined.**Ignition temperature:** Not determined**Decomposition temperature:** Not determined**Auto igniting:** Not determined.**Danger of explosion:** Product does not present an explosion hazard.

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<b>Explosion limits:</b>	
Lower:	Not determined
Upper:	Not determined
Vapor pressure:	Not applicable.
Density at 20°C (68 °F):	12.11 g/cm <sup>3</sup> (101.058 lbs/gal)
Relative density	Not determined.
Vapor density	Not applicable.
Evaporation rate	Not applicable.
<b>Solubility in / Miscibility with</b>	
Water:	Insoluble
Partition coefficient (n-octanol/water):	Not determined.
<b>Viscosity:</b>	
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** No dangerous reactions known  
**Incompatible materials:**  
 Oxidizing agents  
 Chlorine  
**Hazardous decomposition products:** No decomposition products known.

### 11 Toxicological information

**Information on toxicological effects**  
**Acute toxicity:**  
**Primary irritant effect:**  
**on the skin:** Irritant to skin and mucous membranes.  
**on the eye:** Irritating effect.  
**Sensitization:** No sensitizing effects known.  
**Other information (about experimental toxicology):** Irritating to respiratory system  
**Subacute to chronic toxicity:**  
 Tungsten compounds may be irritating to the eyes and respiratory tract. Animal studies suggest that soluble tungsten compounds have the potential for causing adverse health effects involving the gastrointestinal tract and central nervous system. These effects have not been observed in humans. Chronic exposure to tungsten compounds may result in permanent lung damage.  
**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.

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**Uncleaned packagings:****Recommendation:** Disposal must be made according to official regulations.**14 Transport information**

Not a hazardous material for transportation.

<b>UN-Number</b> DOT, ADR, IMDG, IATA	None
<b>UN proper shipping name</b> DOT, ADR, IMDG, IATA	None
<b>Transport hazard class(es)</b> DOT, ADR, IMDG, IATA Class	None
<b>Packing group</b> DOT, ADR, IMDG, IATA	None
<b>Environmental hazards:</b> Marine pollutant:	No
<b>Special precautions for user</b>	Not applicable.
<b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
<b>Transport/Additional information:</b>	Not dangerous according to the above specifications.

**15 Regulatory information****Safety, health and environmental regulations/legislation specific for the substance or mixture****National regulations**

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

All components of this product are listed on the Canadian Non-Domestic Substances List (NDSL).

**Information about limitation of use:** For use only by technically qualified individuals.**Other regulations, limitations and prohibitive regulations****Substances of very high concern (SVHC) according to REACH, Article 57**

Substance is not listed.

**REACH - Pre-registered substances** Substance is listed.**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:**

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

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)

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

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

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

HMIS: Hazardous Materials Identification System (USA)

WHMIS: Workplace Hazardous Materials Information System (Canada)