

**Product name:** Solid Tungsten in various forms  
**Document Nr.:** SDS00170WO5710

**Date:** November 17th 2015  
**Version:** 1.0

## Section 1: Identification of the substance or mixture and the company

### 1.1. Product Identifier

Name: Solid Tungsten (W) in various manufactured forms      EC #: 231-143-9      CAS #: 7440-33-7

### 1.2 Relevant applications of the material and uses advised against

Target material for vacuum deposition (sputtering), evaporation sources, filaments

### 1.3. Company details

Vof Micro to Nano  
Wateringweg 79  
2031EK Haarlem  
Netherlands  
Tel: +31(0)85-2013155  
E: info@microtonano.com

### 1.4 Emergency telephone number

+31(0)85-2013155 (office hours) Vof Micro to Nano, Netherlands

## Section 2: Hazards identification

### 2.1. Classification of the substance or mixture

<b>Physical:</b>	0
<b>Health:</b>	0
<b>Flammability:</b>	0
<b>Environment:</b>	None
<b>Other hazards:</b>	None

### Classification according to Regulation EC Nr. 1272/2008

The substance is not classified as hazardous to health or to the environment according to CLP regulation.



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## Classification according to 67/548/EEC of 1999/45/EC

Not applicable

## 2.2 Labeling elements

Not applicable

## 2.3 Other hazards

Not applicable

## Section 3: Composition / information on components

### 3.1. Substances

Solid tungsten in various forms.      EC #: 231-143-9      CAS #: 7440-33-7

### 3.2 Mixtures

Not applicable

## Section 4: First aid measures

### 4.1. Description of first aid measures

Contact with eyes:	Rinse cautiously with water for several minutes. If possible, remove contact lenses. Continue rinsing.
Contact with skin:	Wash with water and soap. Seek medical attention if irritation persists.
Inhalation:	Fresh air, keep warm and at rest. Seek medical attention if ill effects occur
Ingestion:	If swallowed, do not induce vomiting Seek immediate medical advice

### 4.2. Important symptoms and effects, either immediate or delayed

Inhalation:	No information available
Ingestion:	No information available



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Skin contact: Generally not a skin irritant  
Eye contact: Generally not irritating to eyes

## 4.3. Indication of any immediate medical attention and special treatment

General advise: If you feel unwell, seek medical advice; show product label if possible  
If symptoms persist, always call a doctor

## Section 5: Firefighting Measures

### 5.1. Extinguishing media

Dry agent

### 5.2 Special hazards arising from the substance or mixture

Metal oxide fumes

### 5.3 Advice to firefighters

Wear self-contained breathing apparatus  
Wear full protective suit.

## Section 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Wear protective equipment  
Keep unprotected persons away  
Ensure adequate ventilation

### 6.2 Environmental precautions

Do not allow to enter public sewers and waterways

### 6.3 Methods and material for containment and clean up

Pick up mechanically



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## 6.4 Reference to other sections

For further information see section 7, 8 and 13.

## Section 7: Handling and storage

### 7.1. Precautions for safe handling

Avoid creating or accumulating dust or fine particles  
Provide adequate ventilation  
Avoid breathing dust or fumes

### 7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed, in a cool, well ventilated place  
Keep away from oxidising agents  
Keep out of reach of children

### 7.3 Specific end uses(s)

Not required

## Section 8: Exposure control and personal protection

### 8.1. Control parameters

#### Occupational exposure limits (OEL)

Ingredient	Material Name	Source	TWA	STEL	Peak	Notes
Tungsten dust	Tungsten (W)	EU	5 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>	Not available	Not available

### 8.2 Exposure controls

Control procedures: Avoid creating or accumulating dust or fine particles  
Keep sources of ignition away  
Wash hands before breaks and at the end of the work  
Maintain appropriate working environment



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Personal protection: Protective work clothing  
Inhalation: Use breathing protection with high concentrations  
Hands and skin: Suitable gloves  
Eyes: Wear safety goggles or full face protection

## Section 9: Physical and chemical properties

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

Appearance/physical state: Solid in various forms  
Colour: Silver gray metallic  
Odour: None  
pH: Not applicable  
Melting point/range: 3410°C  
Boiling point/range: 5660°C  
Flash point: Not determined  
Evaporation rate: Not available  
Explosion limits: upper limit: Not determined  
                          lower limit: Not determined  
Vapour pressure: Not applicable  
Relative density: 19.35 g/cm<sup>3</sup> @ 20°C  
Solubility in water: Not soluble in water  
Auto-ignition: Not determined  
Viscosity: Not applicable

### 9.2 Other information

None

## Section 10: Stability and reactivity

### 10.1. Reactivity

No hazardous reactions known if used for its intended purposes

### 10.2 Chemical stability

Stable under recommended storage conditions



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## 10.3 Possibility of hazardous reactions

None known

## 10.4 Conditions to avoid

Avoid creating dust

## 10.5 Incompatible materials

Strong oxidising agents, sulfuric acid, nitric acid, halogens, fluorine

## 10.6 Hazardous decomposition products

Metal oxide fume

## Section 11: Toxicological information

### 11.1. Information on toxicological effects

#### Information on likely routes of exposure:

<b>Inhalation:</b>	May cause irritation
<b>Skin contact:</b>	Powder – irritant effect
<b>Eye contact:</b>	Powder – irritant effect
<b>Sensitisation:</b>	No effects known
<b>Carcinogenicity:</b>	No effects known
<b>Toxicological data:</b>	No data for LD/LC 50 values

## Section 12: Ecological information

### 12.1. Aquatic toxicity

No information available

### 12.2 Persistence and degradability

No information available



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## 12.3 Bio-accumulative potential

No information available

## 12.4 Mobility in soil

No information available

## 12.5 Results of PBT and vPvB assessment

Not applicable

## 12.6 Hazardous decomposition products

No information available

## Section 13: Disposal considerations

### 13.1. Waste treatment methods

**Product:** This material and its container must be disposed of in a safe way. Do not discharge into drains or the environment, dispose to an authorised waste collection point.

**National regulations:** Disposal should be in accordance with local, state or national legislation.

## Section 14: Transport information

### 14.1. UN number

UN-number: N/A

### 14.2 UN proper shipping name

Proper shipping name: N/A



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## 14.3 Transport hazard class(es)

Class: N/A  
ADR/RID-Classification code: N/A

## 14.4 Packing group

Packing: N/A

## 14.5 Incompatible materials

ADR/RID- Environmentally hazardous: N/A  
IMDG-Marine pollutant: N/A  
IATA/ICAO-Environmentally hazardous: N/A

## 14.6 Special precautions for user

ADR/RID-Tunnelcode: N/A  
IMDG-Ems: N/A  
IATA/ICAO-PAX: N/A  
IATA/ICAO-CAO: N/A

## 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC code

Not applicable

## Section 15: Regulatory information

### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

**TSCA:** All components are listed

### 15.2 Chemical safety assessment

No information available



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### Section 16: Other information

This products should be stored, handled and used in accordance with good industrial hygiene practices and in accordance with any legal regulation.

The information contained herewith is based on the present state of our knowledge and is intended to describe the product from the point of view of safety requirements. It does not guarantee any specific properties.

It is the responsibility of the user to query and verify any information seeming suspect or where doubt on the validity may exist. The buyer assumes all responsibility of using and handling the product in accordance with local, state, federal and international regulations.

