

safety data sheet

according to Regulation (EC) No. 1907/2006 (REACH), amended by 2015/830/EU



Tungsten ≥99 %, powder

article number: **9835**
Version: **1.0 en**

date of compilation: 2016-05-30

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

1.1 Product identifier

| | |
|---------------------------------|------------------------------------|
| Identification of the substance | Tungsten |
| Article number | 9835 |
| Registration number (REACH) | This information is not available. |
| EC number | 231-143-9 |
| CAS number | 7440-33-7 |

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses: laboratory chemical

1.3 Details of the supplier of the safety data sheet

Carl Roth GmbH + Co KG
Schoemperlenstr. 3-5
D-76185 Karlsruhe
Germany

Telephone: +49 (0) 721 - 56 06 0

Telefax: +49 (0) 721 - 56 06 149

e-mail: sicherheit@carlroth.de

Website: www.carlroth.de

Competent person responsible for the safety data sheet : Department Health, Safety and Environment

e-mail (competent person) : sicherheit@carlroth.de

1.4 Emergency telephone number

Emergency information service **Poison Centre Munich: +49/(0)89 19240**

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

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

| Classification acc. to GHS | | | |
|----------------------------|-----------------------------------|---------------------------|------------------|
| Section | Hazard class | Hazard class and category | Hazard statement |
| 2.7 | flammable solid | (Flam. Sol. 1) | H228 |
| 3.2 | skin corrosion/irritation | (Skin Irrit. 2) | H315 |
| 3.3 | serious eye damage/eye irritation | (Eye Irrit. 2) | H319 |

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Remarks

For full text of Hazard- and EU Hazard-statements: see SECTION 16.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP)

Signal word

Danger

Pictograms



Hazard statements

H228 Flammable solid.
H315 Causes skin irritation.
H319 Causes serious eye irritation.

Precautionary statements

Precautionary statements - prevention

P210 Keep away from heat, hot surfaces, sparks, open flames. No smoking.
P280 Wear protective gloves/eye protection.

Precautionary statements - response

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Labelling of packages where the contents do not exceed 125 ml

Signal word: **Danger**

Symbol(s)



2.3 Other hazards

There is no additional information.

SECTION 3: Composition/information on ingredients

3.1 Substances

| | |
|-------------------|-------------|
| Name of substance | Tungsten |
| EC number | 231-143-9 |
| CAS number | 7440-33-7 |
| Molecular formula | W |
| Molar mass | 183,8 g/mol |

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SECTION 4: First aid measures

4.1 Description of first aid measures



General notes

Take off contaminated clothing.

Following inhalation

Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

Following skin contact

Rinse skin with water/shower. In case of skin irritation, consult a physician.

Following eye contact

Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart. In case of eye irritation consult an ophthalmologist.

Following ingestion

Rinse mouth. Call a doctor if you feel unwell.

4.2 Most important symptoms and effects, both acute and delayed

Irritation

4.3 Indication of any immediate medical attention and special treatment needed

none

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Co-ordinate fire-fighting measures to the fire surroundings
water spray, foam, dry extinguishing powder, carbon dioxide (CO₂), sand

Unsuitable extinguishing media

water jet

5.2 Special hazards arising from the substance or mixture

None.

5.3 Advice for firefighters

Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus.

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SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Wearing of suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. Do not breathe dust. Avoid contact with skin, eyes and clothes. Avoidance of ignition sources.

6.2 Environmental precautions

Keep away from drains, surface and ground water.

6.3 Methods and material for containment and cleaning up

Advices on how to contain a spill

Covering of drains.

Advices on how to clean up a spill

Take up mechanically. Control of dust.

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Avoid dust formation.

• Measures to prevent fire as well as aerosol and dust generation

Removal of dust deposits.

Advice on general occupational hygiene

Wash hands before breaks and after work. Keep away from food, drink and animal feedingstuffs. When using do not smoke.

7.2 Conditions for safe storage, including any incompatibilities

Store in a dry place.

Incompatible substances or mixtures

Observe hints for combined storage.

Consideration of other advice

• Ventilation requirements

Use local and general ventilation.

• Specific designs for storage rooms or vessels

Recommended storage temperature: 15 - 25 °C.

7.3 Specific end use(s)

No information available.

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SECTION 8: Exposure controls/personal protection

8.1 Control parameters

National limit values

Occupational exposure limit values (Workplace Exposure Limits)

| Country | Name of agent | CAS No | Notation | Identifier | TWA [mg/m ³] | STEL [mg/m ³] | Source |
|---------|---------------|-----------|----------|------------|--------------------------|---------------------------|-----------|
| GB | dust | | i | WEL | 10 | | EH40/2005 |
| GB | dust | | r | WEL | 4 | | EH40/2005 |
| GB | tungsten | 7440-33-7 | | WEL | 5 | 10 | EH40/2005 |

Notation

i Inhalable fraction

r Respirable fraction

STEL Short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period unless otherwise specified

TWA Time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average

Relevant DNELs/DMELs/PNECs and other threshold levels

• human health values

| Endpoint | Threshold level | Protection goal, route of exposure | Used in | Exposure time |
|----------|-----------------------|------------------------------------|-------------------|----------------------------|
| DNEL | 5,8 mg/m ³ | human, inhalatory | worker (industry) | chronic - systemic effects |
| DNEL | 1,7 mg/kg bw/day | human, dermal | worker (industry) | chronic - systemic effects |

• environmental values

| Endpoint | Threshold level | Environmental compartment | Exposure time |
|----------|-----------------|------------------------------|------------------------------|
| PNEC | 0,338 mg/l | freshwater | short-term (single instance) |
| PNEC | 0,034 mg/l | marine water | short-term (single instance) |
| PNEC | 0,31 mg/l | water | continuous |
| PNEC | 5,86 mg/l | sewage treatment plant (STP) | short-term (single instance) |
| PNEC | 960 mg/kg | freshwater sediment | short-term (single instance) |
| PNEC | 96 mg/kg | marine sediment | short-term (single instance) |
| PNEC | 2,17 mg/kg | soil | short-term (single instance) |

8.2 Exposure controls

Individual protection measures (personal protective equipment)



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Eye/face protection

Use safety goggle with side protection.

Skin protection

• hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

• type of material

NBR (Nitrile rubber)

• material thickness

>0,11 mm.

• breakthrough times of the glove material

>480 minutes (permeation: level 6)

• other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

Respiratory protection

Respiratory protection necessary at: Dust formation. Particulate filter device (EN 143). P1 (filters at least 80 % of airborne particles, colour code: White).

Environmental exposure controls

Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

| | |
|-----------------|-----------------------------------|
| Physical state | solid (powder) |
| Colour | this information is not available |
| Odour | this information is not available |
| Odour threshold | No data available |

Other physical and chemical parameters

| | |
|---|---|
| pH (value) | This information is not available. |
| Melting point/freezing point | 3.410 °C |
| Initial boiling point and boiling range | 5.660 °C |
| Flash point | not applicable |
| Evaporation rate | no data available |
| Flammability (solid, gas) | Flammable solid in accordance with GHS criteria |
| <u>Explosive limits</u> | |
| • lower explosion limit (LEL) | this information is not available |
| • upper explosion limit (UEL) | this information is not available |
| Explosion limits of dust clouds | these information are not available |
| Vapour pressure | This information is not available. |

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| | |
|--------------------------------------|---|
| Density | 19,3 g/cm ³ at 20 °C |
| Vapour density | This information is not available. |
| Relative density | Information on this property is not available. |
| <u>Solubility(ies)</u> | |
| Water solubility | no data available |
| <u>Partition coefficient</u> | |
| n-octanol/water (log KOW) | This information is not available. |
| Auto-ignition temperature | Information on this property is not available. |
| Decomposition temperature | no data available |
| Viscosity | not relevant (solid matter) |
| Explosive properties | none |
| Oxidising properties | none |
| 9.2 Other information | |
| There is no additional information. | |
| Temperature class (EU, acc. to ATEX) | T6 (Maximum permissible surface temperature on the equipment: 85°C) |

SECTION 10: Stability and reactivity

10.1 Reactivity

risk of ignition.

10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3 Possibility of hazardous reactions

Violent reaction with: Strong oxidiser

10.4 Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

10.5 Incompatible materials

There is no additional information.

10.6 Hazardous decomposition products

Hazardous combustion products: see section 5.

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SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Shall not be classified as acutely toxic.

| Exposure route | Endpoint | Value | Species | Source |
|----------------|----------|--------------|---------|--------|
| oral | LD50 | >2.000 mg/kg | rat | ECHA |
| dermal | LD50 | >2.000 mg/kg | rat | ECHA |

Skin corrosion/irritation

Causes skin irritation.

Serious eye damage/eye irritation

Causes serious eye irritation.

Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

Summary of evaluation of the CMR properties

Shall not be classified as germ cell mutagenic, carcinogenic nor as a reproductive toxicant

- **Specific target organ toxicity - single exposure**

Shall not be classified as a specific target organ toxicant (single exposure).

- **Specific target organ toxicity - repeated exposure**

Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

Symptoms related to the physical, chemical and toxicological characteristics

- **If swallowed**

data are not available

- **If in eyes**

data are not available

- **If inhaled**

data are not available

- **If on skin**

causes skin irritation

Other information

None

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SECTION 12: Ecological information

12.1 Toxicity

acc. to 1272/2008/EC: Shall not be classified as hazardous to the aquatic environment.

Aquatic toxicity (acute)

| Endpoint | Value | Species | Source | Exposure time |
|----------|------------|-----------------------|--------|---------------|
| LC50 | >200 mg/l | fish | ECHA | 96 h |
| EC50 | >163 mg/l | aquatic invertebrates | ECHA | 48 h |
| ErC50 | >17,7 mg/l | algae | ECHA | 72 h |

Aquatic toxicity (chronic)

| Endpoint | Value | Species | Source | Exposure time |
|----------|-----------|-----------------------|--------|---------------|
| EC50 | >163 mg/l | aquatic invertebrates | ECHA | 24 h |
| EbC50 | >100 mg/l | aquatic invertebrates | ECHA | 21 d |
| NOEC | 9,8 mg/l | fish | ECHA | 38 d |
| LOEC | >10 mg/l | fish | ECHA | 38 d |

12.2 Process of degradability

The methods for determining the biological degradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential

Data are not available.

12.4 Mobility in soil

Data are not available.

12.5 Results of PBT and vPvB assessment

Data are not available.

12.6 Other adverse effects

Non-hazardous to water.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.

Sewage disposal-relevant information

Do not empty into drains.

Waste treatment of containers/packagings

It is a dangerous waste; only packagings which are approved (e.g. acc. to ADR) may be used.

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13.2 Relevant provisions relating to waste

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

13.3 Remarks

Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions.

SECTION 14: Transport information

| | | |
|------|---|--|
| 14.1 | UN number | 3089 |
| 14.2 | UN proper shipping name | METAL POWDER, FLAMMABLE, N.O.S. |
| | Hazardous ingredients | Tungsten |
| 14.3 | Transport hazard class(es) | |
| | Class | 4.1 (flammable solids) |
| 14.4 | Packing group | II (substance presenting medium danger) |
| 14.5 | Environmental hazards | none (non-environmentally hazardous acc. to the dangerous goods regulations) |
| 14.6 | Special precautions for user | |
| | Provisions for dangerous goods (ADR) should be complied within the premises. | |
| 14.7 | Transport in bulk according to Annex II of MARPOL and the IBC Code | |
| | The cargo is not intended to be carried in bulk. | |
| 14.8 | Information for each of the UN Model Regulations | |
| | • Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN) | |
| | UN number | 3089 |
| | Proper shipping name | METAL POWDER, FLAMMABLE, N.O.S. |
| | Particulars in the transport document | UN3089, METAL POWDER, FLAMMABLE, N.O.S., 4.1, II, (E) |
| | Class | 4.1 |
| | Classification code | F3 |
| | Packing group | II |
| | Danger label(s) | 4.1 |
| |  | |
| | Special provisions (SP) | 552 |
| | Excepted quantities (EQ) | E2 |
| | Limited quantities (LQ) | 1 kg |
| | Transport category (TC) | 2 |
| | Tunnel restriction code (TRC) | E |
| | Hazard identification No | 40 |
| | Emergency Action Code | 4Y |

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• International Maritime Dangerous Goods Code (IMDG)

| | |
|--|--|
| UN number | 3089 |
| Proper shipping name | METAL POWDER, FLAMMABLE, N.O.S. |
| Particulars in the shipper's declaration | UN3089, METAL POWDER, FLAMMABLE, N.O.S., 4.1, II |
| Class | 4.1 |
| Packing group | II |
| Danger label(s) | 4.1 |



| | |
|--------------------------|----------|
| Special provisions (SP) | - |
| Excepted quantities (EQ) | E2 |
| Limited quantities (LQ) | 1 kg |
| EmS | F-G, S-G |
| Stowage category | B |

SECTION 15: Regulatory information

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

Relevant provisions of the European Union (EU)

- **Regulation 649/2012/EU concerning the export and import of hazardous chemicals (PIC)**

Not listed.

- **Regulation 1005/2009/EC on substances that deplete the ozone layer (ODS)**

Not listed.

- **Regulation 850/2004/EC on persistent organic pollutants (POP)**

Not listed.

- **Restrictions according to REACH, Annex XVII**

not listed

- **List of substances subject to authorisation (REACH, Annex XIV)**

not listed

Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS) - Annex II

not listed

Regulation 166/2006/EC concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)

not listed

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Directive 2000/60/EC establishing a framework for Community action in the field of water policy (WFD)

not listed

National inventories

Substance is listed in the following national inventories:

- EINECS/ELINCS/NLP (Europe)
- REACH (Europe)

15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance.

SECTION 16: Other information

Abbreviations and acronyms

| Abbr. | Descriptions of used abbreviations |
|-----------|---|
| ADN | Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways) |
| ADR | Accord européen relatif au transport international des marchandises dangereuses par route (European Agreement concerning the International Carriage of Dangerous Goods by Road) |
| CAS | Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances) |
| CLP | Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures |
| CMR | Carcinogenic, Mutagenic or toxic for Reproduction |
| DMEL | Derived Minimal Effect Level |
| DNEL | Derived No-Effect Level |
| EH40/2005 | EH40/2005 Workplace exposure limits (http://www.nationalarchives.gov.uk/doc/open-government-licence/) |
| EINECS | European Inventory of Existing Commercial Chemical Substances |
| ELINCS | European List of Notified Chemical Substances |
| EmS | Emergency Schedule |
| GHS | "Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations |
| IMDG | International Maritime Dangerous Goods Code |
| MARPOL | International Convention for the Prevention of Pollution from Ships (abbr. of "Marine Pollutant") |
| NLP | No-Longer Polymer |
| PBT | Persistent, Bioaccumulative and Toxic |
| PNEC | Predicted No-Effect Concentration |
| REACH | Registration, Evaluation, Authorisation and Restriction of Chemicals |
| RID | Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail) |
| STEL | short-term exposure limit |
| TWA | time-weighted average |
| vPvB | very Persistent and very Bioaccumulative |
| WEL | workplace exposure limit |

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Key literature references and sources for data

- Regulation (EC) No. 1907/2006 (REACH), amended by 2015/830/EU
- Regulation (EC) No. 1272/2008 (CLP, EU GHS)

List of relevant phrases (code and full text as stated in chapter 2 and 3)

| Code | Text |
|------|-------------------------------|
| H228 | flammable solid |
| H315 | causes skin irritation |
| H319 | causes serious eye irritation |

Disclaimer

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.