

**1 Identification of the substance/preparation and of the company/undertaking****· Product details****· Trade name:** Osmium powder**· Article number:** 87870080**· Application of the substance / the preparation**

Intermediate

Precious metal alloy for technical purposes

**· Manufacturer/Supplier:**

W.C. Heraeus GmbH

Chemicals Division - Chemical Products

Heraeusstr. 12-14, D-63450 Hanau

Deutschland/ Germany

**· Further information obtainable from:** Dr. Marcus Hannakam Tel: +49-(0)6181-353240**· Information in case of emergency:**

factory security offices: +49 - (0)6181 - 35213

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**2 Hazards identification****· Hazard description:**

Xn Harmful

**· Information concerning particular hazards for human and environment:**

R 20/21/22 Harmful by inhalation, in contact with skin and if swallowed.

R 37/38 Irritating to respiratory system and skin.

R 41 Risk of serious damage to eyes.

**3 Composition/information on ingredients****· Chemical characterization:****· CAS No. Description**

7440-04-2 osmium

**· Identification number(s)****· EINECS Number:** 231-114-0**4 First aid measures****· General information:** In case of accident or if you feel unwell, seek medical advice immediately.**· After inhalation:**

Supply fresh air.

Call a doctor immediately.

**· After skin contact:**

Immediately wash with water and soap and rinse thoroughly.

Seek medical treatment.

**· After eye contact:**

Rinse opened eye for several minutes under running water.

Call a doctor immediately.

**· After swallowing:**

Rinse mouth with water.

Call a doctor immediately.

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**5 Fire-fighting measures**

- **Suitable extinguishing agents:**  
Dry sand  
Extinguishing powder. Do not use water.
- **For safety reasons unsuitable extinguishing agents:** Water
- **Special hazards caused by the substance, its products of combustion or resulting gases:**  
In case of fire, the following can be released:
- **Protective equipment:**  
Wear self-contained respiratory protective device.  
Wear fully protective suit.

**6 Accidental release measures**

- **Person-related safety precautions:**  
Wear protective equipment. Keep unprotected persons away.  
Avoid contact with substance.  
Avoid formation of dust.  
Ensure adequate ventilation
- **Measures for environmental protection:**  
Do not allow to enter sewers/ surface or ground water.  
Do not allow to penetrate the ground/soil.
- **Measures for cleaning/collecting:**  
Pick up mechanically.  
Prevent formation of dust.  
Send for recovery or disposal in suitable receptacles.

**7 Handling and storage**

- **Handling:**
- **Information for safe handling:**  
Wear protective equipment. Keep unprotected persons away.  
Ensure good ventilation/exhaustion at the workplace.  
Work only in fume cupboard.  
Only accessible to qualified persons.
- **Information about fire - and explosion protection:** see chapter 5
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**  
Keep container tightly sealed.  
Store receptacle in a well ventilated area.  
Store under lock and key and with access restricted to technical experts or their assistants only.

**8 Exposure controls/personal protection**

- **Additional information about design of technical facilities:** No further data; see item 7.

- **Ingredients with limit values that require monitoring at the workplace:**

**20816-12-0 osmium tetroxide**

WEL	Short-term value: 0.006 mg/m <sup>3</sup> , 0.0006 ppm Long-term value: 0.002 mg/m <sup>3</sup> , 0.0002 ppm (as Os)
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- **Personal protective equipment:**
- **General protective and hygienic measures:**  
Do not eat or drink while working.  
Keep away from foodstuffs, beverages and feed.

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*Immediately remove all soiled and contaminated clothing*

*Wash hands before breaks and at the end of work.*

*Avoid contact with the eyes and skin.*

**· Respiratory protection:**

*If the exhausting device is not sufficient use respiratory protection filter.*

*combined filter: B/P3*

**· Protection of hands:**

**· For the permanent contact of a maximum of 15 minutes gloves made of the following materials are suitable:**

*Nitrile rubber, NBR*

*Butyl rubber, BR*

*Fluorocarbon rubber (Viton)*

**· Eye protection:**



*Tightly sealed goggles*

**· Body protection:** *Protective work clothing*

### 9 Physical and chemical properties

**· General Information**

<b>Form:</b>	<i>Solid</i>
<b>Colour:</b>	<i>Blue</i>
	<i>Grey</i>
<b>Odour:</b>	<i>Chlorine-like</i>

**· Change in condition**

*Melting point/Melting range: 3045°C*

*Boiling point/Boiling range: 5000°C*

**· Flash point:** *Not applicable.*

**· Density at 20°C:** *22.6 g/cm<sup>3</sup>*

**· Solubility in / Miscibility with**

**water:** *Insoluble.*

**Organic solvents:** *0.0 %*

**· Solids content:** *100.0 %*

### 10 Stability and reactivity

**· Materials to be avoided:**

*At room temperature the powder will be oxidised gradually to very toxic osmium(VIII) oxide. Therefore store in a tightly closed container.*

### 11 Toxicological information

**· Acute toxicity:**

**· LD/LC50 values relevant for classification:**

**20816-12-0 osmium tetroxide**

<i>Inhalative</i>	<i>TC(low)</i>	<i>0.133 mg/m<sup>3</sup> (human man)</i>
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**· Primary irritant effect:**

**· on the skin:** *Irritant to skin and mucous membranes.*

**· on the eye:** *Strong irritant with the danger of severe eye injury.*

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- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**  
At room temperature the powder will be oxidised gradually to very toxic osmium(VIII) oxide. Therefore the substance is classified as harmful by inhalation, in contact with skin and if swallowed as a precaution.

**12 Ecological information**

- **Ecotoxicological effects:**
- **Remark:** No data available.
- **General notes:** Avoid transfer into the environment.

**13 Disposal considerations**

- **Product:**
- **Recommendation**  
Product or residue of product should be recycled because of precious metal content (national regulations must be observed). Material can be returned to supplier or other recycling companies.  
If residues of products are classified as waste from administrative bodies or recycling of precious metal is not intended use the legal requirements to assign the European Waste Code (depending on branche of industry and industrial process).  
Disposal must be made according to official regulations.
- **Uncleaned packaging:**
- **Recommendation:**  
Uncleaned or with product residues contaminated packing should be treated like the product itself.  
Packages, which do not contain product residues, should be recycled; if there does not exist a collecting system, packages can be treated as rubbish.

**14 Transport information**

- **Land transport ADR/RID (cross-border)**
- **ADR/RID class:** -
- **Maritime transport IMDG:**
- **IMDG Class:** -
- **Marine pollutant:** No
- **Air transport ICAO-TI and IATA-DGR:**
- **ICAO/IATA Class:** -

**15 Regulatory information**

- **Labelling according to EU guidelines:**  
The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials.
- **Code letter and hazard designation of product:**  
Xn Harmful
- **Risk phrases:**  
20/21/22 Harmful by inhalation, in contact with skin and if swallowed.  
37/38 Irritating to respiratory system and skin.  
41 Risk of serious damage to eyes.
- **Safety phrases:**  
7/9 Keep container tightly closed and in a well-ventilated place.  
26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

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36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

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**16 Other information**

*This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.*

· **Department issuing MSDS: HH-SUS**

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