

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

- **Product identifier**
- **Trade name:** *Niobium zirconium alloy*  
(0.8 up to 1.2 % Zr, bulky form)
- **Relevant identified uses of the substance or mixture and uses advised against**
- **Application of the substance / the preparation** *Special alloy*
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
*Heraeus Materials Technology GmbH & Co. KG*  
*Engineered Materials Division*  
*Heraeusstr. 12-14, D-63450 Hanau*  
*Deutschland/ Germany*
- **Further information obtainable from:** *Daniel Magdic Tel: +49-(0)6181-353454*
- **Emergency telephone number:** -

## 2 Hazards identification

- **Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008 -**
- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC** *Not applicable.*
- **Information concerning particular hazards for human and environment:**  
*The product does not have to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.*
- **Classification system:**  
*The classification is according to the latest editions of the EU-lists, and extended by company and literature data.*
- **Label elements**
- **Labelling according to Regulation (EC) No 1272/2008** *Void*
- **Hazard pictograms** *Void*
- **Signal word** *Void*
- **Hazard statements** *Void*
- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** *Not applicable.*
- **vPvB:** *Not applicable.*

## 3 Composition/information on ingredients

- **Chemical characterization:** *Mixtures*
- **Description:**  
*The product is a bulky (semi-finished) material. It is not present in form of powder or dust.*  
CAS: 7440-03-1      *Niobium (95-99,5%)*  
CAS: 7440-67-7      *Zirconium (0.8-1.2%)*
- **Dangerous components:** *Void*

## 4 First aid measures

- **Description of first aid measures**
- **General information:** *In case of accident or if you feel unwell, seek medical advice immediately.*
- **After inhalation:**  
*After inhalation of dust or powder seek medical advice.*  
*Supply fresh air.*
- **After skin contact:**  
*Fine sized material wash off with plenty of water.*  
*If skin irritation continues, consult a doctor.*

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- **After eye contact:**  
Fine sized material in the eye rinse immediately with plenty of water (15 minutes), also under the eyelids.  
Seek medical treatment.
- **After swallowing:**  
Rinse mouth with water after swallowing of fine sized material.  
Seek immediate medical advice.
- **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:** Special powder for metal fires. Do not use water.
- **For safety reasons unsuitable extinguishing agents:** Water
- **Special hazards arising from the substance or mixture**  
Semi-finished material is not easily flammable.  
Fine sized material is more easily flammable. Keep away from sources of ignition.
- **Advice for firefighters**
- **Protective equipment:** Wear self-contained respiratory protective device.

## 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** No special measures required.
- **Methods and material for containment and cleaning up:**  
Pick up mechanically.  
Send for recovery or disposal in suitable receptacles.
- **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**  
Wear protective equipment. Keep unprotected persons away.  
Prevent formation of dust.
- **Information about fire - and explosion protection:** see chapter 5
- **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:** Not required.
- **Specific end use(s)** No further relevant information available.

## 8 Exposure controls/personal protection

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

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- **Control parameters**
- **Ingredients with limit values that require monitoring at the workplace:**
- **Additional information:** The lists valid during the making were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:** Do not eat, drink, smoke or sniff while working.
- **Respiratory protection:**  
Use respiratory protective device against the effects of fumes/dust/aerosol.  
Filter P3
- **Protection of hands:**  
No chemical-protective gloves required.  
Wear gloves for the protection against mechanical hazards according to EN 388.
- **Eye protection:**  
Necessarily if material in form of dust is present.



Tightly sealed goggles

- **Body protection:** Light weight protective clothing

### 9 Physical and chemical properties

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

<b>Form:</b>	Particulate
<b>Colour:</b>	Silver grey
<b>Odour:</b>	Odourless
- **Change in condition**

<b>Melting point/Melting range:</b>	> 2400°C
<b>Boiling point/Boiling range:</b>	> 4900°C
- **Flash point:** Not applicable.
- **Flammability (solid, gaseous):** Semi-finished material is not easily flammable.
- **Self-igniting:** Product is not self igniting.
- **Danger of explosion:** Product does not present an explosion hazard.
- **Density at 20°C:** ca. 8.5 g/cm<sup>3</sup>
- **Solubility in / Miscibility with water:** Insoluble.
- **Solvent content:**

<b>Organic solvents:</b>	0.0 %
<b>Solids content:</b>	100.0 %
- **Other information** No further relevant information available.

### 10 Stability and reactivity

- **Reactivity**
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:**  
No decomposition if used according to specifications.

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- Prevent formation of dust.
- **Possibility of hazardous reactions** Reacts with strong acids and alkali.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

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

**7440-03-1 niobium powder**

Oral LD50 >10000 mg/kg (rat)

- **Primary irritant effect:**
- **on the skin:** No data available.
- **on the eye:** No data available.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**

The product is not subject to classification according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version.

When used and handled according to specifications, the product does not have any harmful effects to our experience and the information provided to us.

## 12 Ecological information

- **Toxicity**
- **Acquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behaviour in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Ecotoxicological effects:**
- **Remark:** No data available.
- **Additional ecological information:**
- **General notes:** Generally not hazardous for water
- **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**  
Contact manufacturer for recycling information.  
If residues of products are classified as waste use the legal requirements to assign the appropriate Waste Code.  
Disposal must be made according to official regulations.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

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## 14 Transport information

<b>· UN-Number</b>	Void
<b>· ADR, IMDG, IATA</b>	Void
<b>· UN proper shipping name</b>	Void
<b>· ADR, IMDG, IATA</b>	Void
<b>· Transport hazard class(es)</b>	
<b>· ADR, IMDG, IATA</b>	
<b>· Class</b>	Void
<b>· Packing group</b>	
<b>· ADR, IMDG, IATA</b>	Void
<b>· Environmental hazards:</b>	
<b>· Marine pollutant:</b>	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>	Material in bulky form is not a dangerous good in the sense of this regulations.
<b>· UN "Model Regulation":</b>	-

## 15 Regulatory information

## 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-US**

**· 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*

*IATA: International Air Transport Association*

*ICAO: International Civil Aviation Organization*

*GHS: Globally Harmonized System of Classification and Labelling of Chemicals*

*LC50: Lethal concentration, 50 percent*

*LD50: Lethal dose, 50 percent*