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

1.1 Product identifier

Trade name: Silver, Silver grain; (particle size > 1 mm)

CAS Number:
7440-22-4

EC number:
231-131-3

Registration number 01-2119555669-21-0028

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

No further relevant information available.

Application of the substance / the mixture

Intermediate

Precious metal alloy for technical purposes

Manufacturer/Supplier:
Heraeus Deutschland GmbH & Co. KG
Heraeusstr. 12-14
D-63450 Hanau
Germany
Tel: +49-(0)6181-355707

Further information obtainable from: sds@heraeus.com

1.4 Emergency telephone number:

Emergency Contact (24-Hour-Phone Number)
GBK-GmbH, Ingelheim: (international) +49 6132-84463
GBK/Infotrac ID 105241: (China domestic) 4001 200 761

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008
The substance is not classified according to the CLP regulation.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC Not applicable.

2.2 Label elements

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

Hazard pictograms Void

Signal word Void

Hazard statements Void

2.3 Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

SECTION 3: Composition/information on ingredients

3.1 Chemical characterisation: Substances

CAS No. Description
7440-22-4 Silver grain

Identification number(s)

EC number: 231-131-3

SECTION 4: First aid measures

4.1 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.

(Contd. on page 2)
After skin contact:
Fine sized material wash off with plenty of water.
If skin irritation continues, consult a doctor.

After eye contact:
Fine sized material in the eye rinse immediately with plenty of water (15 minutes), also under the eyelids.

After swallowing:
Seek immediate medical advice.

4.2 Most important symptoms and effects, both acute and delayed
No further relevant information available.

4.3 Indication of any immediate medical attention and special treatment needed
No further relevant information available.

SECTION 5: Firefighting measures

5.1 Extinguishing media
Suitable extinguishing agents:
CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

5.2 Special hazards arising from the substance or mixture
No further relevant information available.

5.3 Advice for firefighters
Protective equipment: No special measures required.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Avoid formation of dust.

6.2 Environmental precautions:
No special measures required.

6.3 Methods and material for containment and cleaning up:
Pick up mechanically.
Send for recovery or disposal in suitable receptacles.

6.4 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.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Wear protective equipment. Keep unprotected persons away.
Prevent formation of dust.

Information about fire - and explosion protection:
The product is not combustible.

7.2 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.
Further information about storage conditions: None.

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

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredients with limit values that require monitoring at the workplace:

7440-22-4 Silver, Silver grain; (particle size > 1 mm) (50-100%)

WEL: Long-term value: 0.1 mg/m³
40.0 · DNELs

Oral general population, long term, systemic 1.2 mg/Kg/d (not defined) (poorly soluble)
Dermal general population, long term, local 0.04 mg/m3 (not defined) (poorly soluble)
Inhalative general population, long term, systemic 0.04 mg/m3 (not defined) (poorly soluble)

0.1 mg/Kg (not defined) (poorly soluble)
worker, long term, local

0.04 mg/m3 (not defined) (poorly soluble)
Inhalative general population, long term, systemic
worker, long term, local

PNECs

freshwater 0.00004 mg/l (not defined) (dissolved silver)
marine water 0.00086 mg/l (not defined) (dissolved silver)
sediment, freshwater (dry weight) 438 mg/Kg (not defined)
sediment, marine water (dry weight) 438 mg/Kg (not defined)
sewage treatment plant (STP) 0.025 mg/l (not defined) (soluble silver)
soil (dry weight) 0.794 mg/Kg (not defined)

· Additional information: The lists valid during the making were used as basis.

8.2 Exposure controls
· Personal protective equipment:
  · Respiratory protection:
    Use respiratory protective device against the effects of fumes/dust/aerosol.
    Filter P3
  · Protection of hands: No chemical-protective gloves required.
  · Eye protection:
    Necessarily if material in form of dust is present.
    Safety glasses
  · Body protection: Light weight protective clothing

SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties
  · General Information
    · Appearance:
      Form: Solid
      Colour: Silver grey
      Odour: Odourless
  · Change in condition
    Melting point/Melting range: 961.3 °C
    Boiling point/Boiling range: 2180 °C
  · Flash point: Not applicable.
  · Flammability (solid, gaseous): Product is not flammable.
  · Danger of explosion: Product does not present an explosion hazard.
  · Density at 20 °C: 10.5 g/cm³
  · Solubility in / Miscibility with water: Insoluble.

9.2 Other information No further relevant information available.

SECTION 10: Stability and reactivity

· 10.1 Reactivity
· 10.2 Chemical stability
  · Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
Trade name: Silver, Silver grain; (particle size > 1 mm)

- 10.3 Possibility of hazardous reactions: No dangerous reactions known.
- 10.4 Conditions to avoid: No further relevant information available.
- 10.5 Incompatible materials: No further relevant information available.
- 10.6 Hazardous decomposition products: No dangerous decomposition products known.
- Additional information: 

SECTION 11: Toxicological information

- 11.1 Information on toxicological effects

**Acute toxicity:**

- LD/LC50 values relevant for classification:
  - Oral LD50 >10000 mg/kg (mouse)

**Primary irritant effect:**

- on the skin: No irritating effects known.
- on the eye: No irritating effects known.
- Sensitisation: No sensitising effects known.
- Additional toxicological information:
  - When used and handled according to specifications, the product does not have any harmful effects to our experience and the information provided to us.
  - The substance is not subject to classification according to the latest version of the EU lists.

SECTION 12: Ecological information

- 12.1 Toxicity

  - Aquatic toxicity: No further relevant information available.
- 12.2 Persistence and degradability: No further relevant information available.
- 12.3 Bioaccumulative potential: No further relevant information available.
- 12.4 Mobility in soil: No further relevant information available.
- Ecotoxicological effects:
  - Remark: No data available.
  - Additional ecological information:
    - General notes: Generally not hazardous for water
- 12.5 Results of PBT and vPvB assessment
  - PBT: Not applicable.
  - vPvB: Not applicable.
- 12.6 Other adverse effects: No further relevant information available.

SECTION 13: Disposal considerations

- 13.1 Waste treatment methods

  - Recommendation
    - Contact manufacturer for recycling information.
    - Disposal must be made according to official regulations.

- Uncleaned packaging:
  - Recommendation: Disposal must be made according to official regulations.

SECTION 14: Transport information

- 14.1 UN-Number
  - ADR, IMDG, IATA: Void
- 14.2 UN proper shipping name
  - ADR: Void

(Contd. on page 5)
Trade name: Silver, Silver grain; (particle size > 1 mm)

| 14.3 Transport hazard class(es) | Void |
| 14.4 Packing group | Void |
| 14.5 Environmental hazards: | Not applicable. |
| 14.6 Special precautions for user | Not applicable. |
| 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
  No further relevant information available.

- 15.2 Chemical safety assessment: A Chemical Safety Assessment has been carried out.

SECTION 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-EHS- Chemical Safety
- 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)
  - ICAO: International Civil Aviation Organisation
  - 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
  - IATA: International Air Transport Association
  - GHS: Globally Harmonised 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)
  - DNEL: Derived No-Effect Level (REACH)
  - PNEC: Predicted No-Effect Concentration (REACH)
  - LC50: Lethal concentration, 50 percent
  - LD50: Lethal dose, 50 percent
- * Data compared to the previous version altered.