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

1.1 Product identifier
   - Trade name: Silver wool
   - CAS Number: 7440-22-4
   - EC number: 231-131-3
   - Registration number 01-2119555669-21-0026

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 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:
   - 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
     Aquatic Acute 1 H400 Very toxic to aquatic life.
     Aquatic Chronic 1 H410 Very toxic to aquatic life with long lasting effects.

   - Classification according to Directive 67/548/EEC or Directive 1999/45/EC
     N: Dangerous for the environment
     R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

2.2 Label elements
   - Labelling according to Regulation (EC) No 1272/2008
     The substance is classified and labelled according to the CLP regulation.
   - Hazard pictograms

   GHS09

   - Signal word Warning
   - Hazard statements
     H410 Very toxic to aquatic life with long lasting effects.
   - Precautionary statements
     P273 Avoid release to the environment.
     P391 Collect spillage.
     P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

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
  - 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: Supply fresh air; consult doctor in case of complaints.
  - After skin contact:
    Immediately wash with water and soap and rinse thoroughly.
    If skin irritation continues, consult a doctor.
  - After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.
  - After swallowing:
    Rinse out mouth and then drink plenty of water.
    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.
  - Additional information
    Collect contaminated fire fighting water separately. It must not enter the sewage system.

SECTION 6: Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures
  Wear protective equipment. Keep unprotected persons away.
  Avoid formation of dust.
  Ensure adequate ventilation
- 6.2 Environmental precautions:
  Do not allow to enter sewers/ surface or ground water.
  Do not allow to penetrate the ground/soil.
- 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.
  The usual precautionary measures are to be adhered to when handling chemicals.
  Prevent formation of dust.
  Ensure good ventilation/exhaustion at the workplace.
  
- Information about fire - and explosion protection:
  The product is not combustible.
  see chapter 5

- 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

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

- 8.1 Control parameters

- Ingredients with limit values that require monitoring at the workplace:
  
  7440-22-4 silver

  
  WEL Long-term value: 0.1 mg/m³

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

- 8.2 Exposure controls

- Personal protective equipment:

- General protective and hygienic measures:
  
  The usual precautionary measures are to be adhered to when handling chemicals.
  Immediately remove all soiled and contaminated clothing

- 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: Safety glasses

- Body protection: Protective work 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.
Trade name: Silver wool

| · Danger of explosion: | Product does not present an explosion hazard. |
| · Density at 20 °C: | 10.5 g/cm³ |
| · Solubility in / Miscibility with water at 20 °C: | < 0.001 g/l |
| · 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.
· 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:
    | 7440-22-4 silver |
    | 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.

SECTION 12: Ecological information

· 12.1 Toxicity
· Aquatic toxicity:
  · LC50/48h | 0.00022 mg/l (daphnia) |
  · 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: Very toxic for water fleas.
· Additional ecological information:
  · General notes: Avoid transfer into the environment.
  · 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 UN3077

14.2 UN proper shipping name
IMDG ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Silver (particle size < 1 mm)), MARINE POLLUTANT
IATA ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Silver (particle size < 1 mm))

14.3 Transport hazard class(es)
ADR, IMDG, IATA

Class 9 Miscellaneous dangerous substances and articles.
Label 9

14.4 Packing group
ADR, IMDG, IATA III

14.5 Environmental hazards:
Marine pollutant: Symbol (fish and tree)
Special marking (ADR): Symbol (fish and tree)
Special marking (IATA): Symbol (fish and tree)

14.6 Special precautions for user
Warning: Miscellaneous dangerous substances and articles.
Danger code (Kemler): 90
EMS Number: F-A,S-F

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
Not applicable.

Transport/Additional information:

ADR
Limited quantities (LQ) 5 kg
Transport category 3
Tunnel restriction code E

UN "Model Regulation": UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Entwurf Silver wool), 9, III
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 not 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 Roate (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)
  LC50: Lethal concentration, 50 percent
  LD50: Lethal dose, 50 percent
  Aquatic Acute 1: Hazardous to the aquatic environment - Acute Hazard, Category 1
  Aquatic Chronic 1: Hazardous to the aquatic environment - Chronic Hazard, Category 1
- * Data compared to the previous version altered.