



SAFETY DATA SHEET



JSC "Uralelectromed"

1. IDENTIFICATION OF THE SUBSTANCE\PREPARATION AND OF THE COMPANY\UNDERTAKING

Identification of the substance/preparation	Copper (min. 99.5 %)
Trade name	Copper electrolytic powder, grades PM, PMS-1, PMS-A, PMS-B, SA, SB, SC, SD, SE, SF, S, GS
Use of the substance/preparation	Manufacturing of parts and articles by method of powder metallurgy; use in electrical-engineering, instrument making, automotive, aviation, machine-building and chemical industries, for production of copper oxide, copper dioxide, and copper salts.
Version No.	01/2
Revision date	28-December-2009
SDS Number	PB-00194429-002-2009
Manufacturer/Supplier	JSC "Uralelectromed" 1, Lenin Str., Verkhnyaya Pyshma, 624091 Sverdlovsk region, Russia Tel. +7 34368 47199, +7 34368 46193; fax: +7 34368 46039 Contact person: Elena Kapustina Email: reach@ugmk.com ; e.kapustina@ugmk.com http: www.elem.ru
Emergency	Emergency phone (Access code): +7 34368 47199
Only representative	Halma Export & Import GmbH Reichstratsstrasse 11/3A A-1010 Vienna Austria Phone: +43 (0) 1 533 56 80 Fax: +43 (0) 1 533 56 80 30 Contact: Dr. Bernhard Goetsch e-mail: bernhard.goetsch@halma.co.at

2. HAZARDS IDENTIFICATION

This substance is not classified as dangerous according to Directive 67/548/EEC

Physical hazards	Not classified as a physical hazard.
Health hazards	Classified as a health hazard - by inhalation, skin and eye contact and internally (by ingestion).
Environmental hazards	Not classified as an environment hazard.
Specific hazards	This product (copper powder) is considered to present high human exposure. It may be irritating to eyes, mucous membranes and respiratory tract, causes acute and chronic poisoning. The symptoms are shivering, fever, malaise and muscular pain. The effects might be delayed. Long-term exposure to copper may cause anaemia. Prolonged skin contact may cause dermatitis. Molten copper may cause thermal burn. High concentrations of dust may form explosive mixture with air.
Main symptoms	Irritation of nose and throat. Irritation of eyes and mucous membranes

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS #	Percent	EC-No.	Classification
Copper	7440-50-8	minimum 99.5	231-159-6	R: 36/37/38 S: 24/25-36

Composition comments All concentrations are in percent by weight. For more detailed chemical composition, refer to the certificate of analysis.

*) Decoding of hazard symbols is given in Section 16.

4. FIRST-AID MEASURES

Inhalation	In case of exposure to fumes or particulates: Move to fresh air. Get medical attention if discomfort persists.
Skin contact	Get off dirty clothes. Wash skin with soap and water. Get medical attention if irritation develops or persists. In case of contact with molten product, cool rapidly with water and seek immediate medical attention. Do not attempt to remove molten product from skin because skin will tear easily. Cuts or abrasions should be treated promptly with thorough cleansing of the affected area.
Eye contact	Do not rub eyes. Remove any contact lenses. Flush eyes thoroughly with water, taking care to rinse under eyelids. If irritation persists, continue flushing for 15 minutes, rinsing from time to time under eyelids. If discomfort continues, consult a physician.
Ingestion	Rinse mouth thoroughly if dust is ingested. Do not induce vomiting. Get medical attention if any discomfort continues.
General advice	Get medical attention if any discomfort develops. Seek medical attention for all burns, regardless how minor they may seem. Show this safety data sheet to the doctor in attendance.
Notes to physician	Treat symptomatically. The effects might be delayed

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	Special powder against metal fires. Dry sand.
Extinguishing media which must not be used for safety reasons	Do not use water or halogenated extinguishing media
Unusual fire & explosion hazards	Powder may form an explosive mixture with air . Do not use water on molten metal: explosion hazard could result.
Specific hazards	Fire or high temperatures create: metal oxides.
Special protective equipment for fire-fighters	Self-contained breathing apparatus and full protective clothing .
Fire fighting equipment/instructions	Move container from fire area if it can be done without risk. Use a special-purpose equipment

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	Ensure adequate ventilation. Avoid inhalation of dust and contact with skin and eyes. Wear protective clothing as described in Section 8 of this safety data sheet.
Environmental precautions	Avoid release to the environment.
Methods for cleaning up	Scrape up spilled material with shovels into a suitable container for recycle or disposal. Collect dust or particulates using a vacuum cleaner with a HEPA filter.

7. HANDLING AND STORAGE

Handling Provide adequate ventilation. Use appropriate tools and package materials;

PB-00194429-002-2009 ELECTROLYTIC COPPER POWDER

Version: 01/2

Revision date: 28-December-2009

Issue date: 30-December-2009

explosion-proof equipment and artificial light attachments. Avoid contact with molten material. Do not use water on molten metal. Avoid contact with sharp edges and hot surfaces. Avoid generation and spreading of dust. Avoid inhalation of dust and contact with skin and eyes. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Storage Keep dry in supplier's package at temperature not more than +25°C. Store away from incompatible materials. Avoid wetness and moisture.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure limit values

United Kingdom

Components	Type	Value	Form
Copper (7440-50-8)	STEL	2 mg/m ³	Inhalable dusts.
	TWA	1 mg/m ³	Inhalable dusts.
		0.2 mg/m ³	Fume.

Exposure controls Use process enclosures, local exhaust ventilation, or other exposure level control devices to maintain concentration in air below recommended exposure limits.

Occupational exposure controls In case of inadequate ventilation or risk of inhalation of dust, use suitable respiratory equipment with particle filter (type P2). Seek advice from local supervisor.

Respiratory protection

Hand protection

Wear suitable protective gloves to prevent cuts and abrasions; against fine dust use protective hydrophobic ointment, paste and cream. Apply cleansers and personal towels to remove ointment. When material is heated, wear gloves to protect against thermal burns. Suitable gloves can be recommended by the glove supplier.

Eye protection

Wear dust-resistant safety goggles where there is danger of eye contact.

Skin and body protection

General

Wear suitable protective clothing. Use personal protective equipment when required. Select personal protective equipment according to the CEN standards; discuss protective equipment with the supplier.

Environmental exposure controls

Contain spills and prevent releases. Observe national regulations on emissions.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practices. Wash hands after handling. Routinely wash work clothing and protective equipment to remove contaminants. Observe any medical surveillance requirements.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Massive, solid metal.
Physical state	Solid (fine dispersed powder)
Form	Powder particles of dendritic shape
Colour	Red brown.
Odour	Odourless.
Odour threshold	Not applicable.
pH	Not applicable
Boiling point	2540 °C – 2595 °C
Flash point	Not available.
Flammability	Not available.
Vapour pressure	Not available.
Apparent density	1.25 – 3.5 g/cm ³ (depending on the grade)
Specific area of particles	1000-1700 cm ² /g
Electrical resistivity	Maximum 20x10 ⁻⁶ Ohm-m
Solubility (water)	Insoluble
Partition coefficient (n-octano/water)	Not available.
Viscosity	Not available.
Vapour density	Not available.
Evaporation rate	Not available

Melting point	1083°C (1981.4°F)
Freezing point	Not available.
Auto-ignition temperature	Aerogel 270 °C, aerosuspension 700 °C
VOC	0%
Bulk density	Not available.
Percent volatile	Not available.

10. STABILITY AND REACTIVITY

Conditions to avoid	Contact with incompatible materials. Contact with acids will release flammable hydrogen gas.
Hazardous decomposition products	Not applicable.
Stability	Copper powder is stable and non-reactive under normal conditions of use, storage and transport.
Materials to avoid	Acids. Alkalis. Halogens. May oxidize. Interacts with sulfur, hydrogen sulfide, selenium, ammonia; forms complex salts.
Hazardous polymerisation	Hazardous polymerisation does not occur.

11. TOXICOLOGICAL INFORMATION

Acute toxicity	Inhalation of powder or fumes may cause acute and chronic poisoning with various clinical symptoms. DL ₅₀ 1500 mg/kg, guinea-pigs CL ₅₀ (800-960) mg/m ³ , rabbits
Routes of exposure	Inhalation. Skin contact.
Chronic toxicity	Prolonged inhalation may be harmful. Long-term exposure to copper may cause anemia. Dust irritates eyes and causes cornea ulceration.
Sensitization	No test data available for the product.
Carcinogenicity	IARC not listed.
Mutagenicity	No test data available for the product.
Reproductivity	Possible reproductive hazard.
Epidemiology	Based on epidemiological studies, pre-existing pulmonary disorders may be aggravated by prolonged exposure to high concentrations of metal dust or fumes.
Local effects	May cause irritation through mechanical abrasion. Prolonged skin contact may cause dermatitis.
Further information	Overexposure may result in nasal septum irritation and ulceration, disturbance of nervous and bronchopulmonary systems, disturbance of liver, kidneys and other viscera.

12. ECOLOGICAL INFORMATION

Ecotoxicity	Copper powder presents a limited hazard for the environment.
Environmental effects	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Persistence and degradability	The product is not biodegradable.

Bioaccumulation	The product is not bioaccumulating.
Aquatic toxicity	If copper powder presents in water basins, it destructively affects fish, plankton and water weed; changes organoleptic properties of water; prevents water self-purification; is cumulated by soil and plants.
Mobility	Copper powder oxidizes under influence of the environment.

13. DISPOSAL CONSIDERATIONS

Disposal instructions Dispose in accordance with applicable regulations. EWC code 06 04 05.

14. TRANSPORT INFORMATION

ADR	Not regulated as dangerous goods
IATA	Not regulated as dangerous goods.
IMDG	Not regulated as dangerous goods.

15. REGULATORY INFORMATION

Labeling



Contains Electrolytic copper powder, grade (in accordance with the contract)

EC Number 231-159-6

Regulatory information This Safety Data Sheet complies with the requirements of Regulation (EC) № 1907/2006.

16. OTHER INFORMATION

Disclaimer This Safety Data Sheet is specifically designed to comply with the requirements of the EU Regulation called REACH – Registration, Evaluation and Authorization of Chemicals (EC № 1907/2006 of the European Parliament and of the Council of 18 December 2006) and the corresponding country law, and may not comply with the requirements of any other regulations for safe product handling.

Risk and safety codes and phrases R: 36/37/38 – irritating to eyes, irritating to respiratory system, irritating to skin
S: 24/25-36 – avoid contact with skin, avoid contact with eyes, wear suitable protective clothing

Issue date 30-December-2009