Material data sheet Copper

Issue: February 2016
Supersedes issue June 2010

1. Identification of the material

Product: Semi-finished product (sheets, strips, pipes, rods, wires, ropes, strands) made of copper by melting of cathodes or cathode-worthy scraps and subsequent metallurgical hot and cold forming.

Trade name: Cu-OFE; Cu-OF1; Cu-OF; Cu-ETP; Cu-ETP1; Cu-PHC; Cu-HCP; Cu-DLP; Cu-DHP; CuAg0,03; CuAg0,03P; CuAg0,04; CuAg0,04P; CuAg0,1; CuAg0,1P; CuAg0,2

REACH registration No.: not necessary

Manufacturer:
MKM Mansfelder Kupfer und Messing GmbH
Lichtlöcherberg 40
06333 Hettstedt
Germany

2. Chemical composition

Chemical characterization: The main component is copper with low admixtures of other chemical elements.

Element	CAS	EINECS	Percentage (%)
Copper	7440-50-8	231-159-6	99.90 - 99.95
Phosphorus	7723-14-0	231-768-7	up to 0.040
Oxygen	7782-44-7	231-956-9	up to 0.040
Silver	7440-22-4	231-131-3	up to 0.25

Additional notes:
The chemical composition is subject to variations within standardized tolerances.

The products meet the requirements of European directives and ordinances (2011/65/EC (RoHS); 2002/96/EC; 2000/53/EC; 2003/11/EC; 1907/2006/EC (REACH)).

3. Potential hazards

Hazards identification: Not applicable because the product is no hazardous material.

Additional hazards for the human and environment:
Not applicable so far as the product is handled properly. The products shall be used in such a manner that there is no unintentional release of hazardous substances.

Labour Safety:	Environmental Management:	Quality Management:
19.02.2016	23.02.2016	18.02.2016

4. First aid measures

Specific measures are not necessary.

5. Fire fighting measures

The fire fighting measures shall be adapted to each surrounding.

Specific hazards caused by the material or preparation or combustion products or gases released
In case of contact with water, molten copper may explode. Copper may explosively react with the following substances: acetylene, ammonium nitrate, ethylene oxide and strong mineral acids.

6. Measures to be taken in the case of unintentional release

Personal precautionary measures: Not necessary

Measures of environmental protection: Avoid any dust formation.
Prevent the product from getting into the sewerage system or waters.
Cover the sewerage system.

Cleaning / Pick-up method:
- For picking up the product, use approved industrial vacuum cleaners.
- Dispose the product with sludgy consistency in suitable containers.

7. Handling and storage

Protective measures for safe handling: For the semi-finished product, specific measures are not necessary. Avoid any dust formation.

Fire and explosion prevention: Specific measures are not necessary.

Requirements placed on safe storage: Specific measures are not necessary.

8. Exposure control and personal protective equipment

Parameters to be controlled:

CAS No.	Denomination of material	Kind	Value	Unit
7440 - 50 - 8	Cu	MAK*	1E*	mg/m³
7440 - 50 - 8	Cu – smoke	MAK*	0.1A*	mg/m³

* E = respirable A = alveolar MAK = maximum working-site concentration

Personal protective equipment:
General protection and sanitary measures: - Wash the hands before the breaks and at the end of work.
Do not inhale dust.

Respiratory protection: In case of dust formation, use suitable respiratory protective devices.
Skin protection: Use a suitable skin protection (e.g. protective gloves).
Eye protection: In case of dust formation, wear tight protective goggles.
Body protection: In case of dust formation, wear suitable protective clothes.

9. Physical and chemical properties

Shape: solid

Colour: reddish

Odour: odourless

Melting point: 1083 °C

Ignition temperature: not applicable
Self-ignition: not applicable
Fire accelerating properties: not applicable
Explosion hazard: not applicable
Density: 8.9 g/cm³

Solubility in water: practically insoluble

Inflammability: The material itself is not inflammable.

10. Reactivity and stability:

Stable at room temperature.

Conditions to be avoided: Uncontrolled heating effects without protective measures

Substances to be avoided: Ammonia, ammonium chloride, ammonium hydroxide, ammonium nitrate, chlorine, acetylene, copper (II) chloride, copper nitrate, iron (III) chloride, iron sulphate, ethylene oxide, hydrogen peroxide (>10%)

11. Toxicological information

If used for the purpose intended, there are no irritating or harmful effects.

Sensitization
Any sensitizing effects are not known.

12. Ecological information

Semi-finished products of copper are practically insoluble in water.

13. Instructions for disposal

To be disposed of according to the provisions of the German Closed Substance Cycle Waste Management Act.
The material is 100 % recyclable in plants of metallurgical industry.

Waste code No.: 16 01 18

14. Transport information

Within the meaning of the regulations for the road transport (ADR / RID, GGVSE), the product is no hazardous good.

Road transport ADR/RID and GGVS/GGVE (cross-frontier/inland):
ADR/RID-GGVS/E class: -
Marine transport IMDG/GGVSee:
IMDG/GGVSee class: -
Marine pollutant: no
Aircraft transport ICAO-TI and IATA-DGR:
ICA=/IATA class: -

15. Regulatory information

Labelling
The products are not liable to labelling according to EC directives/German Ordinance of Hazardous Substances.

National regulations:
Employment restrictions: none
Statutory Order on Hazardous Incidents: not applicable
Regulations on Inflammable Liquids: not applicable
Technical Instructions
on Air Pollution Control: Chapter 5.2.2. III
Water hazard class: non-hazardous to water
Other regulations
For Germany:
The regulations for the prevention of accidents and other regulations of the accident prevention and insurance associations shall be adhered to.

16. Other information

Recommended use
The product is intended for the professional user in the field of

electrical and electronics industry, building industry, anti-corrosion protection, installation equipment, machine construction, electrical engineering, chemical industry, food industry, brewery and beverages

industry, paper industry, ship and apparatus construction, automobile, wagon and locomotive construction industry, nuclear engineering, overhead construction

Data references

Hauptstoffliste (List of main substances), 2009 WEKA - Verlag
Gefahrstoffdatenblätter (Data sheets for hazardous substances), WEKA - Verlag
TRGS 900 „Luftgrenzwerte„ (Air pollution limits)
Remy, Lehrbuch der anorganischen Chemie (Textbook of inorganic chemistry)
Verwaltungsvorschrift wassergefährdende Stoffe (Administrative regulation on water endangering substances)
Abfallablagerungsverordnung (Directive on waste deposition)
GGVSE (Directive on hazardous goods in road and railway transport)