

EC-Material Safety Data Sheet

According EC-Guideline 91/155/EEC

Changed by Guideline 2001/58/EG

No.: KME 001B-E

remastered at: 31.03.2008

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Trade name: Copper Alloy

Producer/Importer: KME AG

1. Substance/Composite and Company**1.1 Name of the substance or the preparation**

| KME | | | EN | | DIN | | ASTM |
|----------|-------------------|-------------|-----------|----------|----------|-----------------|-----------------------|
| Code-Nr. | Symbol | Trade-name | Symbol | Number | Symbol | Material-number | UNS-Nr. |
| CL 04 | CuAg0,10P | | CuAg0,10P | CW 016 A | CuAg0,1P | 2.1191 | C 10700 ¹⁾ |
| CL 06 | CuAg0,10P | NAB G 10 | CuAg0,10P | CW 016 A | CuAg0,1P | 2.1191 | C 10700 ¹⁾ |
| CL 08 | DLPS-Cu | | | | | | C 12100 |
| CL12 | CuFe2P | STOL 79 | CuFe2P | CW 107 C | CuFe2P | 2.1310 | C 19400 |
| CL 13 | CuFe0,1P | Cu KFC | | | | | C 19210 |
| CL 21 | CuMg0,7 | STOL 78 | | | CuMg0,7 | 2.1323 | C 18665 |
| CL 24 | CuMg0,3 | STOL 93 | | | | | C 18661 |
| CL 26 | CuZn0,5 | | CuZn0,5 | CW 119 C | CuZn0,5 | 2.0205 | |
| CL 42 | CuSn0,2 | STOL 80 | | | | | C 14410 |
| CL 43 | CuSn0,1Mg 0,1P | STOL 77 | | | | | C 15 500* |
| CL 54 | CuSP | Osna Cu58 S | CuSP | CW 114 C | CuSP | 2.1498 | C 14700* |
| CL 55 | CuSP | Osna Cu58 S | CuSP | CW 114 C | CuSP | 2.1498 | C 14700* |

¹⁾ produced on base OF-Cu without deoxidation agent**1.2 Use of the substance/the preparation**

Use as a building material for sheets, pipes and in electric devices

1.3 Company**KME Germany AG & Co.KG**

Klosterstrasse 29

D 49074 Osnabrück

Tel.: +49(0)541321-0

Telefax: +49(0)541321-1507

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1.4 Emergency data**1.4.1 Informing department:**

ESd / Herr Otten Tel.: +49(0)541/321-1509

1.4.2 Emergency phone:

Landesberatungsstelle für Vergiftungserscheinungen, Berlin Tel.: +49(0)3019240

Fax: +49(0)3030686721

2. Content/naming of the ingredients**2.1 Characterising:****2.2**

CAS-No.:

EINECS-No.:

ELINCS-No.:

IUPAC-No.:

2.1.1 Substance/name:

Copper Alloy

2.1.2 Preparations: (s.Table)

Composition/Ingredients (Hazardous or environmental hazardous or with threshold limit values:

| Substance name | CAS-No.: | Weight% | Vol % | Labeling | R-Sentences (figures) |
|----------------------------|-----------|-----------|-------|----------|-----------------------|
| Copper in alloy | 7440-50-8 | 97>x>99,9 | - | - | - |
| Copper in tin-coated alloy | 7440-50-8 | various | - | - | - |

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3. Possible Damage

When supplied in solid form copper is nonhazardous. If they are subsequently processed in any way which might produce airborne dust or fumes, for instance by dry grinding, abrading, electrodischarge machining, melting or welding (the material itself) then an inhalation hazard could arise.

General handling, stamping, forming and most machining operations are nonhazardous. Heat treatment in air up to about 400°C is non-hazardous but higher temperatures may give rise to loss of oxide, which hazardous inhalation. This can be avoided by treatment in inert atmosphere.

4. First Aid - measures**4.1 General:**

There is no acute risk associated with these alloys.

Table:

Exposure

Measures

| | |
|-------------------------|--|
| 4.2 Inhalation | Ensure supply of fresh air. In the event of symptoms refer to medical treatment. In practise any exposure can only arise from operations such as grinding, abrading, electrodischarge machining, welding or melting and is likely to be at low levels which will not cause immediate symptoms. |
| 4.3 Skin contact | Normally to skin irritation. |
| 4.4 Eye contact | Rinse thoroughly with plenty of water and seek medical advice. Use normal industrial protection to protect against foreign bodies entering the eyes. There is no special hazard to the eyes. |
| 4.5 Ingestion | In the event of symptoms refer to medical treatment. Use normal industrial hygiene. There is no special ingestive hazard. |

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5. Fire fighting measures

Tips

Measures

| | | |
|------------|--|--|
| 5.1 | suitable fire fighting substances | The alloys are non-flammable. Look at surrounding. |
| 5.2 | Unsuitable fire fighting substances | n. a. |
| 5.3 | Special hazards | n. a. |
| 5.4 | Special protection | n. a. |

6. Accidental release measures

Tips

Description

| | | |
|------------|---------------------------------|-------|
| 6.1 | Protection of Persons | n. a. |
| 6.2 | Environmental Protection | n. a. |
| 6.3 | Cleaning | n. a. |

- Not applicable to massive forms

7. Handling and storage**7.1 Handling**

Tips

Description

| | |
|---|---|
| Safety of persons and things | Controls are only applicable to any process which might produce airborne dust or fumes, which are subject to Health and Safety Executive Maximum Exposure as shown in the table 8.1 |
| Protection of health and environment | Control are only applicable to any process which might produce airborne dust or fumes, which are subject to Health and Safety Executive Maximum Exposure as shown in the table 8.1 |

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7.2 Storage

| Tips | Description |
|--------------------------------|----------------------------------|
| Safety of persons and things | No special precautions required. |
| Co-storage and maximum storage | No special precautions required. |

| Tips | Description |
|--------------------------------|----------------------------------|
| Safety of persons and things | No special precautions required. |
| Co-storage and maximum storage | No special precautions required. |

7.3 Certain uses

| | |
|-------------|-------|
| Kind of use | n. a. |
| Exact tips | n. a. |

- No restrictions of use are applicable

8. Exposure controls and personal protections**8.1 Exposure limit values to be monitored**

If breathable dust or smoke occurs by machining, these particles should be controlled with a filter system to meet the limit values in 8.1. As an additional measure personal protection as a filtermask or an independent breathing helmet may be used.

| Substance name | CAS-No. | Kind of value (MAK/BAT/ TLV) | Spezial prescriptions | Value in mg/m ³ |
|----------------|-----------|------------------------------|-----------------------|----------------------------|
| Copper | 7440-50-8 | MAK | 1 | mg/m ³ |
| Copper, smoke | 7440-50-8 | MAK | 0,1 | mg/m ³ |

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8.2 Limitation and control of the exposure**8.2.1 Limitation and control of the exposure at the working place**

| Protection | Recommendation |
|----------------------------|---|
| 8.2.1.1 Respiratory | If dust or smoke possible use Filter P2 |
| 8.2.1.2 Hands | Depends on handling |
| 8.2.1.3 Eyes | Depends on handling |
| 8.2.1.4 Body | Depends on handling |

8.2.2 Limitation and control of the environmental exposure

| Measuring recommendation |
|---------------------------------|
| No measures |

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9. Physical and chemical properties**9.1 General**

| Appearance (form) | Odor (perceptible) |
|----------------------|--------------------|
| Solid, Copper colour | Odourless |

9.2 Important notices for health, environment and for safety

| Component | Value/Description | Unit |
|--|-------------------|-------------------|
| pH Value | n. a. | |
| Boiling point/boiling range | 2336 | °C |
| Flash point | n. a. | |
| Ignition (solid, gaseous) | n. a. | |
| Explosion occurrence | n. a. | |
| Ignition feeding properties | n. a. | |
| Vapor pressure | 13,3 (at 1870 °C) | hpa |
| Related density (20 °C) | 8,96 | g/cm ³ |
| Solubility - in water - in fat (solvent) | n. a. | |
| Partition coefficient n-octanole/water | n. a. | |
| Viscosity | n. a. | |
| Vapor density | n. a. | |
| Velocity of vapor forming | n. a. | |

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9.3 Other properties

At this table all other data physical / chemical kind should be listed

| Component | Value/Description | Unit |
|---------------|-------------------|------|
| Melting point | 1083 | °C |

10. Stability and reactivity**10.1 Conditions to avoid**

| condition | Expected reaction |
|-----------|-------------------|
| none | |

10.2 Substance to avoid

| substance | Expected reaction |
|---|---------------------------------|
| Mercury, ammonia, acetylen, chlorine-gas and various acid | There will be a corode reaction |

10.3 Hazardous decomposition products

| substance | Generation |
|-----------|--------------------------------------|
| n. a. | Copper- and copperalloys are stable. |

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11. Toxicology

Experiences with humans:

Copper dust in excess can cause metal fever. This will disappear in a little time after removing worker from exposition without remaining health hazard.

Animal data:

No remarks

12. Ecology**12.1 Ecological toxicity**

| Object | Value/effect |
|--------|--------------|
| | |

- Copper is an basic essential element and occurs only in needed natural concentrations without any ecotoxicity

12.2 Mobility

| Aspects | Description |
|--|---|
| Partition on environmental compartments | Copper is bound usually in not bioavailable form, only the essentially needed part is steadily produced |
| Surface density | n. a. Copper is a solid |
| Adsorption/Desorption | n. a. Copper is a solid |
| Other | |

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12.3 Persistence and degradation

| Aspects | Description |
|---|-------------|
| Biological degradation | n. a. |
| Oxidation | n. a. |
| Hydrolysis | n. a. |
| Degradation in waste water treatment plants | n. a. |

- Copper is a chemical element, not degradable by definition, it can only be removed from bioavailability by binding with a ligand receptor

12.4 Potential of bioaccumulation

| Aspects | Description |
|---------------|-------------|
| enrichment | |
| Feeding chain | |

- Copper is a basic essential element, it will not be accumulated, but by some livings stored for later use

12.5 Other damages

| Aspects | Description |
|--------------------------|----------------------|
| Ozone degradation | As a solid no effect |
| Ozone forming | As a solid no effect |
| Global warming potential | As a solid no effect |

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13. Advice for the discharge

Text

| | |
|--------------------------------|--|
| EWC No. | <u>EWC 17 04 01: Copper Brass, Bronze</u> <u>OECD GA 120: Scrap of copper</u> |
| Special recommendations | Product can and should be recycled. Contact manufacturer/supplier or local metal dealer or waste disposal centres. |

14. Advices for the transport

Text

Prescription

| | | |
|-----------------------------|--|----------|
| UN- Number | | See down |
| Class | | See down |
| Proper Shipping name | | See down |
| Packing group | | See down |
| Marine Pollutant | | See down |
| Other | | See down |

- There is no special risk of carrying copper alloys in solid form, either as a primary product or as scrap. EEC hazard labeling is not required.

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15. Prescriptions and regulations**15.1 Labelling in accordance to the EC-regulations**

Not necessary for copper and copper alloys in solid form

15.1.1 Hazard symbol and calling of the product

Not necessary

15.1.2 Hazardous component(s) to be indicated on the label

n. a.

15.1.3 Relevant S-Sentences

n. a.

15.1.4 Special labelling of certain preparations

n. a.

15.2 National Regulations**15.2.1 Advices for the working restrictions**

n. a.

15.2.2 Technical GuidelinesParagraph 3.14 Clean Air Guide, Class III (5 mg/m³) copper**15.2.3 Class of water hazards**

0 (nonhazardous)

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16. Other advices

| | |
|--|--|
| Relevante R- Sentences | None |
| Training advices | General training is sufficient |
| Restriction on the use | None |
| Additional information | <p>Basic prescriptions</p> <p>German directive (GefStoffV) from 23.12.2004 BGBl I Nr. 74 from 29.12.04, page 3758</p> <p>Directive 67/548/EEC of the council on classification, packing and labelling of dangerous substances from June 27th 1967 with the last change from August 21st 2002</p> <p>Directive 2001/58/EC of the commission for to change the directive 91/155/EEG according article 14 of the directive 199/45 EG of the european parliament and the council according article 27 of the directive 67/548/EEG of the council on Material Safety Data Sheets.</p> <p>European waste catalogue according directive 94/3/EC changed by:</p> <p>Comission Decision 2000/532/EC 2001/118/EC 2001/119/EC</p> <p>Council Decision 2001/573/EC</p> |
| Data sources | Giffliste 2002 Ecomed-Verlag, München (Poison List 2002) Römpp Chemie Lexikon Thieme Verlag, Stuttgart, New York |
| Remasterings, not mentioned in the text | This Material Safety Data Sheet is completely remade |
| End-of-life vehicles guideline (EU 2000/53/EG) Waste electronic and electronic equipment (WEEE from Dec. 2002) Reduction of hazardous Substances-Directive 2002/96/EG | <p>Mercury is not detectable.</p> <p>Cadmium less than 3 ppm coming from impurities of the pre-materials.</p> <p>Lead may be present from impurities of pre-materials</p> <p>Chromium(VI) is not detectable.</p> <p>Lead is allowed up to 4 % in copper alloys.</p> |

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Advice

This products are offered also as tined products. The tin layer doesn't influence possible damage during handling, machining and using. This Material Safety Data Sheet is therefore also valid for these products.

The given information of the MSDS (Material Safety Data Sheet) is based on the present knowledge and our experiences. They are given for a safe and proper use of our products. These given data don't have the meaning of insured properties. The information in this MSDS is made by our best knowledge and our conscience.