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

1.1 Product identifier

Trade name

Copper flakes, granules

Substance name: copper

Identification numbers

CAS no.: 7440-50-8
EC no.: 231-159-6

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

Relevant identified uses of the substance or mixture

chemical analysis

Uses advised against

No data available.

1.3 Details of the supplier of the safety data sheet

Address

ELTRA GmbH
Retsch-Allee 1-5

42781 Haan
GERMANY

Telephone no.: +49 (0) 2104 23 33-400
Fax no.: +49 (0) 2104 23 33-499

Information provided by / telephone

+49 (0) 2104 23 33-192

Advice on Safety Data Sheet

info@eltra.com

1.4 Emergency telephone number

For medical advice (in German and English):
+49 (0)551 192 40 (Giftinformationszentrum Nord)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification information

This product does not meet the classification and labelling criteria given in the Regulation (EC) No 1272/2008 (CLP).

2.2 Label elements

Not relevant

2.3 Other hazards

No data available.

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical characterization

Substance name: copper

Formula: Cu

Identification numbers

CAS no.: 7440-50-8
EC no.: 231-159-6

3.2 Mixtures

Not applicable. The product is not a mixture.
SECTION 4: First aid measures

4.1 Description of first aid measures

   General information
   In case of persisting adverse effects, consult a physician. Remove contaminated clothing and shoes and launder thoroughly before reusing.

   After inhalation
   Ensure supply of fresh air.

   After skin contact
   Wash off immediately with soap and water.

   After eye contact
   Remove contact lenses. Rinse eye thoroughly under running water keeping eyelids wide open and protecting the unaffected eye (at least 10 to 15 minutes). Seek medical assistance.

   After ingestion
   Rinse out mouth and give plenty of water to drink. Induce the patient to vomit of his own accord only if fully conscious. Call a doctor immediately.

4.2 Most important symptoms and effects, both acute and delayed
No data available.

4.3 Indication of any immediate medical attention and special treatment needed
No data available.

SECTION 5: Firefighting measures

5.1 Extinguishing media

   Suitable extinguishing media
   Extinguishing measures to suit surroundings.

   Unsuitable extinguishing media
   No data available.

5.2 Special hazards arising from the substance or mixture
None known.

5.3 Advice for firefighters
Use self-contained breathing apparatus. Wear protective clothing.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

   For non-emergency personnel
   Avoid dust formation. Refer to protective measures listed in sections 7 and 8. Ensure adequate ventilation. Keep away sources of ignition.

   For emergency responders
   No data available. Personal protective equipment (PPE) - see Section 8.

6.2 Environmental precautions
Do not discharge into the drains/surface waters/groundwater.

6.3 Methods and material for containment and cleaning up
Take up mechanically. Send in suitable containers for recovery or disposal.

6.4 Reference to other sections
No data available.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

   Advice on safe handling
Avoid the formation and deposition of dust. Provide good ventilation at the work area (local exhaust ventilation, if necessary).

**General protective and hygiene measures**

Do not eat, drink or smoke during work time. Keep away from foodstuffs and beverages. Wash hands before breaks and after work. Provide eye wash fountain in work area. Do not inhale dust. Avoid contact with eyes and skin.

**Advice on protection against fire and explosion**

Avoid dust development, danger of dust explosion. Keep away from sources of heat and ignition.

### 7.2 Conditions for safe storage, including any incompatibilities

**Technical measures and storage conditions**

Store in a dry place.

**Incompatible products**

Do not store together with: oxidizing agents; Acids; halogen compounds

### 7.3 Specific end use(s)

No data available.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

**Occupational exposure limit values**

<table>
<thead>
<tr>
<th>No</th>
<th>Substance name</th>
<th>CAS no.</th>
<th>EC no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>copper</td>
<td>7440-50-8</td>
<td>231-159-6</td>
</tr>
</tbody>
</table>

**List of approved workplace exposure limits (WELs) / EH40**

Copper

<table>
<thead>
<tr>
<th></th>
<th>WEL long-term (8-hr TWA reference period)</th>
<th>mg/m³</th>
</tr>
</thead>
<tbody>
<tr>
<td>fume</td>
<td>0.2</td>
<td></td>
</tr>
</tbody>
</table>

**List of approved workplace exposure limits (WELs) / EH40**

Copper

<table>
<thead>
<tr>
<th></th>
<th>WEL short-term (15 min reference period)</th>
<th>mg/m³</th>
</tr>
</thead>
<tbody>
<tr>
<td>dusts and mists</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Cu</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

**Dust**

<table>
<thead>
<tr>
<th></th>
<th>WEL long-term (8-hr TWA reference period)</th>
<th>mg/m³</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dust respiration</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Dust inhalable</td>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>

### 8.2 Exposure controls

**Appropriate engineering controls**

No data available.

**Personal protective equipment**

**Respiratory protection**

If workplace exposure limits are exceeded, a respiration protection approved for this particular job must be worn. In case of dust formation, take appropriate measures for breathing protection in the event workplace threshold values are not specified.

**Eye / face protection**

Safety glasses (EN 166)

**Hand protection**

In case of intensive contact, wear protective gloves (EN 374). Before use, the protective gloves should be tested in any case for its specific work-station suitability (i.e. mechanical resistance, product compatibility and antistatic properties). Adhere to the manufacturer’s instructions and information relating to the use, storage, care and
replacement of protective gloves. Protective gloves shall be replaced immediately when physically damaged or worn. Design operations thus to avoid permanent use of protective gloves.

Other
Normal chemical work clothing.

Environmental exposure controls
No data available.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form/Colour</td>
<td>solid</td>
</tr>
<tr>
<td>Odour</td>
<td>odourless</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH value</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Boiling point / boiling range</td>
<td>2595 °C</td>
</tr>
<tr>
<td>Melting point / melting range</td>
<td>1083 °C</td>
</tr>
<tr>
<td>Decomposition point / decomposition range</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>No data available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No data available</td>
</tr>
<tr>
<td>Lower flammability or explosive limits</td>
<td>No data available</td>
</tr>
<tr>
<td>Upper flammability or explosive limits</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Vapour density</td>
<td>No data available</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>8.92</td>
</tr>
<tr>
<td>Density</td>
<td>No data available</td>
</tr>
</tbody>
</table>
Solubility in water
Comments insoluble

Solubility(ies)
No data available

Soluble in
Nitric acid

Partition coefficient: n-octanol/water
No data available

Viscosity
Not applicable

9.2 Other information
Other information
No data available.

SECTION 10: Stability and reactivity

10.1 Reactivity
No data available.

10.2 Chemical stability
Stable under recommended storage and handling conditions (See section 7).

10.3 Possibility of hazardous reactions
No data available.

10.4 Conditions to avoid
None, if handled according to intended use.

10.5 Incompatible materials
bromates; Chlorates; halogen compounds; Oxidizing agents; Acids

10.6 Hazardous decomposition products
None, if handled according to intended use.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute oral toxicity
No data available

Acute dermal toxicity
No data available

Acute inhalational toxicity
No data available

Skin corrosion/irritation
No data available

Serious eye damage/irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Reproduction toxicity
No data available
Carcinogenicity
No data available

STOT - single exposure
No data available

STOT - repeated exposure
No data available

Aspiration hazard
No data available

Delayed and immediate effects as well as chronic effects from short and long-term exposure
Ingestion may lead to organ inflammation. Inhalation of fumes may cause metal fume fever followed by ague, fever, aching muscles, dry mouth and metal taste, headaches, sneezing, vomiting, inflammation of the nose and trachea. May lead to skin and mucosal inflammation. Continuous exposition may lead to haemolysis, problems with urinating, hypotension and abdominal cramps, kidney and liver damages.

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish (acute)
No data available

Toxicity to fish (chronic)
No data available

Toxicity to Daphnia (acute)
No data available

Toxicity to Daphnia (chronic)
No data available

Toxicity to algae (acute)
No data available

Toxicity to algae (chronic)
No data available

Bacteria toxicity
No data available

12.2 Persistence and degradability
No data available.

12.3 Bioaccumulative potential
No data available.

12.4 Mobility in soil
No data available.

12.5 Results of PBT and vPvB assessment
No data available.

12.6 Other adverse effects
No data available.

12.7 Other information
Other information
Do not let enter the product into drains or waterways and do not store on public depositories.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product
Allocation of a waste code number, according to the European Waste Catalogue, should be carried out in agreement with the regional waste disposal company.
Packaging
Residuals must be removed from packaging and when emptied completely disposed of in accordance with the regulations for waste removal. Incompletely emptied packaging must be disposed of in the form of disposal specified by the regional disposer.

SECTION 14: Transport information

14.1 Transport ADR/RID/ADN
The product is not subject to ADR/RID/ADN regulations.

14.2 Transport IMDG
The product is not subject to IMDG regulations.

14.3 Transport ICAO-TI / IATA
The product is not subject to ICAO-TI / IATA regulations.

14.4 Other information
No data available.

14.5 Environmental hazards
Information on environmental hazards, if relevant, please see 14.1 - 14.3.

14.6 Special precautions for user
No data available.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code
Not relevant

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

EU regulations

Regulation (EC) No 1907/2006 (REACH) Annex XIV (List of substances subject to authorisation)
In accordance with the Reach regulation (EC) 1907/2006, the product does not contain any substances that are considered as subject to listing in annex XIV, inventory of substances requiring authorisation.

REACH candidate list of substances of very high concern (SVHC) for authorisation
In accordance with article 57 and article 59 of the Reach regulation (EC) 1907/2006, this substance is not considered as subject to listing in annex XIV, inventory of substances requiring authorisation ("Authorization list").

The substance is not subject to the provisions of annex XVII (restriction entries) of the Reach regulation (EC) 1907/2006.

Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances
This substance is not subject to Part I or 2 of Annex I

15.2 Chemical safety assessment
A chemical safety assessment has not been carried out for this substance.

SECTION 16: Other information

Further information
Article No: 91000-1005, 25 grams; flakes
Article No: 90240; 1362 grams; granules

Sources of key data used to compile the data sheet:
National Threshold Limit Values of the corresponding countries as amended in each case.
Transport regulations according to ADR, RID, IMDG, IATA as amended in each case.
The data sources used to determine physical, toxic and ecotoxic data, are indicated directly in the corresponding
Trade name: Copper flakes, granules

Chapter.

Department issuing safety data sheet
UMCO GmbH
Georg-Wilhelm-Str. 187, D-21107 Hamburg
Tel.: +49 40 / 555 546 300  Fax: +49 40 / 555 546 357  e-mail: umco@umco.de

This information is based on our present knowledge and experience.
The safety data sheet describes products with a view to safety requirements.
It does not however, constitute a guarantee for any specific product properties and shall not establish a legally valid contractual relationship.

Alterations/supplements:
Alterations to the previous edition are marked in the left-hand margin.

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