SAFETY DATA SHEET

eConduct Copper 340500

SECTION 1. IDENTIFICATION

Product name : eConduct Copper 340500
Product code : 023313GK0

Manufacturer or supplier's details
Company name of supplier : ECKART GmbH
Address : Guentersthal 4
           Hartenstein 91235
Telephone : +499152770
Telefax : +499152777008
Emergency telephone : CHEMTREC: 800-424-9300
                       CHEMTREC: 1-703-527-3387 (International)
                       GBK Gefahrgut Buero GmbH, Ingelheim, Germany:
                       From outside US: (001) 352-323-3500
                       (First call in English, response in your language is possible)
                       US & Canada (toll free):1-800-5355-053

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with 29 CFR 1910.1200
Combustible dust
Acute toxicity (Oral) : Category 4
Eye irritation : Category 2A

GHS label elements
Hazard pictograms :

Signal Word : Warning
Hazard Statements : May form combustible dust concentrations in air.
H302 Harmful if swallowed.
H319 Causes serious eye irritation.

Precautionary Statements:

Prevention:
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear eye protection/ face protection.

Response:
P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 If eye irritation persists: Get medical advice/ attention.

Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Hazardous ingredients which must be listed on the label:
Copper

Other hazards
None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Hazardous ingredients</th>
<th>CAS-No.</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper</td>
<td>7440-50-8</td>
<td>&gt;= 90 - &lt; 100</td>
</tr>
<tr>
<td>Silver</td>
<td>7440-22-4</td>
<td>&gt;= 5 - &lt; 10</td>
</tr>
</tbody>
</table>

SECTION 4. FIRST AID MEASURES

General advice:
Take the victim into fresh air.
Do not leave the victim unattended.
Move out of dangerous area.
Show this material safety data sheet to the doctor in attendance.
### SECTION 5. FIRE-FIGHTING MEASURES

<table>
<thead>
<tr>
<th>Suitable extinguishing media</th>
<th>Unsuitable extinguishing media</th>
<th>Specific hazards during fire fighting</th>
<th>Further information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Special powder against metal fire</td>
<td>Water</td>
<td>Do not allow run-off from fire fighting to enter drains or water courses.</td>
<td>Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.</td>
</tr>
<tr>
<td>Dry sand</td>
<td>High volume water jet</td>
<td></td>
<td>Standard procedure for chemical fires. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.</td>
</tr>
<tr>
<td>ABC powder</td>
<td></td>
<td></td>
<td>Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.</td>
</tr>
</tbody>
</table>

**Special protective equipment for fire-fighters**: Wear self-contained breathing apparatus for firefighting if necessary.
SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:
- Use personal protective equipment.
- Evacuate personnel to safe areas.
- Use personal protective equipment.
- Avoid dust formation.
- Avoid breathing dust.

Environmental precautions:
- Prevent product from entering drains.
- Prevent further leakage or spillage if safe to do so.
- If the product contaminates rivers and lakes or drains inform respective authorities.

Methods and materials for containment and cleaning up:
- Use mechanical handling equipment.
- Pick up and transfer to properly labeled containers.
- Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion:
- Normal measures for preventive fire protection.
- Avoid dust formation.

Advice on safe handling:
- Avoid creating dust.
- Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces.
- Avoid formation of respirable particles.
- Do not breathe vapors/dust.
- Avoid contact with skin and eyes.
- For personal protection see section 8.
- Smoking, eating and drinking should be prohibited in the application area.
- Dispose of rinse water in accordance with local and national regulations.

Conditions for safe storage:
- Electrical installations / working materials must comply with the technological safety standards.
Keep away from sources of ignition - No smoking.
Do not store near combustible materials.
Keep containers tightly closed in a cool, well-ventilated place.
To maintain product quality, do not store in heat or direct sunlight.

Keep container tightly closed in a dry and well-ventilated place.
Electrical installations / working materials must comply with the technological safety standards.

Technical measures/Precautions: Protect from humidity and water.

Materials to avoid: Keep away from oxidizing agents, strongly alkaline and strongly acid materials in order to avoid exothermic reactions.
Do not store together with oxidizing and self-igniting products.

Further information on storage stability: Keep in a dry place.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters / Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper</td>
<td>7440-50-8</td>
<td>TWA</td>
<td>1 mg/m³ (Copper)</td>
<td>ACGIH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (dust and mists)</td>
<td>1 mg/m³ (Copper)</td>
<td>NIOSH REL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>1 mg/m³ (Copper)</td>
<td>OSHA P0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>0.2 mg/m³ (Copper)</td>
<td>ACGIH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>0.1 mg/m³ (Copper)</td>
<td>OSHA P0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (Dust and mist)</td>
<td>1 mg/m³ (Copper)</td>
<td>ACGIH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (Fumes)</td>
<td>0.2 mg/m³ (Copper)</td>
<td>ACGIH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (Dust)</td>
<td>1 mg/m³</td>
<td>NIOSH REL</td>
</tr>
</tbody>
</table>
## Personal protective equipment

### Respiratory protection
- Use suitable breathing protection if workplace concentration requires.
- Respirator with a dust filter
- P1 filter

### Hand protection
- **Material**: Leather

### Remarks
- Leather gloves The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other. The exact break through time can be obtained from the protective glove producer and this has to be observed. Recommended preventive skin protection
- The suitability for a specific workplace should be discussed with the producers of the protective gloves.

### Eye protection
- Safety glasses
- Wear face-shield and protective suit for abnormal processing problems.
Skin and body protection: Long sleeved clothing, Safety shoes, Dust impervious protective suit. Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures: General industrial hygiene practice. Do not smoke. Wash hands before breaks and at the end of workday. Keep away from food and drink. Keep away from tobacco products. When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: powder
Color: colored
Odor: characteristic
Odor Threshold: No data available
pH: No data available
Melting point/freezing point: No data available
Initial boiling point and boiling range: No data available
Flash point: No data available
Evaporation rate: No data available
Flammability (solid, gas): Combustible Solids

Burning number: 2
Upper explosion limit / Upper flammability limit: No data available
Lower explosion limit / Lower flammability limit: No data available
Vapor pressure: No data available
Relative density: No data available
Solubility(ies): Water solubility: insoluble
Partition coefficient: n-octanol/water: No data available
Autoignition temperature: No data available
SECTION 10. STABILITY AND REACTIVITY

Reactivity
- No decomposition if stored and applied as directed.
- No decomposition if stored and applied as directed.

Chemical stability
- No decomposition if stored and applied as directed.

Possibility of hazardous reactions
- Stable under recommended storage conditions.
- No hazards to be specially mentioned.
- No decomposition if stored and applied as directed.
- Dust may form explosive mixture in air.

Conditions to avoid
- No data available
- No data available

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity
Harmful if swallowed.

Ingredients:
Copper:
Acute oral toxicity
- Assessment: The component/mixture is moderately toxic after single ingestion.

Skin corrosion/irritation
Not classified based on available information.

Ingredients:
Copper:
Remarks: May cause skin irritation in susceptible persons.

Serious eye damage/eye irritation
Causes serious eye irritation.

Ingredients:
Copper:
Result: Eye irritation
Respiratory or skin sensitization

Skin sensitization
Not classified based on available information.

Respiratory sensitization
Not classified based on available information.

Germ cell mutagenicity
Not classified based on available information.

Carcinogenicity
Not classified based on available information.

IARC
No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA
No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP
No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity
Not classified based on available information.

STOT-single exposure
Not classified based on available information.

STOT-repeated exposure
Not classified based on available information.

Aspiration toxicity
Not classified based on available information.

Further information

Ingredients:
Copper:
Remarks: No data available
SAFETY DATA SHEET

eConduct Copper 340500

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Ingredients:

Copper:
M-Factor (Acute aquatic toxicity) : 10

Ecotoxicology Assessment
Acute aquatic toxicity : Very toxic to aquatic life.
Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.

Silver:
M-Factor (Acute aquatic toxicity) : 10
M-Factor (Chronic aquatic toxicity) : 10

Ecotoxicology Assessment
Acute aquatic toxicity : Very toxic to aquatic life.
Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.

Persistence and degradability
No data available

Bioaccumulative potential
No data available

Other adverse effects
No data available

Ingredients:

Copper:
Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life with long lasting effects.
SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods
Waste from residues: The product should not be allowed to enter drains, water courses or the soil.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.
In accordance with local and national regulations.

Contaminated packaging: Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.
In accordance with local and national regulations.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR
UN/ID No.: UN 3077
Proper shipping name: Environmentally hazardous substance, solid, n.o.s.
(Copper metal powder)
Class: 9
Packing group: III
Labels: Miscellaneous Dangerous Goods
Packing instruction (cargo aircraft): 956
Packing instruction (passenger aircraft): 956

IMDG-Code
UN number: UN 3077
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
(Copper metal powder)
Class: 9
Packing group: III
Labels: 9
EmS Code: F-A, S-F
Marine pollutant: yes
Remarks: IMDG Code segregation group 7 - Heavy metals and their salts
Remarks: For single packagings <=5L / 5 kg, or combination packagings containing inner packagings <= 5L / 5 kg net per inner packaging, SV375 ADR, 2.10.2.7 IMDG-Code, A197
IATA-DGR may be applied.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable for product as supplied.

Domestic regulation

49 CFR
Not regulated as a dangerous good

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know

CERCLA Reportable Quantity

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>CAS-No.</th>
<th>Component RQ (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper</td>
<td>7440-50-8</td>
<td>5000</td>
</tr>
</tbody>
</table>

SARA 304 Extremely Hazardous Substances Reportable Quantity
This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity
This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards
- Combustible dust
- Acute toxicity (any route of exposure)
- Serious eye damage or eye irritation

SARA 313
- The following components are subject to reporting levels established by SARA Title III, Section 313:
  - Copper 7440-50-8 >= 90 - <= 100 %
  - Silver 7440-22-4 >= 5 - < 10 %

Clean Air Act
This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).
This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489).
Clean Water Act
This product does not contain any Hazardous Substances listed under the U.S. Clean Water Act, Section 311, Table 116.4A.
This product does not contain any Hazardous Chemicals listed under the U.S. Clean Water Act, Section 311, Table 117.3.
This product contains the following toxic pollutants listed under the U.S. Clean Water Act Section 307
- Copper 7440-50-8 94.6%
- Silver 7440-22-4 5%

US State Regulations
Massachusetts Right To Know
- Copper 7440-50-8
- Silver 7440-22-4

Pennsylvania Right To Know
- Copper 7440-50-8
- Silver 7440-22-4

California Prop. 65
WARNING: This product can expose you to chemicals including lead and cadmium, which is/are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

California List of Hazardous Substances
- Copper 7440-50-8
- Silver 7440-22-4

California Permissible Exposure Limits for Chemical Contaminants
- Copper 7440-50-8
- Silver 7440-22-4

The ingredients of this product are reported in the following inventories:
DSL : All components of this product are on the Canadian DSL
TSCA : On TSCA Inventory

TSCA list
No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)
NIOSH REL : USA. NIOSH Recommended Exposure Limits
OSHA P0 : USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
OSHA Z-1 : USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
ACGIH / TWA : 8-hour, time-weighted average
NIOSH REL / TWA : Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
OSHA P0 / TWA : 8-hour time weighted average
OSHA Z-1 / TWA : 8-hour time weighted average

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA
The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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