

**MATERIAL SAFETY DATA SHEET**

**Copper Busbar, Copper Anode, Copper Commutator and Tin-plated Copper Busbar**

**1. Identification of product**

Trade Name	: Copper Busbar: Cu-ETP, Cu-OF : Copper Anode: Cu-ETP, Cu-OF, Cu-DHP : Copper Commutator: Cu-Ag : Tin-plated Copper Busbar
Manufacturer	: 700/45 Moo.6 , 700/106 Moo.5 and 700/148 Moo.5 Amata City Chonburi Industrial Estate, Klongtumru, Amphur Muang, Chonburi 20000 Tel 038743444 Fax 038213256 Website: <a href="http://www.orientalcopper.com">http://www.orientalcopper.com</a>
Formula	: Copper Busbar: Cu : Copper Anode: Cu, P : Copper Commutator: Cu, Ag : Tin-plated Copper Busbar: Cu, Sn
Effective	: 1 April 2025
Revision	: 7

**2. Hazrds identification**

2.1 Classification of the substance or mixture

Flammable solids	(Category 1)
Eye irritation	(Category 2A)
Specific target organ toxicity following single exposure	(Category 3)
Short - term (acute) aquatic hazard	(Category 1)
Long - term (Chronic) aquatic hazard	(Category 1)

2.2 Label elements

Safety information according to GHS

Hazard pictogram(s)



Signal word Danger

Hazard statement

H228	Flammable solid. (Cu, P, Ag, Sn)
H261	In contact with water releases flammable gas. (P)
H319	Causes serious eye irritation. (Sn)
H335	May cause respiratory irritation. (Sn)
H400	Very toxic to aquatic life. (Ag)
H412	Harmful to aquatic life with long lasting effects. (Cu, Ag)
Precautionary Statement	
P210	Keep away from heat/sparks/open flames/hot surfaces.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P391	Collect spillage.
P501	Dispose of contents/ container to ... [ ... in accordance with local/ regional/ national/ international regulation (to be specified)].
Additional dangers	N/A

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**3. Composition/Information on ingredients**

**Cu-ETP**

Component	(% by weight)	CAS. NO.
Copper, Cu	min 99.90	7440-50-8

**Cu-OF**

Component	(% by weight)	CAS. NO.
Copper, Cu	min 99.96	7440-50-8

**Cu-DHP**

Component	(% by weight)	CAS. NO.
Copper, Cu	min 99.90	7440-50-8
Phosphorus, P	0.015 - 0.065	12185-10-3
Copper Phosphide, Cu <sub>3</sub> P	0.015 - 0.065	12019-57-7

**Cu-Ag**

Component	(% by weight)	CAS. NO.
Copper, Cu	99.92 - 99.94	7440-50-8
Silver, Ag	0.030 - 0.200	7440-22-4

**Tin-plated Copper Busbar**

Component	(% by weight)	CAS. NO.
Copper, Cu	min 99.90	7440-50-8
Tin, Sn	0.05 - 0.10	7440-31-5

**4. First aid measures**

- Ingestion : If swallowed and the person is conscious, immediately give large amounts of water. get medical attention.
- Inhalation : If a person breathes in large amounts, move the exposed person to fresh air. get medical attention.
- Skin contact : Immediately wash with plenty of soap and water for at least 15 minutes.
- Eye contact : Immediately flush with plenty of water for at least 15 minutes. get medical attention.

**5. Fire fighting and explosion hazard data**

- Fire extinguishing media : Water spray, carbon dioxide, dry chemical, or foam.
- Toxic gases produced : Copper fumes.

**6. Accidental release measures**

General protection and Usual precautions for chemical processing must be taken.

- Environmental precaution : Not application to copper in solid.  
Do not flush into surface water or sanitary sewer system.
- Methods for clean up : Solid copper does not pose any problems. If dust spills should be cleaned up avoid dust generation. wash down with water if contact.
- Hygiene measures : - Keep away from food and water and do not eat, drink, or inhale dust into the body.  
- Wash hands before a break and after working period.  
- Remove the contaminated cloth and clean before using.

**7. Handling and storage**

- Information for safe handling : Use of personal safety equipment according to section 8.2
- Information concerning fire and explosion protection : Do not approach flames, hot surfaces, and sources of fire.
- Requirements to store-rooms and tanks : N/A
- Information concerning storage with other products : N/A
- Further information concerning storage conditions : N/A
- Storage class : N/A

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**8. Exposure controls/ Personal protection**

8.1 workplace-related limiting values:

CAS-No.	Description	Content	Type	Value	Unit
7440-50-8	Copper	-	MAC	1.0	mg/m <sup>3</sup>
7440-50-8	Copper (smoke)	-	MAC	0.1	mg/m <sup>3</sup>
12185-10-3	Phosphorus	-	-	0.1	mg/m <sup>3</sup>
12019-57-7	Copper Phosphide	-	-	0.1	mg/m <sup>3</sup>
7440-31-5	Tin	-	-	2.0	mg/m <sup>3</sup>
7440-22-4	Silver	-	-	0.01	mg/m <sup>3</sup>

8.2 Additional information on the design of technical equipment :

- Respiratory protection : Wear an air filter mask to protect from dust or fumes.
- Hand protection : Protective gloves.
- Eye protection : Goggles.
- Body protection : Industrial safety clothing.

**9. Physical and chemical properties**

- Appearance : solid
- Odor/color : No odor.-Bright red turning (Cu), No odor.-Red powder(P), No odor.-Grey (Ag), No odor.-Grey (Sn)
- pH : N/A
- Melting point/freezing point : 1,083 °C (Cu), 44.1 °C (P), 960 °C (Ag), 231.9 °C (Sn)
- Boiling point : 2,595 °C (Cu), 280 °C (P), 2,212 °C (Ag), 2,270 °C (Sn)
- Flash point : N/A
- Evaporation rate : 0
- Flammability (solid, gas) : N/A
- Upper/lower flammability or explosive limits : (LEL) - N/A (UEL) - N/A
- Vapor pressure : N/A
- Vapor density : N/A
- Density Relative density : N/A
- Specific Gravity (g/cm<sup>3</sup>) : 8.96 (Cu), 2.34 (P), 10.94 (Ag), 7.31 (Sn)
- Solubility : Negligible (Less than 0.1%)
- Auto ignition temperature : N/A
- Atomic mass (g/mole) : 63.546 (Cu), 30.973762 (P), 107.8682 (Ag), 118.710 (Sn)
- Other : N/A

**10. Stability and reactivity**

- Stability : Stable.
- Hazardous polymerization : Will not occur.
- Conditions to avoid : N/A
- Incompatibles : Strong acids, active halogen compounds, chlorine, fluorine, iodine, bromine, ammonia
- Decomposition products : N/A

**11. Toxicological information**

- Respiratory or skin sensitization : Dust may cause sneezing and coughing.
- Serious eye damage/eye : Dust may irritate skin or eyes.  
Prolonged exposure may cause dermatitis.
- irritation : Ingestion may cause nausea, vomiting, headaches, dizziness, gastrointestinal irritation.
- Target organs : N/A
- Routes of entry : N/A

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**12. Ecological information**

: N/A

**13. Disposal considerations**

Product Recommendation : Collect left-overs and return to manufacturer or scrap dealer.  
not to be discharged with the household waste.

Waste code number : 12 01 03 acc. to the european waste catalogue "non-ferrous chips and cuttings.

Recommendation : the waste code number has been assigned according to the usual purpose of use  
and the constituents of the product. Depending on the branch and purpose of  
application another waste code number may possibly be relevant.

**14. Transport information**

General remarks : Dangerous goods transport regulations not required.


**15. Regulatory information**


Recommendation : 12 01 03 acc. to the european waste catalogue "non-ferrous chips and cuttings.  
the waste code number has been assigned according to the usual purpose of use  
and the constituents of the product. Depending on the branch and purpose of  
application another waste code number may possibly be relevant.

**16. Other information**

This data sheet defines our current knowledge concerning the environmental relevance and labor safety of our  
products in their as-shipped form.

However, the data Sheet does not guarantee the assurance of certain properties in a legally binding sense.

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