## ORIENTAL COPPER CO., LTD.



# MATERIAL SAFETY DATA SHEET COPPER ANODE

### 1. IDENTIFICATION OF PRODUCT

Trade Name

: Anode Bar, Nugget, Ball : Cu-DHP grade (Alloy No. C1220)

Anode Bar, Nugget, Ball: Cu-OF (Alloy No. C1020)

Anode Bar, Nugget, Ball: Cu-ETP grade (Alloy No. C1100)

Manufacturer

: 700/45 Amata City Chonburi Industrial Estate, Klongtumru, Amphur Muang, Chonburi 20000

Tel 038743444 Fax 038213256 Website: http://www.orientalcopper.com

Formula

: Cu/P

Effective

: 10/05/2021

Revision

. 4

### 2. HAZARDS IDENTIFICATION

Threshold limit value

:  $1.0 \text{ mg/m}^3 (Cu), 0.1 \text{ mg/m}^3 (P)$ 

Carcinogenicity

NTP: No

Z LIST

: No

IARC: No

OSHA REG

: No

Precautionary Labelling

Health

: 2

Flammability

: 1

Reactivity

: 0

Specific

. .

Hazard ratings are 0 to 4 (0 = No Hazard; 4 = Extreme hazard).

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Cu-DHP grade 0.03% (P)

| Component  | %             | Cas no.   |  |
|------------|---------------|-----------|--|
| Copper     | ≥ 99.90       | 7440-50-8 |  |
| Phosphorus | 0.015 - 0.040 | 7723-14-0 |  |

Cu-DHP grade 0.05% (P)

| Component  | %             | Cas no.   |  |
|------------|---------------|-----------|--|
| Copper     | ≥ 99.90       | 7440-50-8 |  |
| Phosphorus | 0.040 - 0.065 | 7723-14-0 |  |

Cu-OF

| Component | %       | Cas no. |  |
|-----------|---------|---------|--|
| Cu-OF     | ≥ 99.99 | N/A     |  |

Cu-ETP

| Component | %       | Cas no.   |
|-----------|---------|-----------|
| Cu-ETP    | ≥ 99.98 | 7440-50-8 |

### 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.

Eye contact

: Immediately flush with plenty of water for at least 15 minutes. Get medical attention

Skin contact

: Immediately wash with plenty of soap and water for at least 15 minutes.



# MATERIAL SAFETY DATA SHEET **COPPER ANODE**

### 5. Fire fighting and explosion hazard data

Auto-Ignition Temperature: N/A Flash point (closed cup) : N/A

Flammable limits

: Upper - N/A %

Lower - N/A %

Fire extinguishing media : Use extinguishing media appropriate for surrounding fire.

SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

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 contract.

hygiene measures

If dust or fumes are emitted:

- Keep away from food and drink

- Wash hands before a break and after working period

- Store working clothes separately

- Remove contaminated clothing and launder before re-use

- Do not inhale powder, dust or fumes

- Do not eat, drink or smoke

Prevent long and intensive skin contact.

### 7. HANDLING AND STORAGE

Information for safe handling

Filtering extractors and/or personal protection must be

provided if dust or smoke are formed during processing

(see No. 8). Do not breath in the dust or fumes.

Information concerning fire and explosion protection

Have breathing apparatus/ respirator ready

Requirements to store-rooms and tanks

No special requirements

Information concerning storage with other products

Not applicable

Further information concerning storage conditions

None

Storage class

Not applicable

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Additional information on the design of technical equipment :

Filtering extractors are recommended if dusts or smoke are formed.

Constituents with monitored, workplace-related limiting values:

| CAS-No.   | Description    | Content   | Туре | Value | Unit  |
|-----------|----------------|-----------|------|-------|-------|
| 7440-50-8 | Copper         | <b>14</b> | MAC  | 1,0   | mg/m3 |
| 7440-50-8 | Copper (smoke) | :+C       | MAC  | 0,1   | mg/m3 |
| 7723-14-0 | Phosphorus     | 18.1      |      | 0,1   | mg/m3 |

Respiratory protection

: Filter P3 when smoke or dusts are formed above MAC-Limits

Hand protection

Protective gloves

Eye protection

: Goggles

Body protection

: Industrial safety clothing

## ORIENTAL COPPER CO., LTD.



# MATERIAL SAFETY DATA SHEET COPPER ANODE

#### 9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point : 2,595 °C (Cu), 280 °C (P) Vapor pressure (mm Hg) : N/A Melting Point : 1,083 °C (Cu), 44.1 °C (P) Vapor density (Air=1) : N/A Specific Gravity ( $H_2O=1$ ) : 8.9 (Cu), 2.34 (P) Evaporation rate (Butyl acetate = 1) : N/A Solubility ( $H_2O$ ) : Negligible (Less than 0.1%) % Volatiles by volume : 0

Appearance & Odor : Bright to dull silvery gray color. No odor.

### 10. STABILITY AND REACTIVITY

Stability : Stable

Hazardous polymerization: Will not occur

Conditions to avoid : None

Incompatibles : Strong acids, Active halogen compounds, Chlorine, Fluorine, Iodine, Bromine, Ammonia

Decomposition products : Copper fumes

#### 11. TOXICOLOGICAL INFORMATION

Effects of Overexposure : Dust may cause sneezing and coughing.

Dust may irritate skin or eyes.

Prolonged exposure may cause dermatitis.

Ingestion may cause nausea, vomiting, headaches, dizziness, gastrointestinal irritation.

Note: Fine powder, granules and fumes from welding or abrasive operations may pose a health hazard. When burned, soldered or brazed tin plated copper busbar and solder or brazing meterial may give off fumes that cause eye and/or respiratory irritation. Use adequate local exhaust to prevent irritation and maintain fume levels

below OSHA ceiling limits.

Target organs : None identified

Medical conditions generally aggravated by exposure

: None identified

Routes of entry : None indicated

### 12. ECOLOGICAL INFORMATION

: Not application to copper in solid

### 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

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.

### 14. TRANSPORT INFORMATION

General remarks : Dangerous goods transport regulations not required.

## ORIENTAL COPPER CO., LTD.



# MATERIAL SAFETY DATA SHEET COPPER ANODE

### 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 labour 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.

Prepared by.....

(Ms.Somjai jaengsuk)

Safety, Healt & Environmental Supervisor

Approved by.....

(Ms.Phatthranit Phatcharakithiranchot)

Acting Vice President (QUALITY ASSURANCE)