

# MATERIAL SAFETY DATA SHEET

Revision date: January 21, 2011

Revision No.: 14

## 1. Product and Company Information

Name of material : C194 (OLIN194)  
 Classification : Copper Alloy

Company Name : **DOWA-OLIN METAL CORPORATION**  
 & Information Technical Service Section  
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## 2. Hazards Identification

### 2-1 Copper

#### GHS Classification

##### Physical Hazards

Explosives	: Not applicable
Flammable gases	: Not applicable
Flammable aerosols	: Not applicable
Oxidizing gases	: Not applicable
Gases under pressure	: Not applicable
Flammable liquids	: Not applicable
Flammable solids	: Classification not possible
Self-reactive substances and mixtures	: Not applicable
Pyrophoric liquids	: Not applicable
Pyrophoric solids	: Classification not possible
Self-heating substances and mixtures	: Classification not possible
Substances and mixture which, in contact with water, emit flammable gases	: Classification not possible
Oxidizing liquids	: Not applicable
Oxidizing solids	: Not applicable
Organic peroxides	: Not applicable
Corrosive to metals	: Classification not possible

##### Health Hazards

Acute toxicity (oral)	: Classification not possible
Acute toxicity (skin)	: Classification not possible
Acute toxicity (inhalation: gas)	: Not applicable
Acute toxicity (inhalation: vapor)	: Not applicable
Acute toxicity (inhalation: dust, mist)	: Classification not possible
Skin corrosion / irritation	: Classification not possible
Serious eye damages / eye irritation	: Classification not possible
Respiratory sensitization	: Classification not possible
Skin sensitization	: Classification not possible
Germ cell mutagenicity	: Classification not possible
Carcinogenicity	: Not classified
Reproductive toxicity	: Classification not possible
Specific target organ toxicity: single exposure	: Category3 (Respiratory tract irritation)
Specific target organ toxicity: repeated exposure	: Category1 (Liver)
Aspiration hazard	: Classification not possible

##### Environmental Hazards

Aquatic toxicity (acute)	: Classification not possible
Aquatic toxicity (chronic)	: Category4

#### Pictogram



**3. Specification of substance**

Chemical name : Cu-Fe-P-Zn alloy

Element	Fe	P	Zn	Cu
CAS No.	7439-89-6	7723-14-0	7440-66-6	7440-50-8
Identification No. by PRTR Law	-	-	-	-
Enforcement Serial No. by Industrial Safety and Health Laws	-	-	-	Appendix No.9-379
Chemical Composition (Nominal wt%)	2.35	0.07	0.12	Bal.

**4. First aid**

**4-1** Caught in the eyes:

Immediately flush out dust with sufficient clean water and get physician's treatment for pain or uncomfortable feel.

**4-2** Struck to the skin: Soap up the portion.

**4-3** Inhaled: If a large quantity of vapors and particles are inhaled, move the patient to a place of clean air immediately. Give the patient oxygen inhalation and have him/her receive immediate physician's treatments in case it seems to be necessary.

**4-4** Swallowed: If large quantities of vapors and particles are swallowed, make him/her vomit and then have him/her physician's treatments immediately.

**5. Action for fire**

Extinguishing: -- (Incombustibles)

**6. Action for leakage**

No requirement for solid metal product.

**7. Notes for handling and storage**

Handling: To prevent the inhalation of vapors or particles, wear personal protection such as a mask in welding or grinding processes.

The cut ends or edges of the strip are sharp enough for cut, so take sufficient care when handling.

Storage: Do not store together with acids.

**8. Avoidance of exposure**

Acceptable concentration:

Japan Society for Occupational Health: No Requirement

ACGIH TWA \*           Cu    1mg/m<sup>3</sup>           (dust)  
                                   Cu    0.2mg/m<sup>3</sup>          (fume or vapor)

Protective outfit

For mouth:               Dustproof mask  
 For eyes:                 Dustproof glasses  
 For hands:               Rubber or plastic gloves  
 For body:                 --

\*       ACGIH TWA: American Conference of Governmental Industrial Hygienists  
                           Time Weighted Average

**9. Physical / chemical properties**

Appearance            : Metallic brightness  
 Melting point         : 1089 degree C  
 Specific gravity       : 8.91

**10. Hazardous information**

Stability / reactivity: Stable under normal handling conditions.

**11. Toxicological information**

(No information about the alloy, but information on each element is shown below.)

Acute toxicity:

Orally administered - mouse LD50 >4000mg/kg (Copper dusts)

Carcinogenicity:

Japan Society for Occupational Health: No Classification

**12. Ecological Information**

(No information about the alloy, but information on each element is shown below.)

Water Pollution Control Law:

Life environment clause (for Copper)

**13. Note for scrapping**

C194 should be collected and recycled as a metal.

Contact scrapping agent.

**14. Note for transportation**

Handle with care when transporting as follows:

Take care not to allow the air to cause corrosion, turnover, drop or packing disorder.

**15. Applicable legislation**

(No information about the alloy, but information on each element is shown below.)

Water Pollution Control Law:

Life environment clause (for Copper)

C194 does not correspond to Poisons, Deleterious Substances, Specific Deleterious Substances, in Poisonous and Deleterious Substances Control Law.

**16. Other Information**

We have tried to make it as accurate and useful as possible, but can take no responsibility for its use, misuse or accuracy. We have not verified this information, and can not guarantee that it is up-to-date.