

MATERIAL SAFETY DATA SHEET

(based on Form ISO 11014-1)

MSDS - 2 3 6 4

1 / 4

1. Product and Company Information

Product Class : COPPER ALLOY STRIP

Trade Name : **EFTEC64T (C 1 8 0 4 5) & EFTEC 64 TB (C 1 8 0 4 5) : buff polished**

Prepared : Technical & Engineering Department , Metals Company

Revision date : 18. June. 2008

Revision No. : 1

2. Specification of substance

Class (Simple or Mixture) : Combined Mixtures

Chemical Name : Copper - Chromium - Tin - Zinc Alloy

Component :

Component	Cu	Cr	Sn	Zn
% by wt.	99.28	0.25	0.25	0.22
CAS No.	7440-50-8	7440-47-3	7440-31-5	7440-66-6

Chemical formula : Cu - Cr - Sn - Zn

3. Hazardous / poisonous classification

Name of classification : Not applicable

Possible hazardousness : Nothing for ordinary service condition

Possible toxicity : "Copper" and "Tin" have toxicity of acute See Section 11

Effect on environment : There is a drainage standard for copper in life environment clause of prevention low on water quality contamination.

4. First Aid

Occurrence of powder or dust after machining, grinding this materials.

- Enter the eyes : Wash out with clean running water over 15 minutes. If feel pain, consult eye doctor immediately.
- Adhere to skins : Wash out with soap and water then rinse with many water.
- Inhalation : Remove victim to fresh air immediately, then lie quietly keeping warm. Get immediate medical attention.

Directly handling after work

- Scalded skins : Cool affected part with running water immediately. If serious, get immediate medical attention.
- Swallowing tips : Rinse mouth with water, get immediate medical attention.

5. Action for fire

Flash point (Method Used) : N / A
 Flammable Limit : N / A (LEL/UEL: N / A)
 Extinguishing Media : N / A (Stable, nonflammable substance)
 Special Fire Fighting Procedures : Not specified
 Unusual Fire and Explosion Hazards: Metal products do not present fire or explosion hazards under normal conditions. A

6. Action for leakage

No requirement for solid metal product.

7. Notes for handling and storage

Steps to be Taken in Case Material is Released or Spilled : N / A
 Precautions to be taken in handling and storing : No special requirements
 Other Precautions : No special requirements.

8. Avoidance of exposure

Control Density : N / A
 Allowance Density : Not applied for ordinary service also. In occurrence of the fume or the dust, refer to the under table.

Component	The Japan Institute of Industrial Hygienics Advised Value	ACGIH (TLV)	OSHA (PEL)
Copper "Cu"	N / A	Time weighted Average 0.2 (Fume) 1.0 (Dust) Short time exposure Limit 2.0 (Dust)	0.1 (Fume)
Chromium "Cr"	for Pure metal 0.5	for Pure metal metallic Compound 0.5	N / A
Tin "Sn"	N / A	Time weighted Average 2.0 (Inorganic compound) 1.0 (Organic compound) Short time exposure Limit 4.0 (Inorganic compound) 0.2 (Organic compound)	N / A
Zinc "Zn"	5.0 (Fume)	5.0 (Fume) 10.0 (dust)	5.0 (Fume) 10.0 (15min.Max) 10.0 (dust) 5.0 (to breath)

Equipment : No special equipments ordinary.
 In occurrence of the fume or the dust with densities over that table, you shall install local exhaust or Ventilation, must use mask at least.

Protectors : < For hands and fingers >
 To avoid cut at edges, do not deal by bare hands, use gloves .
 < For eyes >
 In working , to avoid Injury use glasses .
 Other protective Clothing or Equipment : None

9. Physical / Chemical Characteristics

Specific Gravity : 8. 9
 Boiling Point (deg. Centi.) : Cu = 2630 , Cr = 2200, Sn = 2275 , Zn = 907
 Melting Point (deg. Centi.) : 1080
 Solubility in Water : Not Applied
 Appearance : Glossy Red (solid)
 Odor : None

10. Hazardous Information

Nothing for the Combined mixtures. Refer as follows, for component Elements.
 Skin Corrosion : No Data
 Irritant Property : Copper cause Inflammation , rarely.
 (Skin , Eye)
 Sensitization : No Data

11. Poison Information

Acute toxicity : < Copper >
 Mouse LD₅₀ > 4000 mg / kg for Copper powder
 Swallowing may cause , Nausea , Vomiting , and a Feeling of Lassitude.
 Inhalation of powder, dust and fume may cause Cough , Breast ,
 and fit for Fever.
 < Zinc & Chromium >
 Fume may cause Cough , Breast h , and fit for Fever after
 several hours from Inhalation of the fume .
 < Tin >
 Very rare .
 Semi - acute toxicity : No Data
 Chronic toxicity : < Copper >
 Symptoms of Chronic poison characterize impedi,ments of
 the Liver and the Kidney .
 < Zinc >
 Very rare
 < Tin >
 Long-term adsorption of it cause the symtom of the
 Tin-composure , do not down activity of the Lungs .

1 2. Ecological Information

Biodegradability : No Data
Fish on Toxicity : TLm (Cu) 48 Hr as form CuSO₄
Salmongairdneri : 0.038 ~ 0.8 ppm
Oryzias Latipes : 2.1 ~ 2.4ppm
BOD / COD : N / A

1 3. Note for scrapping

Collect scrap for remelting (Special Scrapping agent is required.)

1 4. Note for transportaion

In Japan : No regulated
Precautions : Keep dry with sheet covers , for example . Take care not to drop and pull down .

1 5. Applicable legistration

Prevention low on water quality contamination: Life environment clause(for Copper)
(In Japan)

1 6. Other Information

Information herein is given in good faith as authoritative and valid ; however ,
no warranty, express or implied can be made .