Material Safety Data Sheet

1. Products and Manufacturer

Products	Copper and Copper Alloy Brass (C3604)	
General Feature	Yellow-colored non-ferrous metal	
Hazardous Classification	N/A	
Used for	Bolts, nuts, screws, Valves, mechanic parts etc	
Manufacturer Information	Name	
	Address	
	Contact No.	
	Allied Division	

2. Chemical Compositions

1) BRASS RODS AND BARS

Elements		CAS No.	Weight(%)
Copper	Cu	7440-50-8	57.0 ~ 61.0%
Lead	Pb	7439-92-1	1.8 ~ 3.7%
Iron	Fe	7439-89-6	0.5% Max
Tin	Sn	7440-31-5	0.5% Max
Zinc	Zn	7440-66-6	34.3 ~ 41.2%

3. Hazards Identification on Brass rod

Outline for emergency case	
Hazardous and harmful information	- Hazard when Inhaling or Swallowing - Irritation when stuck to skin - Preventing the generation of dust
Effect on eye & skin	- irritative
Effect on inhalation	- bring about respiratory irritation, headache, vomit, nausea, diarrhoea
Effect on swallowing	- nausea, vomit, diarrhoea
Chronic symptom	- incurrence of damage to liver, lung, kidneys

4. First-aid measures

Entering into eyes	Wash away with clean water. Consult with an optician when in trouble such as abnormal symptoms of sense of discomfort
Sticking to skin	Remove with water. If necessary, Consult with physician
Inhaling, swallowing	Exhale and consult with a physician when in trouble
Instruction for doctors	When swallowing, consider stomach-toileting and supplying oxygen

5. Preliminary measures on exposure / Individual protection device

Exposure Limit	Cu => OSHA PEL : 1.0mg/m3 Pb => OSHA PEL : 0.05mg/m3 Fe => OSHA PEL : 1.0mg/m3 Sn => OSHA PEL : 2mg/m3 Zn => N/A
Engineering Management	- Install an air exhauster - Install ventilation equipment in cast there is a possibility of explosion by the extent of material' s density
Respiratory Protection	- wear a mask covering whole face which is recommended by authority when the exposure exceeds limit.
Eye protection	- wear a goggle or protective glasses
Hand protection	- wear a protective gloves
Body protection	- wear a protective clothing

6. Physical/Chemical properties

Physical state	Solid	Color	Light yellow
Smell	Odorless	Molecular weight	Cu : 63.55 Pb : 207.2(atomic wt) Fe ; 55.85 Sn : 118.69 Zn : 65.38
Boiling point	Cu : 2,595℃ Pb : 1,740℃ Fe : 2,750℃ Sn : 2,260℃ Zn : 907℃		
Melting Point	Cu : 1,083℃ Pb : 327.5℃ Fe : 1,535℃ Sn : 231.9℃ Zn ; 420℃	Vapor pressure	N/A
Vapor density	N/A	Gravity	8.4
Water fusibility	Infusible	Ph	N/A
Solvent Fusibility	Fusibility : nitric acid, hot sulphuric acid weak fusibility : muriatic acid , ammonium hydroxide		

7. Safety and Reactivity

Reactivity	Safe in normal temperature and atmosphere
Avoidable state	- Minimize dust generation - Keep away from heat, flame, spark and ignitable materials
Prohibition of Compound	- combustible materials such an oxidizer, a base, a carbon compound, etc.
Polymerization Reaction	- not polymerized

8. Toxic information

Carcinogenesis	N/A
Acute virulence	N/A

9. Ecological information

Mobility	N/A
Stimulation	N/A
Bioaccumulation	N/A
Persistence	N/A
Toxicity	N/A

10. Disposal considerations

Recycling as a raw material for brass products is recommended

11. Transport considerations

Fasten products to prevent from collapsing

12. Regulatory information

N/A

13. other information

- All the information and recommendation set forth in this MSDS is accurate as of th present
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