

**EC - Safety Data Sheet acc. to Guideline 93/112/C
91/155/EEC, 93/112/EC, 2001/58/EC and TRGS 220**

Trade names : Cu-ETP, Cu-OF, Bronze, CuSn4, CuSn5, CuSn6, CuSn8, Brass, CuZn26, CuZn36, CuZn37, STOL 76, STOL 76M, STOL 78, STOL 94, STOL 194



Supplier : Lamineries Matthey SA
Edition 1 issued : 07.05.2007

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1. Identification of preparation and company

Preparation: Bronzes are copper-tin alloys. In connector applications where bronzes are typically used, they are named phosphor bronzes. They are supplied as solid, compact and non-inhalable metal in the form of slabs or cold rolled strips.

Manufacturer/Supplier:

Lamineries Matthey SA
Route de Neuchâtel 6, CH-2520 La Neuveville
Tel.: + 41 (0)32 752 32 32
Fax: + 41 (0)32 752 32 00

e-mail: salesexport@matthey.ch
Website: www.matthey.ch

Contact for technical information and Emergency :

Tel.: + 41 (0)32 752 32 32
Fax: + 41 (0)32 752 32 00

2. Composition/Ingredients

| Ingredient | % by mass | EINECS-/EC-No. | CAS-No. | Classification | Hazard symbol |
|------------|-----------|----------------|-----------|-------------------------|---------------|
| Copper | balance | 231-159-8 | 7440-50-8 | | |
| Zinc | < 39 | 231-175-3 | 7740-66-6 | R11 (powder only) | |
| Tin | < 9 | 231-141-8 | 7440-31-5 | R11 (powder only) | |
| Magnesium | < 0.7 | 231-104-6 | 7439-95-4 | R11 R20 R22 | |
| Silicon | < 0.7 | 231-130-8 | 7440-21-3 | | |
| Nickel | < 2.5 | 231-111-4 | 7440-02-0 | Carc. Cat. 3, R40, R43* | Xn |
| Iron | < 3 | 231-096-4 | 7439-89-6 | | |
| Phosphorus | < 0.5 | | 7723-14-6 | R11 R26 R28 R35 R41 | |

3. Hazard identification

- Danger designation: none

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4. First-aid measures

The alloys as in Sect. 1 do not display any harmful effects of a dangerous substance that might require first-aid measures. The following advice refers to the effect of fumes and dust during processing.

Inhalation: fresh air supply, on complaint – consult a physician.

Skin contact: in general, this product does not irritate the skin..

Eye contact: rinse the eyes with open lids under flowing water for several minutes.

Ingestion: Consult a physician.

5. Fire fighting measures

- Appropriate extinguishers: CO₂, extinguishing powder or water jet; in case of big fire, extinguish with water jet or alcohol-resistant foam.
- Special protection equipment: no special measures necessary

6. Accidental release measures

- Person-based precautions: not necessary
- Environmental protection measures: no special measures required
- Process for cleaning / absorption: mechanical absorption
- Additional instructions: dangerous substances are not emitted

7. Handling und storage

General: The handling of the alloys as in Sect. 1 does not require any of the special safety measures normally applied to dangerous substances. The usual measures for the prevention of physical injury are sufficient.

Handling : no special measures required

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- Instruction for safe handling : no special measures required
- Instructions for fire and explosion prevention: no special measures required, com. No. 5
- Storage:
 - requirements for storage rooms and tanks : none
 - collective storage instructions: not required
 - further information storage conditions about none

8. Exposure controls and personal protection

- Additional instructions for designing technical plants
- Components with workplace-related limit values to be monitored:

| CAS-No. | designation of substance | % | Type | Value | Unit |
|-----------|--------------------------|-----|------|-------|-------------------|
| 7440-50-8 | Copper dust | 100 | MAC | 1 | mg/m ³ |
| 7440-50-8 | Copper smoke | 100 | MAC | 0,1 | mg/m ³ |
| 7440-31-5 | Tin | 100 | MAC | 2 | mg/m ³ |
- Additional instructions: the applicable list for manufacturers serves as basis
- Personal protection equipment:
 - General protection and hygienic measures : conventional prescriptions applied when handling chemicals are to be observed
 - Respiratory equipment: not necessary, otherwise use filter P2
 - Hand safeguard: not necessary, otherwise use protective gloves
 - eye shield: not necessary, otherwise use protective goggles

9. Physical and chemical properties

General: Solid with metallic, matt to brilliant grey surface or rarely with scaled, blue-black to black surface. Odourless.

Important advice regarding health and environmental protection and safety :

| | |
|---|---|
| Melting point/Melting range: | 840 – 1,075 °C |
| Boiling point/Boiling range : | Not known. |
| Flashpoint, flammability, fire-related properties : | The product is not flammable. |
| Explosion hazard : | The product is not explosive. |
| Vapor pressure, vapor density, vaporization rate : | The product has no measurable vapor pressure. |
| Density at 20°C: | 8.2-9.0 kg/dm ³ |
| Solubility in water : | Insoluble. |

Other information: Not required.

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10. Stability and reactivity

- Thermal decomposition / conditions to be avoided: no decomposition in case of appropriate application
- Substances to be avoided: incompatible with mercury, ammonia, acetylene, chlorine, gas and various acids
- Dangerous reactions: no dangerous reactions known
- Dangerous decomposition products: unknown

11. Toxicological information

- Acute toxicity: not known
- Specific symptoms in animal experiment: not known
- Primary irritating effect:
 - on the skin: no irritating effect
 - sensitivity: no sensitivity effect known
 - additional toxicological instructions: when appropriately handled and properly used, this product does not exhibit any health damaging effects according to our experience and the information available to us.

The substance is not subject to obligatory designation pertaining to the EC-lists, in the last valid edition.

12. Ecological information

- General instructions: water hazardous class 0 (self classification): in general not water hazardous

Draining high metal concentrations in natural waters is not permitted!

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13. Disposal considerations

Bronze scrap is a valuable raw material and easy to recycle for reuse. Collect and return the residue to the manufacturer or to a scrap metal dealer; do not dispose in household garbage.

14. Transport information

- Road transport: ADR / RID and GGVS / GGVE (across borders / national)
- Sea ship transport: IMDG / GGVSea
- Further information: does not belong to dangerous goods according to the above prescriptions

15. Regulatory information

- Designation acc. to EC-guidelines:
The substance does not belong to the EC-list of substances to be compulsorily designated or to any other relevant literature sources known to us.
- National prescriptions:
Technical instructions on air: Item 3.1.4 for "Dusty inorganic substances" is to be observed.
- Water hazardous class:
WHC 0 (self classification): in general not hazardous to water

Conventional precaution measures applicable when handling chemicals should be observed.

16. Other information

The details are based on our current stand of knowledge, however, they neither depict assurance of product properties nor establish any contractually legal relationship.

This material safety data sheet describes products of Lamineries Matthey SA with respect to their safety requirements. The details given are based on the information and experience available, but they do not provide or imply guarantees regarding product characteristics, nor do they suppose a legal or contractual obligation of any kind.