

## SAFETY DATA SHEET

### SECTION 1 : IDENTIFICATION

**Manufacturer:**

Swissmetal Industries Ltd.  
 Grand-Rue 6  
 2732 Reconvilier  
 Switzerland  
 Emergency Phone Number:  
 +41 32 482 05 06

**Supplier:**

Swissmetal Industries Ltd.  
 Grand-Rue 6  
 2732 Reconvilier  
 Switzerland

**Date of Creation:** 17<sup>h</sup> September 2018

**Date of Last Edit:** 29<sup>th</sup> November 2021

**Product Use:** Free machining bronze

**Product identification:** Bronze

**Alloys Trade Names:**

Swissmetal Designation	ISO Designation	Standards	
BP5	CuSn5Pb1	C53400	CW458K
BZ4	CuSn4Pb4Zn4	C54400	CW456K
BZ5	CuSn5	C51000	CW451K

## SECTION 2 : CHEMICAL COMPOSITION

The following chemical composition shows the maximum nominal amount of each element in the range of the alloys found on “section 1” and is displayed for information purpose only. Swissmetal can provide the chemical composition of a specific alloy under client request.

Element	Max % by weight
Copper (Cu)	95
Tin (Sn)	5.5
Zinc (Zn)	4
Lead (Pb)	4

## SECTION 3: HAZARDS IDENTIFICATION

Under normal handling and use, exposure to the solid form of copper or copper alloys presents few health hazards. Thermal cutting, melting, machining, grinding may produce fumes or dust containing the component elements and breathing these fumes or dust may present potentially significant health hazards. The exposure levels are relevant to fumes and dust, fumes of copper may cause metal fume fever with flu-like symptoms and copper may cause skin and hair discoloration. Inhalation of lead fumes or dust, or ingestion of lead compounds can cause lead poisoning, characterized by abdominal pain, joint and muscle pains, or weakness. Prolonged overexposure can cause central nervous system disorders. Overexposure to zinc fumes may cause non-fatal metal fume fever. Excessive inhalation of nickel fumes has been associated with respiratory cancer. Also, nickel is a potential sensitizer, and thus may cause allergic reactions.

## SECTION 4: FIRST AID MEASURES

**Ingestion:** If a person swallows’ metal or metal dust, contact a poison center for precise information.  
**Inhalation:** Difficulty of breathing may be induced by dust or fumes, leave the room and breathe fresh air. If difficulties to breathe, contact a medical assistance.  
**Eye:** If dust is in contact with eyes, do not scratch it. Wash eyes with water and contact medical assistance.  
**Skin:** Copper alloys do not irritate skin but contact with fumes and dust may induce allergic reactions and abrasive damages. If dust and fumes are in contact with skin, wash it with water.

## SECTION 5: FIRE FIGHTING MEASURES

In the solid form, there are no risks of fire or explosion hazards with these alloys. Fine chips or dust may ignite and should be stored in a well-ventilated area. In case of fire, use extinguishing agents appropriate for the surroundings or materials. Dry chemicals or sand should be used to extinguish fires. Fire fighters should wear full protective clothing and self-contained breathing apparatus.

**SECTION 6: ACCIDENTAL RELEASE MEASURES**

**Personal precautions, PPE, and emergency procedures:** Not needed.

**Environmental precautions:** Not needed.

**Methods and materials for containment and clean-up:** Dispose it with recyclers and according to environmental regulations.

**SECTION 7: HANDLING AND STORAGE**

Use general and local exhaust ventilation to prevent accumulations of dust and to keep airborne dust concentrations at a minimum. Store dust away from source of ignition.

**SECTION 8: EXPOSURE CONTROL / PERSONAL PROTECTION**

When required, employees should wear respirators for protection against airborne dust or fumes. Approved safety glasses and/or goggles should be worn during any machining, grinding, cutting or other operation from which airborne particles may be emitted. Food or drink should not be consumed in the work area.

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

The following properties are displayed in the range of the alloys found on "section 1" for information purpose. Swissmetal can provide the properties a specific alloy under client request.

**Physical form:** Solid

**Boiling temperature [°C]:** N/A

**Melting temperature [°C]:** 930-1065

**Vapor pressure (20 °C):** N/A

1.0 mm Hg at 1628 °C for Cu

**Specific gravity:** 8.7 – 8.8 g/cm<sup>3</sup>

**Water solubility:** Insoluble

**pH:** N/A

**Color:** Brown

**Odor:** N/A

**SECTION 10: STABILITY AND REACTIVITY**

Copper alloys are stable under normal conditions of transport, use and storage.

**SECTION 11: TOXICOLOGICAL INFORMATION**

If used according to instructions of use, copper alloys do not cause any harmful side effects.

**Lead:** CAS no.: 7439-92-1

"This substance may damage fertility or the unborn child, causes damage to organs through prolonged or repeated exposure, is very toxic to aquatic life with long lasting effects, is very toxic to aquatic life and may cause harm to breast-fed children" [ECHA website on Lead].

**SECTION 12: ECOLOGICAL INFORMATION**

Semi-finished copper products do not have relevant ecological issues.

**SECTION 13: DISPOSAL CONSIDERATIONS**

Scrap metal can be reclaimed for reuse. Follow Federal, State and Local regulations regarding disposal.

**SECTION 14: TRANSPORT INFORMATION**

There are no transportation regulations applicable to alloys produced by Swissmetal.

## SECTION 15: REGULATORY INFORMATION

**REACH SVHC list (updated on 27<sup>th</sup> June 2018):** The alloys of this Safety Data Sheet have in its chemical composition more than 0.1% w/w of Lead (Pb);

**RoHS:** The alloys of this Safety Data Sheet are compliant to RoHS due to exception 6C of the directive allowing Copper alloys to have up to 4% w/w max in the chemical composition.

## SECTION 16: OTHER INFORMATION

### Disclaimer of Liability

The information in this SDS was obtained from outer sources as reference. We provided this information without any warranty. We do not assume the responsibility and expressly disclaim liability for losses and damages in any way connected to the use of these products.