

## **Material Safety Data Sheet**

### **Cast Beryllium-Copper Material**

1. Material: Copper-beryllium alloy
2. Firm: Carltsø Safety Tools ApS,  
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tel.+45 5570 2400, fax +45 5570 2600,  
website:<http://www.carltsøe.com>
3. Composition:
 

Beryllium	1,8-2,1%
Cobolt + Nickel	max. 0.6%
Other	max. 0.5%
Copper	remainder
4. Risk: On delivery the material is in solid form and harmless. If the material is worked up in such a way as to produce airborne particles (through dry grinding, polishing, electrical discharge machining, melting, welding etc.) there may be a risk of inhalation. See point 12.

Ordinary handling, punching, moulding and most types of cutting are harmless. Heat treatment at atmospheric temperatures of up to 400 degrees Celsius is safe, but temperatures above this may release oxides that are dangerous if inhaled. This risk can be avoided by conducting heat treatment under protected atmospheric conditions.

5. First Aid:
 

There are no acute risks.

*Exposure to metal dust or fog*  
In practice such exposure is only possible in connection with processing methods such as dry grinding, polishing, electrical discharge machining, melting and welding and the amounts released are likely to be so small as not to produce direct symptoms. In all cases, however, persons should be moved out into the fresh air and a doctor should be consulted.

*Cuts and scratches*  
In the event of accidents, such as cutting oneself on the material, normal precautions should be taken – remove any particles in the wound, clean it and apply a bandage.

*Eyes*  
Wear safety glasses to protect against metal particles. There is no particular risk of eye injury.

*On swallowing*  
Observe standard industrial hygiene practices. Swallowing involves no particular risk of health damage.
6. Fire precautions: The material is non-flammable.
7. Leakage: This is not possible when the material is in solid form.
8. Handling, storage: No special regulations.

9. Leakage precautions      Precautions need only be taken with processes that may release airborne particles or vapours. An upper limit has been set at 1 mg beryllium per cubic meter air. Exhaust ventilation or filtration is required to limit beryllium content. In certain situations, repair and maintenance, for instance, the use of masks is necessary.
10. Physical properties      Solid bronze-coloured material; density - 8030 kg/cu.m.; melting point - 870 degrees Celsius
11. Stability, reactivity      The material is stable, non-corrosive, non-soluble and under normal conditions, it does not disintegrate.
12. Toxic effects              Inhalation of the beryllium-bearing material involves the risk of chronic beryllium poisoning (T R23). The risk is relatively small (up to 4% of those exposed). The illness results in reduced lung function and may be fatal.  
On the basis of animal tests involving beryllium and beryllium sulphate, EU has classified beryllium alloys as carcinogenic under category 2 (R49). In solid form the material is harmless. There is no literature on skin disorders as a result of handling the material in solid form. Although the EU has classified the material as slightly allergenic (Xi R43), this classification is due to the inclusion of certain non-solid forms of beryllium. There is no documentation of hypersensitivity or allergy as a result of handling the material in its ordinary form.
13. Ecology                    In solid form, beryllium-copper alloys are not detrimental to the environment.
14. Waste treatment         Scrap must not be melted or treated in such a way as to release airborne dust or fog. Scrap material must only be melted in special furnaces. Scrap material can be handed in at approved disposal sites. Contact the local authorities in case of doubt.
15. Transport                 Transportation of the material in solid form(i.e. in original or scrap form) is harmless. No EU safety warning is required.
16. Additional information      The material is harmless apart from in particular situations where airborne particles or fogs are released (on dry grinding, polishing, electrical discharge machining, melting, welding etc.) The health risk must be considered on carrying out such work processes, although normally, simple safety precautions like exhaust ventilation, filtration or masks are sufficient. Please feel free to contact Carltsøe ApS for further information.
17. Warning                    ***Carltsøe Safety Tools should not be used in contact with acetylene. Acetylene may react with copper to form an explosive acetylides. Tools containing less than fifty percent copper, may be used in an acetylene environment.***