

SAFETY PRACTICES FOR WELDING COPPER BERYLLIUM

SF1 - Version 3, March, 2018

Copper beryllium (CuBe), in solid form and as contained in finished products, presents no special health risks. Most manufacturing operations, conducted properly on well-maintained equipment, are capable of safely processing copper beryllium-containing materials. However, like many industrial materials, copper beryllium may present a health risk if handled improperly. The inhalation of dust, mist or fume containing beryllium can cause a serious lung condition in some individuals. The degree of hazard varies, depending on the form of the product, how it is processed and handled, as well as the amount of beryllium in the product. Read the product specific Safety Data Sheet (SDS) for additional environmental, health and safety information before working with copper beryllium alloys.

In addition, processing copper beryllium alloys shall be conducted in accordance with the Beryllium Standard for General Industry (29 CFR 1910.1024) established by the Occupational Safety and Health Administration (OSHA) which includes a Permissible Exposure Limits (PEL) of 0.2 microgram beryllium per cubic meter (0.2 $\mu\text{g}/\text{m}^3$) as an 8-hour Time Weighted Average (TWA), a Short-Term Exposure Limit (STEL) of 2.0 $\mu\text{g}/\text{m}^3$ determined over a 15-minute sampling period and ancillary requirements prompted at an Action Level (AL) of 0.1 $\mu\text{g}/\text{m}^3$ or other specified situations.

In accordance with OSHA regulation 29 CFR 1910.252, the welding of materials containing beryllium is regulated as follows: "Welding or cutting indoors, outdoors, or in confined spaces involving beryllium containing base or filler metals shall be done using local exhaust ventilation and pressure-demand airline respirators unless atmospheric tests under the most adverse conditions have established that the workers' exposure is within the acceptable concentrations defined by 29 CFR 1910.1024. In all cases, workers in the immediate vicinity of the welding or cutting operations shall be protected as necessary by local exhaust ventilation or airline respirators."

Respirators must be used as specified by an industrial hygienist or other qualified professional, and in compliance with the Respiratory Protection Standard (29 CFR 1910.134) established by the OSHA.

During welding operations, ventilation is required to prevent airborne generation of beryllium-containing particulate from the dispersal of slag particulate at the surface of the weld pool during welding.

A side-draft ventilation welding enclosure used to weld other metals will provide a safe environment when welding copper beryllium alloys. If the welded parts are abrasively cleaned, ventilation must be provided to prevent airborne generation of beryllium-containing particulate during the cleaning operations.



ADDITIONAL INFORMATION

The information contained in this Safety Facts applies only to the subject referenced in the title. Read the SDS specific to the products in use at your facility for more detailed environmental, health and safety guidance. SDSs can be obtained by contacting the Materion Brush Inc. Product Safety Hotline at (800) 862-4118 or visit our website at www.materion.com.

Additional information can also be obtained by contacting a Materion Brush Inc. Sales Representative or:

Product Stewardship Department
Materion Brush Inc.
6070 Parkland Boulevard
Mayfield Heights, Ohio 44124
(800) 862-4118