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Dear Reader,

Welcome to our Easy Guide Blast. In a few words we would like to introduce our **HEAT TREATING EXPOSURE CONTROL GUIDE for Beryllium-containing materials**. This is the eighth of nine guides on specific processes provided by the Be Responsible Programme.

## CONTEXT OF THE BE RESPONSIBLE PROGRAMME



The **Be Responsible Programme**, launched by the Beryllium Industry, aims to advance the science of beryllium health and safety as well as protect beryllium workers and their close entourage.

The Beryllium Science and Technology Association (BeST), representative association of the beryllium industry, and its members stress that substantial uncontrolled workplace exposure to beryllium airborne particles can present a potential health and safety risk to employees.

### What to achieve

The inhalation of beryllium-containing dust, mist or fume can cause a serious lung condition in some individuals. The use of engineering and work practice controls are the preferred methods of controlling exposure to beryllium-containing particulate reliably below the national occupational exposure limit (OEL) applicable in your country for airborne beryllium.

### Exposure during the HEAT TREATING process

Heat Treating of beryllium-containing alloys present a health risk if effective controls are not implemented. Heat treatment of beryllium containing alloy parts requires certain safety precautions in most instances.

### Important to know

While beryllium-containing alloy heat treating operations do not generate beryllium-containing fume, the spalling of surface oxide during subsequent handling steps can cause potential exposures.

**Before:** Before heat treating, the parts should be cleaned to remove machining lubricant, which, if not removed, can cause staining when exposed to elevated temperatures.

**During:** It is best if the furnace atmosphere is controlled to minimise oxide formation. An inert or reducing furnace atmosphere in the lower temperature precipitation aging step produces a thin, transparent, adherent oxide that usually presents no handling problems.

**After:** The oxidised surface of heat-treated beryllium-containing alloy parts should be cleaned before further processing, particularly if they will be plated, soldered, brazed or welded.

***Good to know:*** Chemical cleaning in an acid solution is preferred to minimise the potential for exposure to fine particulate. Keeping the oxide moist will help control generation of airborne particulate during handling and disposal; however, ventilation is the preferred method to control airborne generation of particulate.

*Notes*

## GOLDEN RULES

### **Golden rule 1**

As always, personal protective equipment, maintenance, housekeeping, local exhaust ventilation and workplace exposure characterisation must be implemented. Ventilation equipment must be inspected regularly to ensure it is functioning properly.

### **Golden rule 2**

BeST recommends that quantitative and qualitative exposure assessments be conducted by a qualified industrial hygienist or occupational health professional.

### **Golden rule 3**

In case of doubt, always reach out to your supplier for additional guidance.

Check out the full HEAT TREATING exposure control guide [here](#).

*Notes*

## **WANT TO KNOW MORE?**

Check out our dedicated website [www.berylliumssafety.eu](http://www.berylliumssafety.eu) in all European languages or get in contact with us at [info@beryllium.eu](mailto:info@beryllium.eu)