BERYLLIUM FACT SHEET May - 2018

Potential impact of OSHA's new rule for exposure to beryllium for scrap recyclers.

Introduction

Beryllium and beryllium compounds are highly toxic. Occupational exposure by inhaling airborne beryllium dust can cause serious lung disease (Chronic Beryllium Disease or CDB) and lung cancer. Skin exposure to dust and beryllium compounds can cause sensitization which also can lead to CDB.

The Occupational Safety and Health Administration (OSHA) has issued a final rule to prevent chronic beryllium disease and lung cancer in American workers by limiting their exposure to beryllium and beryllium compounds. The new rule dramatically reduces exposure limits and replaces 40-year-old exposure limits that OSHA believes has not adequately protected worker health.

Requirements

The respiratory 8 hour permissible exposure limit (PEL) for beryllium dust has been reduced tenfold from 2 micro grams per cubic meter to 0.2 micro grams per cubic meter. The new short term exposure limit (STEL) is set at 2 micro grams per cubic meter. These exposure limits are in effect as of May 11, 2018. Any workers with the potential to be exposed to beryllium at or above the levels stated above must wear respiratory protection, receive training on beryllium hazards and be offered medical exams.

Requirements to provide change rooms and showers for those workers who are exposed to beryllium dusts go into effect March 11, 2019. Requirements to provide engineering controls if needed to potentially eliminate the need for respiratory protection go into effect March 10, 2020.

The rule contains standards for general industry, construction and shipyards. This fact sheet focuses on the **general industry standard.**

Beryllium and beryllium compounds are important materials use in the aerospace, electronics, energy, telecommunication, medical and defense industries. It is frequently alloyed with copper.

Potential Sources of Beryllium Exposure

OSHA has identified the following industries where exposure can occur:

- Beryllium Production
- Beryllium Oxide Ceramics and
- Composites
- Nonferrous Foundries
- Secondary Smelting, Refining, and Alloying
- Precision Turned Products
- Copper Rolling, Drawing, and Extruding
- Fabrication of Beryllium Alloy Products
- Welding
- Dental Laboratories

OSHA has also identified following list of end use products that contain beryllium

- Aerospace (aircraft braking systems, engines, satellites, space telescope
- Automotive (anti- lock brake systems, ignitions)
- Ceramic manufacturing (rocket covers, semiconductor chips)
- Defense (components for nuclear weapons, missile parts, guidance systems, optical systems)
- Dental labs (alloys in crowns, bridges, and dental plates)
- Electronics (x- rays, computer parts, telecommunication parts, automotive parts)
- Energy (microwave devices, relays)
- Medicine (laser devices, electro-medical devices, X-ray windows)
- Nuclear energy (heat shields, reactors)
- Sporting goods (golf clubs, bicycles)
- Telecommunications (optical systems, wireless base station

Recommended Short Term Actions:

- If you have customers in the industries listed earlier, determine if they are sending you scrap that contains beryllium above 0.1% beryllium (material at 0.1% is exempt from the rule).
- For members that place containers at customer locations for general metal scrap, it is important to remember that most spark proof tools are made from beryllium or beryllium-copper alloy. It is possible that old or broken spark proof tools could show up in a bin.
- Train you employees on the hazards of beryllium and how to handle.
- If you process copper alloys, note that many copper alloys contain low levels of beryllium. Any activity that can result in dust or smoke could be a candidate for worker exposure and hence require sampling to determine beryllium levels.
- End use products listed above are not an exposure source. However, any activity which can generate dust or smoke could be a candidate for worker exposure and hence require sampling to determine beryllium levels for sampling.
- Review your torching operations to evaluate the potential for worker exposure to beryllium and ensure that adequate respiratory protection is being utilized.

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