

OSHA's New Beryllium Standard

OSHA's final rule is designed to prevent chronic beryllium disease and lung cancer in American workers by limiting their exposure to beryllium and beryllium compounds. The rule contains standards for general industry (29 CFR 1910.1024), construction (29 CFR 1926.1124), and shipyards (29 CFR 1915.1024).

Beryllium is used industrially in three forms: as a pure metal, as beryllium oxide, and most commonly, as an alloy with copper, aluminum, magnesium, or nickel. Beryllium oxide (called beryllia) is known for its high heat capacity and is an important component of certain sensitive electronic equipment. Beryllium alloys are classified into two types: high beryllium content (up to 30% beryllium) and low beryllium content (2 - 3% beryllium). Copper-beryllium alloy is commonly used to make bushings, bearings, and springs. Beryllium is also found as a trace metal in slags and fly ash.

Industries & Operations Affected

Exposures to beryllium dust occur in workplace operations involving production/processing of beryllium metal/alloys/composites, nonferrous foundries, machining operations, metal fabrication, welding operations, dental laboratories, copper rolling/drawing/extruding, secondary smelting and refining, and abrasive blasting (slag) operations.

Certain types of slags (coal, copper) used in abrasive blasting operations may contain trace amounts of beryllium (<0.1 % by weight). Due to the high dust conditions inherent in abrasive blasting operations, workers involved in these activities may be exposed to dangerous levels of beryllium.

Workers in industries where beryllium is present may be exposed to beryllium by inhaling or contacting beryllium in the air or on surfaces. Inhaling or contacting beryllium can cause an immune response that results in an individual becoming sensitized to beryllium. Individuals with beryllium sensitization are at risk for developing a debilitating disease of the lungs called chronic beryllium disease (CBD) if they inhale airborne beryllium after becoming sensitized. Beryllium-exposed workers may also develop other adverse health effects such as acute beryllium disease, and lung cancer.

Key Provisions

- Reduces the permissible exposure limit (PEL) for beryllium to 0.2 micrograms per cubic meter of air, averaged over 8-hours.
- Establishes a new short-term exposure limit (STEL) for beryllium of 2.0 micrograms per cubic meter of air, over a 15-minute sampling period.
- Establishes action level concentration for beryllium of 0.1 micrograms per cubic meter of air, averaged over 8-hours.
- Requires employers to: use engineering and work practice controls (such as ventilation or enclosure) to limit worker exposure to beryllium; provide respirators when controls cannot adequately limit exposure; limit worker access to high-exposure areas; develop a written exposure control plan; and train workers on beryllium hazards.
- Requires employers to make available medical exams to monitor exposed workers and provides medical removal protection benefits to workers identified with a beryllium-related disease.

Air Monitoring

Employers must assess the 8-hour TWA exposure and the 15-minute short-term exposure for employees on the basis of any combination of air monitoring data and objective data sufficient to accurately

characterize airborne exposure to beryllium. If initial monitoring indicates that airborne exposure is below the action level and at or below the STEL, the employer may discontinue monitoring for those employees whose airborne exposure is represented by such monitoring. Otherwise, the standard will require repeat sampling based on the initial results (and subsequent results). Laboratory analytical method must measure beryllium to an accuracy of plus or minus 25 percent within a statistical confidence level of 95 percent for airborne concentrations at or above the action level.

Medical Surveillance

OSHA requires employers to offer medical surveillance to workers who meet one of the following conditions: are or are reasonably expected to be exposed above the action level of 0.1 µg/m³ for 30 days in a year; show signs or symptoms of CBD; were exposed to beryllium during an emergency; or have received a recommendation for continued medical surveillance from a physician or other licensed health care professional (PLHCP) from the most recent exam.

Compliance Schedule

On December 12, 2018 OSHA began enforcing most provisions of the beryllium standard for general industry, except for change rooms and showers (March 11, 2019) and engineering controls (March 10, 2020).

For more Information visit:

<https://www.osha.gov/berylliumrule/index.html>

www.affinityconsultants.com

Affinity is here to help your company comply with the new beryllium rule. We have experienced staff to assist you with air monitoring and compliance with all the requirements of the new rule.