

TerranearPMC Safety Share

Week of January 16, 2017 – OSHA's New Beryllium Standard

As the country's current administration bids adieu, and the next one enters into prominence, Dr. David Michaels, the current assistant Secretary of Labor, or the head of OSHA, has spear-headed an effort to move forward and promulgate OSHA's comprehensive regulation to protect the American Worker due to exposures from working with, as well as handling, beryllium.

Beryllium is a strong, lightweight metal used in many industries, such as aerospace, electronics, energy, telecommunication, medical care, and defense. The disease that is attributed to exposure to beryllium, is most-often referred to as Chronic Beryllium Disease or CBD and has been known to damage lung tissue over a period of years of exposure, which, in many cases, leaves its victims unable to breathe without the aid of an oxygen tank. Thus, beryllium has been recognized to be highly toxic when beryllium dust, fume, or mist become airborne so that they are inhaled by workers. The new rule revises health measures that were based on decades-old studies.

The outgoing OSHA head, David Michaels, recently stated in an interview "We know there are many dozens of workers who get sick every year from chronic beryllium disease." He said OSHA recognized decades ago the need for a stronger standard but faced resistance from defense officials. "For many years, beryllium was strategically so important that the government and the beryllium industry fought hard against a more protective standard," Michaels said.

The current OSHA permissible exposure limit is 2 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) for an 8-hour time weighted average. An Action Level (AL) was established at one-tenth that value ($0.2 \mu\text{g}/\text{m}^3$). The new standard will reduce the PEL to the old AL of $0.2 \mu\text{g}/\text{m}^3$. When airborne exposure concentrations exceed this limit, employers will need to take steps to reduce this exposure. In addition, the rule requires additional protections that include personal protective equipment, medical exams, other medical surveillance, as well as training. OSHA has established a new AL of $0.1 \mu\text{g}/\text{m}^3$ as well as a short-term exposure limit (STEL) of $2.0 \mu\text{g}/\text{m}^3$: a health measure based on a 15-minute sampling period.

The new OSHA standard applies to general industry (29 CFR 1910.1024), shipyards (29 CFR 1915.1024), and construction (29 CFR 1926.1124) and will take effect on March 10, 2017. This does not mean that in just few months, employers must meet full compliance to this regulation. Knowing that companies will need time to meet compliance, OSHA has set a one-year "buffer" at which time, on March 12, 2018, businesses will need to comply with most of the requirements. In two years' time (March 11, 2019), businesses will need to provide change rooms and showers (when certain activities require such measures). After 3 years (March 10, 2020), appropriate engineering controls will need to be implemented.

While OSHA has jurisdiction in private businesses throughout the United States (including Puerto Rico and US possessions, such as the US Virgin Islands), Department of Energy (DOE) Facilities fall under the jurisdiction of the DOE Chronic Beryllium Disease Protection Program, 10 CFR 850. While this regulation cites the OSHA PEL and AL, at this time, through a notice in the Federal Register, DOE Contractors (and subcontractors) will be notified that the exposure concentration requirements have changed and, as such, will amend the DOE occupational exposure limit to meet



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OSHA's revised occupational exposure limits (e.g. PEL of $0.2 \mu\text{g}/\text{m}^3$). At the same time, DOE is anticipating to revise its AL to $0.05 \mu\text{g}/\text{m}^3$.

To complicate matters a little further, the American Conference of Governmental Industrial Hygienists (ACGIH), has established their own occupational exposure limits (known as threshold limit values or TLVs) for beryllium at $0.05 \mu\text{g}/\text{m}^3$. While TLVs are generally not legal limits for which employers are obligated to meet compliance, it is not uncommon for contractual agreements to be made that would require an employer to meet ACGIH TLVs.

The OSHA rule also provides an exemption for materials containing less than 0.1% beryllium by weight; however the employer must have data that supports employee exposures to beryllium will remain below the action level of $0.1 \mu\text{g}/\text{m}^3$ (as an 8-hour TWA) under any foreseeable conditions.

OSHA will require periodic exposure monitoring. When employee exposures have been determined to be at or above the action level, while being at or below the PEL, IH monitoring shall be performed every six months. In addition, where employee exposures are above the PEL or STEL, monitoring shall be performed every three months. Employers may discontinue exposure monitoring where employee exposures fall below the action level and STEL. In addition, the final rule includes a new provision that allows employers to assess employee exposures using any combination of air monitoring data and objective data sufficient to accurately characterize airborne exposure to beryllium (referred to as "performance option").

The new OSHA regulation further stipulates that employers must establish and maintain a beryllium work area wherever employees are, or can reasonably be expected to be, exposed to airborne beryllium, regardless of the level of exposure. However, beryllium work areas are not required under the standards for shipyards and construction.

Whenever respiratory protection is required (as per provisions established in the new regulation), employers must provide a powered air-purifying respirator (PAPR) instead of a negative pressure respirator. PAPRs would also be the rule whenever an employee requests a PAPR (provided that the PAPR offers adequate protection).

The new ruling also requires the use of protective clothing and equipment where employee exposures exceed, or can reasonably be expected to exceed, the PEL or STEL or where there is a reasonable expectation of dermal contact with beryllium. In addition, medical examinations shall be offered to each employee who is or is reasonably expected to be exposed at or above the action level for more than 30 days per year. The examinations shall be offered at least every two years.

More information on OSHA's Beryllium regulations for general industry, construction and shipyards can be found by visiting the OSHA website at <https://www.osha.gov>.

When a man assumes a public trust he should consider himself a public property - Thomas Jefferson

