

Beryllium (Be)

What is Beryllium?

Beryllium is a hard, grayish metal naturally found in mineral rocks, coal, soil, and volcanic dust. Beryllium ore is mined, and the beryllium is purified for use in nuclear weapons and reactors, aircraft and space vehicle structures, instruments, x-ray machines, and mirrors. Beryllium oxide is used to make specialty ceramics for electrical and high-technology applications. Beryllium alloys are used in automobiles, computers, sports equipment (golf clubs), and dental bridges.

Does Beryllium have any additional names?

No.

What are the known health effects?

Beryllium can be harmful if you breathe it. Short term exposure to beryllium in the air at high levels has the potential to lead to inflammation of the lungs when inhaled; it is less toxic in drinking water. Long term exposure to beryllium in the air at high concentrations has the potential to damage bones and lungs and may cause cancer.

How does exposure occur?

The general population is normally exposed to low levels of beryllium in air, food, and water. Beryllium dust enters the air from burning coal and oil. This beryllium dust will eventually settle over the land and water. Beryllium enters water from erosion of rocks and soil, and from industrial waste. Some beryllium compounds will dissolve in water, but most stick to particles and settle to the bottom. Most beryllium in soil does not dissolve in water and remains bound to soil.

Is this contaminant regulated?

Yes, and water supplied to Mount Laurel MUA customers is in compliance. The maximum concentration of Beryllium permitted in drinking water is 4 ppb; water supplied by the MLTMUA system has a detected a maximum of 1.33 ppb.

How can I reduce exposure?

Individuals working at facilities that use beryllium should make sure that contaminated clothing and objects are not brought home. Children should avoid playing in soils near uncontrolled hazardous waste sites where beryllium may have been discarded. Methods for drinking water treatment include ion exchange, lime softening and reverse osmosis.

Additional information for Beryllium, including information referenced, can be found at:

<https://www.atsdr.cdc.gov/ToxProfiles/tp4-c1-b.pdf>

https://www.who.int/water_sanitation_health/water-quality/guidelines/chemicals/beryllium-background.pdf