

Lead (Pb)

How You Can Be Exposed to Lead

Lead is a component in thousands of products including lead-based paints, lead solder, electrical fittings and conduits, tank linings, plumbing fixtures, and many metal alloys. Although many uses of lead have been banned, lead based paints continue to be used on bridges, rail-ways, ships, and other steel structures because of its rust - and corrosion-inhibiting properties. Significant lead exposures can also occur when paint is removed from surfaces previously covered with lead-based paint.

Operations that can generate lead dust and fumes:

- Demolition of structures
- Torch cutting and welding
- Use of heat guns, sanders, scrapers, or grinders
- Abrasive blasting

Health effects

Lead is a toxic metallic element, which can enter the body through a variety of means, some of which include:

- Inhaling dust or fumes
- Consuming contaminated food
- Using contaminated eating utensils.

When lead enters the body faster than the body can excrete it, it begins to accumulate in bodily tissues which can lead to numerous health effects. Lead in the body is distributed to the brain, liver, kidney and bones. These effects are toxic to all humans but are much more toxic to children, infants, and unborn children.

Signs/symptoms of lead poisoning include:

- Muscle/joint pain
- Problems with memory or concentration
- Loss of appetite/weight loss
- Gastrointestinal/digestive problems
- Irritability

Lead is especially toxic to unborn children, affecting their development, birth weight, and in severe cases causing spontaneous abortions.

Studies on males show a severe depression of sperm count and decreased function of the prostate and/or seminal vesicles. Chronic exposure to lead in humans can affect the blood and the nervous system.

Work practices

- Employees must wash hands frequently when working around lead, especially before eating.
- No smoking, eating, drinking, application of lip balm, or cosmetics is permitted.
- Avoid cleaning methods which create airborne lead dust or fumes. HEPA vacuums should be used.
- Pregnant women may want to consult with an occupational health physician before working around lead.

Personal Protection

Respiratory protection such as a tight fitting respirator with HEPA cartridges may be required where over-exposure is likely.

OSHA Requirements

OSHA regulates exposure to lead and is applicable in areas where lead exposure exceed action limits. The regulation has many specific requirements for exposure monitoring, medical surveillance, safe work practices, and PPE. Contact University Health and Safety to help assess lead exposure concerns in your work area.

Questions

If you have questions on this topic, please contact Health, Safety, and Risk Management at (612) 626-6002.

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