

Toolbox Talk

Lead

1926.62(a)(3) New construction, alteration, repair, or renovation of structures, substrates, or portions thereof, that contain lead, or materials containing lead.

What is Lead

Lead is a heavy metal chemical element that is very dense but also soft and malleable. It has some very unique properties that make it desirable to use in manufacturing, automotive, and construction materials. With its ability to resist corrosion it was previously added to paints and coatings, until being banned in 1978. Also being reactive to acid makes it a critical ingredient for battery production.

Why is it bad?

Since it is a heavy metal, it is very dangerous when it enters the human body. Lead may be absorbed through the skin, lungs, or intestinal tract. No level of lead in the body is safe. Exposure is greater for those who encounter lead dust, mist, or fumes as opposed to larger flakes or chips of paint.

- Lead quickly binds to red blood cells and diffuses into soft tissues such as the brain, heart, kidneys, liver, and even bone marrow.
- Lead Poisoning: abdominal pain, constipation, headaches, irritability, memory problems, tingling in the hands and feet, metal taste, tinnitus.
- Causes high blood pressure, kidney and nerve damage, infertility and low weight pregnancies.
- Children, spouses, and pets get exposed from “take home” lead dust.
- After prolonged continued exposure lead diffuses into bone where irreversible damage will occur.

How does it enter the body?

Inhalation - The most common source of occupational exposure to lead poisoning.

Common Lead Dust Exposures

- Demolition or remodel of homes built before 1979 (common in paints and ceramic tiles)
- Construction work in metal recycling or manufacturing facilities
- Soldering of pipe, wires, circuit boards
- Dust from refinishing old furniture

What Happens?

- When lead is inhaled up to 50% of the lead particles can reach the lungs
- Larger particles get trapped in the upper respiratory tract and expelled when sneezing or coughing.
- Smaller particles can reach the deeper areas of the lungs where they can be absorbed into the bloodstream.
- Lead particles in the blood carry particles throughout the body causing a list of medical conditions and symptoms.

Ingestion - Exposure may also occur after the physical work is complete and contaminated hands are used to handle food/drink or smoke cigarettes.

- Before eating, drinking, smoking - hands, forearms, and faces should be washed.
 - standard soap and water is not effective, instead a product specifically for lead removal should be used.
- Gloves should always be worn when working with lead based products and materials.
- Uniforms should be worn that can be removed and properly cleaned or disposed of to avoid bringing the contamination out of the work space to avoid “take home” exposure

Absorption - Working with lead-based liquids such as exterior paints, lead-acid batteries, and lubricants during metal fabrication.

Additional Examples: Grinding or machining metal, melting pure lead, handling scrap metals, welding steel pipes with lead-based paints, working in a smelter or foundry, manufacturing or recycling lead-acid batteries, working on lead-encased cables.

Companies that work with Lead on a regular basis need to perform and track blood testing to monitor blood lead levels. This is reported to the state and NIOSH.

NIOSH offers a Health Hazard Evaluation Program, a free service that evaluates workplaces across the country. Any employer or employee can request this.

Summary

No amount of Lead in the human body is safe. Proper PPE should be worn at all times during the demolition of older homes. To be safe from the hazard a proper respirator, goggles, gloves, and disposable jumpsuit should be worn. Remember, the hazard does not stop at the work site, to avoid exposing your loved ones at home take the time and care to leave the dust at work.

For more information on Lead Poisoning please visit
<https://www.cdc.gov/nceh/lead/prevention/default.htm>