



Lead Protection in the Workplace

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Pb **Lead**

Atomic Number: 82
Atomic Mass: 207.20

LEAD occurs naturally in small quantities in the earth's crust. The greatest risk of exposure to lead results from man-made processes and products. Lead is a soft heavy metal mined from the earth. Lead deposits may be found in the form of galena, lead sulfide material associated with zinc-sulfides and silver. Lead has been mined, smelted, and used in the manufacture of products for thousands of years.

SOURCES OF OCCUPATIONAL EXPOSURE

- Battery manufacturers
- Ammunition manufacturers
- Lead miners
- Auto body repair
- Painting
- Scrap metal work
- Electrical work

JUST A FEW LEAD FACTS:

- ◆ The health effects of lead exposure date back to an account by Benjamin Franklin in 1786.
- ◆ The major exposure to lead for most adults is found in the workplace.
- ◆ Lead from deteriorated paint can be found in airborne dust during remodeling, renovation, or abatement activities.

HEALTH EFFECTS



Lead in the body serves no useful purpose. Therefore it may effect most organs and systems.

ACUTE – damage to the brain and central nervous system (CNS)

CHRONIC – more severe CNS damage, slow reflexes, anemia, high blood pressure, reproductive, kidney, and liver disorders

Additional information . . .

- ◆ Occupational Safety and Health Admin.
<http://www.osha.gov>
- ◆ National Lead Information Center
1 (800) 424-LEAD
- ◆ Housing and Urban Development Agency
<http://www.hud.gov/lea>
- ◆ Environmental Protection Agency
<http://www.epa.gov/lead/>

POTENTIAL SOURCES OF LEAD EXPOSURE

Lead-based PAINT (paint containing lead in a concentration of $\geq 0.5\%$ by weight which is equivalent to 5000 ppm)

Lead in WATER resulting from corrosion of lead-containing materials in plumbing, poorly soldered joints, brass fittings, service mains, plumbing, service lines, lead-containing alloys (faucets and valves), private wells, and plumbing equipment

Lead DUST in surface soil from weathering and chipping, scraping, sanding, and other construction related activities involving lead paint

Lead in the AIR from leaded gasoline, stationary sources (industries), and windblown dust

Lead in FOOD from lead soldered containers, lead glaze, airborne lead deposited on crops or water, uptake into food crops, during transportation

Lead in INDUSTRIES (factories)

Other Sources of Lead include but, are not limited to, cosmetics, home remedies, take home lead, hobbies, pewter figurines, crystal, vinyl mini-blinds, and pool cue chalk.

WHAT DOES OSHA SAY?

Determine if Lead is present in the workplace by conducting initial air monitoring. If employees' airborne exposure is:

- ◆ \geq **Action Level** of $30 \mu\text{g}/\text{m}^3$
 - conduct biological monitoring
 - conduct training
- ◆ $>$ **Permissible Exposure Limit** of $50 \mu\text{g}/\text{m}^3$
 - install engineering controls
 - use respiratory protection

Refer to 29 CFR 1910.1025 and 29 CFR 1926.62 for additional regulatory information.

For further information, contact the Safety, Health & Environmental Division at (404) 894-2646
<http://www.oshainfo.gatech.edu>

For further information, call the Safety, Health & Environmental Technology Division, 404/894-3806

