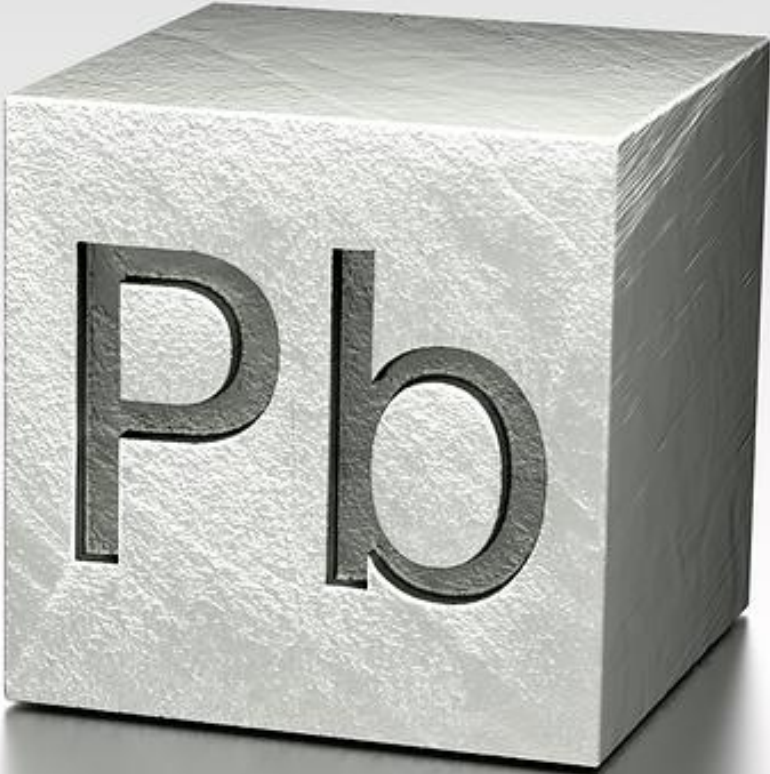


LEAD AWARENESS



Course Overview

1. Lead Hazards
2. Controls to Lessen Exposures

1

Lead Hazards

What you need to know:

1. Common causes of lead exposure
2. How lead enters the body
3. The effects of lead on adults and children
4. Symptoms of lead poisoning

Common Sources of Lead

Lead in industry is normally found in one of three forms:

1. Metals and alloys:

- Weights
- Solders

2. Inorganic compounds:

- Car batteries
- **Paint (prior to 1978)**
- Munitions
- Electronic components

3. Organic compounds:

- Gasoline additives (phased out for automobiles in the US)
- Aviation gas (currently in use, but in process of being phased out by the FAA)



Causes of Lead Exposure in the Workplace

In lead-contaminated work areas, certain tasks are more likely to cause lead dust to enter the air:

- **Demolition**, especially of older buildings
- **Flame-torch cutting** and **welding**
- **Removal of lead paint** by sanding, scraping, or grinding
- **Abrasive blasting** of lead-contaminated surfaces



Lead was a common material used in construction up until the late 20th century. Older structures may include lead in plumbing, electrical wiring, or paint.



Routes of Entry

Lead is primarily introduced to the body via:

- **Inhalation**, when the air contains lead particles.
- **Ingestion**, when lead-contaminated materials, including food, beverages, cosmetics, and tobacco products come into contact with the mouth.



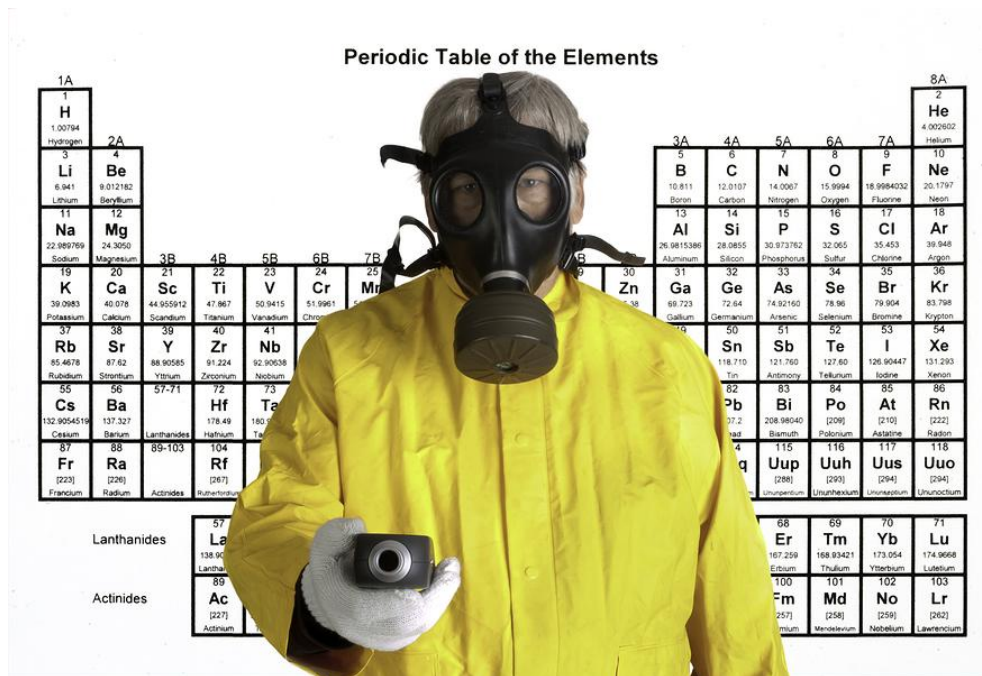
*Certain organic compounds of lead **may be absorbed** through the skin, but these compounds are rarely used today and are not covered by OSHA standards.*

Lead Contamination

Once lead enters the body, it can take anywhere from a month to two decades before it starts to be excreted.

In adults, the half-life of lead in the body depends on where it has been deposited:

- **Lead in blood** has a half-life of about **25 days**.
- **Lead in soft tissue** has a half-life of **1 – 2 months**.
- **Lead in bone** has a half-life of **25 – 30 years**.



Possible Symptoms of Lead Poisoning

- Abdominal pain, vomiting, and constipation
- High blood pressure
- Joint or muscle pain
- Declines in mental functioning
- Pain, numbness, or tingling of extremities
- Headaches
- Memory loss
- Mood disorders
- Fertility issues in both men and women, including harm to fetuses



Lead in Children

The human body is unable to distinguish lead from calcium. This makes lead especially dangerous in the still-developing bodies of children, where it can cause **permanent harm** to bones, muscles, and the brain, as well as hamper future development.



2

How to Minimize Exposures

Minimize Contact & Reduce Contamination

- Do not touch peeling paint or paint chips found on the ground.
- Do not step on or crush paint chips on the ground since this can spread lead contamination.



Housekeeping

If lead dust or lead-containing paint chips must be cleaned up, keep this in mind:

- Allowed:
 - A Vacuum equipped with a HEPA (high-efficiency particulate arresting) filter is the preferred method for cleaning up lead dust or lead-containing paint chips.
- Not Allowed:
 - Compressed air
 - Dry Sweeping



Personal Hygiene

If you may have lead contamination on your hands, personal hygiene is an important part of minimizing lead exposure

- Hand-washing is a simple and effective way of removing lead contamination.
 - Wash for 20 seconds (about the time it takes to sing “Happy Birthday” twice.)
- Washing hands should be done before eating, drinking, applying cosmetics, or taking breaks, and at the end of work shifts.

20 Sec.



Summary

- Despite being dangerous, lead is a common material in numerous industries and products.
- If inhaled or ingested into the human body, lead can linger anywhere from a month to decades before it is passed.
- Exposure to lead can be minimized avoiding contact, proper housekeeping, and good personal hygiene.