

Lead in General Industry Information for Workers

Lead is a very toxic metal that can cause damage to the brain, nervous system, kidneys, reproductive system, and other health problems.

Lead can enter the body by inhaling it from the air or ingesting it, for example, by eating with lead-contaminated hands.

Lead can be present in a wide range of materials, such as scrap metal, solder, bullet fragments and dust, sheeting, cable housing, lead ingots, and lead-acid batteries. Certain tasks, such as grinding, sanding, welding, torch burning, torch cutting, and cleaning or emptying bullet traps can produce high exposure levels.

Workers can take lead home on their bodies, clothing, or shoes, which can accidentally poison their families, especially children.

What do employers need to do?

Cal/OSHA has two lead exposure levels that have been reduced, and workers need to be aware of:

- Action level (AL): 2 micrograms of lead per cubic meter of air ($2 \mu\text{g}/\text{m}^3$) calculated as an 8-hour time-weighted average (TWA). The 8-hour TWA is the employees' full shift exposure to airborne lead expressed as an 8-hour average exposure. Employers are required to take certain measures when the AL is exceeded, such as medical surveillance and blood lead testing.
- Permissible exposure limit (PEL): 10 micrograms of lead per cubic meter of air ($10 \mu\text{g}/\text{m}^3$) calculated as an 8-hour TWA. Employers must keep employees' exposures below the PEL, or as low as feasible.

Determine exposures to lead

Employers are required to determine what work activities may expose their employees to lead and at what exposure levels. This typically involves performing full-shift personal air monitoring. The goal is to determine the airborne lead levels that are representative of employees' exposures.

You and your designated representatives must be allowed the opportunity to observe any monitoring. If observation requires entering hazardous areas, your employer must provide protective clothing and respiratory protection. They must also provide access to the monitoring results.

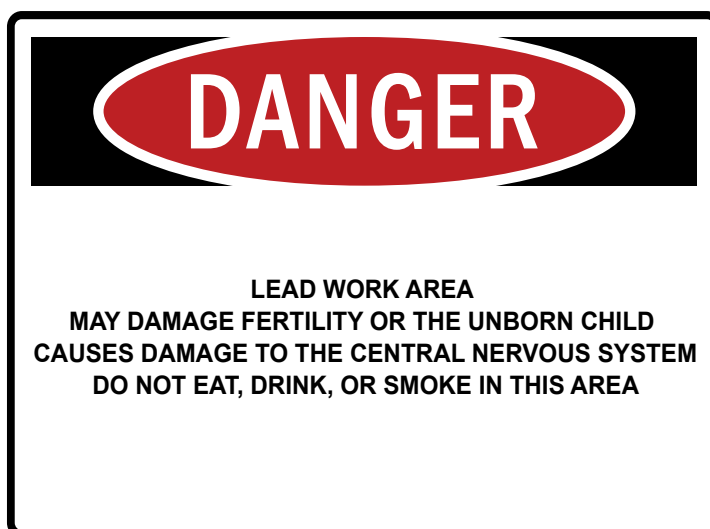
Until exposure assessments are done, employers must assume workers engaged in altering or disturbing certain types of materials, or torch cutting of any scrap metal, are exposed above the AL and/or the PEL.

Provide protection

For all employees exposed to lead, employers must:

- Provide basic lead training, safe housekeeping, and clean washing facilities that include (where necessary) cleansing compounds designed for lead removal from the skin.
- Prohibit eating, drinking and smoking in work areas.

The employer must post signs in each work area where employees' exposures are above the AL, and where workers are engaged in altering or disturbing certain types of materials, or torch cutting any scrap metal.



If exposure levels are found to be above the PEL, the employer must add more controls to reduce lead exposures to below the PEL:

- Engineering controls, such as mechanical ventilation to minimize lead levels.
- Upgraded work practices and administrative controls (e.g., job rotation to areas of less exposure).
- Provision of clean protective clothing (at least daily where exposures exceed $30 \mu\text{g}/\text{m}^3$).
- Provision of changing rooms, showers, and lunchrooms.
- Respiratory protection based on actual exposure levels if other controls are not enough.
- Medical surveillance that includes blood-lead testing, medical exams, and medical removal where necessary.

For certain processes in lead acid battery manufacturing and recycling, a Separate Engineering Control Airborne Limit (SECAL) has been set, which is higher than the PEL. The standard allows certain employers to meet the SECAL using engineering and work practice controls, rather than the PEL. Use of respirators is necessary when other exposure controls are infeasible or inadequate in reducing exposures to or below the PEL.

Employers are required to develop and implement a written lead compliance program to reduce worker's exposures using only engineering and work practice controls to or below the PEL (or the SECAL). This program must be available at the worksite for examination and copying by affected employees or their representatives.

Prior to exposure assessments of workers engaged in altering or disturbing certain types of materials, or torch cutting of any scrap metal, employers must provide interim worker protection that includes:

- Respiratory protection consisting of, at least, a half-mask respirator with specific types of filters (N100, R100, or P100).
- Clean protective work clothing and equipment at least weekly.
- Medical surveillance.
- Training.
- Posting signs.

What can workers do?

Workers can reduce their lead exposures by using protective measures provided by your employer and good hygiene and housekeeping practices. These include:

- If needed, wear respirators properly.
- Wear protective clothing.
 - Remove contaminated clothing at work. Don't take it home or put it in your car.
 - Don't store them in the same place you keep your street clothes when you change.
- Wash hands, exposed arms, and face with special cleansing product:
 - Before eating, drinking, smoking, or applying cosmetics.
 - At the end of the shift.

- Don't eat, drink, smoke, or apply cosmetics in areas where lead is present.
- Use vacuums equipped with HEPA filters to clean lead dust and empty them in a way that doesn't spread lead.
- Shower at the end of the shift if required.

What if your blood lead level is high?

Depending on your lead exposure levels, your employer may need to put you in a medical surveillance program, including ongoing blood lead testing.

If the tests show your blood lead levels are higher than a certain limit, they are required to make changes to lower your blood lead level. In addition, they may need to temporarily remove you from certain job tasks involving lead.

If you are medically removed from exposure to lead, your employer must provide you with medical removal protection benefits for up to 18 months, such as maintaining normal pay and seniority, and the right to former job status when returning to work.

Cal/OSHA has two lead regulations: one for general industry and the other for construction work. This fact sheet discusses some of the general industry requirements. Refer to Title 8, California Code of Regulations (T8CCR) section 5198 for details on requirements and exceptions.

Resources

- Cal/OSHA
 - T8CCR sections **5198 (general industry)**
 - **Appendix A: Substance Data Sheet for Occupational Exposure to Lead**
 - **Appendix B: Employee Standard Summary**
 - **Publications**
 - **Lead**
- California Department of Public Health, Occupational Lead Poisoning Program
 - **Information for Workers and Employers**
- OSHA
 - **Lead Safety & Health Topic**

December 2024



This document is available with active links at www.dir.ca.gov/dosh/dosh_publications

For assistance regarding this subject matter, employers may contact

Cal/OSHA Consultation Services at 1-800-963-9424 or InfoCons@dir.ca.gov

www.dir.ca.gov/dosh/consultation.html

© 2024 California Department of Industrial Relations

