



# LEAD

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## Health Safety and Environment Fact Sheet

For thousands of years lead has been known to be poisonous. If you are exposed to lead, there are some things you need to know.

**Lead enters the body mostly through breathing lead dust and fumes.** Lead goes through the lungs into the blood stream easily. Some lead is stored in bones and other tissues. The rest is eliminated from the body.

**If lead is swallowed, some will enter the blood stream.** Eating and smoking with contaminated hands will probably cause you to swallow some lead. Always be sure to wash thoroughly before eating or smoking.

**All workers exposed to lead should be given regular blood lead exams.** This test consists of a blood sample being sent to a laboratory for analysis. Complete medical exams and/or removal from the job is required for workers with blood lead levels which are considered too high as defined in the regulations (U.S. OSHA Standard or Canadian Provincial Standards). In most cases, these workers continue to get their full pay and benefits.

**Always request the results of company blood lead exams and the company's doctor's report.** Keep them for your records and give a copy to your own physician. If you are transferred off the job for high lead levels, you should write down the dates and any symptoms of lead poisoning you are experiencing. See a doctor immediately.

**Be alert for the following symptoms:** Headaches, fatigue, irritability, twitches, nervousness, high blood pressure, sleeplessness, pains in joints, aching muscles, decreased appetite, stomach pains, constipation. Since all of these problems often appear slowly over time or can be caused by other reasons, lead can easily be over looked as the real cause.

**Lead exposure may also cause other health problems which you might not feel.** Interference with blood-forming mechanism, anemia, kidney damage, nervous system damage, sterility and birth defects. Make sure your doctor knows that you are exposed to lead.

**Lead can affect your children.** Lead poisoning is thought to cause sterility and miscarriages. Anyone who works with lead and is planning to have children should get their blood tested for lead and show this data sheet to their doctor. Children take in lead more easily than adults and are affected by lower lead levels. Contaminated clothing brought home by workers may cause high blood lead levels in their children. Your doctor should be informed if you suspect any danger. You should always change out of your work clothes and shower at work. The work clothes should be laundered by the company.

If there is too much lead in the air, better controls are needed where you work, either by improving ventilation or by changing work procedures.

**Lead should be controlled by the employer through engineering techniques rather than respirators or transferring workers in and out of high lead exposure areas.** Both U.S. and Canadian regulations require that management provide a workplace free from health and safety hazards.

**Lead levels in the air should be measured regularly.** Both governments require the employer to measure the air for lead. You may request to see the results and you must be given an opportunity to copy them.

## FACTS ABOUT LEAD POISONING

### I. Where can you get it?

#### HAZARD

**Lead Fume**

**Lead Metal Dust**

**Lead Oxide Dust**

**Lead Pigments**

**Lead Compounds**

#### WHERE IT IS FOUND.

Melting or pouring lead or lead bearing metal; soldering or welding with lead, lead containing or lead painted metal. Flame cutting or burning on lead based paint. Automobile radiator repair.

Sanding or grinding of lead metal.

Drossing, battery making, some rubber compounds.

Paint spraying and sanding or blasting surfaces with lead paint.

Making chemical formulations, ceramics and pottery.

**Any visible lead dust should be considered dangerous.**

### II. Danger levels in your workplace.

**Air Level (ug/m<sup>3</sup>)**

**Above 50 ug/m<sup>3</sup>**

**30 ug/m<sup>3</sup> Action Level**

#### Guidance

Lead is measured in micrograms of lead per cubic meter of air. OSHA and most Canadian Provinces have set a Permissible Exposure Limit (PEL) of 50 ug/m<sup>3</sup> averaged over an 8 hour work-day. This is the highest level of lead in the air which you may be legally exposed. Under the OSHA regulation, if any employee is exposed above the action level, the employer must set up an air monitoring program to determine the exposure level of all exposed workers.

### III. Danger levels in your body.

#### Lead Levels in Blood (ug/100g)

**Below 10 ug/100g**

**25 ug/100g**

**40 ug/100g**

**50 ug/100g**

**60 ug/100g**

**Above 80 ug/100g**

#### Guidance

Blood lead levels are measured in micrograms of lead per 100 grams of blood. Your employer's obligation to offer medical surveillance is triggered by the air monitoring program. If you are exposed at the "action level" or greater for more than 30 days a year, your employer must make available periodic blood sampling and medical examinations.

Normal for general population.

Anything above this level is abnormal and shows you are absorbing lead. Some health problems are possible. Working conditions should be improved.

If a worker's blood lead level (PbB) exceeds this level under OSHA, the employer must offer blood testing at least every two months until two consecutive PbBs indicate a blood level below 40 ug/100g.

Under the OSHA Standard, if your blood level level is 50ug/100g or above averaged over a 6 month period, you must be removed from the job until your blood lead level returns to 40 ug/100g or below.

Above this level, symptoms of lead poisoning are increasingly possible. Long- term damage is increasingly probable. Prompt action is needed to reduce exposure.

Immediate and permanent damage to health is possible. Lead control on the job is severely deficient.

**Note:** These are estimates of safe or hazardous levels. Individual susceptibility to withstand exposure varies widely. The medical problems may or may not occur at

## Controlling Exposure

Various jurisdictions regulate the use of lead at work. Many of our members depend on OSHA for protection. The following discusses OSHA's minimum requirements. If lead is used at a workplace, the amount of lead in the work area must be measured. The OSHA Lead Standard limits the amount of lead in the air. It's important to remember the two levels that were outlined earlier in this fact sheet, Action Level (AL) and Permissible Exposure Limit (PEL).

The OSHA AL is 30 micrograms of lead per cubic meter of air ( 30 ug/m<sup>3</sup> ) as an average over an 8-hour day.

### ***If air levels are greater than the Action Level:***

- ◆ Employers must set up an air monitoring program to determine the typical daily exposure level for each job classification in each work area on each shift.
- ◆ Employers must notify their employees in writing of the results which represents their exposure.
- ◆ Employers must repeat air monitoring at least every 6 months, and notify workers in writing of the results.
- ◆ If workers are exposed at or above the AL for more than 30 days each year, the employer must establish a medical surveillance program.

The OSHA Permissible Exposure Limit for lead is 50 ug/m<sup>3</sup>. The PEL is an 8-hour average. This means that exposures can legally be more than 50 ug/m<sup>3</sup> at times, but only if they are *below* 50 ug/m<sup>3</sup> at other times, so that the average exposure for any 8-hour workshift is 50 ug/m<sup>3</sup> or less. Employers must control air levels so that each workers' exposure does not average more than

### ***If air levels are greater than the PEL:***

- ◆ Air monitoring must be done every 3 months.
- ◆ In addition to notifying workers in writing of the exposure results, employers must say in writing what will be done to correct the overexposure.
- ◆ Proper respirators must be provided by the employer, free of charge, until the exposure has been lowered below the PEL by other controls.
- ◆ Clean clothing and appropriate protective equipment must be provided free of charge by the employer when exposures are at or above the PEL, or when employees are working with lead compounds which cause skin or eye irritation.
- ◆ A change room, lunchroom, and shower facility must be provided by the employer.
- ◆ Eating, drinking, smoking and applying cosmetics are prohibited in areas where lead levels are greater than the PEL.
- ◆ Workers must wash hands and face before eating, drinking, smoking or applying cosmetics.

## Engineering Controls

For many jobs, local exhaust ventilation can be used to control exposures. Local exhaust ventilation systems capture contaminated air from the source before it spreads to the workers' breathing zone. Dilution ventilation just moves the contaminated air through the work area and is not appropriate for controlling lead.

## Medical Removal Protection

The OSHA Standard provides that a worker who is removed from work due to high blood lead levels must continue to receive full salary and benefits while displaced from the job for up to 18 months.

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