

## Frequently Asked Questions About

# LEAD

### **What is lead?**

Lead (Pb) is a naturally occurring, bluish-gray metal that has no taste or smell. It is a very dense and heavy metal, and often is used as a protective shield in x-ray applications.

### **Where can lead be found in the environment?**

Lead is found in small amounts in water and soil. Lead concentrations in the soil are between 1 and 300 parts of lead per million parts (ppm) of soil. Very small quantities of lead are found in lakes, rivers, and groundwater that supply drinking water. In fact, more than 99 percent of all publicly supplied water contains less than three parts lead per billion parts (ppb) of water, which is considered extremely good.

Lead is found in urban areas, in automotive emissions that have settled into soil, and in lead paint. Remodeling of older homes often disturbs lead-based paints and produces lead dust. In addition, urban industrial runoff and settling of airborne lead particles are significant sources for lead in bodies of water.

Since the late 1970s, the U.S. has slowly reduced air emissions of lead. The largest decreases were made in industrial process releases and, since leaded gasoline was outlawed, auto emissions.

### **How is lead used?**

Lead has a variety of uses, including the following:

- roofing,
- x-ray shields,
- ammunition,
- batteries,
- metal products (sheet lead, solder, some brass, bronze products, and pipes), and
- iron and steel products.

Lead was once commonly used in gasoline, paints, ceramic glaze, and canning, but these uses have been gradually phased out due to health concerns.

### **Do electric utilities release lead into the environment?**

Yes, a very small amount. Trace amounts of lead are present in coal and oil. When electric utilities burn these fuels at power plants, lead is released in very small amounts. Most of this lead is carried by

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particles of ash. Coal-based power plants are equipped with devices to capture these particles before they reach the air. This lead-carrying ash is then usually sent to ash ponds or land disposal sites.

The reporting threshold for lead and lead components was lowered beginning with the 2001 reporting year. The Environmental Protection Agency (EPA) estimates that power plants released 3,985 tons of lead compounds into the environment in 2004, accounting for less than two percent of all lead released by industries. Electric utilities decreased by over six percent the disposal or other releases for lead and lead compounds from 2003 to 2004. According to EPA, all industries combined released approximately 222,497 tons of lead and lead compounds into the environment in 2004.

### **How could I be exposed to lead? Will exposure affect me?**

People are exposed to lead in a number of ways—in homes, proximity to lead paint, smoking, and wine consumption are a few examples. Most human intake of lead can be attributed to consumption of food and drinking water that contain lead, as well as breathing airborne lead particles.

Children are particularly susceptible to lead because they absorb it more readily and do not eliminate lead from their blood as quickly as adults. Mothers who are exposed to large amounts of lead during pregnancy can give birth to smaller and slower developing babies.

Increased exposure to lead can cause abdominal pain, constipation, nausea, vomiting, weight loss, brain and kidney damage, and hypertension. Lead poisoning can cause reduced mental capacity and development in children. EPA classifies lead as a “probable human carcinogen.” Lead releases by utilities are too small to cause these kinds of health effects.

### **What do EPA and other experts say about lead?**

The Centers for Disease Control recommend that children under age six be tested annually for lead exposure. EPA regulates the amount of lead released to the air and water, and the Consumer Product Safety Commission sets lead standards for consumer products (like water coolers and paints) and school facilities. EPA upheld a ruling that classified lead as a persistent, bioaccumulative toxic, thereby lowering its TRI reporting threshold to 100 pounds. The rule became effective for reporting year 2001.

The emissions level and inhalation risk of lead from electric utilities are so low that EPA does not plan to conduct any further evaluations in this area.

### **Where can I get more information?**

- Electric Power Research Institute, 3412 Hillview Ave., P.O. Box 10412, Palo Alto, CA 94303; (800) 313-EPRI; <http://www.epri.com>
- U.S. Department of Health and Human Services, Public Health Service, Agency for Toxic Substances and Disease Registry, 200 Independence Ave., S.W., Washington, D.C. 20201; (877) 696-6775; <http://www.atsdr.cdc.gov/>
- U.S. Environmental Protection Agency, 1200 Pennsylvania Ave., N.W., Washington, D.C. 20460; (202) 260-2090; <http://www.epa.gov/>



**EDISON ELECTRIC  
INSTITUTE**

701 Pennsylvania Avenue, N.W.  
Washington, D.C. 20004-2696  
202-508-5000  
[www.eei.org](http://www.eei.org)

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