Lead in Drinking Water Frequently Asked Questions

What is Lead?

Lead is a heavy metal that has been used for thousands of years due to its malleability, corrosion resistance, and low melting point. Historically, lead has been used in construction, plumbing, batteries, ammunition, radiation shielding, and as a pigment in paints. It was commonly used in plumbing systems due to its ease of shaping and joining.

Why is lead a health risk?

Lead is a toxic metal that can be harmful to human health even at low exposure levels. Lead is persistent, and it can bioaccumulate in the body over time. Exposure to lead in drinking water can cause serious health effects in all age groups. Infants and children can have decreases in IQ and attention span. Lead exposure can lead to new learning and behavior problems or worsen existing learning and behavior problems. The children of women who are exposed to lead before or during pregnancy can have increased risk of these negative health effects. Adults can have increased risks of heart disease, high blood pressure, and kidney, or nervous system problems.

When was lead used in plumbing materials?

Lead has been utilized in plumbing materials for thousands of years, dating back to ancient civilizations such as the Romans and Greeks, who used lead pipes for water supply and drainage. Throughout the Middle Ages and into the 19th century, lead remained a common choice due to its malleability and resistance to corrosion. However, as awareness of lead poisoning grew, especially in the early 20th century, concerns about its health risks began to surface. This culminated in a national ban in 1986, when the Safe Drinking Water Act was amended to prohibit the use of lead pipes, solder, and flux in plumbing systems, reflecting a significant shift toward safeguarding public health.

How do I know if my drinking water contains lead?

Lead is not easily detectable in water, as it can be colorless, odorless, and tasteless. The only definitive way to determine if your drinking water contains lead is to have it tested by a certified laboratory. You can find a list of certified labs here: NCDEQ Certified Laboratory Listings

How does lead get into drinking water?

Lead can contaminate drinking water primarily through older plumbing systems, where lead pipes, fixtures, and lead-based solder may still be in use. When water flows through these materials, especially if it is acidic or low in mineral content, lead can leach into the

water supply. Additionally, brass fixtures, which often contain lead, can also contribute to contamination when water sits in them for extended periods. Environmental sources, such as lead-based paints or soil, can further exacerbate the issue. Regular testing and maintenance are essential to identify and mitigate the risks of lead contamination in drinking water.

What is a water service line?

A water service line is the pipe that connects a building's plumbing system to the municipal water supply or a private water source, delivering potable water for various uses. It typically consists of two sections: the public side and the private side. The public side, also known as the main line, runs from the municipal/private water main in the street to the water meter, which measures the water usage for billing purposes. This section is usually maintained by the local water utility. The private side extends from the water meter to the building itself and is the responsibility of the property owner for maintenance and repair. This does not include the plumbing materials used underneath the building. A service line and connection may consist of multiple plumbing material types including copper, galvanized iron, lead or plastic.

Is water the only source of lead exposure?

No. According to the U.S. Centers for Disease Control and Prevention (CDC), lead in drinking water typically accounts for about 10% to 20% of total lead exposure for most people. However, in children, the percentage can be significantly higher—over half of their lead exposure may come from drinking water due to their lower body weight and higher consumption of water relative to their size. Furthermore, the CDC emphasizes that there is no safe level of lead exposure, which reinforces the recommendation to eliminate potential sources of lead in the environment, including water, paint, soil, and dust, to protect public health.

How much lead in water is too much?

The U.S. Environmental Protection Agency (EPA) has established the maximum contaminant level goal for lead in drinking water at zero, recognizing that no safe level of lead exposure exists. However, the action level for lead, which triggers certain regulatory measures, is set at 15 parts per billion (ppb) in drinking water. If lead levels exceed this threshold, water utilities are required to take specific actions to reduce lead levels, such as optimizing water treatment processes, replacing lead service lines, and conducting public education campaigns.

What can I do to reduce or eliminate lead from my drinking water?

Below are recommended actions that you may take, separately or in combination, if you are concerned about lead in your drinking water. The list also includes where you may find more information and is not intended to be a complete list or to imply that all actions equally reduce lead in drinking water.

**Run the Tap Before Use** - The more time water has been sitting in pipes providing water to your home, the more lead it may contain. Before drinking, flush your home's pipes by running the tap, taking a shower, doing laundry, or doing a load of dishes. The amount of time to run the water will depend on whether your home has a lead service line or not, as well as the length and diameter of the service line and the amount of plumbing in your home.

**Clean Aerators** - Regularly clean your faucet's screen (also known as an aerator). Sediment, debris, and lead particles can collect in your aerator. If lead particles are caught in the aerator, lead can get into your water.

**Use Cold Water for Cooking and Drinking** - Do not use hot water from the tap for drinking, cooking, or making baby formula as lead dissolves more easily into hot water. Boiling water does not remove lead from water.

**Do Not Boil Water to Remove Lead** - Boiling water will NOT remove lead.

**Filter the Water** - Using a filter can reduce lead in drinking water. If you use a filter, it should be certified to remove lead. Read any directions provided with the filter to learn how to properly install, maintain, and use your cartridge and when to replace it. Using the cartridge after it has expired can make it less effective at removing lead. Do not run hot water through the filter. Find out more information from the EPA on how to find the correct filters here.

Is it safe to shower in water that contains lead?

Yes. Bathing and showering should be safe for you and your children, even if the water contains lead over EPA's action level. Human skin does not absorb lead in water.