



Lead in Drinking Water - Frequently Asked Questions

WQA proudly serves as an educator of water treatment professionals, certifier of water treatment products, public information resource and voice of the water quality improvement industry. This document addresses frequently asked questions about lead in drinking water, developed by staff at WQA.

1. How can lead get into the water supply?

Studies indicate nearly all the lead in users' tap water does not come from the primary water source or from the municipal treatment plant, but is a result of corrosion resulting from materials containing lead coming into contact with water after it leaves the treatment plant. Lead can enter a home's drinking water by leaching from lead service connections, from lead solder used in copper piping, and from brass fixtures.

2. What are potential health effects from lead?

Lead poisoning often shows no symptoms; however, signs such as irritability, weight loss, vomiting, constipation, or stomach pain could occur. Young children and pregnant women are at the greatest risk, even from short-term exposure. Reduced cognitive development and neurobehavioral deficits are associated with blood levels less than 10 micrograms of lead per deciliter of blood ($\mu\text{g}/\text{dL}$) in children. Thus, it is determined there is no safe blood lead level in children. Individuals will adsorb more lead if they have poor nutrition than those with better diets. To learn more, read the information on the Centers for Disease Control's (CDC) website: http://www.cdc.gov/nceh/lead/acclpp/blood_lead_levels.htm

3. Where can I go to get my water tested?

WQA strongly recommends water testing be conducted at each point of use following appropriate sampling procedures capturing lead levels after a period of disuse before a specific water treatment product is selected. Water conditions can change; test water before treatment has been installed and continue testing after installation.

The EPA website is a resource to find EPA and state-accredited laboratories that can perform a water analysis:

<http://water.epa.gov/scitech/drinkingwater/labcert/statecertification.cfm>

4. **Where do I find a product certified for lead reduction?**

American National Standards Institute (ANSI) accredited entities offering product certification include: Water Quality Association's Product Certification Program, NSF International, International Association of Plumbing and Mechanical Officials, and Underwriters Laboratory. All of these certifiers have product listings. To find WQA certified products for lead reduction and links to the manufacturer's website, consumers can visit wqa.org. Products certified through WQA's Product Certification Program have been tested and certified to the material safety requirement and contaminant reduction claim(s) as specified by the standard. Products displaying the WQA Gold Seal provide assurance that they have been rigorously tested and meet the requirements of the standard, ensuring they are actually effective for the contaminants which are covered by the marketing claims. Factory audits are performed by WQA on a regular basis to ensure there are no changes to the product that would negatively impact safety or performance. WQA is also audited yearly by ANSI to keep its accreditation. Confirmation of WQA's accreditation can be found on [ANSI's website](#).

6. **How do I get the most out of my filter once I have selected one?**

Remember to always consult the manufacturer-provided literature and follow both installation and use instructions. Replacing filters as recommended and knowing the daily usage recommendations will help ensure they are performing as promised. Studies have shown that in some cases the levels of lead found are higher than the conditions under which the manufacturer set the replacement recommendations in published manuals. Consumers should contact a water treatment professional as described above if they have concerns about their specific situation. To ensure the manufacturer can provide the most accurate recommendations, have test results for lead and iron in your water supply on hand for review.

7. **Does a "lead-free" claim mean the product can remove lead from the water?**

No, a product is considered compliant with the "lead-free" standard, NSF/ANSI 372, if its weighted average lead content is no greater than 0.25%. This certification is to standard NSF/ANSI 372 and is not a claim that the product completely removes any trace of lead from the water.

8. **What treatment methods can be used at the tap or whole-house?**

Lead can exist in water in a broad array of forms; therefore, more than one type of technology may be needed for adequate removal. **Soluble** (or dissolved) lead may be removed by ion exchange, reverse osmosis, adsorption, or distillation. Insoluble (or **particulate**) lead may be removed by fine filtration and adsorption as well as by reverse osmosis and distillation.

Solid block and precoat adsorption filters, using a mixture of activated carbon and a lead adsorbent, can remove particulate lead by filtration and adsorption, and soluble lead by adsorption. Contact time, type and size of activated carbon and the lead adsorbent material, flow rate per unit area, and the design of submicron filter void sizes to ensure effective filtration of the lead species are critical to the success of this treatment technology. Removal of lead by

reverse osmosis is effective because the membrane removes the soluble lead and also acts as a barrier to particulate lead. **Strong-acid cation exchange softeners** only remove soluble lead and will not remove particulate lead. Properly designed and operated **distillation** units are capable of reducing both forms of lead.

System performance characteristics should be verified by tests conducted under established test procedures and water analysis. Thereafter, the resulting water should be monitored periodically to verify continued performance. The application of the water treatment equipment must be controlled diligently to ensure acceptable feed water conditions and equipment capacity are not exceeded. Use certified products recommended by water treatment professionals. Visit WQA.org to locate water professionals in your area.