

Lead Regulations and What You Should Know

The regulation requires systems to collect tap samples from sites served by the system that are more likely to have plumbing materials containing lead. If more than 10% of tap water samples collected exceeds the lead action level of 15 parts per billion or the copper action level of 1300 parts per billion, then water systems are required to take additional actions including:

- For lead action level exceedances, educating the public about lead in drinking water and actions consumers can take to reduce their exposure to lead.
- For systems with lead service lines, replacing the portions of lead service lines (lines that connect distribution mains to customers) under the water system's control.
- Taking further steps to optimize their corrosion control treatment.

Definition of Terms µg/l: micrograms per liter. This is equivalent to one part- per-billion or ppb.

Action Level: The concentration of lead or copper which, if exceeded in greater than ten percent of the total number of samples collected by a public water system, triggers one or more of the actions specified above. The lead action level is not health-based. It was established based on the feasible lead level that public water systems could meet.

Maximum Contaminant Level Goal: The level of lead or copper in drinking water below which there is no known or expected risk to health. The MCLG for lead is 0 (zero) ppb, based on information from EPA and CDC that there is no identifiable level of lead that is without risk, and the MCLG for copper is 1300 ppb which is the same as the copper action level and water at or below this level is considered safe.

Explanation of the Health Effects of Lead and Copper

Lead causes serious health problems if too much enters your body from drinking water and other sources. Drinking water is just one way we consume lead. EPA estimates that less than 20% of lead exposure for the overall population is from drinking water. Infants who consume mostly mixed formula can receive 40 to 60 percent of their exposure to lead from drinking water. Other major sources include lead paint dust, soil and food, food and beverage containers, leaded gasoline and occupational exposure.

Too much lead can cause damage to the brain and kidneys, and it interferes with the production of red blood cells that carry oxygen to all parts of your body. The greatest risk of lead exposure is to infants, young children, and pregnant women. Scientists have linked the effects of lead on the brain with lowered IQ in children. Adults with kidney problems and high blood pressure can be affected by lower levels of lead more than healthy adults. Lead is stored in the bones, so it can be released later in life. During pregnancy, the child receives lead from the mother's bones, which may affect brain development.

Some people who drink water containing copper in excess of the action level may, with short term exposure, experience nausea, cramps, diarrhea and/or vomiting with the more severe effects associated with higher levels of copper; and with long-term exposure may experience liver or kidney damage. People with Wilson's Disease should consult their personal doctor if the amount of copper in their water exceeds the action level.

How to Reduce or Eliminate your Exposure to Lead and Copper in Drinking Water

Lead and copper originate in plumbing materials and are released from lead service lines, pipes, valves and faucets by corrosion or friction. Wisconsin banned the use of lead service lines, lead solder in 1984. Prior to then, lead was widely used in pipes, pipe solder, packing, valves, meters, and as solid pipe. Brass is an alloy containing up to 15% lead, and most valves and faucets have brass bodies. Copper pipes installed prior to 1985 may have lead solder joints. Water quality affects how readily plumbing corrodes. Softened or highly treated water is more aggressive and tends to dissolve pipes and other plumbing materials. The following actions will help reduce your exposure to lead and copper in drinking water:

- Check whether your home has a lead service line connecting to the water main. Homes with lead service lines will have higher lead levels than the compliance results may indicate.
- Flush the water lines before drinking any time the water has been motionless in the distribution system for four hours or more. The amount of time you should flush your water depends on whether your home has a lead service line or not.
- For homes without lead service lines, flushing the tap for one minute will reduce lead levels in the water.
- For homes with lead service lines, the water lines should be thoroughly flushed to clear the water from the lead service line before water is used for drinking or cooking. This may take five minutes or longer depending on the length of the lead service line.
- Use cold water for cooking and preparing baby formula. Do not cook with or drink water from the hot water tap; lead dissolves more easily in hot water.
- Do not boil water to remove lead. Boiling water will not reduce lead levels and can increase the lead concentration in the water.
- Look for alternative sources or treatment of water. If you have a lead service line, you should consider using bottled water or purchasing a water filter. Read the package to be sure the filter is approved to reduce lead or contact NSF International at 800-NSF-8010, or www.nsf.org for information on performance standards for water filters.
- Identify if your plumbing fixtures contain lead. New faucets, fittings, and valves may contain up to 8 percent lead including those advertised or labeled as “lead-free” and may contribute lead to drinking water. Consumers should be aware of this when choosing fixtures and take appropriate precautions.

If your home has a lead service line, you should consider taking an additional water sample after flushing for five minutes to determine if the flushing time is sufficient. Most labs charge about \$25 for a metals analysis.

For more information call Juneau Water Utilities, (920) 386-4815 or visit the WDNR website to view or print a brochure about lead at <http://dnr.wi.gov/files/pdf/pubs/dg/dg0015.pdf> and about copper at

<http://dnr.wi.gov/files/PDF/pubs/DG/DG0027.pdf>

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