

## Acknowledgement:

This Fact Sheet is one of a series developed by an Interagency Committee with representatives from Saskatchewan Ministry of Health, Regional Health Authorities, Saskatchewan Watershed Authority, Saskatchewan Ministry of Environment, Saskatchewan Ministry of Agriculture, Agriculture and Agri-Food Canada - AESB and Health Canada.

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Government of  
Saskatchewan

# Lead

(For Private Water and Health Regulated Public Water Supplies)

## What Is Lead?

Lead is a blue-gray metal found in nature combined with other elements. Lead is toxic and has no nutritional value, but is very valuable in manufacturing.

Lead is used to make batteries, paints, ammunition, and some glazed ceramics. Prior to 1990, lead was also used to make plumbing materials. Due to health concerns, the lead content in gasoline, paints and ceramic products has been dramatically reduced.

## How Does Lead Get Into Water?

Lead can get into drinking water by entering a drinking water supply or from lead-containing piping, home plumbing or fixtures. Contamination of source water can occur due to discharge from industries that burn fossil fuels, mine, smelt, and manufacture.

Older homes built prior to the mid-1950's are more likely to have lead pipes and service lines. Homes built between the mid-1950s and 1989 are not likely to have lead pipes or service lines. However, there may be lead in some fixtures or solder used to connect your pipes. Homes built after 1989 are unlikely to have lead in pipes, service lines, solder or joints. It is also possible that submersible pumps, especially the leaded-brass variety, could release lead into the drinking water and, therefore, may be a concern for those that rely on a well.

The amount of lead from the plumbing system that may be dissolved depends upon several factors. This includes pH, water temperature, the age of the plumbing, water quality and standing time of the water in the plumbing system.

## How Does Lead Affect My Health?

Lead is very poisonous. Lead can damage kidneys, male reproductive system, liver, lungs, spleen, bone marrow, and bone. It may cause anemia, and possibly affect the memory. The effects of lead on adults are generally reversible, but not for children under six years of age. Lead intake can affect a child's mental and physical growth, and learning ability. A particular concern is water used for formula fed infants as it can contribute 40-60% of an infants lead intake.

Lead is also dangerous for unborn children as she/he can be exposed to lead through their mother. Harmful effects include premature births, small babies, and decreased mental ability in the infant.

## Other Considerations

Lead in drinking water is most often from lead that may be in household plumbing or service lines. Houses with lead service lines or where lead is a concern and the drinking water has been sitting in the lines for 6 hours or more should flush the water system by running the cold water faucet for at least 5 minutes or until the water gets very cold. This help to get rid of lead that may have leached out of pipes. In addition, homes where lead is an issue should not consume water from the hot water tap as heated water may contain higher lead levels.

If water at your property has been shown to have lead levels over the recommended level, children under the age of six and pregnant women should consider alternate sources of drinking water or use an approved filter attached to the tap. If your water has been tested and found to have levels below the recommended 0.010 mg/L, a filter is not recommended but flushing of the water for five minutes should continue.

Lead does not accumulate in fish, but it does in some shellfish such as mussels.

There is a blood test to identify lead poisoning. Medical treatment may be necessary if blood lead levels are high. Seek medical advice for symptoms that may be as a result of lead exposure.

### **How Can I Remove Lead From My Drinking Water?**

Lead can only be prevented from entering the water by reducing the corrosiveness of the water to acceptable levels and by replacing water mains and service connections containing lead. At the point of use a water filter that is attached to the tap can be used to lower lead to acceptable levels. The filter should conform to the National Sanitation Foundation (NSF) International standard for reducing lead (NSF/ANSI 53). An up to date listing of filters that meet the NSF 53 standard for lead can be found at <http://www.nsf.org/certified/dwtu>. Boiling the water will not remove lead and, in fact, may increase the lead levels as some of the water evaporates during boiling.

The best practice to reduce lead exposure levels at the consumers tap is flushing the plumbing materials prior to human consumption of water. Where lead has been demonstrated to be an issue, water suppliers should consider the adoption of appropriate corrosion control measures including addition of corrosion inhibitors and monitoring pH and alkalinity levels in the piping system as this will reduce lead levels in finished water.

Municipalities in the province are encouraged to replace any lead piping systems by installing other suitable piping materials, such as polyvinyl chloride (PVC).

### **What Is The Standard For Lead In Drinking Water?**

Both Health Canada and Saskatchewan Environment have established a maximum acceptable concentration (MAC) of 0.010 mg/L of lead in drinking water. Levels slightly over the acceptable limit of 0.010 mg/L are very unlikely to cause health effects in older children, men and non-pregnant women.

### **How Can I Find Out If There Is Lead In My Water?**

Most water quality testing laboratories can determine how much lead is present in a water supply. For information on sampling instructions and containers, you should contact an accredited laboratory. If using the Saskatchewan Disease Control Laboratory (Provincial Lab), sample containers are available from the laboratory, local Health Regions, or rural municipalities. Taking both a standing water (water in the pipes for 6 hours or more) and a flushed (running water for at least 5 minutes) sample should be considered.

## Need More Information?

### Health Regulated Public Water Supply

For more information on this fact sheet and/or other water quality issues relating to health regulated public water supplies contact your local health region public health inspector.

### Private Water Supply

For more information on how Lead impacts on human health contact your local health region office. For information on how Lead impacts agricultural operations contact Saskatchewan Ministry of Agriculture through your Regional Office, the Agricultural Knowledge Centre at 1-866-457-2377 or on the internet (<http://www.agriculture.gov.sk.ca>).

<p><b>Government of Saskatchewan</b> Water Information website <a href="http://www.SaskH2O.ca">www.SaskH2O.ca</a></p>	<p><b>Water Inquiry Line</b> Questions about water? Call 1-866-SASK H2O (1-866-727-5420) to be referred to proper agency.</p>
<p><b>Saskatchewan Ministry of Health</b> <a href="http://www.health.gov.sk.ca/environmental-health">http://www.health.gov.sk.ca/environmental-health</a> <b>Regional Health Offices</b> Saskatoon: Saskatoon (306) 655-4620 Sunrise: Yorkton (306) 786-0600 Kelsey Trail: Melfort (306) 752-6310 Five Hills: Moose Jaw (306) 691-1500 Sun Country: Weyburn (306) 842-8618 Heartland: Rosetown (306) 882-6474a Prairie North: North Battleford (306) 446-6400 Prince Albert Parkland: Prince Albert (306) 765-6600 Cypress: Swift Current (306) 778-5280 Regina Qu'Appelle: Regina (306) 766-7755 Mamawetan Churchill River: La Ronge (306) 425-8512 Keewatin Yatthe: Buffalo Narrows (306) 235-5811</p>	<p><b>Saskatchewan Watershed Authority</b>, Head Office, Moose Jaw (306) 694-3900 Website: <a href="http://www.swa.ca">www.swa.ca</a> <i>Regional Offices:</i> <a href="http://www.swa.ca/AboutUs/Contact.asp?type=Offices">http://www.swa.ca/AboutUs/Contact.asp?type=Offices</a></p> <p><b>Sask Water Corporation</b> Head Office, Moose Jaw Customer Service 1-888-230-1111 Website: <a href="http://www.saskwater.com">http://www.saskwater.com</a></p> <p><b>Agri-Environment Services Branch *</b> Agriculture and Agri-Food Canada Website <a href="http://www4.agr.gc.ca/AAFC-AAC/display-afficher.do?id=1187362338955&amp;lang">http://www4.agr.gc.ca/AAFC-AAC/display-afficher.do?id=1187362338955&amp;lang</a> <i>Regional Office:</i> <a href="http://www4.agr.gc.ca/AAFC-AAC/display-afficher.do?id=1254830746884&amp;lang=eng">http://www4.agr.gc.ca/AAFC-AAC/display-afficher.do?id=1254830746884&amp;lang=eng</a></p>
<p><b>Saskatchewan Ministry of Health</b> <b>Saskatchewan Disease Control Laboratory, Regina</b> General Inquiry 1-866-450-0000 Phone: (306) 798-2125 // Fax (306) 798-0071 Website: <a href="http://www.health.gov.sk.ca/lab">http://www.health.gov.sk.ca/lab</a></p>	<p><b>Saskatchewan Ministry of Agriculture</b> General Inquiry 1-866-457-2377 Agricultural Operations Regina (306) 787-4680 Irrigation Development Outlook (306) 867-5500 Website: <a href="http://www.agriculture.gov.sk.ca">www.agriculture.gov.sk.ca</a></p>
<p><b>Health Canada</b> First Nation and Inuit Health Branch, Regina (306) 780-5434 // FAX (306) 780-5107 Website: <a href="http://www.hc-sc.gc.ca">http://www.hc-sc.gc.ca</a></p>	<p><b>Saskatchewan Ministry of Environment</b> Toll-Free 1-800-567-4224 Spill Emergency Toll-Free 1-800-667-7525 Website: <a href="http://www.environment.gov.sk.ca">http://www.environment.gov.sk.ca</a></p>

\* Agri-Environment Services Branch (AESB) is an integration of three existing components: Prairie Farm Rehabilitation Administration (PFRA), National Land and Water Information Service (NLWIS) and Agri-Environmental Policy Bureau (AEPB).