

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 – PFRA and Health Canada.

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Jul/09



Government of
Saskatchewan

Boron

(For Private Water and Health Regulated Public Water Supplies)

What Is Boron?

Boron is a compound that occurs in nature, and is usually found in soils at a concentration of 5 to 150 ppm. Surface waters naturally contain low levels of boron. The average boron concentration in surface waters ranges from 0.001 mg/L to 0.1 mg/L.

Boron is an essential plant nutrient and is often found combined with other substances to form compounds called borates. Common borate compounds include boric acid, salts of borates, and boron oxide.

Boron compounds are used industrially in glass making, fire retardants, leather tanning industries, cosmetics, photographic materials, soaps and cleaners, and for high-energy fuel. It is also used as a fertilizer, soil additive and also used as a pesticide for cockroach control.

How Does Boron Affect My Health?

Boron is well absorbed from the gastrointestinal tract in humans. Ingesting large amounts of boron over short periods of time can harm the stomach, intestines, liver, kidney, and brain.

Other Considerations (optional section)

Boron does not appear to accumulate in fish or other organisms in water, but it accumulates in plants and is found in foods, mainly fruits and vegetables. Boron can also decrease plant growth.

Tests are available to measure boron levels in blood and urine. It is not known whether boron levels measured in the body can be used to predict whether health problems will occur.

Short- and long-term oral exposures to some types of boron in laboratory animals have demonstrated adverse affects to the male reproductive tract.

How Can I Remove Boron From My Drinking Water?

Boiling is not effective at removing Boron from drinking water and could actually increase the concentrations. Reverse osmosis distillation and ion exchange resin systems may be able to remove significant amounts of boron. Both technologies are expensive and require careful and regular maintenance.

What Is The Standard For Boron In Drinking Water?

Health Canada has established an interim maximum acceptable concentration (IMAC) of 5 mg/L of boron in drinking water.

How Can I Find Out If There Is Boron In My Water?

Most water quality testing laboratories can determine how much Boron 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, sample containers are available from the laboratory, local Health Regions, or rural municipalities.

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

<p>Government of Saskatchewan Water Information website www.SaskH2O.ca</p>	<p>Water Inquiry Line Questions about water? Call 1-866-SASK H2O (1-866-727-5420) to be referred to proper agency.</p>
<p>Saskatchewan Ministry of Health http://www.health.gov.sk.ca/environmental-health</p> <p>Regional Health Offices Saskatoon: Saskatoon (306) 655-4605 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) 882-6413 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>Health Canada Website: http://www.hc-sc.gc.ca First Nation and Inuit Health – Saskatchewan Phone: (306) 780-6561//FAX (306) 780-7733</p> <p>First Nations Environmental Health Providers <i>BTC Indian Health Services Inc.</i> Phone: (306) 937-6700 <i>File Hills Qu'Appelle Tribal Council Health Services</i> Phone: (306) 332-8241 <i>Meadow Lake Tribal Council, Health and Social Development</i> Phone: (306) 236-8261 <i>Northern Inter-Tribal Health Authority</i> Phone: (306) 765-2421 <i>Prince Albert Grand Council, Health and Social Development</i> Phone: (306) 953-7248 <i>Saskatoon Tribal Council, Health, and Family Services Inc.</i> Phone: (306) 956-6100</p>
<p>Saskatchewan Ministry of Health Saskatchewan Disease Control Laboratory, Regina General Inquiry 1-866-450-0000 Phone: (306) 798-2125 // Fax (306) 798-0071 Website: http://www.health.gov.sk.ca/lab</p>	<p>Saskatchewan Ministry of Agriculture General Inquiry 1-866-457-2377 Agricultural Operations Regina (306) 787-4680 Irrigation Development Outlook (306) 867-5500 Website: www.agriculture.gov.sk.ca</p>
<p>Saskatchewan Watershed Authority, Head Office, Moose Jaw (306) 694-3900 Website: www.swa.ca <i>Regional Offices:</i> http://www.swa.ca/AboutUs/Contact.asp?type=Offices</p>	<p>Prairie Farm Rehabilitation Administration (PFRA) - Agriculture and Agri-Food Canada Website http://www.agr.gc.ca/pfra/water/intro_e.htm <i>Regional Offices:</i> http://www.agr.gc.ca/pfra/sask_e.htm</p>
<p>Sask Water Corporation Head Office, Moose Jaw Customer Service 1-888-230-1111 Website: http://www.saskwater.com</p>	<p>Saskatchewan Ministry of Environment Toll-Free 1-800-567-4224 or (306) 953-3750 Spill Emergency Toll-Free 1-800-667-7525 Website: http://www.environment.gov.sk.ca</p>