

## 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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# Copper

(For Private Water and Health Regulated Public Water Supplies)

## What Is Copper?

Copper is a reddish metal that occurs naturally in rock, soil, water, sediment, and air. Its unique chemical and physical properties have made it one of the most commercially important metals. Since copper is easily shaped or molded, it is commonly used to make coins, electrical wiring, and water pipes. Copper compounds are also used as an agricultural pesticide, and to control algae in lakes and reservoirs.

## How Does Copper Get Into Water?

Copper and its compounds are widely distributed in nature but are in low concentrations when found in surface water or groundwater. Copper may also enter the water supply if used in pipes and copper alloys found in domestic plumbing.

## How Does Copper Affect My Health?

Copper is an essential element in human metabolism, and it is well known that deficiency results in a variety of clinical disorders, including nutritional anemia in infants. Through food and water, one can consume about 1,000 micrograms (1,000 ug) of copper per 1mg a day. In water, dissolved copper may or may not have a taste, smell, or color. It can only be detected through a chemical test.

Although the main concerns are aesthetic, excessive copper consumption may cause vomiting, diarrhea, stomach cramps, and nausea. The seriousness of these effects can be expected to increase with increased copper levels or length of exposure. Children and the elderly with liver problems or damage are susceptible and over the long term their may blood may be affected.

## Other Considerations

High levels of copper occur if corrosive water comes in contact with copper plumbing and copper-containing fixtures in the water distribution system. The level of copper in drinking water increases with the corrosivity of the water and the length of time it remains in contact with the plumbing. If you think there is a high level of copper in your water, you may notice that there is a metallic taste or blue or bluegreen stains around sinks and plumbing fixtures.

## How Can I Remove Copper From My Drinking Water?

The easiest and most effective method for reducing exposure to copper is to avoid drinking or cooking with water that has been in contact with your house plumbing for more than six hours. When first drawing water in the morning or after a work day, flush the system by running the cold water faucet for 2-3 minutes. Copper can be removed by distillation cation exchange and reverse osmosis.

## What Is The Standard For Copper In Drinking Water?

The Health Canada's Guidelines for Canadian Drinking Water Quality and Saskatchewan Environment's Drinking Water Quality Standards and Objectives have established a maximum acceptable concentration (MAC) of 0.010 mg/L.

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

Most water quality testing laboratories can determine how much copper 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 copper impacts on human health contact your local health region office. For information on how copper 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><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></p> <p><b>Regional Health Offices</b> 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><b>Health Canada</b> Website: <a href="http://www.hc-sc.gc.ca">http://www.hc-sc.gc.ca</a> <b>First Nation and Inuit Health – Saskatchewan</b> Phone: (306) 780-6561//FAX (306) 780-7733</p> <p><b>First Nations Environmental Health Providers</b> <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><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>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>Prairie Farm Rehabilitation Administration (PFRA) - Agriculture and Agri-Food Canada</b> Website <a href="http://www.agr.gc.ca/pfra/water/intro_e.htm">http://www.agr.gc.ca/pfra/water/intro_e.htm</a> <i>Regional Offices:</i> <a href="http://www.agr.gc.ca/pfra/sask_e.htm">http://www.agr.gc.ca/pfra/sask_e.htm</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>Saskatchewan Ministry of Environment</b> Toll-Free 1-800-567-4224 or (306) 953-3750 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>