

Acknowledgement:

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

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Government of
Saskatchewan

Iron

(For Private Water and Health Regulated Public Water Supplies)

What Is Iron?

Iron occurs naturally in soil, sediments and ground water and can be found in many types of rocks. Iron can be present in water in two forms; the soluble ferrous iron or the insoluble ferric iron. Water containing ferrous iron is clear and colorless, and when exposed to air the water turns cloudy causing a reddish brown precipitate of ferric iron appears.

Iron is an essential trace element for maintenance of energy metabolism and the prevention of iron deficiency anemia. It can be found in food, such as eggs; lean red meat; and beans, peas, and other legumes.

How Does Iron Get Into Water?

Iron exists naturally in rivers, lakes, and underground water. It may also be released to water from natural deposits, industrial wastes, refining of iron ores, and corrosion of iron containing metals.

The combination of naturally occurring organic material and iron can be found in shallow wells and surface water. This water is usually yellow or brown but may be colorless.

How Does Iron Affect My Health?

Iron is an essential nutrient for good health. It is a major component of hemoglobin, which is used to transport oxygen and carbon dioxide in the blood. Iron deficiency can enhance lead absorption and toxicity; anyone with increased blood lead levels should be tested for iron deficiency.

The ingestion of large quantities of iron can damage blood vessels, cause bloody vomitus/stool, and damage the liver and kidneys, and even cause death. However, because ingestion is regulated, body tissues are generally not exposed to high-level concentrations.

Other Considerations

Before you attempt to remove anything that appears to be iron-related, it is important to have your water tested. Once you determine whether you organic or inorganic iron in your water, you can take steps to correct the problems.

Iron bacteria flourish best under dark conditions and in waters containing dissolved iron and carbon dioxide. It can clog pipes and screens, and can leave brownish stains on laundry, reddish-brown particles on fixtures, and can cause an unpleasant taste and odor in water.

How Can I Remove Iron From My Drinking Water?

The basic approach to remove iron is to convert the soluble or dissolved forms of iron into insoluble or precipitate forms so that they can be filtered out. This is done by oxidation with a chemical such as chlorine prior to filtration. Other methodologies such as ion exchange (eg. greensand filtration) or reverse osmosis may be effective. Home treatment systems should be certified to the appropriate National Sanitation Foundation standard for iron removal.

What Is The Standard For Iron In Drinking Water?

Saskatchewan's Drinking Water Quality Standards and Objectives and Health Canada's Guidelines for Canadian Drinking Water Quality both establish an aesthetic objective (AO) of 0.3 mg/L of iron in drinking water.

How Can I Find Out The Iron Of My Water?

Most water quality testing laboratories can determine how much iron 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 iron impacts on human health contact your local health region office. For information on how iron 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 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>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>Sask Water Corporation Head Office, Moose Jaw Customer Service 1-888-230-1111 Website: http://www.saskwater.com</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>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>Health Canada First Nation and Inuit Health Branch, Regina (306) 780-5434 Website: http://www.hc-sc.gc.ca</p>	<p>Saskatchewan Ministry of Environment Toll-Free 1-800-567-4224 Spill Emergency Toll-Free 1-800-667-7525 Website: http://www.environment.gov.sk.ca</p>