HEALTH CANADA'S DRINKING WATER SCREENING VALUES FOR PERFLUOROALKYLATED SUBSTANCES (PFAS)

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PERFLUOROALKYLATED SUBSTANCES (PFAS)

Perfluoroalkylated substances (PFAS) are man-made chemicals, the most common being perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA). PFAS are used in a wide variety of industrial and consumer products such as adhesives, cosmetics, cleaning products, and in specialized chemical applications, such as fire-fighting foams. PFAS are also used in water-, stain-, and oil-repellent coatings for fabrics and paper. Environmental concentrations of PFAS may be higher in areas near facilities that use large amounts of these chemicals, and near locations where fire-fighting foams containing PFAS were used to put out a fire.

DRINKING WATER SCREENING VALUES

Health Canada's drinking water screening values (DWSV) are provided as guidance, and apply to water intended for human consumption. They are developed at the request of a federal department or a province or territory when there is a need for a quick response, and there are no existing formal guidelines. Because of the need for a quick response, screening values are a rapid assessment to help an organization identify a level at which no health effects are expected. They are not based on the same extensive research and don't undergo the same internal peer review and public consultation as formal guidelines. However, they are still based on similar risk assessment approaches as formal guidelines.

HEALTH CANADA'S DRINKING WATER SCREENING VALUES FOR PERFLUOROALKYLATED SUBSTANCES

Health Canada has developed screening values for a number of PFAS at the request of several jurisdictions. These screening values are based on available scientific studies, as well as assessments conducted by other jurisdictions. In addition, when the screening values are developed, Health Canada includes a margin of safety (or 'buffer zone'). As such, screening values are established at a level designed to protect the health of Canadians, including children, based on a lifetime's exposure to the substance.

Scientific information is limited on PFAS. Drinking water screening values have been developed for all the PFAS for which there is enough data available. Consistent with the approach taken to analyze some other chemical groups, Health Canada considers that screening values for other substances also in the PFAS group are likely to be consistent with those listed below.

PFAS NAME	ACRONYM	DRINKING WATER SCREENING VALUE (milligrams/litre) (mg/L)	DRINKING WATER SCREENING VALUE (micrograms/litre) (µg/L)
perfluorooctanoic acid	PFOA	0.0002*	0.2*
perfluorooctane sulfonate	PFOS	0.0006*	0.6*
perfluorobutanoate	PFBA	0.03	30
perfluorobutane sulfonate	PFBS	0.015	15
perfluorohexanesulfonate	PFHxS	0.0006	0.6
perfluoropentanoate	PFPeA	0.0002	0.2
perfluorohexanoate	PFHxA	0.0002	0.2
perfluoroheptanoate	PFHpA	0.0002	0.2
perfluorononanoate	PFNA	0.0002	0.2

*Full health risk assessments are now being developed by Health Canada for PFOS and PFOA as part of the *Guidelines for Canadian Drinking Water Quality*. These two assessments have been drafted and are expected to be posted for public consultation in late spring/early summer 2016, and finalized in 2017.

WATER TESTING RESULTS AND THE DRINKING WATER SCREENING VALUES

Exposure to PFAS in drinking water is not considered to pose a risk to Canadians if levels fall below the Health Canada screening values outlined above.

Short-term exposure to PFAS in drinking water at levels slightly higher than these screening values is not expected to have health effects as screening values are based on a lifetime of exposure to the substance. Potential health risks from exposure significantly above the screening values depend on how much PFAS a person was exposed to, and for how long he/she was exposed. High levels of PFAS have been linked with negative health effects in animal studies, including liver damage and impacts on neurological development. However, there is little information available on human health risks associated with PFAS.

Activities like bathing, showering, washing dishes, brushing teeth and doing laundry do not pose a health concern. PFAS stay in the water, so you can't breathe them in and they won't be absorbed through the skin.

Ingesting water, such as through drinking, using it in food preparation and in infant formula, does not pose a health risk so long as the levels of PFAS in drinking water do not exceed the screening values over an extended period of time.

If your drinking water testing results are above these screening values, there are treatment systems available that can remove PFAS from drinking water. PFAS can be removed by treating well water: using either an activated carbon filter installed at the tap or where the water enters the house; or using a reverse osmosis system installed at the drinking water tap. Reverse osmosis systems should only be installed at the tap, as the treated water may cause corrosion to the plumbing and cause other contaminants, like heavy metals, to leach into the water.

Before you install a treatment system, your water should be tested for the presence and concentration of PFAS. Once the system is in place, you should have both the water entering the system and the treated water tested periodically to ensure the system is effective.