

The drop on water

Antimony

Antimony (Sb) is a metal that is present naturally in small quantities in water, rocks, and soils.

Sources

Antimony occurs naturally in the environment.

In groundwater, sources of antimony also include

- plumbing materials
- mining wastes
- manufacturing effluent
- leaching of fertilizers
- leaching of landfills
- fossil fuel combustion products

Maximum Acceptable Concentration for Drinking Water = 0.006 mg/L

In water, antimony has no taste, smell, or colour. It can only be detected through a chemical test.

The Canadian drinking water quality guideline for antimony is **0.006 milligrams per litre (mg/L)**.

Health Risks

Short-term exposure (over days or weeks) to antimony in drinking water at very high concentrations (above 30 mg/L) can cause nausea, vomiting, and diarrhea.

The risk to human health is through ingestion only – drinking, cooking, teeth brushing. Well water with antimony levels greater than 0.006 mg/L may safely be used for bathing, handwashing, and dishwashing.

QUICK FACTS

- Antimony is present in rock and soil.
- Antimony in drinking water has no taste, smell, or colour.
- Antimony can only be detected through chemical testing.
- The Canadian drinking water quality guideline for antimony is **0.006 mg/L**.
- Exposure to very high levels of antimony (above 30 mg/L) in drinking water can cause nausea, vomiting, and diarrhea.
- Well water with antimony greater than **0.006 mg/L** should not be used for drinking, cooking, or teeth brushing. It may be used for bathing, handwashing, and dishwashing.
- If antimony is present above **0.006 mg/L** in drinking water, consider water treatment options or alternative sources of water.

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Testing

Regularly test your well water for a standard suite of chemical parameters, including antimony. Use an accredited water testing laboratory. Find a list of accredited water testing laboratories at www.gov.ns.ca/nse/water/waterlabs.asp or see the Yellow Pages under “laboratories.”

Get the special sampling bottles and instructions on proper sampling from the laboratory.

The cost of analyzing water samples can range from \$15 for a single parameter to \$230 for a full suite of chemical parameters. The cost can vary depending on the lab and the number of parameters being tested.

Solutions

If antimony is present above 0.006 mg/L in the first test, you must determine the source of the antimony. Get a second test, taking a sample of water from the well before it enters the building. This will help determine whether the antimony is present in the groundwater or the plumbing materials.

If the source of antimony is corrosion of antimony-containing plumbing materials, consider the following options:

- Remove the source of antimony.
- Flush faucets until the water runs as cold as possible before using the water for drinking, cooking, or teeth brushing.
- Avoid using hot tap water for drinking, cooking, or making baby formula.
- Adjust pH so water is less corrosive (for more information, see our fact sheets on pH and corrosive water).
- Use a treatment system, to reduce antimony levels.
- Use alternative water sources, such as bottled water or another well that has been tested and found to be safe.

REGULAR TESTING

Homeowners are responsible for monitoring the quality of their well water:

- Test for bacterial quality every 6 months.
- Test for chemical quality every 2 years.
- Test more often if you notice changes in physical qualities – taste, smell, or colour.

Regular testing alerts you to problems with your drinking water.



Treatment

We recommend purchasing a treatment system that has been certified to meet the current NSF standards. NSF International is a not-for-profit, non-governmental organization that sets health and safety standards for manufacturers in 80 countries. See its website at www.nsf.org.

Although there are currently no treatment units certified specifically for antimony reduction, effective treatment methods for reducing antimony levels in drinking water include

- coagulation/filtration
- distillation
- reverse osmosis

Once installed, re-test your water to ensure the treatment system is working properly. Maintain the system according to the manufacturer's instructions to ensure a continued supply of safe drinking water.

For more information on water treatment, see our publications *Water Treatment Options* and *Maintaining Your Water Treatment*, part of the *Your Well Water* booklet series at www.gov.ns.ca/nse/water/privatewells.asp.

FOR MORE INFORMATION

Contact

Nova Scotia Environment at
1-877-9ENVIRO
or 1-877-936-8476

www.gov.ns.ca/nse/water/


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