

## Basic Information about Arsenic in Drinking Water

### Arsenic at a Glance

**Maximum Contaminant Level (MCL)** = 0.010 milligrams per Liter (mg/L) or 10 parts per billion (ppb)

**Maximum Contaminant Level Goal (MCLG)** = zero

### **Health Effects**

Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.

### **Chemical Abstract Service Registry Number**

7440-38-2

### **Sources of Contamination**

Erosion of natural deposits; runoff from orchards; runoff from glass & electronics production wastes  
The United States Environmental Protection Agency (EPA) regulates arsenic in drinking water to protect public health. Arsenic may cause health problems if present in public or private water supplies in amounts greater than the drinking water standard set by EPA.

### **What is arsenic?**

Arsenic is a semi-metal element in the periodic table. It is odorless and tasteless. It enters drinking water supplies from natural deposits in the earth or from agricultural and industrial practices.

### **Uses for arsenic.**

Approximately 90 percent of industrial arsenic in the U.S. is currently used as a wood preservative, but arsenic is also used in paints, dyes, metals, drugs, soaps, and semi-conductors. Agricultural applications, mining, and smelting also contribute to arsenic releases in the environment.

### **What are arsenic's health effects?**

Some people who drink water containing arsenic well in excess of the MCL for many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.

This health effects language is not intended to catalog all possible health effects for arsenic. Rather, it is intended to inform consumers of some of the possible health effects associated with epichlorohydrin in drinking water when the rule was finalized.

### **What are EPA's drinking water regulations for arsenic?**

In 1974, Congress passed the Safe Drinking Water Act. This law requires EPA to determine the level of contaminants in drinking water at which no adverse health effects are likely to occur. These non-enforceable health goals, based solely on possible health risks and exposure over a lifetime with an adequate margin of safety, are called maximum contaminant level goals (MCLG). Contaminants are any physical, chemical, biological or radiological substances or matter in water.

The MCLG for arsenic is zero. EPA has set this level of protection based on the best available science to prevent potential health problems. Based on the MCLG, EPA has set an enforceable regulation for arsenic, called a maximum contaminant level (MCL), at 0.010 mg/L or 10 ppb. MCLs are set as close to the health goals as possible, considering cost, benefits and the ability of public water systems to detect and remove contaminants using suitable treatment technologies.

The Arsenic and Clarifications to Compliance and New Source Contaminants Monitoring Final Rule, the regulation for arsenic, became effective in 2002. The Safe Drinking Water Act requires EPA to periodically review and revise contaminants, if appropriate, based on new scientific data. The regulation for arsenic will be included in a future review cycle.

States may set more stringent drinking water MCLGs and MCLs for arsenic than EPA.

#### **How does arsenic get into my drinking water?**

The major sources of arsenic in drinking water are erosion of natural deposits; runoff from orchards; and runoff from glass & electronics production wastes.

A federal law called the Emergency Planning and Community Right to Know Act (EPCRA) requires facilities in certain industries, which manufacture, process, or use significant amounts of toxic chemicals, to report annually on their releases of these chemicals. For more information on the uses and releases of chemicals in your state, contact the: Community Right-to-Know Hotline: (800) 424-9346.

#### **How will I know if arsenic is in my drinking water?**

If your water comes from a household well, check with your health department or local water systems that use ground water for information on contaminants of concern in your area.

#### **How will arsenic be removed from my drinking water?**

The following treatment method(s) have proven to be effective for removing arsenic to below 0.010 mg/L or 10 ppb: [adsorption media, ion exchange, coagulation/filtration, oxidation/filtration, and point-of-use or point-of-entry treatment using activated alumina or reverse osmosis](#).

#### **How do I learn more about my drinking water?**

EPA strongly encourages people to learn more about their drinking water, and to support local efforts to protect and upgrade the supply of safe drinking water.

The "Arsenic in Drinking Water" page, <http://www.epa.gov/safewater/arsenic/index.html>, provides regulatory information about arsenic in drinking water.

---

You can read more on this Safewater Fact Sheet: Drinking Water Standard for Arsenic, [http://www.epa.gov/safewater/arsenic/regulations\\_factsheet.html](http://www.epa.gov/safewater/arsenic/regulations_factsheet.html)

---

You can also submit your question to the Safewater Question and Answer Database: <http://safewater.supportportal.com/ics/support/splash.asp?deptID=23015>

## Private Drinking Water Wells

If your family gets drinking water from a private well, do you know if your water is safe to drink? What health risks could you and your family face? Where can you go for help or advice?

The information contained in this web site will help you answer these questions.

EPA regulates public water systems; it does not have the authority to regulate private drinking water wells. Approximately 15 percent of Americans rely on their own private drinking water supplies, and these supplies are not subject to EPA standards, although some state and local governments do set rules to protect users of these wells. Unlike public drinking water systems serving many people, they do not have experts regularly checking the water's source and its quality before it is sent to the tap. These households must take special precautions to ensure the protection and maintenance of their drinking water supplies.

### What You Can Do

Private, individual wells are the responsibility of the homeowner. To help protect your well, here are some steps you can take:

Have your water tested periodically. It is recommended that water be tested every year for total coliform bacteria, nitrates, total dissolved solids, and pH levels. If you suspect other contaminants, test for those. Always use a state certified laboratory that conducts drinking water tests. Since these can be expensive, spend some time identifying potential problems.

### **Testing more than once a year may be warranted in special situations:**

- someone in your household is pregnant or nursing
- there are unexplained illnesses in the family
- your neighbors find a dangerous contaminant in their water
- you note a change in water taste, odor, color or clarity
- there is a spill of chemicals or fuels into or near your well
- when you replace or repair any part of your well system

Identify potential problems as the first step to safeguarding your drinking water. The best way to start is to consult a local expert, someone that knows your area, such as the local health department, agricultural extension agent, a nearby public water system, or a geologist at a local university (See more detailed information below).

Be aware of your surroundings. As you drive around your community, take note of new construction. Check the local newspaper for articles about new construction in your area.

Check the paper or call your local planning or zoning commission for announcements about hearings or zoning appeals on development or industrial projects that could possibly affect your water.

Attend these hearings, ask questions about how your water source is being protected, and don't be satisfied with general answers. Make statements like "If you build this landfill, (just an example) what will you do to ensure that my water will be protected." See how quickly they answer and provide specifics about what plans have been made to specifically address that issue.

### ***Identify Potential Problem Sources***

To start your search for potential problems, begin close to home. Do a survey around your well:

- is there livestock nearby?
- are pesticides being used on nearby agricultural crops or nurseries?
- do you use lawn fertilizers near the well?
- is your well "downstream" from your own or a neighbor's septic system?
- is your well located near a road that is frequently salted or sprayed with de-icers during winter months?
- do you or your neighbors dispose of household wastes or used motor oil in the backyard, even in small amounts?

If any of these items apply, it may be best to have your water tested and talk to your local public health department or agricultural extension agent to find way to change some of the practices which can affect your private well.

In addition to the immediate area around your well, you should be aware of other possible sources of contamination that may already be part of your community or may be moving into your area. Attend any local planning or appeal hearings to find out more about the construction of facilities that may pollute your drinking water. Ask to see the environmental impact statement on the project. See if underground drinking water sources has been addressed. If not, ask why.