



## ARSENIC IN DRINKING WATER

### What is ARSENIC IN DRINKING WATER?

Arsenic is a silver-gray or white metallic solid element found in nature. Arsenic combines with other elements to form organic and inorganic compounds. Inorganic arsenic compounds are thought to be more toxic than organic arsenic compounds.

### Where can arsenic be found and how is it used?

Organic arsenic is found in groundwater supplies and soil and mineral deposits all over the world. In the United States, the highest levels of natural arsenic are found in western states. Arsenic is found in groundwater in all 50 states, mainly in areas with shallow groundwater reserves and large amounts of arsenic in soil and mineral deposits. In Delaware, little arsenic is found in groundwater or public water.

Industry, farming and medicine have all used inorganic arsenic compounds. Arsenic is no longer produced in the United States but it is still imported from other countries. Until the 1940s, inorganic arsenic compounds were often used as agricultural pesticides. Now most uses of arsenic in farming are banned in the United States. The use of chromated copper arsenic to make a wood preservative for pressure-treated wood has been greatly reduced since 2003.

### How can people be exposed to arsenic in drinking water?

You could be exposed to arsenic in drinking water by:

**Living in** an area where high amounts of arsenic are in soils and mineral deposits. Inorganic arsenic compounds are the most common forms found in water. People living near factories, waste sites or farms where arsenic or pesticides were once used may be exposed. It is not easy to tell if arsenic is in drinking water, as most compounds have no color, odor or taste.

### How does arsenic work and how can it affect my health?

High doses of arsenic can cause severe short-term health effects, including death. While long-term exposure to low levels of arsenic will not cause immediate effects, people with that exposure can suffer cancer of the skin, bladder, liver, lungs and kidneys. If there are high levels of arsenic in drinking water, skin on the feet, hands and torso can develop sores or turn color.

### How is arsenic poisoning treated?

Tests can measure arsenic in your blood, urine, hair and fingernails. These tests determine if you were exposed to high levels of arsenic. They cannot determine how the arsenic will affect your health.

### What should I do if exposed to arsenic?

If you think you were exposed to high levels of arsenic, talk to your doctor.

### What factors limit use or exposure to arsenic?

Exposure to arsenic in drinking water is unlikely since typically the amount is very low if detected at all. People connected to public water can contact their water company for information on monitoring and treating water containing arsenic.



## Is there a medical test to show whether I've been exposed to arsenic?

Tests can measure arsenic in your blood, urine, hair and fingernails. These tests determine if you were exposed to high levels of arsenic. They cannot determine how the arsenic will affect your health.

## Technical information for arsenic

CAS Number: 7440-38-2

Chemical Formula: As

Carcinogenicity (EPA): A1-Carcinogen

MCL (Drinking Water): 0.01 mg/L (As of 1/23/06)

OSHA Standards (Air): 10 ug/m<sup>3</sup>, 8 hr Time-Weighted Avg. (TWA)

NIOSH Standards: NA

ACGIH (air): 0.01 mg/m<sup>3</sup>, 8 hr Time-Weighted Avg (TWA)

## References and Sources

Agency for Toxic Substances and Disease Registry (ATSDR). 2005. *Toxicological Profile for arsenic*. (Draft for Public Comment.) Atlanta, GA: U.S. Department of Health and Human Services.

U.S. Environmental Protection Agency, Office of Ground Water and Drinking Water. *Drinking Water Standard for Arsenic*, January 2001, [http://www.epa.gov/safewater/arsenic/regulations\\_factsheet.html](http://www.epa.gov/safewater/arsenic/regulations_factsheet.html) (Accessed 10/19/09)

U.S. Environmental Protection Agency, Integrated Risk Information System. *Arsenic, Inorganic*. [http://cfpub.epa.gov/ncea/iris/index.cfm?fuseaction=iris.showQuickView&substance\\_nmbr=0278](http://cfpub.epa.gov/ncea/iris/index.cfm?fuseaction=iris.showQuickView&substance_nmbr=0278) last updated June 12, 2000 (Accessed 10/19/09)

U.S. Environmental Protection Agency. *Headquarters Press Release: EPA to Propose Withdrawal of Arsenic in Drinking Water Standard; Seeks Independent Reviews*. [www.epa.gov/safewater/arsenic.html](http://www.epa.gov/safewater/arsenic.html), March 20, 2001.

World Health Organization. *Guidelines for Drinking Water Quality*, 2<sup>nd</sup> Ed. *Volume 1: Recommendations*. Geneva, 1993.