



STATE OF NEW YORK DEPARTMENT OF HEALTH

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INFORMATION FACT SHEET BROMATE IN DRINKING WATER

Bromate is formed when ozone used to disinfect drinking water reacts with naturally occurring bromide found in source water. Bromate formation in disinfected drinking water is influenced by factors such as bromide ion concentration, pH of the source water, the amount of ozone and the reaction time used to disinfect the water.

The U.S. Environmental Protection Agency developed a level that it considers protective of non-cancer health effects from long-term exposure, including individuals who may be more susceptible including women of childbearing age and children. Assuming an adult drinks about two quarts of water a day at the drinking water standard of 10 micrograms per liter, their exposure is about a sixth of that level. The increased lifetime cancer risk from drinking this water everyday poses a moderate risk level of about two in ten thousand. These exposure and risk estimates are likely to be overestimates since most people would not consume two quarts of water containing bromate at the standard for their lifetime.

The information on the toxicity of bromate comes from accidental or intentional poisonings in people and from studies on laboratory animals.

Some people who ingested large amounts of bromate had gastrointestinal symptoms such as nausea, vomiting, diarrhea and abdominal pain. Some individuals who ingested high concentrations of bromate also experienced kidney effects, nervous system effects and hearing loss. However, these people were exposed to bromate levels many thousand of times the amount that would come from drinking water at its standard.

Exposure to large amounts of bromate for a long period of time caused kidney effects in laboratory animals. Long-term exposure to high levels of bromate has also caused cancer in rats. Whether bromate can cause cancer in people is not known.

Some people may be at greater risk for developing health effects from bromate exposure or have concerns for their pregnancy or nursing infant. Because bromate can cause health effects in kidneys, it is possible that those with pre-existing kidney conditions could be at greater risk. The information on the effects of bromate on reproductive health is limited, but does not indicate a concern at levels near the drinking water standard.

If you experience symptoms that you think may be related to bromate exposure, you should see your physician. If you have additional questions about bromate or the health effects from exposure to bromate, contact the New York State Department of Health's toll-free Environmental Health Information Line at 1-800-458-1158, extension 27820.

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