

## Understanding Bromine

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### Editorial Note

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### EDITORIAL NOTE

Bromine is the 44th most common element in the earth's crust, with a concentration of 2.4 parts per million by weight. Bromine can be present in seawater, natural brines, and evaporated salt lakes. Bromine is used as a chlorine substitute in swimming pools. Bromine-based products are used in agriculture and sanitation, as well as as fire retardants. Bromine-containing compounds are also used in certain sedatives. Bromine in nature is a combination of its two stable isotopes, which are present in the following percentages:  $^{79}\text{Br}$  (50.7 percent) and  $^{81}\text{Br}$  (49.3 percent).

Bromine is used in a wide range of products, including agricultural pesticides, insecticides, dyes, pharmaceuticals, flame retardants, furniture foam, fuel, electronic plastic casings, and film photography. Bromine is used to purify water and is also mentioned in many medicines and sanitizers. With the aid of bromine, mercury emissions from coal-fired plants can be reduced by up to 90%. Bromine is harmful to human tissues in its natural state and has been found to irritate both the eyes and the throat, as well as being life threatening when inhaled in large quantities.

Prevention is preferable to cure when it comes to bromine toxicity. Remove yourself from every place where bromine is being released or leaking. Bromine is heavier than air and can fall to low-lying places, so try to get to the highest ground possible. When exposed to bromine, thoroughly wash your hands with soap and water. Bromine poisoning is treated in a hospital setting with supportive medical treatment (such as oxygen and fluids administered through a needle through the vein). Bromine poisoning has no clear antidote. (An antidote is a medication that works to counteract the effects of a poison.) The most important thing is for people to get away from the exposure site as soon as possible and seek medical attention.