Are there other natural elements similar to chlorine?

Yes. One of them is **Bromine**. The chemical property of bromine is similar to chlorine and is discussed in this article.

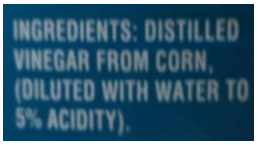
Bromine exists exclusively as **bromide salts** in diffuse amounts in crustal rock. Bromide salt accumulated in sea water. Also, may be recovered from brine wells and from the Dead Sea waters. Some volcanic soils contain bromine. The concentration of bromine in the atmosphere is extremely low. The bromine reserves are located in China, Israel and in state of Arkansas, US.

Bromine and Chlorine both belong to the halogen family of chemical elements.

Bromine is reactive toward to most organic compounds (molecules containing carbon). An example of a bromine-containing organic compound that has been used since ancient times is the **fabric dye** Tyrian purple. It bonds easily with many elements and has a strong bleaching action. Bromine evaporates easily at the standard temperature and gives a vapor that has a strongly disagreeable odor resembling that of chlorine. Although, it could be acceptable to those 5% people with the real allergic reaction to chlorine. Having good bactericidal and virucidal properties, bromamines are used on the commercial basis. Bromine does a fine job as a sanitizer, but it doesn't oxidize as well as chlorine. The element is used in water purification compounds, disinfectants and insecticides. Bromine is utilized in paper products, plastics, paints, textiles, medicines, in gasoline anti-knock compounds.

Bromine has a big **advantage over chlorine** in killing bacteria and viruses, especially, in the swimming pools, hot tubs, shower and sink drains, in the toilet bowls, as it continue **remains an active disinfectant in the water**, in contrast with chloramines that quickly raise. **Bromine** is less **irritating** on mucus membranes than chlorine, although it still produces an odor. Bromine is not that cost effective as chlorine is.

Is vinegar an effective agent for disinfecting bacteria and mold?



Vinegar is a **mixture** of about **5% acetic and water.**

The structural formula for acetic acid is CH_3COOH (Carbon, Hydrogen, Oxygen). **Vinegar** is a **weak acid** with a pH of 2.4, indicates that only 0.4% of the acetic acid molecules are dissociated in the water. pH 7 is neutral. Despite a lot of references on the Internet stating that vinegar or vinegar mixed with baking soda is an effective way to disinfect mold, bacteria, etc... I'm skeptical that it has a significant effect because vinegar is a week acid itself. What to expect from the solution that contains 95% of water? The acidity is the only disinfectant agent in this mixture. Based on the years of my own practical and theoretical studies I made a conclusion that Vinegar or Vinegar + Baking soda is an ineffective, useless solution in the professional cleaning procedure. Besides that strong long lasting smell, it can be used only on selective surfaces. In fact, to avoid any accidental issues, every **cleaner of Bio Maids signed** the acknowledgement that **vinegar and bleach are prohibited** to **bring and use** on the premises.

Summary prepared by:

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