

Emergency Disinfection of Drinking Water

As long as adequate water pressure has been maintained through a flood and the disinfections treatment system has been intact, you may only need to flush your water pipes.

When the home water supply is interrupted by natural or other forms of disaster, you can obtain limited amounts of water by draining your hot water tank or melting ice cubes. In most emergency water situations- well water is the preferred source of drinking water-however, it is not normally an option any longer in our area. If it is not available and river or lake water must be used, avoid sources containing floating material and water with a dark color or an odor.

When emergency disinfection is necessary, examine the physical condition of the water. Disinfectants are less effective in cloudy water. Filter murky or colored water through clean cloth or allow it to settle and draw off the clean water for disinfection. Water prepared for disinfection should be stored only in clean, tightly covered, containers, not subject to corrosion.

There are two general methods by which small quantities of water can be effectively disinfected. One method is boiling. It is the most positive method by which water can be made bacterially safe to drink. Another method is chemical treatment. If applied with care, certain chemicals will make most water free from harmful or pathogenic organisms.

METHODS OF EMERGENCY DISINFECTION

Boiling: vigorous boiling for one minute will kill any disease-causing microorganisms present in water. The flat taste of boiled water can be improved by pouring it back and forth from one container to another (called aeration), by allowing it to stand for a few hours, or by adding a small pinch of salt for each quart of water boiled. If the water system is under a “boil water notice,” you should continue to boil your water until the water utility has been restored to full operation and the microbiological quality of the water is safe for human consumption.

Chemical Methods:

CHLORINE BLEACH: common household bleach contains a chlorine compound that will disinfect water. The procedure to be followed is usually written on the label. When the necessary procedure is not given, find the percentage of available chlorine on the label and use the information in the following tabulation as a guide.

Available Chlorine	Drops of Bleach to add per quart of clear water	Drops of bleach to add per quart of cloudy water
1%	10	20
4-6%	2	4
7-10%	1	2
If not known	10	20
Mix thoroughly by stirring or shaking water in container; let stand for 30 minutes. A slight chlorine odor should be detectable in the water. If not, repeat dosage and let stand an additional 15 minutes before using.		

If the treated water has too strong a chlorine taste, it can be made more pleasing by allowing the water to stand exposed to the air for a few hours or by pouring it from one clean container to another several times.

GRANULAR CALCIUM HYPOCHLORITE

Add and dissolve one heaping teaspoon of high-test calcium hypochlorite (approximately 1/4 ounce) for each two gallons of water. The mixture will produce a stock chlorine solution of approximately 500 mg/L, since the calcium hypochlorite has an available chlorine equal to 70 percent of its weight. To disinfect water, add the chlorine solution in the ration of one part of chlorine solution to each 100 parts of water to be treated. This is roughly equal to adding 1 pint (16oz.) of stock chlorine to each 12.5 gallons of water to be disinfected. To remove any objectionable chlorine odor, aerate the water as described above.

CHLORINE TABLETS

Chlorine tablets containing the necessary dosage for drinking water disinfection can be purchased in a commercially prepared form. These tablets are available from drug and sporting goods stores and should be used as stated in the instructions. When instructions are not available, use one tablet for each quart of water to be purified.

Iodine Methods -- the use of iodine as a means of disinfection may not be effective in guarding against exposure to a giardia or cryptosporidium. Therefore, iodine use should be limited to the disinfection of well water (as opposed to surface water sources such as rivers, lakes, and springs), because well water is unlikely to contain these disease-causing organisms.

TINCTURE OF IODINE

Common household iodine from the medicine chest or first aid kit may be used to disinfect water. Add five drops of 2 percent US Pharmacopeia (USP) Tincture of iodine to each quart of clear water. For cloudy water add ten drops and let the solution stand for a least 30 minutes.

IODINE TABLETS

Commercially prepared iodine tablets containing the necessary dosage for drinking water disinfection can be purchased at drug and sporting goods stores. They should be used as stated. When instructions are not available, use one tablet for each quart of water to be purified.

WATER TO BE USED FOR DRINKING, COOKING, MAKING ANY PREPARED DRINK, OR BRUSHING THE TEETH SHOULD BE PROPERLY DISINFECTED.

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