

Emergency Disinfection of Water

Product (Example)	Available Chlorine (Percent)	Stock Solution	*Quantity of stock solution to treat	
			1 GAL	1,000 GAL
Bleach	5.25	Full strength	8 drops	1 2/3 cups
Calcium Hypochlorite	65	2 heaping TBS (1 oz.) in quart of water	20 drops	1 quart



**Double amount for turbid or colored water.*

After adding the stock solution to the water volume being treated, stir it thoroughly and let the treated water stand for 30 minutes before using. Common household iodine from the medicine chest or first aid kit also may be used to disinfect water. Add 10 drops of 2 percent tincture of iodine to each gallon of water, mix well and let stand for at least 30 minutes before using.

Commercially prepared chlorine and iodine tablets containing the necessary dosage for drinking water disinfection may be obtained at any drug store. They should be used in accordance with label instructions.

Disinfection of Equipment

Equipment used for storing or transporting potable water must be thoroughly cleaned and disinfected prior to use. Cleaning should be done to remove any dirt, scale, and other loose materials. Disinfection of equipment or tanks should be done by one of the following methods:

1. Add 20 ounces of 65 percent calcium hypochlorite to each 1,000 gallons of water; or
2. Add 2 gallons of 5.25 percent sodium hypochlorite (bleach) to each 1,000 gallons of water; or
3. Add 2 pints of 5.25 percent sodium hypochlorite (bleach) to each 100 gallons of water.

This will result in a solution that has about 100 mg/L chlorine. Let it stand a minimum of 12 hours, then drain through the distribution system, if possible. A residual chlorine test should show a distinct residual in the water drained out of the tank; if not, the disinfection process should be repeated. The complete contents of the tank should be drained to a safe location such as a sanitary sewer, the water should be dechlorinated if a large volume has to be drained to a storm sewer or waterway.





Water Disinfection



■ The most reliable method for purifying water is to vigorously boil the water for five minutes. This will kill any disease-causing bacteria present in the water. When boiling is not practical, chemical disinfection should be used. Chlorine and iodine are the most commonly used chemical disinfectants.

■ Liquid chlorine (bleach) is recommended for use in small individual systems when disinfection is necessary. Chlorine may be obtained in powder or liquid form from drug stores or supermarkets. Whichever form of chlorine is used, make sure it is from a source that is fresh. The powder form [calcium hypochlorite is 65 percent available chlorine and the liquid form [sodium hypochlorite (bleach)] is usually 5.25 percent available chlorine. When using the powder, mix by adding the powder to a quart of water. Allow the solution to settle and use the clear liquid, without shaking (See table below). This stock solution loses strength and should be made up fresh at least once a week.



Residual Chlorine

When using emergency water sources, the level of residual chlorine in the water for consumption should be between 0.5 and 4 parts per million, after the treatment described in this bulletin. Inexpensive color comparator test kits can be purchased from most large department stores and swimming pool supply companies. Testing for residual chlorine should be performed several times per day for large volume uses and at least twice per day for small volumes.