

**GOVERNMENT OF ALBERTA / DEPARTMENT  
OF SOCIAL SERVICES AND COMMUNITY  
HEALTH / HEALTH INSPECTION SERVICES**

**DISINFECTION OF SMALL WATER SUPPLIES**

While it is true that boiling of water is the simplest, cheapest and easiest method of disinfection, it is not always possible to use this method. Several common and well known chemicals which may be procured at almost any grocery or drug store are useful for the same purpose. The amounts of such chemicals necessary for this procedure are very small and they are harmless if used as directed.

It is recognized that drinking water from surface streams is always an unwise procedure and all domestic water supplies that are not properly protected against the entrance of human sewage should be regarded as potential sources of disease. By selecting the procedure which applies in the individual case, the consumer may be assured of the purity of an emergency water supply.

A slight after-taste has no significance, but a distinct unpalatability means that too much of the chemical has been used.

**Boiling:** Small quantities of water may be sterilized by boiling for at least ten minutes. Water which has not been filtered can be used for drinking if it is boiled. Aeration by pouring from one receptacle to another will cool the water and tend to remove the flat taste.

**Iodine:** Iodine may be used for disinfecting water. For clear water, use 3 drops from an eye-dropper of tincture of iodine for one quart of water. Six drops for each quart of water should be used if the water is colored, cloudy or contains sediment. Enough iodine should be added to give a slight brownish color to the water. The water must be allowed to stand fifteen minutes before use in order to give the iodine time to react.

If it is desirable to destroy the brown color due to the iodine and restore the original appearance, after the fifteen minutes standing period add a pinch of sodium thiosulphate or "hypo" – the chemical used for "fixing" in photographic work.

Iodine should not be used continuously when any of the consumers are affected by inward growing goiter.

**Disinfection with Chlorine Solutions:** There are many chlorine solutions on the market which may be used for disinfecting water. Household strength hypochlorites such as Javex, Perfex etc., which have 4 to 5 per cent available chlorine, may be used in the following quantities.

For clear water:

2 drops-----for each 1 gallon of water  
1 teaspoonful-----for each 50 gallons of water  
1 tablespoonful ---- for each 200 gallons of water  
1 pint -----for each 6,400 gallons of water

For cloudy waters or those containing sediment, add half again the above amounts.

Mix and allow the treated water to stand at least 30 minutes before using.

The residual or excess chlorine may be destroyed by adding sodium thiosulphate- photographers "hypo"-in amounts about equal to the quantity of hypochlorite added, after a 30 minute standing period.

The solutions deteriorate once opened. If tightly closed and kept in a cool place they will retain their strength for three to four weeks.

**Disinfection with Commercial Strength Hypochlorite:** Other chlorine solutions may be used in proportion to the percentage of available chlorine in them. This percentage is usually stated on the bottle.

Commercial strength hypochlorite with 16 to 20 percent available chlorine may be used in the following quantities:

For clear water:

2 drops-----for each 5 gallon of water  
1 teaspoonful----- --for each 250 gallons of water  
1 tablespoonful --for each 1,000 gallons of water  
1 pint -----for each 25,000 gallons of water

For cloudy waters or those containing sediment, add half again the above amounts.

Mix and allow the treated water to stand at least 30 minutes before using.

The residual or excess chlorine may be destroyed by adding sodium thiosulphate – photographers "hypo"- in amounts about equal to the quantity of hypochlorite added, after the 30 minute standing period.