

HOW TO TURN UNSAFE WATER INTO DRINKABLE WATER

Step 1

If necessary: Remove particles

To remove contamination with solid particles pre-filter the unsafe water with a piece of cloth or a coffee filter. This method does not remove micro-organism. You still have to disinfect with heat or chemicals.

Step 2a

If possible: Disinfection with heat

Sufficient heat will kill micro-organisms in contaminated water already at a temperature below the boiling point. During the time needed to reach boiling point the water is heated long enough for disinfection. There is no need to boil water for 5 minutes, 10 minutes, or 20 minutes, as some guide books recommend!

Step 2b

If heat is impossible: Chemical Disinfection

A) With Iodine

Iodine has advantages over chlorine in convenience and efficacy; and the taste is less offensive. It is safe for short and intermediate length use (3-6 months), but questions remain about its safety in long-term usage. It should not be used by persons with allergy to iodine, persons with active thyroid disease, or pregnant women.

When the iodine is added to the water leave the preparation for 30 minutes in clear weather or 60 minutes in cloudy weather.

Table of available Iodine preparations:

Iodine Preparations		
Preparation	Iodine	Amount/Liter
Iodine Topical Solution	2%	8 drops
Iodine Tincture	2%	8 drops
Lugol's Solution	5%	4 drops
Povidone-Iodine (Betadine®)	10%	4 drops
Tetraglycine hydroperiodide (Globaline®, Potable Aqua®, EDWGT®)	8 mg	1 tablet

B) With chlorine

Any common brand of liquid chlorine bleach contains 5-6 % sodium hypochlorite.

For 1 liter of unsafe water use 4 drops chlorine and wait 30 minutes.

For 20 liters of water add 80 drops (1 tablespoon or 5 ml) chlorine.

Measuring by drops is more accurate and the preferred method.

When the chlorine is added to the water leave the preparation for 30 minutes in clear weather or 60 minutes in cloudy weather.