

CONVERTING HOUSEHOLD BLEACH TO PARTS PER MILLION OF AVAILABLE CHLORINE

Typical household bleach contains approximately 5.25% chlorine which is free to react with water during the disinfection process. When performing shock disinfection of a water system it is important to use enough chlorine to achieve approximately 50 ppm (parts per million). If you use too little bleach you may not eliminate the bacteriological contaminants. If you use too much chlorine you will create a taste and odor problem, which is hard to correct and may form cancer causing trihalomethanes.

In order to determine how much bleach to add you must know the volume of the container being disinfected. Lets say your container is a 1000 gallon water storage tank. Here is how you would determine how much bleach to add to disinfect the full tank.

Step 1) Multiply 1000 gal x 50 ppm

$$1000 \times (50/1,000,000) = 0.05 \text{ gal of chlorine}$$

This is the amount of pure chlorine you would need to add to mix to 50 ppm.

Step 2) OK now remember that bleach is only 5.25% chlorine or in other words 1 gallon of bleach = 0.0525 gallons of chlorine.

So in this case $0.05 \text{ gal} / 0.0525 = 0.9524$ gallons of bleach.

If you are working in metric units it is easiest to remember that 1 ppm = 1 milligram/Liter.