

ENVIRONMENTAL HEALTH FACT SHEET

No. 400

DISINFECTION OF WATER TANKS

This information bulletin has been developed to provide information on the disinfection of water tanks with chlorine. Chlorination is the most common form of disinfection and successfully controls many microorganisms.

CALCULATING THE SIZE OF YOUR TANK FOR CHLORINATION

Tanks come in a variety sizes ranging from 750 L (165 gallons) to over 50 000 L (11 000 gallons). To convert a tank volume in gallons to a volume in litres, simply multiply the number of gallons by 4.5.

TO CALCULATE TANK WATER VOLUME

- **Full Rectangular Tanks (box tanks, some in ground tanks)**

Volume (in litres) = (depth [m] x width [m] x length [m]) multiplied by 1000 (to convert cubic metres to litres.)

- **Full Cylindrical Tanks**

Volume (in litres)

= (3.14 x radius [m] x radius [m] x tank depth [m]) multiplied by 1000 (to convert cubic metres to litres.)

Example:

Tank radius = 2 metres Tank depth = 3 metres

[The radius is the half the diameter or width of the tank].

Tank Volume = (3.14 x 2 m X 2 m x 3m) x 1000
= (3.14 x 4 m²x 3 m) x 1000
= (3.14 x 12 m³) x 1000
= 37.68 m³ x 1000
= 37 680 Litres

- **Part-full Cylindrical Tanks**

Volume (in litres) = (3.14 x radius x radius [m] x water depth [m]) multiplied by 1000.

(See diagram over page)

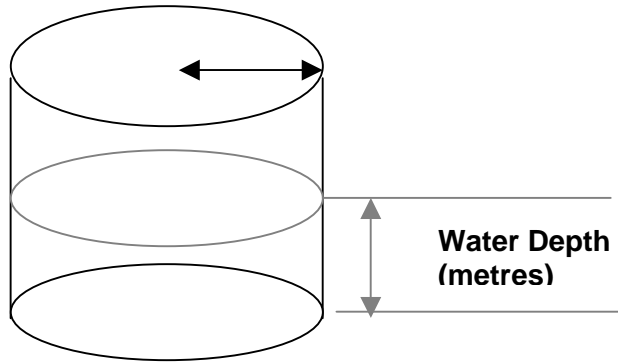


Diagram adapted from *Guidance on the Use of Rainwater Tanks, 2004, enHealth.*

fact sheet

TO CALCULATE MILLILITRES OF 4% LIQUID BLEACH REQUIRED TO DISINFECT THE WATER IN A TANK

	Concentration of Chlorine Required (mg/L)		
	1	2	5
Amount of Water in Tank (Litres)			
1000	25 mL	50 mL	125 mL
2000	50 mL	100 mL	250 mL
3000	75 mL	150 mL	375 mL
4000	100 mL	200 mL	500 mL
5000	125 mL	250 mL	625 mL
6000	150 mL	300 mL	750 mL
7000	175 mL	350 mL	875 mL
8000	200 mL	400 mL	1000 mL
9000	225 mL	450 mL	1125 mL
10000	250 mL	500 mL	1250 mL

Please note the above calculations are only estimates. The amount of liquid bleach required to be added to your water supply would depend on the quality of the water.
CHECK THE LABEL OF THE PRODUCT TO ENSURE THAT NO ADDITIVES SUCH AS FRAGRANCES ARE ADDED TO THE BLEACH.

TO CALCULATE MILLILITRES OF 12.5% SODIUM HYPOCHLORITE (LIQUID) REQUIRED TO DISINFECT THE WATER IN A TANK

	Concentration of Chlorine Required (mg/L)		
	1	2	5
Amount of Water in Tank (Litres)			
1000	2 grams	3 grams	8 grams
2000	3 grams	6 grams	15 grams
5000	8 grams	15 grams	38 grams
6000	9 grams	18 grams	46 grams
7500	12 grams	23 grams	58 grams
10000	15 grams	31 grams	77 grams
16000	25 grams	49 grams	123 grams
20000	31 grams	62 grams	154 grams
30000	46 grams	92 grams	231 grams

Please note the above calculations are only estimates. The amount of chlorine required to be added to your water supply would depend on the quality of the water.
DO NOT USE STABILISED CHLORINE.
THE CHLORINE USED MUST NOT CONTAIN ISOCYANURIC ACID.

HOW TO USE THE TABLES:

1. Calculate the volume of the tank in litres.
2. Select the concentration of chlorine required:
 - 1mg/L: Routine disinfection for clean water
 - 2 mg/L: Routine disinfection for reasonable clean water
 - 5 mg/L: Disinfection for tanks and pipes.
3. Choose the chlorine disinfectant used and read the amount of chlorine disinfectant to be added where the chlorine concentration required corresponds to the volume of the tank.

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