

## 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 micro-organisms.

#### **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].

$$\begin{aligned}\text{Tank Volume} &= (3.14 \times 2 \text{ m} \times 2 \text{ m} \times 3 \text{ m}) \times 1000 \\ &= (3.14 \times 4 \text{ m}^2 \times 3 \text{ m}) \times 1000 \\ &= (3.14 \times 12 \text{ m}^3) \times 1000 \\ &= 37.68 \text{ m}^3 \times 1000 \\ &= 37\,680 \text{ Litres}\end{aligned}$$

- **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)

fact sheet

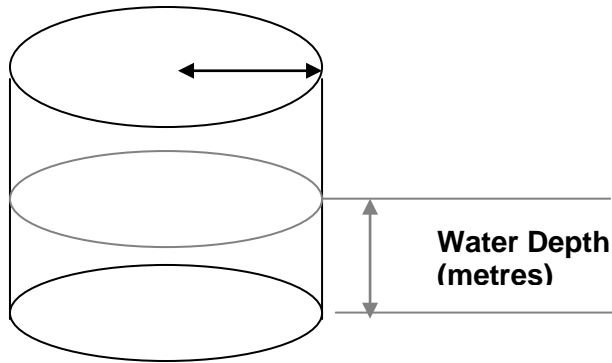


Diagram adapted from *Guidance on the Use of Rainwater Tanks, 2004, enHealth.*

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**

fact sheet

	Concentration of Chlorine Required (mg/L)		
	1	2	5
Amount of Water in Tank (Litres)			
1000	8 mL	16 mL	40 mL
2000	16 mL	32 mL	80 mL
5000	40 mL	80 mL	200 mL
6000	48 mL	96 mL	240 mL
7500	60 mL	120 mL	300 mL
10000	80 mL	160 mL	400 mL
16000	128 mL	256 mL	640 mL
20000	160 mL	320 mL	800 mL
30000	240 mL	480 mL	1200 mL

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.

**FOR FURTHER INFORMATION**

**CONTACT ENVIRONMENTAL HEALTH ON 1800 095 646 OR YOUR LOCAL OFFICE**

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