

## Preparing a Given Concentration of Sodium Hypochlorite from a Bleach Solution

### Steps:

This table calculates the amount of bleach solution (%) that should be diluted with water to get a desired concentration (ppm) of sodium hypochlorite.

To use this table simply enter:

1. Volume of solution required in Litres (1 Litre =1000 mL)
2. Desired concentration of sodium hypochlorite in parts per million (PPM)
3. Concentration of bleach solution in percent
4. Press "enter"

### Precautions

- Always follow safety precautions and the manufacturer's directions when working with concentrated solutions of bleach (sodium hypochlorite).
- To avoid injury, use appropriate personal protective equipment during handling (read the label and refer to the material safety data sheet).
- Chlorine bleach solution might damage some surfaces (e.g., metals, some plastics) so it is advisable to check with the manufacturer before using.
- For chlorine bleach solution to be effective a certain amount of contact time with the surface is needed. Contact time varies according to what is being disinfected.
- Always add the bleach to water, not water to the bleach.
- Never mix ammonia products with bleach or bleach-containing products. This practice produces chlorine gas - a very toxic gas that can cause severe breathing problems, choking and potentially death.
- To be more effective preclean the surface first before using the chlorine bleach solution.
- A bottle of bleach has a shelf life so check the bottle for an expiry date or with the manufacturer for the shelf life of the product.
- Do not pre-mix the water and bleach solution, as it loses potency over time.

	Enter desired information	10 L Equals			
Volume of solution required (L) (1 Litre =1000 mL)	10.00	2.6 Gallons (US)	2.22 Gallons (Imperial)	10,000 mL	40 Metric cups
Desired concentration of sodium hypochlorite (PPM)	1,000				
Concentration of bleach solution (%)	5.25				

In the cells below is the volume of bleach solution, at 5.25% concentration, that should be added to 9809.523 ml or 9.809 L of water to equal a total volume of 10000 ml or 10 L (1:52 dilution of bleach to water ratio)

mL	190.477	Use a graduated pipet/cylinder
L	0.19	
Gallons (US)	0.05	Too small to accurately measure; use another unit of measurement
Gallons (Imperial)	0.04	Too small to accurately measure; use another unit of measurement
Grams	190.477	Use an accurate weigh scale
Kilograms	0.19	
Fluid oz.	6.44	
Teaspoon	38 1/8	Unit too large, consider using another unit of measurement
Tablespoon	12 6/8	
Metric cup	6/8	

The calculation performed above is based on the following equation:

$$C1 \times V1 = C2 \times V2$$

Where:

- C1** is the initial concentration of the bleach (sodium hypochlorite) solution.
- V1** is the volume of bleach to be diluted with water. This is what you are trying to calculate.
- C2** is the concentration of the diluted bleach solution you are preparing.
- V2** is the volume of bleach solution you are preparing.

**Contact:** If you have any questions or ideas on how to improve this calculator please contact Dru Sahai at [dru.sahai@oahpp.ca](mailto:dru.sahai@oahpp.ca)

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