

Dilution Calculator - ppb, ppm, ppt, pph

Calculators for preparing physiological and biochemical solutions

Meant to be used in both the teaching and research laboratory, this calculator (see below) can be utilized to perform dilution calculations when working with solutions having the following concentration units: parts per billion (ppb), parts per million (ppm), parts per thousand (ppt), and parts per hundred (pph, %). Additional dilution calculators are also available and are suited to more specialized applications (see here).

If you wish to perform dilution factor or fold dilution calculations for solutions with the concentration expressed in parts per billion (ppb), parts per million (ppm), parts per thousand (ppt), or parts per hundred (pph, %), please use our Dilution Factor Calculator - Parts per Billion (ppb), Parts per Million (ppm), Parts per Thousand (ppt), Parts per Hundred (pph, %).

If you are starting with the solid material and wish to make a solution with the concentration expressed in parts per billion (ppb), parts per million (ppm), parts per thousand (ppt), or parts per hundred (pph, %), please use our Parts per Billion (ppb), Parts per Million (ppm), Parts per Thousand (ppt), Parts per Hundred (pph, %) Concentration Calculator.

Dilution equation

Dilution Equation

C1 is the concentration of the stock solution.

V1 is the volume to be removed (i.e., aliquoted) from the concentrated stock solution.

C2 is the final concentration of the diluted solution.

V2 is the final volume of the diluted solution. This is the volume that results after V1 from the stock solution has been diluted with diluent to achieve a total diluted volume of V2.

An alternative and commonly-used notation for this equation is $M_1V_1 = M_2V_2$, where M is used in place of C.

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Each calculator cell shown below corresponds to a term in the formula presented above. Enter appropriate values in all cells except the one you wish to calculate. Therefore, at least three cells must have values, and no more than one cell may be blank. The value of the blank cell will be calculated based on the other values entered. After a calculation is performed, the calculated cell will be highlighted and

subsequent calculations will calculate the value of the highlighted cell (with no requirement to have a blank cell). However, a blank cell has priority over a highlighted cell.

For convenience, this calculator allows you to select different volume and concentration units, and the necessary conversions are carried out for you to obtain the value of the blank cell in the desired unit.

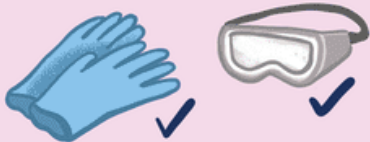
How to Prepare a 1 M NaOH Solution

Sodium hydroxide (NaOH) is a common and useful strong base.

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|--|---|--|---|
| <p>1. Fill a clean volumetric flask halfway with water.</p>  | <p>2. Add 1.0 M NaOH (40.0 g).</p>  | <p>3. Add water to reach the 1.0 liter mark.</p>  | <p>4. Mix to obtain a 1.0 M NaOH solution.</p>  |
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SAFETY

- Warning: NaOH is corrosive and can cause chemical burns. Do not touch NaOH.
- Wear safety goggles and gloves.
- If you get NaOH on your skin, immediately rinse with a large volume of water.



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