

Dilutions

1. When 15.0 mL of a concentrated sodium hydroxide solution (19.1 M) is diluted to 250.0 mL, a solution which can be used in cleaning and disinfecting results. Determine the concentration of this solution. *(1.15 M)*
2. Commercial sulfuric acid has a concentration of 17.6 M. If 2.00 L of 2.50 M $\text{H}_2\text{SO}_{4(\text{aq})}$ is needed in the lab, what volume of the concentrated solution is required? *(0.284 L)*
3. What volume of 0.750 mol/L sodium hydroxide solution can be prepared from 25.0 mL of a 2.50 mol/L solution ? *(83.3 mL)*
4. What would be the concentration of a hydrochloric acid solution prepared by diluting 50.0 mL of 12.0 M hydrochloric acid to a volume of 2.00 L? *(0.300 M)*
5. Calculate the concentration of the solution formed if a 5.00 mL 10.0 M nitric acid is placed in a 500.0 mL volumetric flask and filled up to the mark with deionized water. *(0.100 M)*
6. What volume of 7.50 M sulfuric acid can be prepared from 5.0 L of concentrated sulfuric acid (18.0 M)? *(12.0 L)*
7. A 1.00 L solution of concentrated 12.0 M $\text{H}_2\text{SO}_{4(\text{aq})}$ is diluted to produce a solution with a concentration of 9.0 M. What *volume of water must be added* to the concentrated solution to produce the desired concentration? *(333 mL added)*