

## Test yourself for Volumetry before the next titration lectures

What is the molar concentration of  $\text{CuSO}_4$  and  $[\text{Cu}^{+2}]$  if you have a solution 0.25% (w/v) of  $\text{CuSO}_4$  (MW: 159.61 g/mol)?

If you have a solution of  $\text{K}_3\text{PO}_4$  that is 0.1 M, what is  $[\text{PO}_4^{-3}]$ ,  $[\text{K}^+]$ , and what is  $\text{K}^+$  conc. in ppm?

If you have a solution that is  $\text{HNO}_3$  65% (w/w), MW: 63.01, Sp. gr.: 1.39. What is the molar concentration of  $\text{HNO}_3$ ? Then describe how should you prepare 500 mL, 0.2 M  $\text{HNO}_3$  using the above solution?

If you have a 250 mL solution of 0.15 M  $\text{CdCl}_2$  (MW: 183.32), Calculate ppm conc. of  $\text{Cd}^{+2}$  (AM: 112.41), and number of millimoles  $\text{Cd}^{+2}$  in solution?

If an  $\text{NH}_3$  Solution [28% (w/w), MW: 17.03, Sp. gr.: 0.9] was diluted within a dilution factor 1:120 what is the molar and ppm concentration of the diluted solution?

If you have sodium oxalate solution of  $[\text{Na}_2\text{C}_2\text{O}_4] = 0.13$  M, What is the % w/v of  $\text{Na}_2\text{C}_2\text{O}_4$ ? What is ppm concentration of  $\text{Na}^+$  in this solution?

What is  $[\text{K}^+]$  if you dissolved 1.358 g of KI (MW: 166) assayed 85.88% (w/w) in 100 mL volumetric flask?

A stock solution of 5.50 M  $\text{Na}_2\text{CO}_3$  (MW: 105.99) solution was diluted as follows: 5.0 mL of stock solution were transferred into 50 mL volumetric flask and diluted with water. 13.5 mL of the resulting solution were further diluted into 100 mL volumetric flask. 8.0 mL of the solution were diluted into 25 mL volumetric flask. From end solution 10.0 mL were titrated with 0.1 M HCl. Calculate the volume in mL consumed in titration?

