

Solution Stoichiometry, Extra Exercises

Complete the following stoichiometric problems. Communicate your problem-solving approach using internationally accepted symbols for elements, quantities, numbers, and units.

1. What is the amount concentration of a KOH(aq) solution if 12.8 mL of this solution is required to react with 25.0 mL of 0.110 mol/L $\text{H}_2\text{SO}_4\text{(aq)}$?
2. What volume of 0.125 mol/L NaOH(aq) is required to react completely with 15.0 mL of 0.100 mol/L $\text{Al}_2(\text{SO}_4)_3\text{(aq)}$?
3. In a chemical analysis, a 10.0 mL sample of $\text{H}_3\text{PO}_4\text{(aq)}$ was reacted with 18.2 mL of 0.259 mol/L NaOH(aq) . Calculate the amount concentration of the phosphoric acid.
4. The concentration of magnesium ions (assume magnesium chloride) in sea water was analyzed and found to be 50.0 mmol/L. What volume of 0.200 mol/L sodium hydroxide solution would be needed in an industrial process to precipitate all of the magnesium ions from 1.00 ML of sea water?