

Concentration of Ions

1. What is the concentration of all the ions in a 0.750 M solution of aluminum sulfate? (Ans: 2.25M)

2. A 4.691 g sample of MgCl_2 is dissolved in enough water to give 750. mL of solution. What is the magnesium ion concentration in this solution? (Ans: $6.57 \times 10^{-2} \text{ M}$)

Calculating Molarity:

3. What is the molarity of a solution that has 235 g glucose ($\text{C}_6\text{H}_{12}\text{O}_6$) in 5.00 L water? (Ans: 0.261M)

4. How many moles of glucose are in 1.89 L of the solution above? (Ans: 0.494 mol)

5. What is the molarity of a solution prepared by dissolving 10.7 g NaI in 0.250 L? (Ans: 0.285 M)

6. How many grams of KCl are needed to make 50.0 mL of 2.45 M KCl? (Ans: 9.13g)

7. How many grams of LiF would be present in 575 mL of 0.750 M LiF solution? (Ans: 11.2g)

Dilution

8. What volume of 6.0 M H_2SO_4 is needed to make 500.00 mL of 0.25 M H_2SO_4 solution? (Ans: 0.0208L)

9. What molarity should the stock solution be if you want to dilute 25.0 mL to 2.00 L and have the final concentration be 0.103 M ? (Ans: 8.24 M)

10. If you add 4.00 mL of pure water to 6.00 mL of 0.750 M NaCl solution, what is the concentration of sodium chloride in the diluted solution? (Ans: 0.450 M)