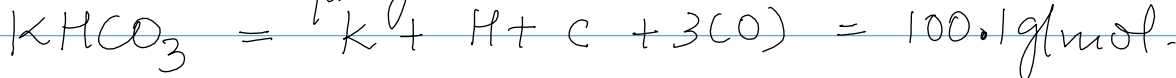


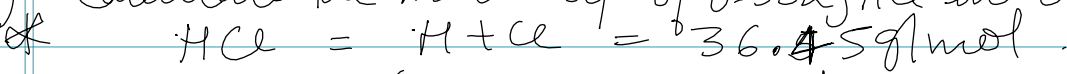
Molarity: ①

- 1) What is the molarity of a solution that has 333g potassium hydrogen carbonate dissolved in 10.0L water?



$$M = \frac{\text{mol}}{\text{L}}$$
$$M = \frac{333 \text{ g} \times \frac{1 \text{ mol}}{100.1 \text{ g}}}{10.0 \text{ L}} \quad \left| \quad \begin{array}{l} 333 \text{ g KHCO}_3 \times \frac{1 \text{ mol}}{100.1 \text{ g}} = 3.327 \text{ mol} \\ M = \frac{3.327 \text{ mol}}{10.0 \text{ L}} = \boxed{0.333 \text{ M KHCO}_3} \end{array} \right.$$

- 2) Calculate the molarity of 0.552g HCl in 0.592L solution.



$$M = \frac{\text{mol}}{\text{L}} = \frac{(0.552 \text{ g} \times \frac{1 \text{ mol}}{36.45 \text{ g}})}{0.592 \text{ L}} = \frac{0.01514 \text{ mol}}{0.592 \text{ L}} = \boxed{0.0256 \text{ M HCl}}$$

- 3) How would you prepare 0.500L of a 6.68M NaOH solution?

① $M = \frac{\text{mol}}{\text{L}}$ strategy - find mols \rightarrow g NaOH.

$$\text{mol} = M \times L = 6.68 \frac{\text{mol}}{\text{L}} \times 0.500 \text{ L} = 3.34 \text{ mol}$$

$$3.34 \text{ mol NaOH} \times \frac{39.98 \text{ g}}{1 \text{ mol NaOH}} = 133.5 \text{ g} \quad \boxed{134 \text{ g NaOH}}$$

- 4) How would you make 10.0mL of a 0.100M KOH solution?

$$M = \frac{\text{mol}}{\text{L}} \quad \text{mol} = M \times L = 0.100 \frac{\text{mol}}{\text{L}} \times 0.010 \text{ L} = 0.001 \text{ mol}$$

$$0.001 \text{ mol KOH} \times \frac{56.096 \text{ g}}{1 \text{ mol}} = \boxed{0.0561 \text{ g KOH}}$$

Dissolve 0.0561g of KOH in 10mL H₂O.