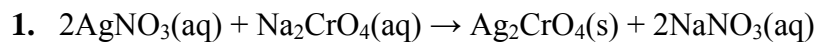


CHAPTER 7	Solution Stoichiometry Problems Answer Key	BLM 7.2.5A
ANSWER KEY		

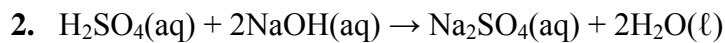


$$\text{(a)} \quad n_{\text{Ag}_2\text{CrO}_4} = 0.200 \text{ mol AgNO}_3 \times \frac{1 \text{ mol Ag}_2\text{CrO}_4}{2 \text{ mol AgNO}_3} = 0.100 \text{ mol Ag}_2\text{CrO}_4(\text{s})$$

$$\text{(b)} \quad n_{\text{NaNO}_3} = 0.500 \text{ L} \times 0.300 \frac{\text{mol}}{\text{L}} \text{Na}_2\text{CrO}_4 \times \frac{2 \text{ mol NaNO}_3}{1 \text{ mol Na}_2\text{CrO}_4} = 0.300 \text{ mol NaNO}_3(\text{aq})$$

$$\text{(c)} \quad m_{\text{Ag}_2\text{CrO}_4} = 0.200 \text{ L} \times 0.500 \frac{\text{mol}}{\text{L}} \text{AgNO}_3 \times \frac{1 \text{ mol Ag}_2\text{CrO}_4}{2 \text{ mol AgNO}_3} \times 331.74 \frac{\text{g}}{\text{mol}} \text{Ag}_2\text{CrO}_4$$

$$m_{\text{Ag}_2\text{CrO}_4} = 16.6 \text{ g Ag}_2\text{CrO}_4(\text{s})$$

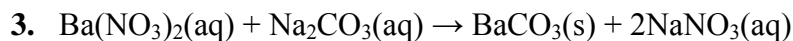


$$\text{(a)} \quad V_{\text{H}_2\text{SO}_4} = 0.0473 \text{ L} \times 0.224 \frac{\text{mol}}{\text{L}} \text{NaOH} \times \frac{1 \text{ mol H}_2\text{SO}_4}{2 \text{ mol NaOH}} \times \frac{\text{L}}{0.320 \text{ mol}} \text{H}_2\text{SO}_4$$

$$V_{\text{H}_2\text{SO}_4} = 0.0166 \text{ L} = 16.6 \text{ mL H}_2\text{SO}_4(\text{aq})$$

$$\text{(b)} \quad c_{\text{H}_2\text{SO}_4} = 0.0500 \text{ L NaOH} \times 0.540 \frac{\text{mol}}{\text{L}} \text{NaOH} \times \frac{1 \text{ mol H}_2\text{SO}_4}{2 \text{ mol NaOH}} \times \frac{1}{0.0856 \text{ L H}_2\text{SO}_4}$$

$$c_{\text{H}_2\text{SO}_4} = 0.158 \frac{\text{mol}}{\text{L}} \text{H}_2\text{SO}_4(\text{aq})$$



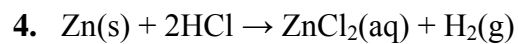
$$\text{(a)} \quad m_{\text{Na}_2\text{CO}_3} = 0.120 \text{ L Ba}(\text{NO}_3)_2 \times 0.0500 \frac{\text{mol}}{\text{L}} \text{Ba}(\text{NO}_3)_2 \times \frac{1 \text{ mol Na}_2\text{CO}_3}{1 \text{ mol Ba}(\text{NO}_3)_2} \times 105.99 \frac{\text{g}}{\text{mol}} \text{Na}_2\text{CO}_3$$

$$m_{\text{Na}_2\text{CO}_3} = 0.636 \text{ g Na}_2\text{CO}_3(\text{aq})$$

$$\text{(b)} \quad m_{\text{BaCO}_3} = 0.120 \text{ L Ba}(\text{NO}_3)_2 \times 0.0500 \frac{\text{mol}}{\text{L}} \text{Ba}(\text{NO}_3)_2 \times \frac{1 \text{ mol BaCO}_3}{1 \text{ mol Ba}(\text{NO}_3)_2} \times 197.34 \frac{\text{g}}{\text{mol}} \text{BaCO}_3$$

$$m_{\text{BaCO}_3} = 1.18 \text{ g BaCO}_3(\text{s})$$

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$$\text{(a) } n_{\text{HCl}} = 5.77 \text{ g Zn} \times \frac{\text{mol}}{65.41 \text{ g}} \text{ Zn} \times \frac{2 \text{ mol HCl}}{1 \text{ mol Zn}} = 0.176 \text{ mol HCl(aq)}$$

$$\text{(b) } c_{\text{ZnCl}_2} = 0.176 \text{ mol HCl} \times \frac{1 \text{ mol ZnCl}_2}{2 \text{ mol HCl}} \times \frac{1}{0.100 \text{ L}} \text{ ZnCl}_2 = 0.880 \frac{\text{mol}}{\text{L}} \text{ ZnCl}_2(\text{aq})$$