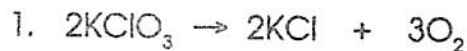


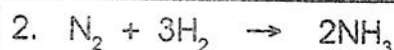
STOICHIOMETRY: MASS-MASS PROBLEMS

Name KEY



How many grams of potassium chloride are produced if 25 g of potassium chlorate decompose?

$$25\text{g KClO}_3 \times \frac{1\text{mol KClO}_3}{122.6\text{g KClO}_3} \times \frac{2\text{mol KCl}}{2\text{mol KClO}_3} \times \frac{74.6\text{g KCl}}{1\text{mol KCl}} = \boxed{15.3\text{g KCl}}$$

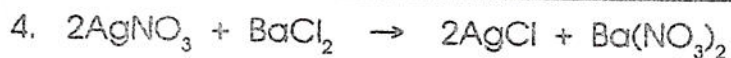


How many grams of hydrogen are necessary to react completely with 50.0 g of nitrogen in the above reaction?

$$50.0\text{g N}_2 \times \frac{1\text{mol N}_2}{28.0\text{g N}_2} \times \frac{3\text{mol H}_2}{1\text{mol N}_2} \times \frac{2.0\text{g H}_2}{1\text{mol H}_2} = \boxed{10.7\text{g H}_2}$$

3. How many grams of ammonia are produced in the reaction in Problem 2?

$$50.0\text{g N}_2 \times \frac{1\text{mol N}_2}{28.0\text{g N}_2} \times \frac{2\text{mol NH}_3}{1\text{mol N}_2} \times \frac{17.0\text{g NH}_3}{1\text{mol NH}_3} = \boxed{60.7\text{g NH}_3}$$



How many grams of silver chloride are produced from 5.0 g of silver nitrate reacting with an excess of barium chloride?

$$5.0\text{g AgNO}_3 \times \frac{1\text{mol AgNO}_3}{169.9\text{g AgNO}_3} \times \frac{2\text{mol AgCl}}{2\text{mol AgNO}_3} \times \frac{143.4\text{g AgCl}}{1\text{mol AgCl}} = \boxed{4.2\text{g AgCl}}$$

5. How much barium chloride is necessary to react with the silver nitrate in Problem 4?

$$5.0\text{g AgNO}_3 \times \frac{1\text{mol AgNO}_3}{169.9\text{g AgNO}_3} \times \frac{1\text{mol BaCl}_2}{2\text{mol AgNO}_3} \times \frac{208.3\text{g BaCl}_2}{1\text{mol BaCl}_2} = \boxed{3.1\text{g BaCl}_2}$$