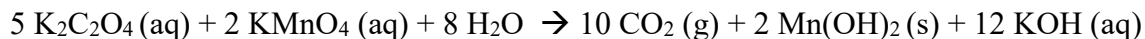


1. 25.0 g of $\text{K}_2\text{C}_2\text{O}_4$ is reacted with KMnO_4 according to the following chemical equation.



MW 166.2 158.04 44.01 88.96 56.11

- How many grams of KMnO_4 are required for this reaction?
 - How many grams of $\text{Mn}(\text{OH})_2$ will be produced?
 - If the reaction is done in 2.5 L of solution, what will be the concentration of OH^- at the end?
 - If CO_2 is collected, and its density is 1.98 kg/m^3 , how many liters of CO_2 will be formed?
- What volume of 0.150 M NaOH solution is required to react completely with 50.0 mL of 0.200 M HCl solution? [Write the chemical equation first.]
 - What volume of 0.120 M NaOH solution is required to react completely with 40.0 mL of 0.200 M H_2SO_4 solution? [Write the chemical equation first.]
 - A 0.5010 g sample of diprotic acid H_2A (MW 120.0) is titrated with 35.0 mL of an NaOH solution. What is the concentration of the NaOH solution? [Write the chemical equation first.]
 - If, in a titration, 0.7520 g of an unknown diprotic acid " H_2X " requires 15.00 mL of 0.2390 M NaOH to reach the equivalence point, what is the molar mass of H_2X ? [Write the chemical equation first.]
 - How many liters of air with density 1.23 kg/m^3 is needed to completely burn 350 g of propane (C_3H_8 , MW 44.1)? [What are the reactants? Write the chemical equation first.]

Answers

1. a. 9.51 g b. 5.35 g c. 0.144 M d. 6.7 L

2. 66.7 mL

3. 133 mL

4. 0.239 M

5. 419.4 g/mol

6. 4920 L