

1. What is the molarity of a solution made from 20.0 mL of 1.2 grams of sodium chloride?
2. 235 mL of a 0.110 M potassium chloride solution mixes with a solution of lead (II) nitrate. Assume that there is excess lead (II) nitrate.
 - A) Write the molecular and NIE for this reaction.

 - B) What is the mass of the precipitate?
3. Aluminum reacts with hydrochloric acid to form hydrogen gas and _____. How many grams of hydrogen gas can be produced by the reaction of 54.0 grams of Al(s) with an excess of hydrochloric acid?
4. How many mL of a 0.150 M sodium iodide solution must be added to 75.0 mL of a 0.250 M lead (II) nitrate solution to precipitate all of the lead?
5. The neutralization of 25.0 mL of 0.24 M hydrochloric acid requires 5.0 mL of barium hydroxide. What is the molarity of the barium hydroxide solution?

6. 0.2500 g hydrofluoric acid is added to 50.0 mL of a 0.500 M sodium carbonate solution.

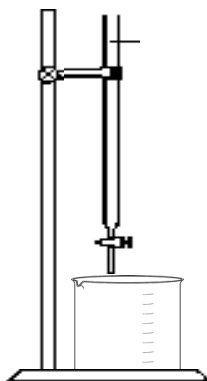
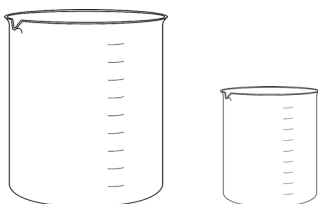
A) What is the concentration of the excess reactant after the reaction has occurred?

B) Is the pH of the resulting solution basic, neutral, or acidic? Why?

7. A 2.35 g impure sample of magnesium oxide was dissolved in 50.0 mL of 0.183 M hydrochloric acid, and the excess acid was titrated to an end-point by 13.4 mL of 0.105 M sodium hydroxide.

A) Draw what **occurred** in the **first reaction** in the diagram below.

B) Draw what **occurred** in the **second reaction** in the diagram below.



C) What are the molecular equations for each reaction?

D) Using solution stoichiometry, what was the mass of the magnesium oxide sample?

E) What was the mass percent of magnesium oxide in the impure sample?