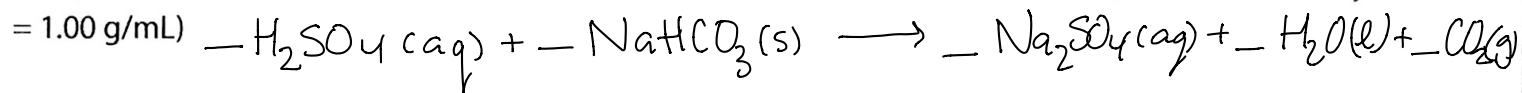


## Practice Problems — Limiting and Excess Stoichiometry

1. 25.0 g each of zinc metal and HCl dissolved in aqueous solution are reacted together. What volume of hydrogen gas, measured at STP, is formed and what mass of excess reactant is left over?

2. An acid spill containing 12.0 g of pure sulphuric acid is neutralized by 80.0 g of sodium bicarbonate (baking soda). What volume of water is formed? What mass of excess reactant is left over? (Reminder: density of water = 1.00 g/mL)



3. When ammonia is passed over hot calcium, calcium hydride and nitrogen gas are formed. What mass of calcium hydride results when 20.0 L of ammonia measured at STP and 150 g of calcium are reacted? What quantity of excess reactant remains?

## Practice Problems — Percentage Yield

1. A chunk of zinc metal reacts with an excess of hydrochloric acid solution. What is the percentage yield if a 7.23 g piece of zinc produces 2.16 L of hydrogen gas at STP? Begin with a balanced equation.
2. A solution containing 15.2 g of barium bromide is reacted with a solution containing excess sodium phosphate to form 9.5 g of precipitate. What is the percentage yield of the reaction? Begin with a balanced equation.
3. Copper(II) oxide reacts with hydrogen gas to form water and copper metal. From this reaction, 3.6 g of copper metal was obtained with a yield of 32.5%. What mass of copper(II) oxide was reacted with the excess hydrogen gas? Begin with a balanced equation.