

Name: _____ per _____

Gas Stoichiometry

Practice Sheet #32

Prep

1. Hydrogen is combined with oxygen to form water.
 - a. Write a balanced chemical equation for this reaction.

 - b. What volume and mass of hydrogen and oxygen (at STP) would be required to produce 27.0 g of water?

2. Nitrogen monoxide reacts with oxygen to produce nitrogen dioxide.
 - a. Write a balanced chemical equation for this reaction.

 - b. If 140 L of oxygen react at STP, what volume of and mass of nitrogen monoxide is required?

 - c. If 15.0 g of nitrogen monoxide react, what volume of and mass of oxygen (at STP) is required?

3. Nitrogen monoxide reacts with chlorine to form nitrosyl chloride (NOCl) at STP.
 - a. Write a balanced chemical equation for this reaction.

 - b. If there is 448 g of nitrogen monoxide, what volume and mass of nitrosyl chloride will be produced (at STP)?

Name: _____ per _____

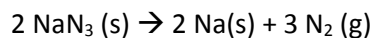
4. Propyne (C_3H_4) undergoes combustion with oxygen to produce carbon dioxide and water.

a. Write a balanced chemical equation for this reaction.

b. If 52.0 L of propyne at 1.24 atm and 2870 °C, what volume and mass of oxygen is required?

c. What volume and mass of carbon dioxide water will be produced?

5. Automobile air bags inflate following a serious impact. The impact triggers the chemical reactions:



a. If an automobile air bag has a volume of 11.8 L, how much NaN_3 in grams is required to fully inflate the air bag upon impact? Assume STP conditions.