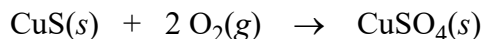


Ch 5/Worksheet/Gases-Partial Pressure and Stoichiometry/Name: _____

- 1) A sample of air collected at STP contains 0.039 moles of N₂, 0.010 moles of O₂, and 0.001 moles of Ar. (Assume no other gases are present.)
- Find the partial pressure of O₂.
 - What is the volume of the container?
- 2) A sample of hydrogen gas (H₂) is collected over water at 19°C.
- What are the partial pressures of H₂ and water vapor if the total pressure is 756 mm Hg?
 - What is the partial pressure of hydrogen gas in atmospheres?
- 3) What volume of O₂ at 710. mm Hg pressure and 36°C is required to react with 6.52 g of CuS? (*Ans: 3.7 L*)



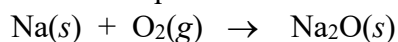
4) Write a balanced equation for the production of ammonia gas (NH₃) from nitrogen gas (N₂) and hydrogen gas (H₂).

a) What volume of ammonia is produced from 4.50 liters of H₂ at STP? (*Ans: 3.00 L*)

b) What mass of ammonia is produced from 5.60 liters of N₂ at STP? (*Ans: 8.50 g*)

c) What volume of ammonia is produced from 12.1 grams of H₂ at 25°C and 1.00 atmosphere pressure? (*Ans: 98.0L*)

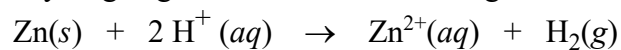
5) Use the following chemical equation to answer the questions below:



a) How many grams of sodium are needed to completely react with 2.80 liters of O₂ at STP? (*ans: 11.5g*)

b) What volume of O₂ at 25°C and 2.00 atm is needed to completely react with 4.60 grams of sodium? (*Ans: 0.610 L*)

- 6) To prepare a sample of hydrogen gas, a student reacts 7.78 grams of zinc with acid:



The hydrogen is collected over water at 22°C and the total pressure of gas collected is 750. mm Hg. What is the partial pressure of H₂? What volume of wet hydrogen gas is collected?

(Ans: 3.00 L)

- 7) Hydrogen peroxide was catalytically decomposed and 75.3 mL of oxygen gas was collected over water at 25°C and 742 torr. What mass of oxygen was collected?
a) 0.00291 g b) 0.0931 g c) 0.0962 g d) 0.0993 g e) 0.962 g

Vapor Pressure of Water

Temp (°C)	15	16	17	18	19	20	21	22	23	24	25
P _{H₂O} (mm Hg)	13	14	15	15	16	18	19	20	21	22	24