

Name _____ Date _____ Period _____

Gas Ws #5: Introduction to Gas Law Stoichiometry

- How many liters of hydrogen gas will be produced at 280.0 K and 96.0 kPa if 40.0 grams of sodium react with excess hydrochloric acid?
- Magnesium metal will burn in carbon dioxide gas to produce carbon and magnesium oxide. What mass of magnesium will react with a 250.0 ml container of carbon dioxide gas at 77.0°C and 65.0 kPa?
- Ammonia (NH₃) and oxygen gases react to form nitrogen monoxide gas and water vapor. Write a balanced equation.
 - At STP, what volume of oxygen is needed to burn 15.0 liters of ammonia?
 - When the Pressure is 1.2 atm and the temperature is 25°C, what volume of oxygen is needed to burn 15.0 liters of ammonia?
 - When the temperature is 350.0 K and the pressure is 100.0 kPa, how many grams of water are produced when 15.0 liters of ammonia burn?
- Solid LiOH has been used in spacecraft to remove exhaled CO₂ from the environment as shown by the reaction $2\text{LiOH} + \text{CO}_2 \rightarrow \text{Li}_2\text{CO}_3 + \text{H}_2\text{O}$. How many grams of LiOH must be used to absorb the CO₂ that exerts a partial pressure of 5.00 kPa at 15.0°C in a space laboratory that has a volume of 80.0L.