

- 183 ml of a gas is collected over water at  $25.3^{\circ}\text{C}$  and 723.3 mm of Hg. If the molecular mass of the gas is 70.8 g/mole, what is the mass of the gas? .486 g
- 6.20 grams of aluminum react with 25.0 ml of 3.50 M hydrochloric acid (hydrogen chloride). What volume of hydrogen will be produced at  $35.0^{\circ}\text{C}$  and 95.2 kPa? Which reactant is left over? 1.18 L, 5.41 g Al left over.
- 36.72 grams of potassium chlorate decompose into potassium chloride and oxygen when heated. What volume of oxygen will be collected at 850.4 mm Hg and  $35.6^{\circ}\text{C}$ ? 10.18 L
- 159.3 ml of hydrogen is collected over water at  $32.8^{\circ}\text{C}$  and barometric pressure of 754.6 mm Hg by the reaction of sodium with water. Sodium hydroxide is also produced. How much sodium was needed for the reaction? 0.272 g
- $652\text{ cm}^3$  of a gas is collected over water at 62.62 kPa and  $38.4^{\circ}\text{C}$ . What will be the volume of the dry gas at 97.5.0 kPa and  $15.9^{\circ}\text{C}$ ?  $345\text{ cm}^3$
- 15.0 g calcium and 15.3 ml of 0.0145 M phosphoric acid (hydrogen phosphate) react to produce hydrogen gas and calcium phosphate. What will be the volume of hydrogen if it is collected at 89.3 kPa and  $28.9^{\circ}\text{C}$ ? 9.35 ml
- What is the density of nitrogen gas at  $25.1^{\circ}\text{C}$  and 102.3 kPa? 1.16 g/L
- 2.346 grams of propane ( $\text{C}_3\text{H}_8$ ) are burned with 66.23 liters of oxygen at STP. What volume of carbon dioxide will be produced at 92.3 kPa and  $221^{\circ}\text{C}$ ? 7.14 L
- 84.23 liters of hydrogen are collected over water at  $52^{\circ}\text{C}$  and 103.3 kPa by reacting excess nitric acid (hydrogen nitrate) with aluminum. What mass of aluminum was required for the reaction? 50.26 g
- 113 ml of oxygen are **collected over water** at  $32.0^{\circ}\text{C}$  and 741 torr. What will be the volume of dry oxygen at  $25.0^{\circ}\text{C}$  and 782 torr? 99.6 ml
- Water reacts with 62.32 grams of lithium to produce hydrogen and lithium hydroxide. What volume of hydrogen gas will be collected at 735 mm Hg and  $27.3^{\circ}\text{C}$ ? 114