

1. What is the volume of 12.5 g of  $\text{N}_2\text{O}$  (g) at STP?

**6.36 L  $\text{N}_2\text{O}$**

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2. How many grams of  $\text{CO}_2$  (g) can be in a balloon with a volume of 12.5 L at STP?

**24.6 g  $\text{CO}_2$**

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3. Determine the density of  $\text{Cl}_2$  gas at STP.

**3.17 g/L**

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4. What is the molar mass of 2.52 g of an unknown gas in a balloon with a volume of 20.2 L at STP?

**2.79 g/mol**

5. What pressure in atmospheres (atm) is exerted by 2.54 g of steam ( $\text{H}_2\text{O}$ ) at its boiling point of  $100.0^\circ\text{C}$  and in a volume of 2.00 L?

**2.16 atm**

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6. What volume will 10.0 g of  $\text{O}_2$  occupy at a temperature of  $22.0^\circ\text{C}$  and a pressure of 745 torr?

**7.72 L**

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7. How many grams of  $\text{SO}_3$  gas are in 15.2 L at a pressure of 652 mm Hg and a temperature of  $25.0^\circ\text{C}$ ?

**42.7 g  $\text{SO}_3$**