

Density = Mass/ Volume	1 Mole = 22.4 Liters of Gas
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1. Calculate the density of carbon dioxide at STP.

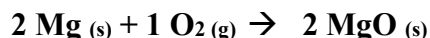
$$\text{Density} = \frac{\text{mass}}{\text{volume}} = \frac{\text{molar mass}}{\text{molar volume}} = \text{_____} =$$

2. Calculate the density of helium gas at STP.

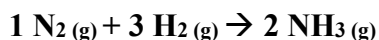
3. Calculate the density of ammonia at STP.

The following problems are NOT at STP:

4. If the density of oxygen gas is 1.29 g/L, how many grams of magnesium will react with 100 ml of oxygen gas at STP?



5. In 1905, Fritz Haber discovered a method for producing ammonia from the nitrogen in air use the reaction below:



The process involves heating the reactants to 450 °C and increasing the pressure to 200 atmospheres in the presence of an iron catalyst. The density of the hydrogen gas under these conditions is 6.724 g/L, and the density of ammonia gas is 57.15 g/L. How many liters of ammonia gas will be produced, if 500.0 L of hydrogen gas react with excess nitrogen gas?