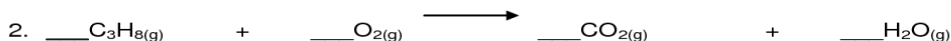


Gas Law Stoichiometry Worksheet**Directions: Use significant figures and units in the problems below.**

1. Given the following unbalanced chemical equation for the combination reaction of sodium metal and chlorine gas:



- a. What volume of chlorine gas, measured at STP, is necessary for the complete reaction of 4.81 g of sodium metal.



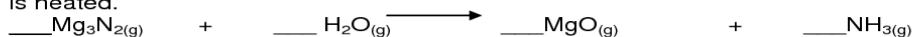
- a. Balance the above reaction.
b. What volume of oxygen gas at 25°C and 1.04 atm is needed for the complete combustion of 5.53 g of propane?

3. Potassium permanganate, KMnO_4 , is produced commercially by oxidizing aqueous potassium manganate, K_2MnO_4 . \longrightarrow



- a. Balance the above reaction.
b. What volume of $\text{Cl}_2(g)$, measured at STP, is needed to produce 10.0 g of KMnO_4 ?

4. If water is added to magnesium nitride, ammonia gas is produced when the mixture is heated.



- a. Balance the above reaction.
b. If 10.3 g of magnesium nitride is treated with 10.3 g of water, what volume of ammonia gas would be collected at 24°C and 752 mmHg?