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Quiz 11.2

1. Ethylene burns in oxygen to form carbon dioxide and water vapor:

 $C_2H_4(g) + 3 O_2(g) \rightarrow 2 CO_2(g) + 2 H_2O(g)$

How many liters of water can be formed if 1.25 liters of ethylene are consumed in this reaction?

2. When chlorine is added to acetylene, 1,1,2,2-tetrachloroethane is formed:

 $2~CI_2(g)+C_2H_2(g) \longrightarrow C_2H_2CI_4(I)$ How many liters of chlorine will be needed to make 75.0 grams of $C_2H_2CI_4?$

3. What volume of oxygen is needed to react with solid sulfur to form 3.5 L SO₂?

 $__S + __O_2 \rightarrow __SO_2$

4. How many liters of propane gas (C₃H₈) will undergo complete combustion with 34.0L of oxygen gas? Equation:

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5. Ammonium nitrate is a common ingredient in chemical fertilizers. Use the reaction shown to calculate the mass of solid ammonium nitrate that must be used to obtain 0.100 L of dinitrogen monoxide gas at STP.

_____NH4NO3(s)
$$\rightarrow$$
 _____N2O(g) + _____ H2O(g)

6. Solid potassium metal will react with Cl₂ gas to form ionic potassium chloride. How many liters of Cl₂ gas are needed to completely react with 204 g of potassium at STP?