

**Ch5/ PowerPoint Study-4Gases-Gas Stoichiometry**      **Name:**

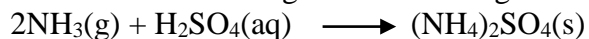
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*Answer these questions as you are watching the videos. They are due in class.*

*These questions are not just for you to answer but also to prepare you for the exam.*

*Make sure you understand what you are writing and not just copy from the text book. **Show all work.***

- 1) What volume of ammonia gas, measured at 660.3 mmHg and 58.2°C, is required to produce 6.46 g of ammonium sulfate according to the following balanced chemical equation? (ans: 3.07 L)



Strategy:

- a) Calculate the mols of ammonium sulfate.

- b) What is the mol ratio of ammonium sulfate to ammonia?

- c) Use the mols from (b) to substitute in the ideal gas law to find volume of ammonia gas.

- 2) What grams of  $\text{CaCO}_3$  will produce 34.8 L volume of  $\text{CO}_2$  gas at 645 torr and 800 K according to the equation  $\text{CaCO}_3(\text{s}) \rightarrow \text{CaO}(\text{s}) + \text{CO}_2(\text{g})$ ? (ans: 45 g)

Strategy:

- a) Use the ideal gas law to find the mols of carbon dioxide.

- b) Find the mol ratio of carbon dioxide to calcium carbonate.

- c) Find the grams in mols of calcium carbonate from (b).

*(We will do “gases over water” in class practice)*