

## Honors Gas Law Stoichiometry Homework

When sodium bicarbonate is added to sulfuric acid, the following reaction takes place:



- a) How many liters of carbon dioxide gas will be formed if 175 grams of sodium bicarbonate reacts with an excess of sulfuric acid at STP?
- b) If 76 liters of carbon dioxide gas are actually formed, what was my percent yield for the reaction? Is this answer reasonable?
- c) If I run this reaction at 450<sup>0</sup> C and 1.50 atm, sulfuric acid becomes a gas and reacts more quickly with sodium bicarbonate. How many liters of carbon dioxide gas would we expect to form if we combined 225 liters of gaseous sulfuric acid with 125 grams of sodium bicarbonate? What is the limiting reagent for this reaction?
- d) How much of the excess reagent will be left over at the end of the reaction from part c)?