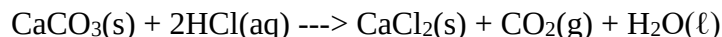


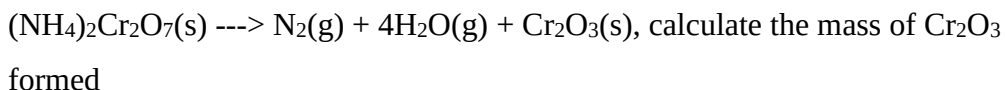
1. This reaction was carried out:



If 10.0 grams of CaCO_3 was used, calculate

- a. What would be the volume of CO_2 (at STP) produced from the complete reaction?
- b. What mass of CaCl_2 was produced
- c. How many moles of H_2O was produced

2. 0.84 g of ammonium dichromate is decomposed. Here is the chemical reaction:



3. Calculate the mass of solid product obtained when 16.8 g of NaHCO_3 was strongly heated until there was no further change
4. In an experiment, 10 ml of ethane was burnt in 50 ml of oxygen
 - a. Which gas was supplied in excess?
 - b. Calculate the volume of the excess gas remaining at the end of the reaction
 - c. Calculate the volume of CO_2 produced
5. Aluminum metal reacts rapidly with aqueous sulfuric acid to produce aqueous aluminum sulfate and hydrogen gas.

Determine the volume of hydrogen gas produced at STP when a 2.00 g piece of aluminum completely reacts
6. Calcium oxide is used to remove sulfur dioxide generated in coal-burning power plants to produce CaSO_4 .

What mass of calcium oxide is required to react completely with 1.4×10^3 L of sulfur dioxide?

7. Balance the equation and calculate the volume of O_2 required to produce 75.0 g of P_2O_5 at STP. $\text{P}_4 + \text{O}_2 \rightarrow \text{P}_2\text{O}_5$
8. Oxygen gas is sometimes prepared in labs by the thermal decomposition of potassium chlorate (KClO_3). The balanced chemical equation is as follows:
$$2\text{KClO}_3(\text{s}) \rightarrow 2\text{KCl}(\text{s}) + 3\text{O}_2(\text{g})$$

If 5.150 grams decompose, what volume of O_2 would be obtained at STP?