Answer on Question #79787, Chemistry /General Chemistry

Ammonium perchlorate (NH4CLO4) is a powerful solid rocket fuel, used in the space shuttle boosters. It decomposes into nitrogen (N2) gas, chlorine (Cl2) gas and water vapor, releasing a great deal of energy. Calculate the moles of oxygen produced by the reaction of 0.065 mol of ammonium perchlorate. Be sure your answer has a unit symbol, if necessary, and round it to the correct number of significant digits.

Solution

$2NH_4ClO_4 \rightarrow N_2 + Cl_2 + 4H_2O + 2O_2$

As it goes from the reaction equation 2 mol of ammonium perchlorate produce 2 mol of oxygen gas. So 0.065 mol of ammonium perchlorate produce **the same amount** of oxygen gas.

Answer

0.065 mol of oxygen gas are produced by the reaction of 0.065 mol of ammonium perchlorate.