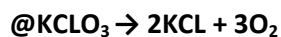


#72437 Chemistry, Other

1. The compound KClO_3 decomposes according to the following equation

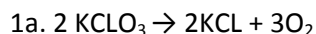


- what is the mole ratio of KClO_3 to O_2 in this reaction?
- How many moles of O_2 can be produced by letting 6.0 moles of KClO_3 react based on the above equation?
- How many molecules of oxygen gas, O_2 , are produced in question 1b?

2. Magnesium combines with chlorine, Cl_2 to form magnesium chloride, MgCl_2 during a synthesis reaction.

- write a balanced chemical equation for the reaction.
- How many moles of magnesium chloride can be produced with 3 moles of chlorine?

Answer:

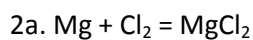


Mole ratio KClO_3 to O_2 is 2 : 3

1b. $n(\text{O}_2) = \frac{3}{2} \cdot n(\text{KClO}_3) = \frac{3}{2} \cdot 6 = 9$ moles

1c. 1 mole = $6.022 \cdot 10^{23}$ molecules

9 moles $\cdot 6.022 \cdot 10^{23}$ molecules = $54.198 \cdot 10^{23}$ molecules



$n(\text{MgCl}_2) = n(\text{Cl}_2)$

2b. 3 moles of Cl_2 gives 3 moles of MgCl_2

Answer provided by AssignmentExpert.com