

Limiting Reagents Practice Worksheet

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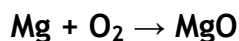
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1. 2.0 moles of Mg and 5.0 moles of O₂ are placed in a reaction vessel, and then the Mg is ignited according to the reaction below:



Balance this equation and identify the limiting reagent in this experiment.

2. For the reaction: $\text{K} + \text{O}_2 \rightarrow \text{K}_2\text{O}$
- Is 0.65 moles of O₂ enough to react with 0.56 moles of K?
 - Is 0.65 g of O₂ enough to react with 0.56 g of K?
 - How many grams of K₂O will be produced from 0.50 g of K and 0.10 g of O₂?
3. For the reaction: $\text{Na}_2\text{O} + \text{H}_2\text{O} \rightarrow \text{NaOH}$
- What weight of NaOH could be made from 12.4 g of Na₂O and 42.1 g of H₂O?
 - What would be the limiting reagent if 100 g each of Na₂O and H₂O were allowed to react?
4. For the reaction: $\text{C} + \text{H}_2 \rightarrow \text{CH}_4$
- How many moles of CH₄ can be made from 7.0 moles of H₂ and 5.0 moles of C?
 - What weight of CH₄ will be made when 10.0 g of H₂ reacts with 5.0 g of C?

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| 1. | 2 Mg + O ₂ → 2 MgO (Mg is limiting reagent) |
| 2. | a) yes b) yes c) 0.59 g K ₂ O |
| 3. | a) 16.0 g NaOH b) Na ₂ O is limiting |
| 4. | a) 3.5 mol CH ₄ b) 6.7 g CH ₄ |