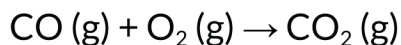


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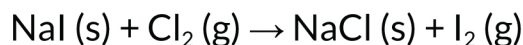
Answer the following questions.

1. Here is an unbalanced equation depicting the formation of carbon dioxide (CO₂) as a result of the combustion of Carbon Monoxide (CO):

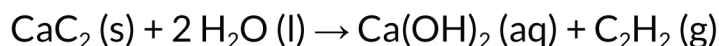


How much CO is needed to produce 0.69 g of CO₂?

2. How much NaCl is produced (in grams) when Cl₂ reacts with 0.29 g of NaI? The unbalanced equation is provided below:



3. Determine how much Ca(OH)₂ is produced when CaC₂ reacts with 0.64 grams of water, as per the following balanced chemical equation:



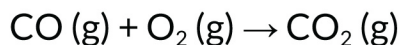
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Answers

1. Here is an unbalanced equation depicting the formation of carbon dioxide (CO₂) as a result of the combustion of Carbon Monoxide (CO):



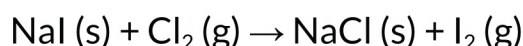
How much CO is needed to produce 0.69 g of CO₂?

Firstly we need to balance the equation provided to us. To get the balanced equation, we will multiply CO and CO₂ by 2, resulting in



The amount of CO needed to produce 0.69 g of CO₂ = $(28/44) \times 0.69 = 0.439 \text{ g}$

2. How much NaCl is produced (in grams) when Cl₂ reacts with 0.29 g of NaI? The unbalanced equation is provided below:

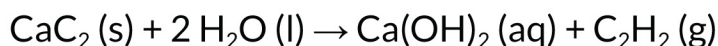


Let's balance the equation given. To get the balanced equation, we need to multiply NaI and NaCl by 2, resulting in



The amount of NaCl produced by 0.29 g of NaI = $(58.44/149.89) \times 0.29 = 0.113 \text{ g}$

3. Determine how much Ca(OH)₂ is produced when CaC₂ reacts with 0.64 grams of water, as per the following balanced chemical equation:



As the equation is already balanced, we can directly calculate the amount of Ca(OH)₂ produced in this reaction.

So, when 0.64 grams of water is added to CaC₂, the amount of Ca(OH)₂ produced is = $(74.093/36) \times 0.64 = 1.317 \text{ g}$