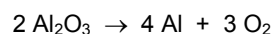




MOLE CALCULATIONS 1

- 1) Aluminium is extracted from aluminium oxide as shown. Calculate the mass of aluminium that can be formed from 1020 g of aluminium oxide.

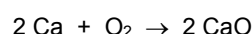


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- 2) Calculate the mass of oxygen needed to react 10 g of calcium to form calcium oxide.

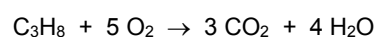


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- 3) What mass of propane could burn in 50 g of oxygen?

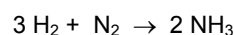


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- 4) What mass of ammonia can be made from 20 g of hydrogen?

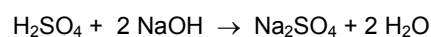


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- 5) What mass of sodium hydroxide is needed to neutralise 10 kg of sulfuric acid?

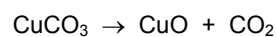


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- 6) What mass of carbon dioxide is formed when 10 g of copper carbonate decomposes on heating?



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- 7) What mass of carbon monoxide is needed to react with 1 kg of iron oxide? $\text{Fe}_2\text{O}_3 + 3 \text{CO} \rightarrow 2 \text{Fe} + 3 \text{CO}_2$

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- 8) What mass of chlorine reacts with 20 g of iron to form iron (III) chloride? $2 \text{Fe} + 3 \text{Cl}_2 \rightarrow 2 \text{FeCl}_3$

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- 9) Hydrazine (N_2H_4) is used as a rocket fuel. It can be made by reacting ammonia with hydrogen peroxide. What mass of ammonia is needed to make 100 g of hydrazine? $2 \text{NH}_3 + \text{H}_2\text{O}_2 \rightarrow \text{N}_2\text{H}_4 + 2 \text{H}_2\text{O}$

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- 10) 10.0 g of hydrated sodium sulfate decompose to form 4.40 g of anhydrous sodium sulfate on heating. Calculate the formula mass of hydrated sodium sulfate and the value of x . $\text{Na}_2\text{SO}_4 \cdot x\text{H}_2\text{O} \rightarrow \text{Na}_2\text{SO}_4 + x \text{H}_2\text{O}$

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