Science 1.8 AS 90947 Investigate selected chemical reactions

Thermal Decomposition Reactions – Writing Word and Symbol Equations Answers

Success Criteria: complete each level before moving onto the next

- Basic: write word equations for the following thermal decomposition reactions
- Proficient: write symbol equations for the following thermal decomposition reactions
- Advanced: balance the symbol equations for the following thermal decomposition reactions

Remember: metal carbonate → metal oxide + carbon dioxide gas

metal hydrogen carbonate → metal carbonate + carbon dioxide gas + water

1. calcium carbonate powder is heated. Calcium carbonate is found in limestone rock and mollusc shells.

Word equation  calcium carbonate → calcium oxide + carbon dioxide gas

Symbol equation  CaCO₃ → CaO + CO₂

2. sodium hydrogen carbonate powder is heated.

Word equation  sodium hydrogen carbonate → sodium carbonate + carbon dioxide gas + water

Symbol equation  2NaHCO₃ → Na₂CO₃ + CO₂ + H₂O

3. copper carbonate powder is heated.

Word equation  copper carbonate → copper oxide + carbon dioxide gas

Symbol equation  CuCO₃ → CuO + CO₂

4. magnesium hydrogen carbonate powder is heated.

Word equation  magnesium hydrogen carbonate → magnesium carbonate + carbon dioxide gas + water

Symbol equation  Mg(HCO₃)₂ → MgCO₃ + CO₂ + H₂O

5. iron (II) carbonate powder is heated. Iron carbonate is an important iron ore.

Word equation  iron carbonate → iron oxide + carbon dioxide

Symbol equation  FeCO₃ → FeO + CO₂

6. potassium carbonate powder is heated. Potassium carbonate is used in the production of glass.

Word equation  potassium carbonate → potassium oxide + carbon dioxide

Symbol equation  K₂CO₃ → K₂O + CO₂