

Definitions and Concepts for CAIE Chemistry IGCSE

Topic 5 - Chemical Energetics

Definitions in **bold** are for extended supplement only

Definitions have been taken, or modified from the CAIE Cambridge IGCSE Chemistry 0620 syllabus for 2023, 2024 and 2025.

Activation energy: The activation energy, E_a , is the minimum amount of energy that colliding particles need to have to react

Endothermic reaction: A reaction that takes in energy from the surroundings so the temperature of the surroundings decreases. **In an endothermic reaction, the energy needed to break existing bonds is greater than the energy released from forming new bonds.**

Enthalpy change: The enthalpy change, ΔH , of a reaction is the transfer of thermal energy during a reaction. The enthalpy change, ΔH , of an exothermic reaction is negative and an endothermic reaction is positive.

Exothermic reaction: A reaction that transfers energy to the surroundings so the temperature of the surroundings increases. **In an exothermic reaction, the energy released from forming new bonds is greater than the energy needed to break existing bonds.**

Overall enthalpy change of the reaction: The difference between the sum of the energy needed to break bonds in the reactants and the sum of the energy released when bonds in the products are formed.

