# Chemical energetics

A-Level Chemistry · Vocabulary in context

| Word | Example |
|---|---|
| **enthalpy change** /enˈθælpi tʃeɪndʒ/ | The **enthalpy change** of this reaction is −50 kJ/mol.<br>−50 kJ/mol |
| **exothermic** /egzəˈθɜːmɪk/ | Burning is **exothermic**: it gives out heat. |
| **endothermic** /ˌendəʊˈθɜːmɪk/ | Melting ice is **endothermic**: it takes in heat. |
| **reaction pathway diagram** /rɪˈækʃn ˈpæθweɪ ˈdaɪəgræm/ | A **reaction pathway diagram** shows the energy of the reactants and products. |
| **activation energy** /ˌæktɪˈveɪʃn ˈenədʒi/ | A match gives the **activation energy** to start the fire. |
| **standard conditions** /ˈstændəd kənˈdɪʃnz/ | **Standard conditions** are 298 K and 100 kPa.<br>298 K 100 kPa |
| **enthalpy change of reaction** /enˈθælpi tʃeɪndʒ ɒv rɪˈækʃn/ | The **enthalpy change of reaction** is −92 kJ/mol.<br>−92 kJ/mol |
| **enthalpy change of formation** /enˈθælpi tʃeɪndʒ ɒv fɔːˈmeɪʃn/ | The **enthalpy change of formation** of water is −286 kJ/mol.<br>−286 kJ/mol |
| **enthalpy change of combustion** /enˈθælpi tʃeɪndʒ ɒv kəmˈbʌstʃn/ | The **enthalpy change of combustion** of methane is −890 kJ/mol.<br>−890 kJ/mol |
| **enthalpy change of neutralisation** /enˈθælpi tʃeɪndʒ ɒv ˌnjuːtrəlaɪˈzeɪʃn/ | The **enthalpy change of neutralisation** is about −57 kJ/mol.<br>−57 kJ/mol |



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| **bond energy** /bɒnd ˈenədʒi/ | The C–H **bond energy** is about 413 kJ/mol.<br>C–H 413 kJ/mol |
| **specific heat capacity** /spəˈsɪfɪk hiːt kəˈpæsɪti/ | Water has a high **specific heat capacity**, so it warms up slowly. |
| **extrapolate** /ekˈstræpəleɪt/ | **Extrapolate** the line back to find the temperature at the start. |
| **Hess's law** /ˈhesɪz lɔː/ | **Hess's law** says the enthalpy change is the same by any route. |
| **energy cycle** /ˈenədʒi ˈsaɪkl/ | Draw an **energy cycle** with two routes from the same start to the same end. |