Chemical energetics

A-Level Chemistry · Vocabulary in context

Word	Example
enthalpy change /enˈθælpi tʃeɪndʒ/	The **enthalpy change** of this reaction is −50 kJ/mol. −50 kJ/mol
exothermic /egzəˈðɜːmɪk/	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. 298 K 100 kPa
enthalpy change of reaction /enˈθælpi tʃeɪndʒ ɒv rɪˈækʃn/	The **enthalpy change of reaction** is −92 kJ/mol. −92 kJ/mol
enthalpy change of formation /enˈθælpi tʃeɪndʒ ɒv fɔːˈmeɪʃn/	The **enthalpy change of formation** of water is −286 kJ/mol. −286 kJ/mol
enthalpy change of combustion /enˈθælpi tʃeɪndʒ ɒv kəmˈbʌstʃn/	The **enthalpy change of combustion** of methane is −890 kJ/mol. −890 kJ/mol
enthalpy change of neutralisation /enˈθælpi tʃeɪndʒ ɒv ˌnjuːtrəlaɪˈzeɪʃn/	The **enthalpy change of neutralisation** is about −57 kJ/mol. −57 kJ/mol

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bond energy /bɒnd ˈenədʒi/	The C–H **bond energy** is about 413 kJ/mol. 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.

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