

Unit 8 Energetics (Paper 1, 2 & 3)

8.1 Energetics

Enthalpy Change

Reactions can be endothermic or exothermic.

Enthalpy change (ΔH) is the heat energy change measured under conditions of constant pressure. Standard enthalpy changes refer to standard conditions ie 100 kPa and a stated temperature (eg $\Delta H_{298 \text{ K}}$).

You should be able to:

- define standard enthalpy of combustion ($\Delta_c H^\ominus$)
- define standard enthalpy of formation ($\Delta_f H^\ominus$).

Calorimetry




The heat change, q , in a reaction is given by the equation $q = mc\Delta T$

where m is the mass of the substance that has a temperature change ΔT and a specific heat capacity c .




You should be able to:

- use this equation to calculate the molar enthalpy change for a reaction
- use this equation in related calculations.

You will **not** be expected to recall the value of the specific heat capacity, c , of a substance.

		
Revision Done?	YES	NO






		
Revision Done?	YES	NO

Application of Hess' Law

Hess's law.

You should be able to use Hess's law to perform calculations, including calculation of enthalpy changes for reactions from enthalpies of combustion or from enthalpies of formation.




		
Revision Done?	YES	NO

Bond Enthalpies

Mean bond enthalpy.

You should be able to:

- define the term mean bond enthalpy
- use mean bond enthalpies to calculate an approximate value of ΔH for reactions in the gaseous phase
- explain why values from mean bond enthalpy calculations differ from those determined using Hess's law.

		
Revision Done?	YES	NO

