

Enthalpy

Specification reference	Checklist questions	
3.2.1 a	Can you explain that some chemical reactions are accompanied by enthalpy changes that are exothermic (ΔH , negative) or endothermic (ΔH , positive)?	<input type="checkbox"/>
3.2.1 b	Can you construct enthalpy profile diagrams to show the difference in the enthalpy of reactants compared with products?	<input type="checkbox"/>
3.2.1 c	Can you explain the term <i>activation energy</i> , including use of enthalpy profile diagrams?	<input type="checkbox"/>
3.2.1 d i	Can you explain and use the terms <i>standard conditions</i> and <i>standard states</i> (physical states under standard conditions)?	<input type="checkbox"/>
3.2.1 d ii	Can you explain and use the term <i>enthalpy change of reaction</i> (enthalpy change associated with a stated equation, $\Delta_r H$)?	<input type="checkbox"/>
3.2.1 d iii	Can you explain and use the term <i>enthalpy change of formation</i> (formation of 1 mol of a compound from its elements, $\Delta_f H$)?	<input type="checkbox"/>
3.2.1 d iv	Can you explain and use the term <i>enthalpy change of combustion</i> (complete combustion of 1 mol of a substance, $\Delta_c H$)?	<input type="checkbox"/>
3.2.1 d v	Can you explain and use the term <i>enthalpy change of neutralisation</i> (formation of 1 mol of water from neutralisation, $\Delta_{\text{neut}} H$)?	<input type="checkbox"/>
3.2.1 e	Can you determine enthalpy changes directly from appropriate experimental results, including use of the relationship $q = mc\Delta T$?	<input type="checkbox"/>
3.2.1 f i	Can you explain the term <i>average bond enthalpy</i> (breaking of 1 mol of bonds in gaseous molecules)?	<input type="checkbox"/>
3.2.1 f ii	Can you explain exothermic and endothermic reactions in terms of enthalpy changes associated with the breaking and making of chemical bonds?	<input type="checkbox"/>

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3.2.1 f iii	Can you use average bond enthalpies to calculate enthalpy changes and related quantities?	<input type="checkbox"/>
3.2.1 g i	Can you describe Hess' law for construction of enthalpy cycles and calculations to determine indirectly an enthalpy change of reaction from enthalpy changes of combustion?	<input type="checkbox"/>
3.2.1 g ii	Can you describe Hess' law for construction of enthalpy cycles and calculations to determine indirectly an enthalpy change of reaction from enthalpy changes of formation?	<input type="checkbox"/>
3.2.1 g iii	Can you describe Hess' law for construction of enthalpy cycles and calculations to determine indirectly enthalpy changes from unfamiliar enthalpy cycles?	<input type="checkbox"/>
3.2.1 h	Can you list and describe the techniques and procedures used to determine enthalpy changes directly and indirectly?	<input type="checkbox"/>