

## GLOSSARY OF USEFUL TERMS FOR UNIT 5

<b>Enthalpy of Formation</b>	enthalpy change when one mole of a compound is formed from its elements in their standard states
<b>First Ionisation Enthalpy</b>	enthalpy change when one electron is removed from each of a mole of free gaseous atoms of that element
<b>Second Ionisation Enthalpy</b>	enthalpy change when one electron is removed from each of a mole of free gaseous unipositive ions of that element
<b>Enthalpy of Atomisation of an Element</b>	enthalpy change when one mole of free gaseous atoms is produced from that element in its standard state
<b>Enthalpy of Atomisation of a Compound</b>	enthalpy change when one mole of a compound in its standard state is converted into free gaseous atoms
<b>First Electron Affinity</b>	enthalpy change when one electron is added to each of a mole of free gaseous atoms of that element
<b>Second Electron Affinity</b>	enthalpy change when one electron is added to each of a mole of free gaseous uninegative ions of that element
<b>Bond Dissociation Enthalpy</b>	mean enthalpy change when one mole of covalent bonds is broken homolytically, resulting in free gaseous atoms
<b>Lattice Enthalpy</b>	enthalpy change when one mole of an ionic compound is formed from its free gaseous ions
<b>Lattice Dissociation Enthalpy</b>	enthalpy change when one mole of an ionic compound is completely dissociated into free gaseous ions
<b>Enthalpy of Hydration</b>	enthalpy change when one mole of free gaseous ions is added to an excess of water

<b>Enthalpy of Solution</b>	enthalpy change when one mole of an ionic compound is completely dissolved in an excess of water
<b>Entropy</b>	a measure of the degree of disorder in a substance
<b>Spontaneous Reaction</b>	a reaction for which the free energy change is negative
<b>Amphoteric</b>	able to react with acids and alkalis
<b>Oxidation Number</b>	the charge that would exist on an atom if all the bonding were completely ionic
<b>Standard Electrode Potential</b>	the emf of a cell in which the left-hand electrode is the standard hydrogen electrode and the right-hand electrode is the standard electrode in question
<b>Ligand</b>	a species which can use its lone pair of electrons to form a co-ordinate bond with a metal ion
<b>Co-ordination Number</b>	the total number of co-ordinate bonds formed between the metal ion and the ligands in a complex
<b>Complex</b>	a species containing a metal ion attached to one or more ligands by means of co-ordinate bonds
<b>Bidentate ligand</b>	a ligand which uses two lone pairs of electrons to form two co-ordinate bonds with a metal ion
<b>Multidentate ligand</b>	a ligand which uses more than two lone pairs of electrons to form more than two co-ordinate bonds with a metal ion
<b>Homogeneous Catalyst</b>	A catalyst in the same physical state as the reactants
<b>Heterogeneous Catalyst</b>	A catalyst in a different physical state to the reactants

**Lewis Acid**

An electron pair acceptor

**Lewis Base**

An electron pair donor