

CHEMISTRY 12

EXAMINATION TERMINOLOGY

This list is provided to clarify some chemistry-related terms commonly used on Chemistry 12 Provincial Examinations.

Arrows $\overset{?}{\rightarrow}$ or $\overset{?}{\leftarrow}$	Used to state that the predominant direction of the reaction is to be determined (e.g. forward, reverse, or reversible).
Chemical equations	<p>A chemical equation should contain relevant information that would include balancing of atoms and charges, phase designations (<i>s</i>, <i>l</i>, <i>g</i>, <i>aq</i>) and appropriate arrows (such as equilibrium arrows).</p> <p>A <i>skeletal equation</i>, commonly used in the redox section, refers to one that is incomplete with regards to balancing and/or chemical species.</p>
Chemical species	A term used to describe any chemical entity such as NaCl, Ba ²⁺ , etc.
Conditions	It is assumed that all reactions occur at standard conditions (unless otherwise stated).
E_a	Symbol for <i>activation energy</i> .
Favoured	In a chemical equilibrium it might be stated that products are <i>favoured</i> . This means that for that particular equilibrium there are proportionately more products than reactants.
Predominant reaction	<p>The reaction that has the greatest overall effect on the system.</p> <p><i>For example:</i></p> <p>The predominant reaction in 1.0 M NaHCO₃(aq) is the basic hydrolysis of HCO₃⁻ :</p> $\text{HCO}_3^-(\text{aq}) + \text{H}_2\text{O}(\ell) \rightleftharpoons \text{H}_2\text{CO}_3(\text{aq}) + \text{OH}^-(\text{aq})$ <p>even though other reactions such as</p> $\text{HCO}_3^-(\text{aq}) + \text{H}_2\text{O}(\ell) \rightleftharpoons \text{H}_3\text{O}^+(\text{aq}) + \text{CO}_3^{2-}(\text{aq})$ <p>and</p> $\text{H}_2\text{O}(\ell) + \text{H}_2\text{O}(\ell) \rightleftharpoons \text{H}_3\text{O}^+(\text{aq}) + \text{OH}^-(\text{aq})$ <p>are also occurring, but to a lesser degree.</p>

Reactants and products	In equilibrium equations, the chemicals written on the left side are conventionally referred to as reactants and those on the right as products.
Standard Cu – Zn electrochemical cell	An electrochemical cell with Cu(s), Cu ²⁺ (aq), Zn(s), Zn ²⁺ (aq) as the relevant chemical species (at standard conditions).
Stress	<p>A term used to describe a relevant change to one or more of the chemical species or conditions of an equilibrium system.</p> <p><i>For example:</i></p> $\text{HCO}_3^-(\text{aq}) + \text{H}_2\text{O}(\ell) \rightleftharpoons \text{H}_3\text{O}^+(\text{aq}) + \text{CO}_3^{2-}(\text{aq})$ <p>if HCl(aq) is added, the stress is an increase in [H₃O⁺] in the original equilibrium, whereas, if NaOH(aq) is added, the stress is a decrease in [H₃O⁺] in the original equilibrium since the added OH⁻ predominantly reacts with the original H₃O⁺ (the stronger acid).</p>
Shift	A <i>shift left</i> in a chemical equilibrium means that more reactants are formed and fewer products result when compared to the original equilibrium.
Titrate	To react to the equivalence point (stoichiometric point).
Trial K_{eq}	A trial calculation used in certain equilibrium problems.
Trial K_{sp}	A trial calculation, the same as trial ion product (TIP), used in certain solubility problems.