

# Chemical Equilibrium

The key areas of study in this topic are:

- Dynamic equilibrium
- Le Chatelier's principle
- The equilibrium constant,  $K_c$

By the end of this topic I should be able to:

	Start	End
Explain that a dynamic equilibrium exists in a closed system when the rate of the forward reaction is equal to the rate of the reverse reaction and the concentrations of reactants and products do not change		
Know Le Chatelier's principle and use it to deduce qualitatively the effect of a change in temperature, pressure or concentration on the position of equilibrium		
Explain that a catalyst increases the rate of both forward and reverse reactions in an equilibrium by the same amount resulting in an unchanged position of equilibrium		
Describe the techniques and procedures used to investigate changes to the position of equilibrium for changes in concentration and temperature. Qualitative effects only		
Explain the importance to the chemical industry of a compromise between chemical equilibrium and reaction rate in deciding the operational conditions e.g. Haber process		
Derive expressions for the equilibrium constant, $K_c$ , for homogeneous reactions. Calculate the equilibrium constant, $K_c$ , from provided equilibrium concentrations		
Estimate the position of equilibrium from the magnitude of $K_c$		

In all topic areas you should be able to demonstrate and apply your knowledge and understanding.

