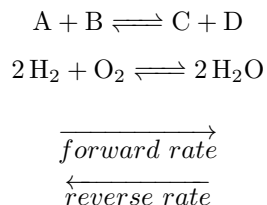


# Chemical Kinetics

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October 7, 2024

Reaction rate:



Reaction rate is characterized by the number of reactions per second. At equilibrium, the forward rate equals the reverse rate.

$$\nu d = [A][B]$$

Uppercase letters represent chemical components, lowercase letters are THE STOICHIOMETRIC COEFFICIENT.

$$\begin{array}{l} \nu d = k[A]^a[B]^b \\ \nu i = k'[C]^c[D]^d \end{array}$$

The constant  $k$  relies on the affinity between  $A$  and  $B$ . The constant  $k'$  relies on the affinity between  $C$  and  $D$ .

$$\begin{array}{l} \nu d = \nu i \\ k[A]^a[B]^b = k'[C]^c[D]^d \\ \frac{k}{k'} = \frac{[C]^c[D]^d}{[A]^a[B]^b} \\ \frac{k}{k'} = K \end{array}$$

The equilibrium constant  $K$  is a value unique to each reaction. The higher the value of  $K$ , the higher the reaction rate is.

