

# Acids, Bases & pH Knowledge organiser

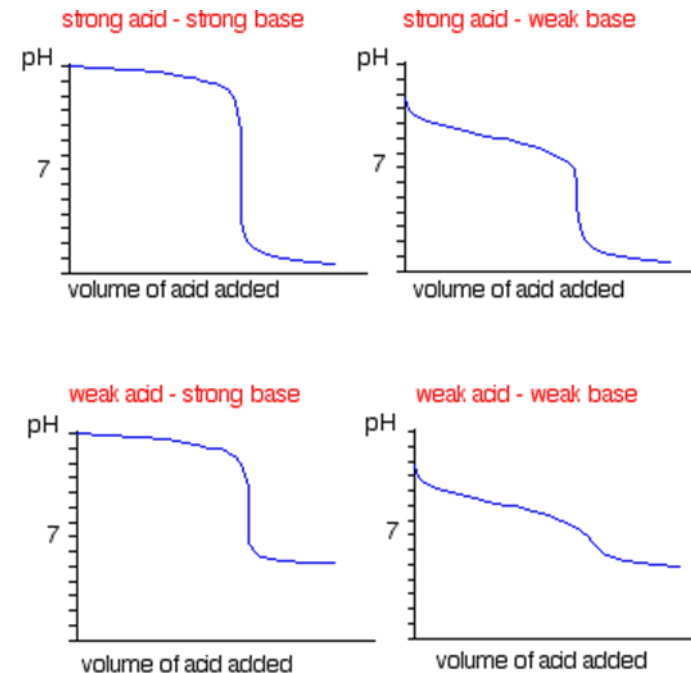
## 1. Keyword

Bronsted-Lowry acid	Proton donor
Bronsted-Lowry base	Proton acceptor
Conjugate base	An <b>acid</b> that has donated its hydrogen
Conjugate acid	A <b>base</b> with a hydrogen ion added to it.
Strong	Fully ionises/dissociates in solution
Weak	Partially ionises/dissociates in solution
pH	$-\text{Log}_{10} [\text{H}^+]$
K <sub>w</sub>	Ionic product of water = $[\text{H}^+][\text{OH}^-] = 1 \times 10^{-14}$ At 298k
K <sub>a</sub>	Acid dissociation constant. A measure of dissociation of a weak acid. Units = $\text{Mol dm}^{-3}$
Half equivalence point	Half the volume required to neutralise and acid or base = pK <sub>a</sub>
Indicator	A compound or compounds that change colour when pH changes. Should fall in the vertical rise on a pH curve
10 <sup>x</sup>	Inverse log button on your calculator duh!
Buffer	Solution which resists small changes in pH. Made from a weak acids and its salt.

## 2. Useful acids

Name	Formula	Strength	Protic
Hydrochloric	HCl	Strong	Mono
Sulphuric	H <sub>2</sub> SO <sub>4</sub>	Strong	Di
Nitric	HNO <sub>3</sub>	Strong	Mono
Phosphoric	H <sub>3</sub> PO <sub>4</sub>	Strong	Tri
Ethanoic	CH <sub>3</sub> COOH	Weak	Mono
Ethanedioic	HOOC <sub>2</sub> COOH	Weak	Di

## 3. pH curves



## 4. K<sub>a</sub> Expression



$$K_a = \frac{[\text{H}_3\text{O}^+][\text{A}^-]}{[\text{HA}]}$$