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Bases & Base Ionization Constant (Kb)

Chemistry with ❤️
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A Base

source

- A base is a chemical that **takes a hydrogen ion** from another chemical and absorbs it.
- In an aqueous solution, a strong base **ionizes entirely.**
- A weak base **ionizes just minimally** in a water solution.

SIGNIFICANCE OF VALUE OF Kb:

- The numerical value of Kb reflects the **strength of the base.**
- Weaker bases have lower Kb values and vice versa also holds true (stronger bases have high Kb).

Base Ionization Constant Kb

source

- The base ionization constant Kb can be determined **experimentally** and each base has its own **unique value.**

Base Ionization Constant

- **Base Ionization Constant** (K_b): the equilibrium constant for the ionization reaction of a base with water
  - $B + H_2O \rightleftharpoons OH^- + BH^+$

$$K_b = \frac{[BH^+][OH^-]}{[B]}$$

- Large K_b = Strong base
- Small K_b = Weak base