

Solutions, Acids, & Bases

Section 3: Strength of Acids & Bases

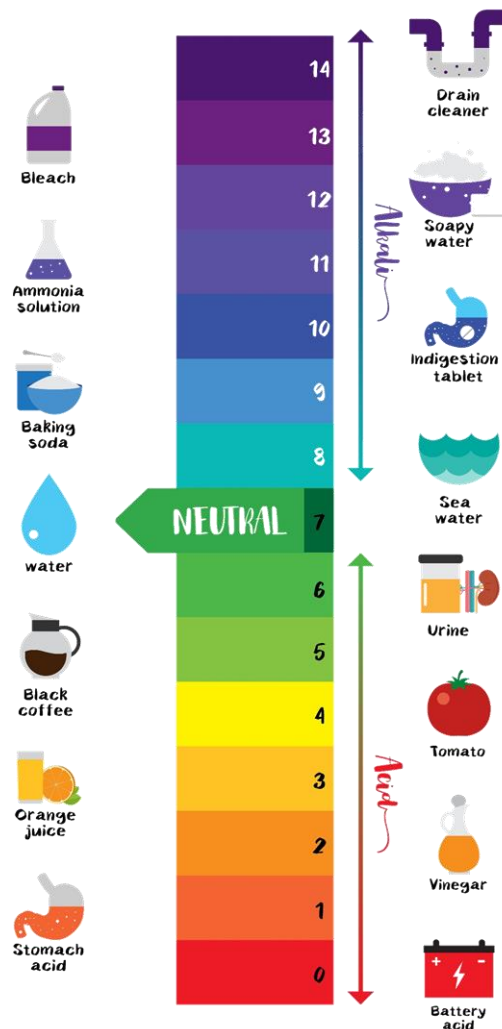
The strength of an acid or base depends on how many acid or base particles dissociate into ions in water. A **strong acid** ionizes almost completely in water whereas a weak acid only partly ionizes in a solution. A **strong base** dissociates completely in a solution whereas a **weak base** does not.

Strength and concentration are not the same thing. Strength refers to how strong or weak something is. These terms refer to the ease at which an acid or base dissociates in a solution. When discussing concentration, the terms dilute and concentrated are used to indicate the amount of acid or base in a solution. It is possible to have dilute solutions of strong acids and bases as well as concentrated solutions of weak acids and bases.

pH is a measure of the concentration of H^+ ions in a solution or how acidic or basic it is. To indicate a pH of a solution, a scale was devised that ranges from 0–14. The strength of the pH scale is determined by the concentration of hydrogen ions H^+ where the greater concentration of H^+ the lower the pH and more acidic a solution is.

Solutions with a pH lower than 7 are described as acidic, the lower the value the more acidic.

Solutions with a pH greater than 7 are considered basic; the higher the pH, the more basic a solution is. Exactly 7 indicates neutral.



Review:

1. What is the difference between strength and concentration?
2. What does pH measure?