

[H₃O⁺], [OH⁻], pH, and pOH of Solutions

Solution	General condition	At 25°C
Neutral	$[\text{H}_3\text{O}^+] = [\text{OH}^-]$ $\text{pH} = \text{pOH}$	$[\text{H}_3\text{O}^+] = [\text{OH}^-] = 1 \times 10^{-7} \text{ M}$ $\text{pH} = \text{pOH} = 7.0$
Acidic	$[\text{H}_3\text{O}^+] > [\text{OH}^-]$ $\text{pH} < \text{pOH}$	$[\text{H}_3\text{O}^+] > 1 \times 10^{-7} \text{ M}$ $[\text{OH}^-] < 1 \times 10^{-7} \text{ M}$ $\text{pH} < 7.0$ $\text{pOH} > 7.0$
Basic	$[\text{H}_3\text{O}^+] < [\text{OH}^-]$ $\text{pH} > \text{pOH}$	$[\text{H}_3\text{O}^+] < 1 \times 10^{-7} \text{ M}$ $[\text{OH}^-] > 1 \times 10^{-7} \text{ M}$ $\text{pH} > 7.0$ $\text{pOH} < 7.0$