

Titration Curves

Weak Acid + Strong Base

0.1 M CH₃COOH

0.1 M NaOH

25.0 mL

25.0 mL

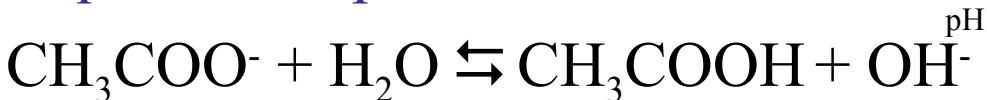
Initial weak acid

$$K_a = 1.8 \times 10^{-5} = \frac{[\text{H}^+][\text{CH}_3\text{COO}^-]}{[\text{CH}_3\text{COOH}]}$$

$$\text{pH} = \text{p}K_a + \log \frac{[\text{CH}_3\text{COO}^-]}{[\text{CH}_3\text{COOH}]}$$

half-way point $\text{pH} = \text{p}K_a = 4.74$

equivalence point



$$K_b = 5.6 \times 10^{-10} = \frac{[\text{OH}^-][\text{CH}_3\text{COOH}]}{[\text{CH}_3\text{COO}^-]}$$

strong base

