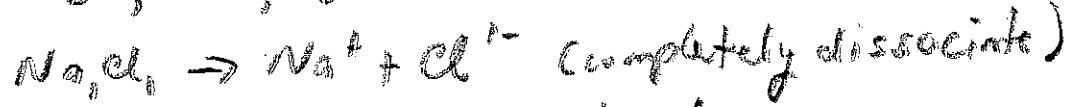


Hydrolysis of Salt (Part A)

What is pH of a 0.10M NaCl solution?

Step 1



both Na^+ (cation of strong base) and

Cl^- (anion of strong acid) do not react w/ H_2O .

so, only reaction is



Step 2



Step 3

$$K_w = \frac{[\text{H}_3\text{O}^+] [\text{OH}^-]}{[\text{H}_2\text{O}]^2} = [\text{H}_3\text{O}^+] [\text{OH}^-]$$

Step 4

ICE
Box

$$1.0 \times 10^{-14} \text{ M}^2 = (x)(x)$$

$$x = \sqrt{1.0 \times 10^{-14} \text{ M}^2}$$

$$[\text{H}^+] = x = 1.0 \times 10^{-7} \text{ M}$$

$$\text{Step 5} \quad \text{pH} = -\log([\text{H}^+]) = -\log(1.0 \times 10^{-7} \text{ M}) = -(7.000)$$

Step 6

$$\boxed{\text{pH} = 7.00}$$