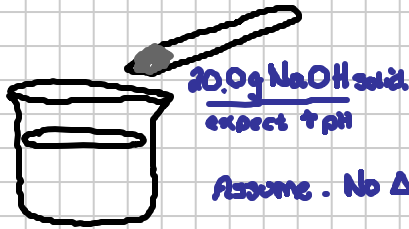


Lecture 14.4. Buffer The Buffer 2: NaOH @ the equivalence point.

Note Title

2/25/2012

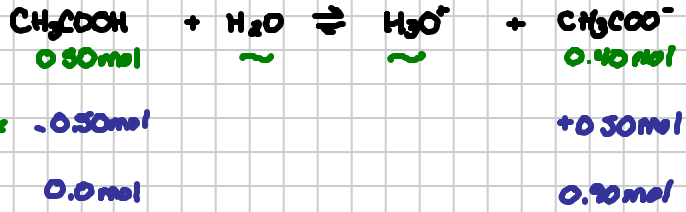


Bother the Buffer calculations

$$\text{moles NaOH} = \frac{20.0 \text{ g NaOH}}{40 \text{ g/mol}} = 0.50 \text{ mol NaOH}$$

1.00 L ✓
 0.50 M CH₃COOH ✓ ⇒ 0.50 mol
 0.40 M NaCH₃COO ✓ ⇒ 0.40 mol

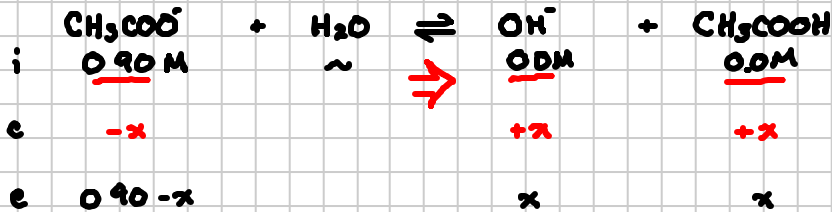
neutralization



Added enough NaOH
 to use up all CH₃COOH
 Equivalence point



Start over - Weak Base Equilibrium.



L.M.A. $\frac{(x)(x)}{(0.90-x)} = K_b = \frac{K_w}{K_a} = \frac{1.00 \times 10^{-14}}{1.76 \times 10^{-5}} = 5.68 \times 10^{-10}$
 - really small
 - favor reactants

$$\frac{x^2}{(0.90-x)} = 5.68 \times 10^{-10}$$

$$x = 2.26 \times 10^{-5} = [\text{OH}^-] \quad \left\{ \text{pOH} = -\log[\text{OH}^-] = 4.64 \right.$$

$$\text{pH} = 14 - 4.64 = \underline{9.35}$$

pH: 4.66 9.35
 equivalence