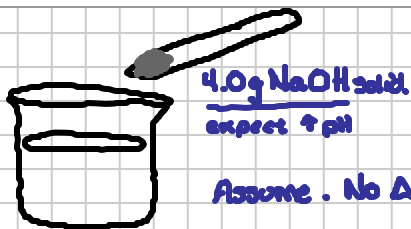


Lecture 14.3: Buffer The Buffer 1 - Solid NaOH

Note Title

2/25/2012



Buffer the Buffer calculations

$$\text{moles NaOH} = \frac{4.0 \text{ g NaOH}}{40 \text{ g/mol}} = \frac{1 \text{ mol}}{40 \text{ g}} = 0.10 \text{ mol NaOH}$$

Assume . No Δ Volume

1.00L ✓

0.50M CH₃COOH ✓ ⇒ 0.50 mol

0.40M NaCH₃COO ✓ ⇒ 0.40 mol



No Δ Vol: Vol = 1.00L

i	$\frac{0.40 \text{ mol}}{1.00 \text{ L}} = 0.40 \text{ M}$	~	0.0M	0.50M
c	-x	→	+x	+x
e	0.40 - x		x	0.50 + x

L.M.A.

not here

$$\frac{(x)(0.50+x)}{(0.40-x)} = 1.76 \times 10^{-5} \quad \left\{ \begin{array}{l} x = [\text{H}_3\text{O}^+] = 1.408 \times 10^{-5} \\ \text{pH} = -\log(1.408 \times 10^{-5}) = 4.85 \end{array} \right.$$

pH₁ = 4.66 $\xrightarrow{\text{add } 4 \log \text{ . NaOH .}}$ pH₂ = 4.85

↑ increase pH as expected