

Summary

Acid-Base Eq (1) Buffers (2)

What is the new pH of a solution made from 0.405 M HCOOH and 0.325 M HCOONa if 1.00 mL of 0.250 M HCl is added to 50.0 mL of the buffer. $K_a \text{ HCOOH} = 1.8 \times 10^{-4}$.

pen case for acid base (1) for calc. of pH.



I	$(0.325 \times 0.05\text{L})$	$(0.25 \times 0.001\text{L})$	$(0.405 \times 0.05\text{L})$
	1.63×10^{-2}	2.5×10^{-4}	2.025×10^{-2}
C	-2.5×10^{-4}	-2.5×10^{-4}	$+2.5 \times 10^{-4}$
E	0.01605 mol.	0	0.0203 mol.

$$[\text{H}_3\text{O}^+] = K_a \times \frac{[\text{acid}]}{[\text{base}]}$$

$$= 1.8 \times 10^{-4} \times \frac{0.0203}{0.01605}$$

$$= 2.32 \times 10^{-4}$$

$$\text{pH} = -\log 2.32 \times 10^{-4} = \boxed{3.63}$$

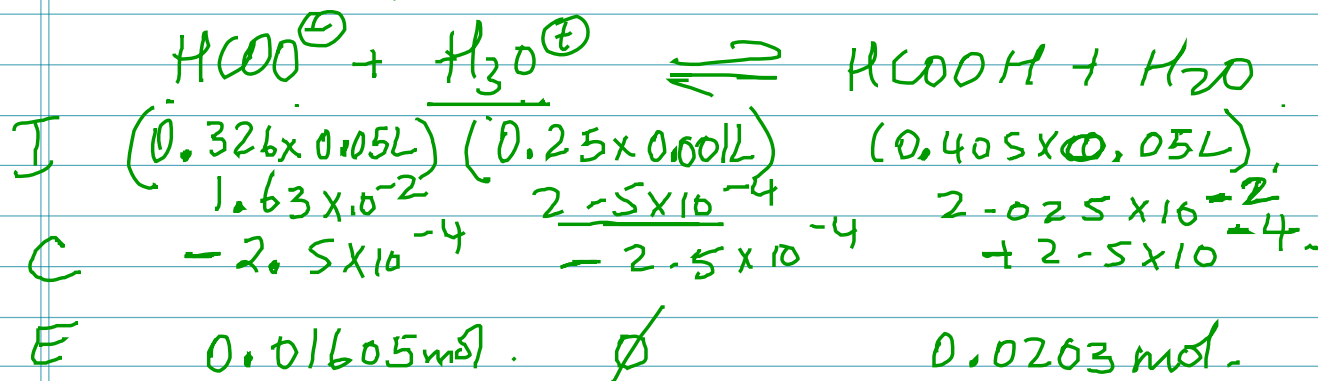
$$\text{original pH} = 4.74$$

Sapna Gupta

Acid-Base Eq (11) Buffers (2)

What is the new pH of a solution made from 0.405M HCOOH and 0.326M HCOONa if 1.00 mL of 0.250M HCl is added to 50.0 mL of the buffer. $K_a \text{ HCOOH} = 1.8 \times 10^{-4}$.

Reaction for acid base (9) for calc. of pH.



$$[\text{H}_3\text{O}^+] = K_a \times \frac{[\text{acid}]}{[\text{base}]}$$

$$= 1.8 \times 10^{-4} \times \frac{0.0203}{0.01605}$$

$$= 2.32 \times 10^{-4}$$

$$\text{pH} = -\log 2.32 \times 10^{-4} = \boxed{3.63}$$

$$\text{original pH} = 4.74$$