Question #45568, Chemistry, Physical Chemistry

Calculate pH of solution containing 0.100 M CH3COOH and 0.050 M CH3COONa.

Answer:

$pK_{CH3COOH}=1{,}74\cdot10^{-5}$

$$pH=-lg[H^+]$$

To buffer solutions formed a weak acid and a salt of this acid:

$$[H^+]=K_{acid}\cdot C_{acid}/C_{solt}$$

$$[H+]=1{,}74\cdot10^{-5}\cdot0.1/0.05=3{,}48\cdot10^{-5}$$

$$pH=-lg[3{,}48\cdot10^{-5}]=\textbf{4,458}$$