

Answer on the question #68304, Chemistry / General Chemistry

Question:

What is the pH of a neutral solution at 25°C?

Answer:

At 25°C, the ion product constant is : $K_w = [H^+][OH^-] = 10^{-14}$. As the concentration of $[H^+]$ and $[OH^-]$ is the same for neutral solution, we can find it :

$$[H^+] = \sqrt{10^{-14}} = 10^{-7} M$$

According to definition, pH is the negative logarithm of concentration of hydrogen ions:

$$pH = -\log[H^+] = -\log 10^{-7} = 7$$

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