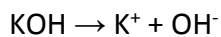


Answer on Question #81288, Chemistry, General Chemistry

What is the pH of a 6.50×10^{-3} M KOH solution?

Solution:

According to dissociation process:



Potassium hydroxide is a strong electrolyte. That's why concentration of KOH equals concentration of hydroxide – ion OH^- :

$$[\text{KOH}] = [\text{OH}^-] = 6.50 \times 10^{-3} \text{ M}$$

Determine the pOH value using expression:

$$\text{pOH} = -\lg[\text{OH}^-]$$

or:

$$\text{pOH} = -\lg(6.50 \times 10^{-3}) = 2.19$$

Determine the pH value using known value of pOH:

$$\text{pH} = 14 - \text{pOH}$$

or:

$$\text{pH} = 14 - 2.19 = 11.81 \text{ (basic)}$$

Answer: pH = 11.81.