

Answer on Question #61564, Chemistry / General Chemistry

Condition: 25.0 mL of an H₃BO₃ solution were titrated with 29.15 mL of a 0.205 M of LiOH solution to reach the equivalence point, what is the molarity of the H₃BO₃ solution?

Solution:

According to the equation of chemical reaction



$$C_a \cdot V_a = C_b \cdot V_b$$

$$\text{here of } C_a = C_b \cdot V_b / V_a$$

$$C(\text{H}_3\text{BO}_3) = 0,5 \cdot C(\text{NaOH}) \cdot V(\text{NaOH}) / C(\text{H}_3\text{BO}_3)$$

$$C(\text{H}_3\text{BO}_3) = 0,5 \cdot 29,15 \cdot 10^{-3}(\text{L}) \cdot 0,205(\text{mol/L}) / 25,0 \cdot 10^{-3}(\text{L})$$

$$C(\text{H}_3\text{BO}_3) = 0,1195(\text{mol/L})$$

Answer: the molarity of H₃BO₃ = 0,1195 (mol/L)

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