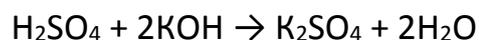


Answer on Question #58737, Chemistry / General Chemistry

A 33.00 mL sample of an H₂SO₄ solution concentration is titrated with a 0.01222 M KOH solution. A volume of 40.22 mL KOH was required to reach the equivalence point.

Solution:

The equation of the reaction between H₂SO₄ and KOH:



From the equation it is visible that 1 mol of H₂SO₄ reacts from 2 mol the KOH.

Then molar concentration of H₂SO₄ can be calculated on a formula:

$$M_{\text{KOH}} \cdot V_{\text{KOH}} = 2 \cdot M_{\text{H}_2\text{SO}_4} \cdot V_{\text{H}_2\text{SO}_4}$$

From here $M_{\text{H}_2\text{SO}_4} = \frac{1}{2} \cdot M_{\text{KOH}} \cdot V_{\text{KOH}} / V_{\text{H}_2\text{SO}_4} = \frac{1}{2} \cdot 40.22 \cdot 0.01222 / 33.00 = 0.007447\text{M}$

Answer: H₂SO₄ solution concentration is equal 0,007447M