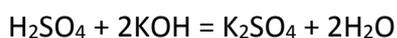


Question #58739, General chemistry

A 33.00 mL sample of an H₂SO₄ solution of unknown concentration is titrated with a 0.1222 M KOH solution. A volume of 40.22 mL of KOH was required to reach the equivalence point.

What is the concentration of the unknown H₂SO₄ solution?

Solution



$$n(\text{KOH}) = V \cdot c = 40.22 \cdot 0.1222 = 4.9149 \text{ (mmol)}$$

$$n(\text{H}_2\text{SO}_4) = 2 \cdot n(\text{KOH}) = 9.8298 \text{ (mmol)}$$

$$c(\text{H}_2\text{SO}_4) = n/V = 9.8298 / 33 = 0.2978 \text{ M}$$

Answer

$$c(\text{H}_2\text{SO}_4) = 0.2978 \text{ M}$$