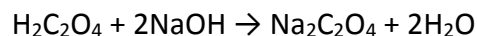


Answer to Question #49691, Chemistry, Inorganic Chemistry

What's the sodium hydroxide solution is standardized using 0.502 g of solid acid $\text{H}_2\text{C}_2\text{O}_4$. Find the molarity of the base if 30.50 mL are required for the titration to a phenolphthalein endpoint?

Solution:



$$c = \frac{n}{V}$$
$$n(\text{NaOH}) = 2 \times n(\text{H}_2\text{C}_2\text{O}_4) = \frac{2 \times m(\text{H}_2\text{C}_2\text{O}_4)}{M_r(\text{H}_2\text{C}_2\text{O}_4)}$$
$$c = \frac{2 \times m(\text{H}_2\text{C}_2\text{O}_4)}{M_r(\text{H}_2\text{C}_2\text{O}_4) \times V}$$
$$c = \frac{2 \times 0.502}{90 \times 0.0305} = 0.366 \text{ mol/L}$$

Answer:

0.366 M

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