

Exp 1: Standardization of Sodium Hydroxide (NaOH)

Solution with standard Oxalic Acid ($C_2H_2O_4 \cdot 2H_2O$)
Solution.

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Experimental Data:

Weight taken (mg) $\times 0.1$
Strength of oxalic acid solution = $\frac{0.63}{0.63}$ (N)

$$= \frac{0.62 \times 0.1}{0.63} (N)$$

$$= 0.098 N$$

Table: Standardization of supplied NaOH solution
against standard oxalic acid solution by acid-base
titration.

No of reading	Vol. of NaOH (in mL)	Vol. of oxalic acid (burette reading) (in mL)			Mean (in mL)
		Initial	Final	Difference	
1	10	0.00	8.50	8.50	$\frac{8.50 + 8.60 + 8.50}{3}$ $= 8.533$
2	10	8.50	17.10	8.60	
3	10	17.10	25.60	8.50	

Calculations:

The strength of supplied NaOH solution:

$$V_{\text{NaOH}} \times N_{\text{NaOH}} = V_{\text{oxalic acid}} \times N_{\text{oxalic acid}}$$

$$N_{\text{NaOH}} = \frac{V_{\text{oxalic acid}} \times N_{\text{oxalic acid}}}{V_{\text{NaOH}}}$$

$$= \frac{8.533 \times 0.098}{10}$$

$$= 0.0836 \text{ N}$$

$$\approx 0.084 \text{ N}$$

$$\approx 0.08 \text{ N}$$

Results: The strength of supplied NaOH solution is 0.08 (N).