

Acid content of Beverages - SUSB - 010

Molarity of NaOH Stock Solution 0.1054
 Took 250 mL of stock solution

Sample: Tropicana Orange Juice, High Calcium

Run 1

Volume of juice (grad cyl) 100.0 mL

Added 4 drops of phenolphthalein

Final buret reading 35.37
 Initial buret reading 3.52
 Net volume 31.85 mL

Run 2

Volume of juice 100.0 mL

Added 4 drops of phenolphthalein

Final buret reading ~~36.44~~ 36.49
 Initial buret reading 4.38
 Net volume ~~32.08~~ 32.11 mL

Calculations:

Run 1: $31.85 \times 0.1054 = 3.357 \text{ mmol NaOH}$
 Conc of acid in juice $3.357 / 100.0 = 3.357 \times 10^{-2} \text{ M}$

Run 2: $32.11 \times 0.1054 = 3.384 \text{ mmol NaOH}$
 Conc of acid in juice $3.384 / 100.0 = 3.384 \times 10^{-2} \text{ M}$

Average conc = $3.370 \times 10^{-2} \text{ M}$

Avg Deviation = $0.13 + 0.14 / 2 = 0.14 \text{ M}$

Pct deviation = $100 \times 0.14 \text{ M} / 3.370 \times 10^{-2} \text{ M} = 0.42 \%$