

Chemistry 2, Lesson 4

Titration

		Trial 1	Trial 2	Trial 3
Analyte (HCl)	<i>amount (mol)</i>	0.0025	0.0025	0.0024
	<i>Concentration (M)</i>	0.1213	0.1246	0.1220
	<i>Initial buret volume (mL)</i>	0.24	-	-
	<i>Final buret volume (mL)</i>	20.85	-	-
	<i>Volume dispensed (mL)</i>	20.61	20.06	19.67
Titrant (NaOH)	<i>amount (mol)</i>	0.0025	0.0025	0.0024
	<i>Concentration (M)</i>	0.200	0.200	0.200
	<i>Initial buret volume (mL)</i>	0.05	-	-
	<i>Final buret volume (mL)</i>	12.54	-	-
	<i>Volume dispensed (mL)</i>	12.49	12.32	11.87

Computation

$$12.49 \times \frac{0.2}{1000} = \approx 0.0025$$

$$\frac{0.0025}{20.61/1000} = \approx 0.1213$$

$$12.32 \times \frac{0.2}{1000} = \approx 0.0025$$

$$\frac{0.0025}{20.06/1000} = \approx 0.1246$$

$$11.87 \times \frac{0.2}{1000} = \approx 0.0024$$

$$\frac{0.0024}{19.67/1000} = \approx 0.1220$$

$$\frac{0.1213 + 0.1246 + 0.1220}{3} = \approx 0.1226$$

$$\frac{0.120 - 0.1226}{0.120} \times 100\% = 2.1\bar{6}\%$$

*Edgenuity claims this is wrong, and that the % error is 2.5, however no work is shown, and so I do not understand why this may be.