

Investigation 11 (week 2)

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Name

Course

Section

Lab partner

Trail 1

Trail 2

mL Vinegar = 10 mL

Mass of flask: 107.942 g

volume vinegar: 275 mL

Mass flask + Vinegar: 118.047 g

Mass Vinegar: 10.105 g

Density of vinegar = $\frac{\text{grams vinegar}}{\text{mL Vinegar}}$

3 drops of

phenolphthalein

10 mL

$$= \frac{10.105 \text{ g}}{10 \text{ mL}}$$

$$\text{Density of vinegar} = 1.0105 \text{ g/mL}$$

$$V_{\text{initial NaOH (mL)}} = 0.1 \text{ mL}$$

$$V_{\text{final NaOH (mL)}} = 20.9 \text{ mL}$$

$$V_{\text{total used NaOH (mL)}} = V_f - V_i$$

$$= 20.9 - 0.1$$

$$= 20.8 \text{ mL}$$

~~Molarity NaOH (mole/L) = moles NaOH / L~~

$$\text{molarity NaOH (mole/L)} = 0.5343 \text{ mol/L}$$

$$V_{\text{NaOH}} = 0.0208 \text{ L}$$

$$\text{Moles of NaOH (mol)} = 0.5343 \times 0.0208$$

$$\text{Moles of NaOH} = 0.01106001 \text{ mol}$$

$$M_{\text{flask}} = 107.942 \text{ g}$$

$$\text{Volume vinegar: } 10 \text{ mL}$$

$$M_{\text{f}} + \text{Vinegar} = 118.047 \text{ g}$$

$$\text{mass vinegar: } 10.103 \text{ g}$$

$$\text{Density of vinegar: } \frac{10.103 \text{ g}}{10 \text{ mL}}$$

$$= 1.0103 \text{ g/mL}$$

$$V_{\text{initial}} = 0 \text{ mL}$$

$$V_{\text{final}} = 16.8 \text{ mL}$$

3 Drops of phenolphthalein

$$V_{\text{total}} = 16.8 \text{ mL}$$

$$\text{molarity of NaOH} = 0.5343 \text{ mol/L}$$

$$V_{\text{T}} = 0.0168 \text{ L}$$

$$\text{Moles of NaOH} = \frac{0.008976}{\text{mol}}$$

Caution: Place this in flip under yellow sheet before writing, to protect the pages that follow.

$$0.01106001 \text{ mol}$$