

Experiment 1 Prelaboratory Assignment

Basic Laboratory Operations

Date _____ Lab Sec. ^{blw} _____ Name _____ Desk No. _____

1. a. What is the dominant color of a nonluminous flame from a Bunsen burner? Explain.

Blue, because methane (or any natural gas) burns with sufficient oxygen completely, producing carbon dioxide, water and energy.

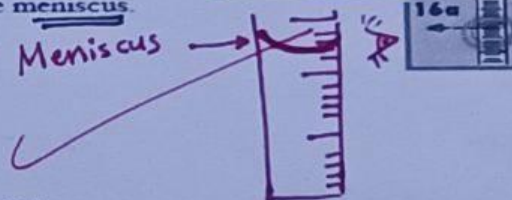
b. Is the temperature of a luminous flame greater or less than that of a nonluminous flame? Explain.

The temperature of a luminous flame is less than that of a nonluminous flame, because the luminous flame doesn't get sufficient O₂ to convert carbon that was burned into CO₂.

2. Diagram the cross section of a graduated cylinder, illustrating how to read the meniscus.

رسم تخطيطي

Meniscus سطح الماء



3. Experimental Procedure, Part B. What is the sensitivity of the least sensitive balance most likely to be in your laboratory?

It is for a top leading balance because it used to determination of masses to the nearest .01-.001 grams



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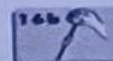
±0.1 g | ±.001 g

$$1 \text{ cm}^3 = 1 \text{ mL}$$

5. Refer to Technique 16B ^{معلقة طرف}

a. Remove the drop suspended from a pipet tip by touching the tip to the ^{طرف} wall of the waste beaker

b. The finger used to control the delivery of liquid from a pipet is the ^{السبابة} index finger



c. A pipet is filled with the aid of a ...

d. Most pipets are calibrated as "TD (20°C)" Define "TD" and what is its meaning regarding the volume of liquid a pipet delivers? ^{صدا} ^{فيما يتعلق}

TD → Tube delivery, the pipet is created for that specified volume

6. Experimental Procedure, Part C.1 The density of aluminum is 2.70 g/cm^3 and the density of chromium is 7.19 g/cm^3 . If equal masses of aluminum and chromium are transferred to equal volumes of water in separate graduated cylinders, which graduated cylinder would have the greatest volume change? Explain.

Aluminum would have the greatest volume change because it has the lower density and the higher volume. $(\uparrow V = \frac{m}{\downarrow d})$

7. Experimental Procedure, Part C.3 The mass of a beaker is 5.333 g . After 5.00 mL of spearmint oil is pipetted into the beaker, the combined mass of the beaker and the spearmint oil sample is 9.962 g . From the data, what is the measured density of spearmint oil? ^{دورق} ^م ^{النقاع} ^{نقاع}

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$$d = \frac{m}{V} = \frac{4.629}{5} = 0.9258 \text{ g/mL}$$

$$m_{\text{oil}} = 9.962 - 5.333 = 4.629 \text{ g}$$