

USE OF STALAGMOMETER

The stalagmometer must be properly cleaned before being used the first time and after a period of storage. **CAUTION:** Since Nitric Acid fumes are evolved during the cleaning process, the procedure should be done in a fume hood using proper personal protection.

Properly clean the stalagmometer using the following procedure:

1. Set up stalagmometer in stand in a fume hood.
2. Place a clean 150 ml beaker underneath the stalagmometer then fill with reagent grade concentrated nitric acid. Immerse bottom tip (approx. 1/2") of stalagmometer into the beaker.
3. Squeeze rubber bulb and pinch at the arrow up (↑) position to collapse. Place bulb end securely on top end of stalagmometer. Carefully draw the nitric acid by pinching the arrow up (↑) position until the level is above the top etched line. (See figure 1)
4. Allow nitric acid to remain in stalagmometer for 5 minutes and then carefully remove the bulb allowing the acid to completely drain.

NOTE: The nitric acid can be stored in a tightly stoppered amber glass bottle and be reused several times.

5. Fill a clean 150 ml beaker with distilled or deionized water. Using the rubber bulb per the instructions in Step #3, rinse and drain stalagmometer with deionized or distilled water until the inside is "water break" free.
6. Fill a clean 150 ml beaker with alcohol. Again using the rubber bulb per Step #3, rinse and drain the stalagmometer twice with alcohol and allow the stalagmometer to dry completely.
7. Take a sample of the solution to be tested and adjust the solution to room temperature. Measure the specific gravity and record the reading.
8. Fill a clean 150 ml beaker with solution to be tested. Immerse bottom end of stalagmometer into the beaker. Fill the stalagmometer per instructions in Step #3, making sure that the solution level is above the top etched line. (See figure 1)
9. Raise the stalagmometer so that the bottom end is completely out of solution. Remove bulb and immediately place a finger on the top end of the stalagmometer. Carefully use the finger to bring the solution level down to the top etched line. Do not release finger at this time.
10. "Wipe" the excess solution on the lower tip by touching it against the side of the beaker.
11. Release fingertip to allow solution to drain and count the number of drops until the level reaches the bottom etched line. (See figure 1)

CALCULATIONS FOR CHROMIUM (2.5ml)

$$\text{Surface tension} = \frac{1440}{\text{Dynes/cm}} \times \frac{\text{Specific Gravity}}{\text{\# of Drops counted}}$$

This stalagmometer is calibrated at 20 drops at 25° C.

CALCULATIONS FOR NICKEL (5.0ml)

$$\text{Surface tension} = \frac{2880}{\text{Dynes/cm}} \times \frac{\text{Specific Gravity}}{\text{\# of Drops counted}}$$

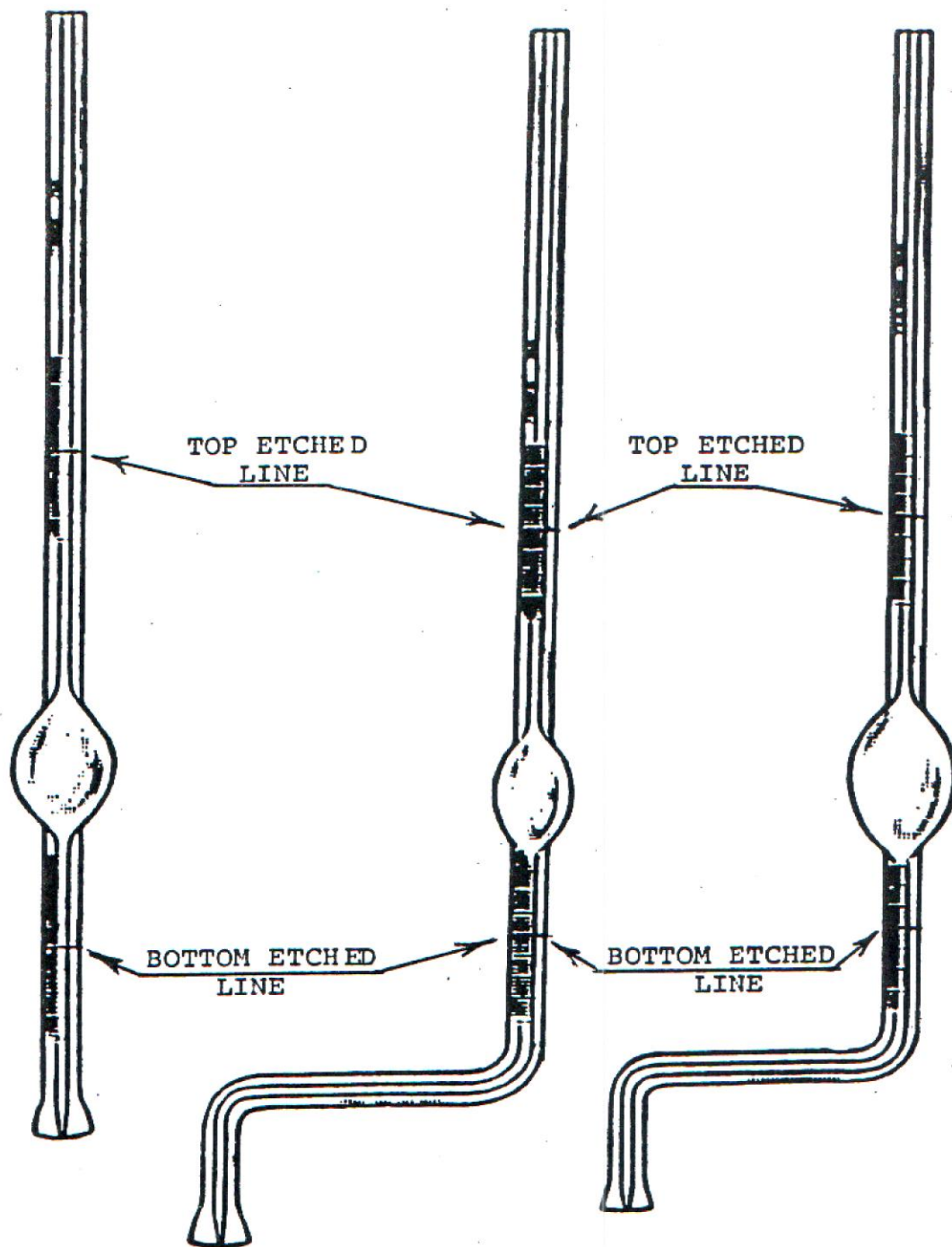
This stalagmometer is calibrated at 40 drops at 25° C.

IMPORTANT NOTES

- A. If consecutive samples of similar solutions are to be tested, Steps #1 thru #6 need not be repeated. Simply rinse and drain the stalagmometer twice with the next solution to be tested and then proceed to Step #7.
- B. To measure surface tension in tenths of a drop, refer to attached directions.

CONTENTS FOR STALAGMOMETER KIT

- 1 - Stalagmometer
- 1 - Rubber Bulb
- 1 - Thermometer Clamp
- 1 - Support Stand & Rod
- 1 - 150 ml Beaker
- 1 - Hand Counter



(FIGURE #1)