



## INSTRUCTIONS

30 July 1996

Vapro™ Vapor Pressure Osmometer, model 5520  
Vapor Pressure Osmometer, models 5500& 5100C

### AC-063 Sample Holder for 2 $\mu$ L Samples

#### Intended Use:

Wescor's 2  $\mu$ L sample holder allows you to measure very low volume samples with your Vapor Pressure Osmometer.

#### Required Equipment:

Except Wescor's AC-063 Sample Holder all other required items must be obtained from suppliers other than Wescor.

- AC-063, Low-volume Sample Holder
- High quality 1/8 inch round hole paper punch, Mieth or equivalent
- High quality 2  $\mu$ L pipette, which will deliver precisely 2 microliters or less
- Pipette tips (short)
- Tweezers
- Teasing needle
- Whatman #1 Filter Paper or equivalent
- Lint-free tissue paper
- Cotton-tipped applicators

#### Special Low Volume Procedure:

Very low volume tests require careful and consistent technique to achieve reliable results. The following are important for you to consider when running samples with very low volumes:

1. Use only single sample discs. Because of their small size, you must be careful not to load more than one.
2. Discs must be punched cleanly - no ragged edges.
3. The sample holder must be kept very clean.
4. Do not exceed 4  $\mu$ L of sample in the special sample holder. Using too much sample fluid can severely contaminate the thermocouple.
5. The paper disc must be completely saturated by sample fluid. If not fully saturated, the disc may appear patchy. In this condition, data will be inconsistent and repeatability will be poor.

**Preparing Paper Discs:**

1. Use a 1/8 inch diameter punch to create a supply of paper discs. Punch only one thickness of paper stock at a time, to prevent paper discs from sticking together. That, along with static electricity will make it difficult to pick up a single disc with the tweezers.
2. After punching, remove paper discs from the retainer of the punch. Store discs in a clean, static-free container.

Note:

Very small samples of less than 2 microliters can be successfully measured using lighter paper for the discs. You should experiment with various papers. Be cautious as some papers contain electrolytes that make them unsuitable. Successful results have been achieved using standard laboratory lint-free tissue.

**Running Samples:**

Technique, including timing, is vitally important to obtaining good data while conducting very low volume tests.

Maintain a stable ambient temperature. Heat, cold, air currents, and temperature fluctuations that vary more than approximately 0.3° C within a 10 to 15 minute period, generally will result in poor quality data.

1. Calibrate the instrument using 2  $\mu$ L of standard.
2. Load a single paper disc into the center of the special sample holder. You may need to use the teasing needle and the tweezers to separate discs that are stuck together.
3. Place the sample into the center of paper disc. Be sure to touch the pipette onto the disc as in regular procedure. Be sure the disc is completely saturated.
4. Close the sample chamber to begin the measurement cycle.
5. When the measurement is complete, open the sample chamber and retract the sample slide.
6. Thoroughly clean the sample holder of all sample material using lint-free tissue and a cotton-tipped applicator.