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ALLA FRANCE EBULLIOMETERS

OPERATING INSTRUCTIONS

Ebulliometers directly and precisely determine the alcoholic content of dry wines, champagne, beer, cider, alcohol solutions, and vinegar.

Benefits

- Electronically regulated heating
- Stable boiling temperature
- Continuous cooling
- Total process visibility, filling, boiling and draining

Specifications

Alla France Complete Electric Ebulliometer

- Measurement range of 0-17%
- Uncertainty: +/- 0.15% vol.
- Testing time: 6-8 min.
- Power: 125W
- Anti-overheating electronic protection system
- Optional: USB Key with electronic software to calculate the % volume
- Mercury filled thermometer

Alla France Economic Electric Ebulliometer

- Measurement range of 3-16%
- Uncertainty +/- 0.3% vol.
- Boiling in 5-7 min.
- Power: 125W
- Digital thermometer
- Table to calculate the % volume
- Optional: USB Key with software to calculate % vol, Circular rule

Assembly

1) Insert the seal and screw the glass cylinder onto the red connector.
2) Link a piece of the silicone tube from your water supply system to the lower inlet branch of the cooling condenser and another piece from the condenser outflow to the drainage.
3) Check your thermometer and make sure there is no separation in the mercury column. Install thermometer into the bottom glass cylinder as per the photo.
4) Link a piece of silicone tubing from the back exit valve of the device of the instrument to the drainage. Close the valve.
5) Connect the instrument through the supplied cable to a 110V plug.

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Calibration

1) Open the water supply system valve in order to start the cooling process.
2) Pour a small quantity of standardized wine into the top funnel, rinsing the cylinder at the same time. Allow the top funnel to drain into the boiling chamber, and then slowly fill up the chamber with sample to the inscribed mark.
3) Turn on the back switch. The red LED light in front will light up indicating that the device is switched on.
4) Press the front On/Off button once. The LED will show a green light. The sample will start heating up.
5) Wait for the mercury column to rise and stabilize (approximately 6-7 minutes). Record the measurement results of the thermometer. Press again On/Off to stop the boiling process.
6) Remove the thermometer. Open the drainage valve of the instrument and rinse using at least 750mL of distilled water inside the glass cylinder to rinse and cool the heater down.
7) Replace the thermometer. Fill the cylinder with distilled water to the inscribed mark, and repeat steps 4 and 5 again. Note the temperature at which the distilled water boils and remains stable.
8) Use of the calculation slide rule: Take the temperature at which the distilled water boiled. Move the inner wheel around to the arrow that is secured with a screw, to the temperature at which the water boiled. For instance, if the water boiled at 99.9°, move the wheel to the point where the arrow and 99.9° line up. Once you have the boiling temperature of the wine, you simply look at the inner wheel at the temperature and read across to the corresponding degree of alcohol. At 99.9° water temperature and a reading of 91.5° on the wine, the alcohol would equal 11.7% by volume.
9) The device is now calibrated and can be used for the morning. It is optimal to recalibrate in the afternoon, as the barometric pressure which affects boiling temperature can change the baseline reading. With drastic changes in weather, recalibrate to obtain the most accurate alcohol readings.

Analysis

With the wine sample, repeat steps 2, 4, 5, 6, and 8 from above.

Troubleshooting

- Do not push the On/Off button without having water or wine inside the glass cylinder.
- The control of the water blank should be done 1 – 2 times per day (AM and PM), or more if necessary depending on weather conditions. Drastic fluctuations in the weather will change the barometric pressure, thus changing the boiling point of the water.
- Be sure to cool down the device after each sample and rinse it thoroughly with the new sample to be analyzed prior to next sample.
- Make sure to drain all rinse sample out of the chamber by gently tipping the boiling chambers over and draining into sink.
- In case of overheating, the green LED light will flash and the device will stop heating. To recover, let the instrument cool down until the green light stops flickering. Then rinse with cool water and empty all water out of instrument.
- Use anti-foam to reduce foaming in samples with high levels of CO_2.
- If testing vinegar, use standardized vinegar to calibrate instead of wine.

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