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Getränkeanalytik

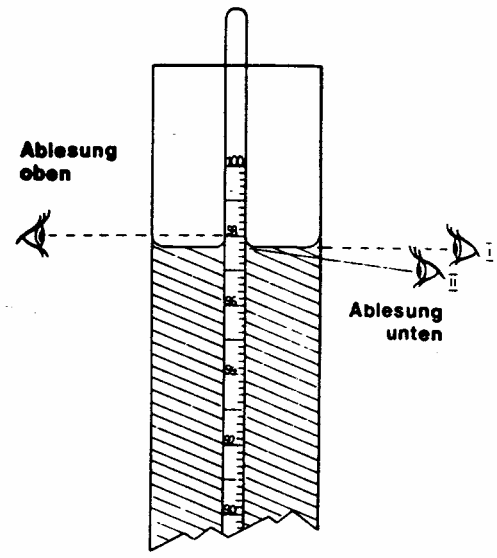
# Areometer (saccharimeter, alcoholometer) with thermometer

**version 04/2005**



## Technical information and instructions for use

- Areometers only provide impeccable results when they are in good order, clean and fat free. Measuring instruments have after each use to be cleaned thoroughly with cold water. Use a lint free cloth for cleaning.
- Protect the areometer from heat, cold, impact and dropping. When being introduced incorrectly, an impact onto the cylinder bottom will normally destroy the areometer.
- Spindle cylinders must be kept clean and fat free. Rinse after use thoroughly with water. Clean occasionally by means of a brush and detergent. Make sure before filling that the cylinder is dry and has sufficiently been pre-rinsed with the sample liquid.
- The diameter of the spindle cylinder should be substantially larger than the diameter of the aerometer floating body so that the instrument has enough play to all sides and adhesion forces are avoided.
- The aerometer is slowly introduced into the spindle cylinder being filled up to approx. 2/3 with sample liquid. To do so, hold the instrument only at the head of the stem. The aerometer must not swing up and down since otherwise the liquid film adhering to the stem falsifies the weight of the aerometer and thus the measuring result.
- Air bubbles adhering to the aerometer hinder the analysis and have to be removed by carefully rotating the measuring instrument or by pulling-out the aerometer and immersing it again.
- The temperature of the sample to be examined often deviates from that of the aerometer. For this reason, read measured values only 1-2 minutes after having immersed the instrument.
- The liquid to be examined should be free from suspended solids (filtration) and not show any formation of layers (mix thoroughly).
- The measured values must be read exactly. Aerometers, on which no reading instructions are printed, are always adjusted to “reading downward”. Instruments adjusted to “reading upward” must be marked by the printing “reading upward” (compare illustration).




- The calibration of an aerometer is the official guarantee that the deviation is at no position of the aerometer graduation greater than one graduation mark.
- Areometrics are temperature-dependent and always refer to 20°C. If the measuring takes place at exactly 20°C, the indicated measured value applies. If measuring takes place at deviating temperatures, the temperature correction has to be made with calibrated instruments or instruments being appropriate for calibration by means of tables, e.g. the official alcohol tables. Simple areometers are equipped with correction graduations.

Schliessmann supplies areometers being appropriate for calibration and calibrated areometers with highly responsive mercury thermometers (according to the Weights and Measures Act) - identification ***ThA*** - and areometers without Weights and Measures Act identification with a less complex and slower colour thermometer - identification ***FThA***-.

Special design features:

***ThA:*** The thermometer capillary is melted into the aerometer underneath the taper, the mercury being merely separated from the sample to be examined by the aerometer wall. Thus, optimum heat transmission conditions are ensured.

***FThA:*** The thermometer capillary is fasted in the aerometer underneath the taper by means of thermo-conducting transparent fixing material. The coloured capillary liquid and the sample to be examined are separated from each other by the capillary wall, the thermo-conducting fixing material and the aerometer wall. The heat transmission conditions are not as good as with the *ThA* version, but still significantly better than other designs with air (instead of an fixing agent) between capillary and aerometer.

Hereafter the response time for the temperature adjustment between sample and the aerometer is specified with various output temperature differences:

| Temperature difference [°C] | 20 | 15 | 10 | 5 | 2,5 |
|---|---|---|---|---|---|
| Response time *ThA* [sec.] | 40 | 30 | 20 | 10 | 5 |
| Response time *FThA* [sec.] | 160 | 120 | 80 | 40 | 20 |