Triple Scale Beer and Wine Hydrometer

68°F/68°F Temperature of Standardization

A hydrometer measures the weight of a liquid in relation to water. Sugar and other fermentable solids add to the density of water, raising the specific gravity. As fermentation takes place, solids are converted to alcohol, lowering gravity. Specific gravity is a useful indication of fermentation potential prior to yeast introduction and by comparison with the beginning readings, an accurate final indication of the fermentation results.

Water, by definition, has a specific gravity of 1.000. Unfermented beer or wine, wort or must, contain a fairly high level of fermentable solids, will have a specific gravity higher than 1.000 sometimes reaching 1.160.

The different scales interpret the specific gravity of a liquid in several useful formats:

The Brix scale shows the percentage of sugar by weight.

The Approximate Potential Alcohol by Volume scale indicates the potential alcohol content before fermentation. In order to determine the alcohol content of a wine or beer after fermentation will you will need use a % Alcohol by Volume hydrometer.

1. CLEANLINESS OF THE HYDROMETER, HYDROMETER JAR AND THE LIQUID IN WHICH THE READINGS ARE TAKEN: For uniform and reproducible readings, the surface of the hydrometer and especially of the stem must be clean so that the liquid will rise uniformly and merge into an almost imperceptible film on the stem. The readiness with which this condition is fulfilled depends somewhat on the character of the liquid. Such liquids as mineral oils and strong alcoholic mixtures readily adhere to the stem. Weak aqueous solutions of sugar, salts, acids, and alcohol require scrupulous cleaning of the hydrometer stem. Before a test is made the hydrometer should be thoroughly washed, rinsed and dried by wiping with a clean, lint-free cloth. The hydrometer jar should be thoroughly washed and rinsed before the clean test liquid is added.

Note: DURAC® Precision Polycarbonate and Plastic Hydrometers are designed for room temperature use only. Clean with any mild non-abrasives non-alkaline detergent to prevent scratching of the plastic, do not use abrasives, such as scouring powders or steel wool. Do not clean in a dishwasher. Do not autoclave.

Bel-Art – SP Scienceware does not provide applications specific technical support.

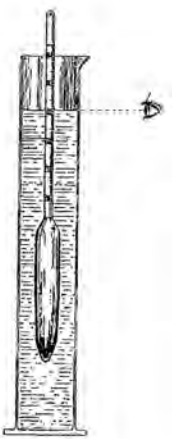
2. TEMPERATURE: The hydrometer and liquid should be at nearly the temperature of the surrounding atmosphere to prevent changes in density during the observation as well as any doubt as to the actual temperature. To insure uniformity of density and temperature, the liquid should be completely stirred shortly before the observation is made. Stirring is well accomplished with a perforated disk or spiral on the end of a rod long enough to reach the bottom of the container. Stirring from top to bottom disperses liquid layers of different density. Readings should not be made until both liquid and hydrometer are free of air bubbles and are at rest.

Note: When using hydrometers, the temperatures of the liquid, the hydrometer, and the surrounding atmosphere should be nearly equal. It is essential to allow enough time to achieve this equilibrium before an accurate reading can be taken. Polycarbonate hydrometers may require more time than hydrometers made from other materials.

3. PROPER IMMERSION: immerse the hydrometer slowly to a point slightly beyond that at which it floats naturally (not more than 1 or 2 scale graduations), then allow it to float freely.

4. TAKING READING: At eye level read the scale where the liquid crosses the stem.

Temperature Corrections: Hydrometers are calibrated at 68˚F/68˚F. To determine the density of a liquid, the liquid should be 68˚F. If the temperature of the liquid varies, the liquid will either contract or expand, depending upon the temperature. Therefore, the density fluctuates with the temperature. Where there is variation from the standard 68˚F, corrections must be applied to the hydrometer reading. To assure proper corrections, a separate accurate thermometer should be used when taking readings.



Temperature in °F	Specific Gravity Correction
50°F	Subtract 0.002
60°F	Subtract 0.001
70°F	No correction needed
77°F	Add 0.001
84°F	Add 0.002
95°F	Add 0.003
105°F	Add 0.005
110°F	Add 0.007
113°F	Add 0.008
118°F	Add 0.009

H-B Instrument – SP Scienceware
102 West Seventh Avenue
Trappe, PA 19426 USA

973-694-0500 (PHONE)
973-694-7199 (FAX)

info@belart.com
www.belart.com/hb

H-B Instrument
SP SCIENCEWARE™

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