pH MEASUREMENT

EQUIPMENT

pH Meter with accurate electrode and automatic temperature compensator
50 mL or 100 mL beakers

REAGENTS

pH 4.00 Buffer— use as a standard for calibration
pH 7.00 Buffer— use as a standard for calibration
pH 3.00 Buffer— use as an outside check standard
pH 10.00 Buffer— use as an outside check standard
Distilled water bottle
Appropriate electrode filling solution

PROCEDURE

Using the automatic slope feature, calibrate the meter by measuring the pH 7.00, then the pH 4.00 buffers. Check the slope accuracy by checking the buffers for values falling within the limits of + or - 0.02 pH tolerance. If the calibration falls out of the range of tolerance, clear the meter and recalibrate until the parameters are met. Use pH 3.00 and pH 10.00 buffers to validate slope and to act as outside check standards depending on the pH range needed. For wine samples, the pH 3.00 to pH 4.00 range are the most critical. For titrating total acidity, the endpoint is pH 8.2.

To measure the pH in samples, dispense approximately 30 mL sample into a 50 mL beaker. Allow the samples to reach room temperature and immerse the electrodes in the beaker to measure the pH. Record the value, then check it again for repeatability. Sparkling wine samples and fermenting musts need to be degassed prior to measuring pH. If the sample is gassy, the pH measurement will not stabilize.

After each measurement, the electrodes should be adequately rinsed with distilled water. After use, store electrodes in colorless pH 4.00 buffer or a commercial electrode storage solution. Check the electrode fill level so that the salt bridge is optimally activated. The best level is to maintain the filling solution just below the fill hole on the electrode.

To maximize electrode performance, be sure that electrode fill hole is uncovered. Use fresh buffers daily.

DISPOSAL

Buffers: dispose with water in sink.