



Method 5.3 – Syrup: pH

1. Rationale

This method is applicable to factory syrups.

2. Principle

The pH of the syrup is measured directly at room temperature. The pH meter is calibrated at room temperature using pH 4.0 and 7.0 buffer solutions. Due to the high viscosity of syrup, equilibrium between the electrode and the solution is only reached after about 30 minutes of contact. However, for factory control it is normal practice to measure the pH after exactly one minute. Note that readings taken after one minute will be invalid.

3. Apparatus

- 3.1 **pH meter**
- 3.2 **Magnetic stirrer** and stirrer bar
- 3.3 **Beaker:** 50 cm³

4. Reagents

- 4.1 **pH buffer solutions** 4.0 and 7.0

5. Procedure

Following the manufacturer's directions, calibrate the pH meter using the 4.00 and 7.00 pH buffer solutions (compensated for a temperature different from 20°C) while stirring at a constant rate. Calibrations should be done at the beginning of each day or shift using fresh buffer solutions only. The buffer solutions should be at room temperature.

Allow the sample to cool to room temperature. Measure the pH of the sample while stirring at a constant rate after exactly one minute. Report the result to one decimal place.

6. References

- SASTA (1985). *Laboratory Manual for South African Sugar Factories*. 3rd Edition: 257 - 258, 292.
- SMRI (1997). Determination of the pH of juice. *SMRI Test Methods*, TM040.