



Method 9.1 – Drinking water, boiler water, boiler feed water and effluent: pH

1. Rationale

This method is applicable to drinking water, boiler water, boiler feed water and effluent.

2. Principle

The pH of the sample is measured directly at room temperature. The pH meter is calibrated at room temperature using pH 4.00 and 7.00 buffer solutions.

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** 4.00 and 7.00

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 or 25°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, allowing at least one minute for the reading to stabilise. Report the result to two decimal places.

6. References

SASTA (1985). *Laboratory Manual for South African Sugar Factories*. 3rd Edition: 345, 356.

SMRI (1997). Determination of the pH of juice. *SMRI Test Methods*, TM040.