



Method 7.12 – Raw sugar: pH

1. Rationale

This method is applicable to raw sugars.

2. Principle

The pH of a 30°Bx solution of raw sugar is measured directly. The pH meter is calibrated using pH 4.00 and 7.00 buffer solutions.

3. Apparatus

3.1 Top pan balance readable to 0.1 g

3.2 pH meter

3.3 Magnetic stirrer and stirrer bar

3.4 Beaker: 150 cm³

4. Reagents

4.1 pH buffer solutions 4 and 7

5. Procedure

Prepare a 30°Bx sugar solution by mixing 30 g sample with 70 g water in a 150 cm³ beaker until all the sugar is dissolved.

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.

Measure the pH of the sample solution 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: 257 - 258.