



Method 1.3 - Official Methods: prepared cane Brix

1. Rationale

The measurement is affected by the presence of suspended matter, which must therefore be removed by filtration or by centrifuging. Temperature changes have a predictable effect on the refractometer readings of pure sucrose solutions and the temperature corrections which apply to pure sucrose solutions may be used for juices without introducing serious errors.

2. Principle

After digestion a portion of the sample is filtered with a filter aid and used to determine the Brix of the solution.

3. Apparatus

- 3.1 Precision refractometer
- 3.2 Stoppered bottle (225 cm³)
- 3.3 Filter paper, Whatman No. 6 or equivalent (150 mm ϕ)
- 3.4 Stemless funnel (100 mm ϕ)
- 3.5 Beaker (100 cm³)
- 3.6 Watch glass (100 mm ϕ)

4. Reagents

- 4.1 Filter aid - Celite 577 or equivalent

Celite is an inert powder and inhalation may cause asbestosis of the lungs. Wear a dust mask during use.

5. Procedure

Place a fluted filter paper in the stemless funnel.

Place the filter funnel in the mouth of a clean dry beaker, so that the funnel is supported by the rim of the beaker.

Place approximately 1 g of filter aid in the filter paper.

Shake the bottle with the cooled extract and transfer a portion in one operation to the filter, taking care not to overflow the upper edge of the filter paper and cover the funnel with a watch glass to minimize evaporation.

Discard the first 10 cm³ of the filtrate, using it to rinse the beaker.

Collect about 25 cm³ of the filtrate.

Measure the Brix of the filtrate with the refractometer.

It is recommended that the measurements be carried out at $20.0 \pm 0.1^\circ\text{C}$.

6. Expression of Results

Report Brix in $^\circ\text{Bx}$ to two decimal places.

7. Precision

The tolerance associated with the Brix analysis is $\pm 0.05^\circ\text{Bx}$.

8. References

SASTA (1985). *Laboratory Manual for South African Sugar Factories*. 3rd Edition: 234 – 236.