

Supelco®

1.16141.0001

Reflectoquant® Sucrose (Saccharose) Test

1. Method

Sucrose (saccharose) is cleaved by sucrose phosphorylase into fructose and glucose-1-phosphate. The latter is converted by phosphoglucomutase into glucose-6-phosphate. This is in turn oxidized by NAD under the catalytic effect of glucose-6-phosphate dehydrogenase to gluconate-6-phosphate. In the presence of diaphorase the NADH formed in the process reduces a tetrazolium salt to a blue formazan that is determined reflectometrically.

2. Measuring range and number of determinations

| Measuring range | Number of determinations |
|-------------------------|--------------------------|
| 0.25 - 2.50 g/l sucrose | 50 |

3. Applications

Sample material:

Beverages, e.g. fruit/vegetable juice, refreshment drinks after appropriate sample pretreatment (**application see the website**) or dilution (see section 6)
Dairy products after appropriate sample pretreatment (see section 6)

4. Influence of foreign substances

After appropriate dilution or sample pretreatment, the determination is not interfered with by the substances usually contained in the sample materials stated above.

5. Reagents and auxiliaries

The test strips and the test reagent are stable up to the date stated on the pack when stored closed at +2 to +8 °C.

Package contents:

Tube containing 50 test strips
1 bar-code strip
1 bottle of reagent Sa-1
1 graduated 12-ml plastic syringe
1 graduated 1-ml plastic syringe
1 test vessel with stopper

Other reagents and accessories:

Polyvinylpyrrolidone Divergan® RS, Cat. No. 107302
Carrez clarification, Cat. No. 110537
Sucrose, Cat. No. 107687
Stopwatch

6. Preparation

- Extract solid sample materials by an appropriate method.
- It may be necessary to dilute the sample to be analyzed with distilled water (e.g. 1:100, i.e. 1 ml of sample + 99 ml of water) prior to the determination (see section 7):

| Sucrose concentration g/l | Dilution factor | Dilution |
|---------------------------|-----------------|----------|
| 2.5 - 25 | 1 + 9 | 10 |
| 25 - 250 | 1 + 99 | 100 |
| > 250 | 1 + 999 | 1000 |

- Strongly colored samples must be decolorized with polyvinylpyrrolidone Divergan® RS prior to the determination (application see the website).
- Yogurt and milkshakes as well as turbid juices must be clarified according to Carrez' method prior to the determination.

7. Procedure

Observe the manual for the reflectometer.

The following applies to the Sucrose Test:

Measurement procedure A

Stored reaction time: 300 sec

Rinse the test vessel several times with distilled water.

| | | |
|-------------------------------|-----------------------|---|
| Distilled water (23 ± 3 °C) | 10 ml | Inject into the test vessel with the syringe. |
| Reagent Sa-1 | 5 drops ¹⁾ | Add and swirl. |
| Pretreated sample (23 ± 3 °C) | 1.0 ml | Add with the syringe and mix. |

Press the START button of the reflectometer and - **this is imperative - at the same time immerse both reaction zones of the test strip in the measurement sample for 2 sec.**

Carefully allow excess liquid to run off via the long edge of the strip onto an absorbent paper towel.

Immediately insert the strip all the way into the strip adapter with the reaction zones facing the display.

After the end of the reaction time, read off the result from the display in g/l sucrose. The result is automatically stored.

¹⁾ **Hold the bottle vertically while adding the reagent!**

Notes on the measurement:

- If the measurement value exceeds the measuring range (HI is shown on the display), repeat the measurement using **fresh**, diluted samples until a value of less than 2.50 g/l sucrose is obtained.
- Concerning the result of the analysis, the dilution (see also section 6) must be taken into account:

Result of analysis = measurement value x dilution factor

Serial measurements:

After the first measurement, it is possible to run further measurements by pressing the START button. In this case, however, a stopwatch is required since the countdown function of the reflectometer is available only once per series.

Protect the reaction zones from light during the reaction time.

All results are individually shown and automatically stored.

- If the test strip is inserted into the adapter after the reaction time has expired, renewed depression of the START button may produce a false result.

8. Method control

To check test strips, test reagent, measurement device, and handling (recommended before each measurement series):

Dissolve 1.00 g of sucrose in distilled water, make up to 1000 ml with distilled water, and mix. Sucrose content: 1.00 g/l. Analyze this standard solution as described in section 7.

Additional notes see under **www.qa-test-kits.com**.

9. Notes

- **Reclose** the reagent bottle and **the tube containing the test strips immediately after use.**
- Rinse the test vessel and the syringes **with distilled water only.**
- At the end of each workday, cleanse the strip adapter thoroughly with distilled water or ethanol.

