Sweeten your routine in the laboratory

BioSystems
Y15

Sugar analysis in foodstuff

Food & Beverage analysis

human - centred biotech

Carbohydrate analysis is an essential tool for monitoring different technological processes and their quality, in the detection of adulterations, as well as in the determination of nutritional parameters for their correct labeling.

Analytical solutions

The reagents have been designed together with the **Automatic Analyser BioSystems Y15**, optimizing their performance and offering a unique system in the market.

D-Glucose / D-Fructose | Ref. 12800[1]

Glucose and **fructose** are monosaccharides naturally present in different food or added as additives. The reagent allows the quantification of sugars separately or together in different food matrices such as juices and beverages, vegetables, meat, dairy or cereal-based products, among others.

Principle of the spectrophotometric method:

- Hexoquinase
- Phosphoglucose isomerase
- Glucose-6-phosphate dehydrogenase

Sucrose / D-Glucose / D-Fructose | Ref. 12819[1]

Sucrose, **glucose** and **fructose** are simple sugars naturally present in different foods or added as additives. The reagent enables the quantification of sucrose separately or all together in different food matrices such as juices and beverages, vegetables, meat, dairy, or cereal-based products, among others.

Principle of the spectrophotometric method:

- ß-fructosidase
- Hexoquinase
- Phosphoglucose isomerase
- Glucose-6-phosphate dehydrogenase

[1]**Metrological** characteristics: for further technical information about the reagents, request the performance report from your supplier. On the instructions for use of each reagent, you will find more information about the matrix extraction processes.

Maltose / Sucrose / D-Glucose / D-Fructose | Ref. 12893[1]

Maltose, **sucrose**, **glucose** and **fructose** are simple sugars (mono and disaccharides) naturally present in different foods. The reagent allows the quantification of the four sugars in different cereal-based products.

Principle of the spectrophotometric method:

- α-glucosidase
- ß-fructosidase
- ß - glucosidase
- Hexoquinase
- Phosphoglucose isomerase
- Glucose-6-phosphate deshydrogenase

Sucrose | Ref. 12894[1]

The reagent allows the quantification of sucrose in samples with higher concentration

Principle of the spectrophotometric method:

- ß-fructosidase
- Hexoquinase
- Glucose-6-phosphate deshydrogenase

Lactose / D-Galactose | Ref. 12882[1]

Lactose is a disaccharide sugar, formed by D-glucose and **D-galactose**. Both substances are naturally present in dairy products or can be added externally as additives. The reagent has been validated in juices and beverages, cereal, meat or dairy products. It allows the quantification of sugars separately or the sum of both.

Depending on the application used, the reagent can be also used for lactose-free labeling (except for samples containing lactose-free dairy products).

Principle of the spectrophotometric method:

- ß-galactosidase
- Mutarotase
- ß-galactose deshydrogenase

[1]**Metrological** characteristics: for further technical information about the reagents, request the performance report from your supplier. On the instructions for use of each reagent, you will find more information about the matrix extraction processes.

Starch | Ref. 12848[1]

Starch is a complex carbohydrate formed by glucose polymers. It is the energy source in cereals and potatoes, where is naturally found. Also, its use as a thickener and texturizer is widely spread in the food industry. The reagent allows the quantification of starch, via glucose.

Principle of the spectrophotometric method:

- α-amilase
- Amiloglucosidase
- Hexoquinase
- Glucose-6-phosphate deshydrogenase

Validated Matrices[2]

Reagents	Juices	Fruit & Vegetables	Cereals Products	Honey	Dairy Products	Meat Products	Chocolates
D-GLUCOSE / D-FRUCTOSE	✓	✓	✓	✓	✓	✓	✓
SUCROSE / D-GLUCOSE / D-FRUCTOSE	✓	✓	✓	✓	✓	✓	✓
MALTOSE / SUCROSE / D-GLUCOSE / D-FRUCTOSE			✓				
SUCROSE	✓	✓					
LACTOSE / D-GALACTOSE			✓		✓	✓	✓
TOTAL STARCH			✓			✓	

[1]**Metrological** characteristics: for further technical information about the reagents, request the performance report from your supplier. On the instructions for use of each reagent, you will find more information about the matrix extraction processes.

[2]Methods may also be used with other types of samples. Contact your supplier for more information.

BioSystems Y15

Automatic Random Access Analyser

Highlights

150 cycles/hour (75 results/hour).

Samples continuous loading.

Dedicated reagents, minimum handling.

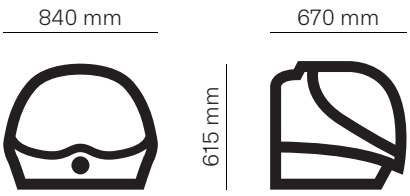
Automatic pre and post dilution.

User-friendly and adaptable software, direct results.

Item	Quantiy	Code
BioSystems Y15 analyser	-	83106
BioSystems Y15C analyser	-	83106C
Reaction rotor	10 units	AC11485
Concentrated Washing Solution	500 mL	BO13416
Concentrated System Liquid	1000 mL	12889
Sample wells (pediatric cups)	1000 units	AC10770
Reagent bottles 50 mL + caps	10 units	BO11493
Reagent bottles 20 mL + caps	10 units	BO11494
Amber reagent bottles 50 mL + caps	10 units	BO13442
Halogen lamp Y15 6V/10W	1 unit	LA10429U

Intended use: automated analyser for the measurement of different kind of food and beverage samples.
For professional use in analytical laboratories only.

Dimensions



Technical Specifications

THROUGHPUTS

Speed	150 cycles/hour
Mean throughput	75 results/hour

SAMPLE HANDLING

Positions for racks (reagents or samples)	4 or 2 in Y15c
Rack samples capacity	24 sample positions/rack
Max. capacity of samples	72 or 48 in Y15c
Barcode reader	External
Size of primary tubes	Ø 13 mm or 15 mm (max. height 100 mm)
Sample well diameter	13 mm
Sample types	Agri-food and beverage samples
Dispensing pump	Ceramic pump of high durability
Dispensing tip	Stainless steel 110 mm
Level detection	Capacitative
Sample pipetting volume	From 2 µL to 80 µL
Pipetting resolution	0.1 µL
Predilution ratio	From 1:2 to 1:40
Tip wash	Inside and outside

REAGENTS HANDLING

Volume of reagent bottles	20 mL, 50 mL
Reagents rack capacity	10 bottles of 20 or 50 mL
Cooled reagent	Yes, in Y15c. 20 reagents max.
Temperature range of cooler	10 °C below room temperature (at 25 °C)
Reagent volume	R1 volume, 10 µL to 600 µL R2 volume, 10 µL to 200 µL
Dispensing mode	Ceramic pump without maintenance
Pipetting resolution	1 µL
Tip wash	Inside and outside

REACTION ROTOR

Reaction volume range	From 180 µL to 800 µL
Number of wells	120
Well material	UV methacrylate
Type of incubation	Dry without maintenance
Temperature	37.0 °C
Temperature accuracy	±0.2 °C

OPTICAL SYSTEM

Light Source	Halogen lamp (6V, 10W)
Lightpath	6 mm
Wavelengths	340 - 405 - 420 - 520 - 560 - 600 - 620 - 635 - 670 nm (1 additional filter can be added by user)
Wavelenght accuracy	±2 nm
Spectral range	340 - 900 nm
Photometric range	-0.05 to 3.6 A
Photometric detection system	Silicon photodiode
Internal resolution	<0.0001 A
Baseline stability	0.004 A max., 30 minutes at 505 nm

SIZE AND WEIGHT

Size (w., d., h.)	840 x 670 x 615 mm
Weight	45 Kg
Packaging	120x80x94 cm; 116 Kg

ELECTRICAL AND ENVIRONMENTAL REQUIREMENTS

Mains voltage	115 to 230 V
Mains frequency	50 or 60 Hz
Electric power	150 A (200 A in Y15c)
Ambient temperature	From 10 to 35 °C
Relative humidity	<75%
Altitude	<2500 m

FLUID REQUIREMENTS

System liquid solution bottle	3 L
Washing solution bottle	3 L
Waste solution bottle	3 L

MINIMUM COMPUTER REQUIREMENTS

Operative system	Windows® 10 (x64) or Windows® 11 (x64)
CPU	Equivalent to IntelCore i3 (8th generation)@3.10 GHz or over
RAM	8 GB
Hard Disk	40 GB or over
DVD Lector	Yes
Monitor minimum resolution	1280x800
Connector of serial channel	USB

LABORATORY INFORM ON SYSTEMS (LIS)

Connectivity to LIS	Yes

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