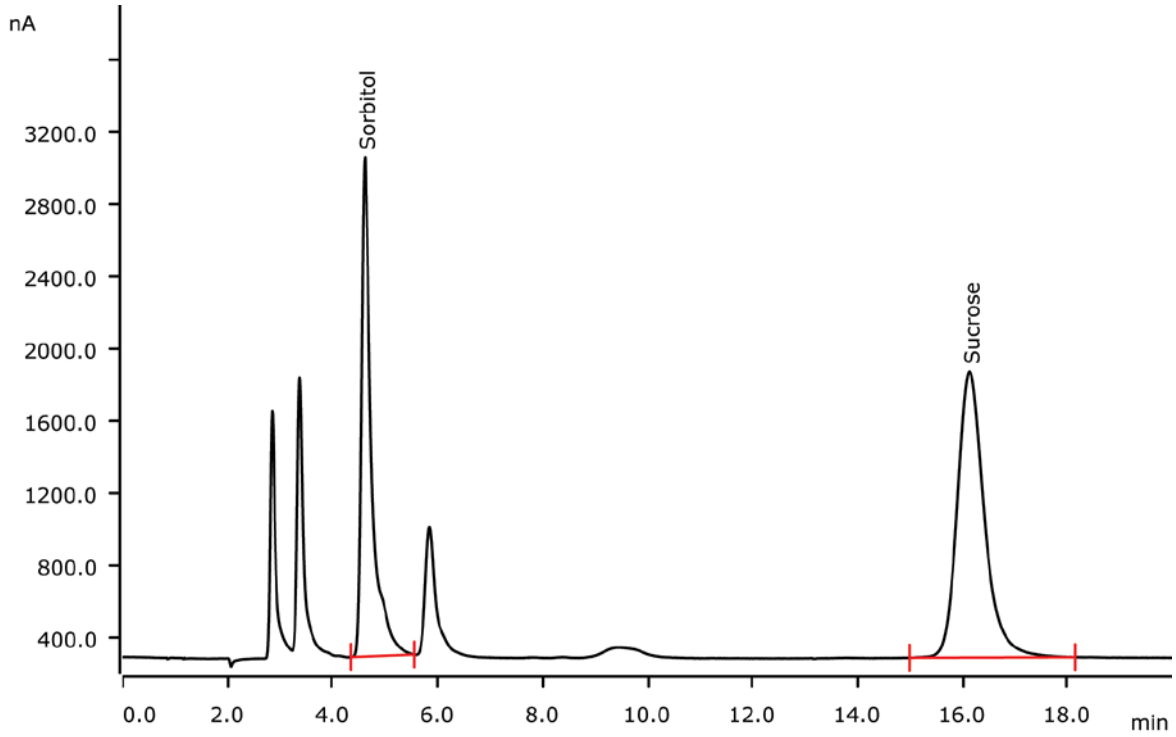
IC Application Note P–67

Sorbitol and sucrose in soap applying pulsed amperometric detection



Polyols and sugar components in soaps increase the stability and size of bubbles and foam. A typical soap ingredient is glycerol. But sugar alcohols and sugars are used as well. The determination of sorbitol and sucrose in a transparent soap is achieved on a Metrosep Carb 2 - 150/4.0 column with subsequent pulsed amperometric detection (PAD).

Results

Compound	Concentration [g/kg]	RSD [%, n = 3]	Recovery [%]
Sorbitol	77.7	0.0	100
Sucrose	269.4	0.6	102

Metrohm

Sample

Transparent soap

Sample preparation

0.1 g of soap is dissolved in 1000 mL of ultrapure water. Injection after filtration (0.2 µm).

Columns

Metrosep Carb 2 - 150/4.0	6.1090.420
Metrosep Carb 2 Guard/4.0	6.1090.500

Solutions

Eluent	100 mmol/L sodium hydroxide 10 mmol/L sodium acetate

Parameters

Flow rate	0.5 mL/min
Injection volume	5 µL
P_{max}	20 MPa
Recording time	20 min
Column temperature	32 °C

PAD Parameters

Cell	Wall-Jet cell
Working electrode	Gold
Reference electrode	Palladium
Spacer	50 µm
Measuring potential	0.05 V
Measuring duration	100 ms
Cycle duration	550 ms
Measuring range	200 µA
Temperature	35 °C
Mode	PAD

Analysis

Pulsed amperometric detection

Instrumentation

940 Professional IC Vario ONE	2.940.1100
IC Amperometric Detector	2.850.9110
919 IC Autosampler plus	2.919.0020
IC equipment Wall-Jet cell: Carb (Au, Pd)	6.5337.010