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Anton Paar

Apparent Purity of Sucrose and Technical Sugar Solutions

Analytical process control is done at all stages of sugar production. According to ICUMSA standards, the MCP Sucromat saccharimeter together with the Abbemat refractometer analyzes sugar samples on Pol, Brix and Apparent Purity.

Sugar manufacturing process control and payment analysis

Sugar manufacturing is a separation and purification process in which sugar cane or beet, a raw material of medium sucrose content and juice purity, is processed to pure crystal sugar and by-products of low sucrose contents or low purities, namely final molasses, bagasse and filter cake.

It is the aim of every sugar factory to crystallize most of the sugar received with the cane and beet, and to keep sugar losses in by-products and undetermined losses at the lowest possible level. Therefore, the analysis of sucrose content and impurities is important in sugar payment analysis as well as in analyzing raw intermediates and final products.

The determination of Pol, Brix and Apparent Purity are the most common analyses in sugar laboratories. According to ICUMSA methods, the sucrose content can be measured by using a saccharimeter and the percentage of dry substance by a refractometer.

Combination of MCP Sucromat and Abbemat refractometer

The combination of MCP Sucromat at 589 nm (and at 880 nm, MCP 250/500 Sucromat) and an Abbemat refractometer of the Performance, Performance Plus or Heavy Duty line together with an optional flow cell with filling funnel is ideal for determining the Pol, Brix and Apparent Purity.

The chosen Abbemat and the MCP Sucromat are connected by an interface cable and operated from the MCP Sucromat screen. When selecting the purity method on the MCP Sucromat Apparent Purity will be directly displayed together with the temperature-corrected °Brix reading as well as temperature-corrected sucrose content (in terms of °Z International Sugar Scale readings). A computerized Sucrolyser system can be set up with a personal computer and the software programs "Sugarlab" (sugar process control) and/or "Cane" (payment analysis).

Further information about corresponding ICUMSA methods and measuring principles are specified in the corresponding Application Note.

Good to know

MCP Sucromat together with an Abbemat of the Heavy Duty, Performance or Performance Pus line is ideal for determing Pol, Brix and Purity in the sugar industry.

Other Anton Paar instruments relevant for the application

A fast quality analysis of sugar beet can be done with the Betalyser system. It quickly determines the sugar (MCP 300 Sucromat), sodium and potassium (FP-5 flame photometer) and the α-amino-nitrogen (Testamin 5 double beam

Do you have any questions?

Contact Anton Paar directly:
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