STANDARDIZED SUGAR SYRUP

Introduction

In the beverage, confectionery and canned product industries, sugar is mostly processed as an aqueous solution or syrup. Therefore, the first stage of the process is the preparation of the standardized sugar syrup.

Syrup is prepared simply by mixing sugar with water to a concentration of 60-67 °Brix. The dissolving process can be discontinuous or continuous and the system can be hot or cold.

Application

The crystal sugar is typically dissolved in water, using one of a variety of mixing techniques. The most efficient way is continuous dissolving using a jet mixer, which ensures extremely rapid dissolving.

In order to obtain a uniform product quality, the Brix concentration of the sugar solution must be carefully controlled. For example, too much or too little sugar affects the composition of toffee, and too much sugar in soft drinks means uneven quality and excessive use of the other ingredients.

Instrumentation and installation

Vaisala K-PATENTS® Sanitary Refractometer PR-43-AC is installed in the mixer outlet to measure the concentration of dissolved sugar.

The mixed sugar solution contains a large quantity of air bubbles. These bubbles have an influence on traditional density measuring devices. Due to its unique digital sensing technology, the refractometer only measures the liquid concentration, and the measurement is unaffected by the presence of air bubbles.

The precise and rapid in-line measurement obtained by the refractometer, helps to optimize processing time and to save raw materials.
**Instrumentation** | **Description**
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Sanitary Compact Refractometer PR-43-AC for hygienic installations in small pipe line sizes of 2.5 inch and smaller. The PR-43-AC refractometer is installed in the pipe bend. It is angle mounted on the outer corner of the pipe bend directly, or by a flow cell using a 3A Sanitary clamp, I-clamp or VariLine® connection.

**User Interface** | Selectable multichannel MI, compact CI or a web-based WI user interface options allow the user to select the most preferred way to access and use the refractometer measurement and diagnostics data.

**Measurement range** | Refractive Index (nD) 1.3200 – 1.5300, corresponding to 0-100 Brix.