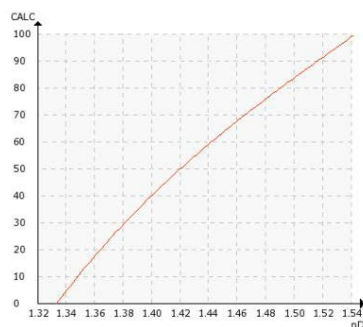


CANE SUGAR JUICE

Typical end products

Sugar and syrup for sweetening soft drinks, beer brewing, preserves, beverage, sweets, liqueurs, ethanol, etc.

Chemical curve: R.I. per BRUX at Ref. Temp. of 20 °C



Introduction

Sugar refining is the production of a higher quality sugar from re-melted raw cane sugar. The first step in refining is affination, where the raw sugar crystals are mixed with a heavy syrup (typically 60 to 80 Brix) to remove the residues of molasses. The syrup is used as a washing solution for the sugar crystals.

Application

Raw sugar and affination syrup are mixed together. During this mixing, the molasses film on the crystal surface is softened and partly dissolved. The crystals are then separated from the syrup in centrifuges


and washed by a water spray. After centrifuging, the sugar crystals are dissolved in hot sweet water in the melter and diluted to a 54 Brix solution. The liquor is screened to remove coarse impurities and it moves on in the process for clarification and decolorizing.

Instrumentation and installation

Vaisala Polaris™ PR53 Process Refractometer can be installed directly in the pipeline after the melter, or in a recirculating line to monitor in real-time the concentration of the liquor to clarification.

The refractometer provides Ethernet and 4-20 mA output signals that can be used for automatic control of the dilution operation to ensure the target concentration is achieved. Typical measurement range in this application is 40-80 Brix, and typical process temperature is about 60 °C (140 °F).

The refractometer facilitates the monitoring and control of the affination process ensuring the optimal operation of the subsequent processes.

| Instrumentation | Description |
|---|---|
|  | The Vaisala Polaris PR53GP Process Refractometer is a heavy-duty instrument with non-weld body construction for diverse applications. The optional flange-mounted pipe flow cell installation accessory allows flange-mounted installation in a wide variety of pipe sizes. |
| User Interface | Vaisala Polaris process refractometers are Indigo compatible. Expand features with Indigo, including data logging, wash control and settings, measurement parameters, diagnostics and service updates. |
| Measurement range | Refractive Index (nD) 1.3200 – 1.5300, corresponding to 0-100 Brix. |

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