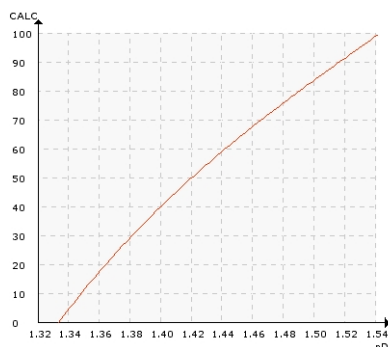


FRUIT YOGURT

Typical end products

Flavored chilled dairy products such as fruit yogurts and desserts.

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



Introduction

Yogurt is a very popular chilled dairy product and numerous brands and flavors can be found in the supermarkets' chiller cabinets. Yogurt is made by the lactic fermentation of whole, standardized and skimmed milks.

The consistency, flavor and aroma vary from one district to another. In some areas, yogurt is produced in the form of a highly viscous liquid, while in other countries it is in the form of a softer gel. Yogurt is also produced in frozen form as a dessert, or as a drink.

Application

Fresh fruit, jam, juice, honey, syrup and other sweeteners may be added to flavor the yogurt before it is packaged for sale. In a continuous industrial process, yogurt flavoring is done in-line when it is transferred from the buffer tanks to the filling lines. The amount of ingredients is commonly measured by a variable-speed metering pump which feeds them into the yogurt in a fruit blending unit. The fruit additives can be sweet with a sugar content between 50-55 %, or natural (unsweetened). The ratio of the ingredients is carefully measured to a determined final product Brix level.

After mixing, the flavored yogurt is analyzed for quality control, before it moves on to the filler machine and cool storage.

Instrumentation and installation

The K-Patents Sanitary Process Refractometer PR-43-AC is mounted on a pipe bend after the in-line mixer. The refractometer measures continuously the Brix concentration of flavored yogurt for final quality control purposes, before the product passes to the filling machines and is packed.


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The measurement of the K-Patents refractometer is not influenced by particles, bubbles or the color of the medium. The measurement is selective of the liquid phase and fruit chunks, seeds or berries mixed in the yogurt do not represent a source of error.

The K-Patents refractometer provides Ethernet and 4-20 mA output signals that can be used as real-time feedback for automatic control of the flavoring process. The precise and continuous measurement by the refractometer ensures a correct ratio of yogurt to fruit and a consistent product quality.

If many products are packed through the same filling line, another refractometer can be used to detect the product-product, as well as the product-CIP liquid interfaces (see application note *Food and Beverage Interface Detection*).

The K-Patents PR-43-AC is designed to meet the strict aseptic conditions in dairy processing. The refractometer is available with 3-A Sanitary and EHEDG certifications.

Instrumentation	Description
	<p>K-Patents 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 Varinline® connection.</p>
<p>User Interface</p>	<p>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.</p>
<p>Measurement range</p>	<p>Refractive Index (nD) 1.3200 – 1.5300, corresponding to 0-100 Brix.</p>