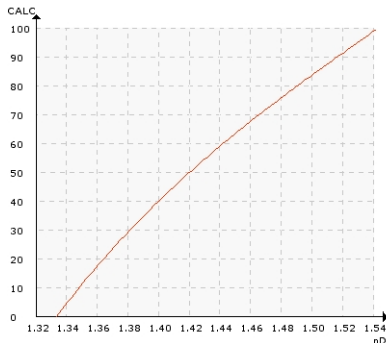


PRODUCT AND CIP INTERFACE

Typical end products

Egg, ice-cream, beer, juice, soft drinks, wine, etc.

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



Introduction

Many processing plants use the same filling station for a range of different products. For example, wine factories run wines from different barrels in the same station. High-speed in-line filling machine operations can be improved by utilizing real-time Refractive Index measurement technology. Automated monitoring and control of the CIP cleaning process allows wines to be switched without the need for a shutdown. This way, an increased productivity is achieved without compromising the end product.

Application

After the first wine batch is run through a pipeline to packaging, the pipes are flushed with CIP cleaning

chemicals and water. In order to save valuable production time, the second wine batch is pumped through the pipeline right after the wash cycle. The K-Patents Sanitary Process Refractometer PR-23-AC instantly detects the product-to-product and product-to-CIP cleaning interfaces. The K-Patents PR-23-AC output signal can also be utilized for quality control monitoring, ensuring a correct product and bottle combinations, and that the end product complies with specifications. Colorimeters, which are commonly used in wine factories, have been proven not to reliably detect product-to-product wine interfaces.

Installation

The K-Patents Sanitary Refractometer PR-23-AC is installed at the end of the filling line to monitor concentration level of the medium. When the concentration reaches a pre-set limit and there is no water present, the refractometer 4-20 mA or serial output signal activates the end product filling with no delay.


When there are separate lines for the product and for the CIP cleaning media, the water flows to a sewer while the pipe is full of product. The K-Patents PR-23-AC gives an instant alarm when the concentration reaches its top limit, and this signal can be used to switch valve direction. During filling, the valve is open to the filling line and closed to the sewer. During CIP cleaning and at the start of a new

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WINE INTERFACE DETECTION	

wine batch, the valve closes the filling line and the stream is then diverted to sewer.

refractometer monitoring of product Brix allows for instantaneous and real-time filling station quality control.

The K-Patents PR-23-AC is 3-A approved and EHEDG tested to meet the highest hygiene requirements for beverage production. The K-Patents

Instrumentation	Description
	<p>K-Patents Sanitary Compact Refractometer PR-23-AC for small pipe line sizes of 2.5 inch and smaller.</p> <p>The PR-23-AC sensor 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 or Varivent® connection.</p>
Measurement range:	Refractive Index (nD) 1.3200 – 1.5300, corresponding to 0-100 Brix.
Output units:	Concentration % by weight, °Brix, °Plato, °Balling, °Baume, Density.