LIQUID SUGAR

Typical end products
Sugar coated donuts and other bakery products.

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

Introduction
Sugar coating of donuts and other specialty bakery products is very common. Coating is done by topping the product with a sugar mass prepared with granulated or a powdered sugar. The sugar coating is usually flavored to meet different preferences by the consumers.

Certain sugar preparations are specifically formulated to increase the shelf life of the donuts. Fine and uniform sugar coating also plays a key role in the bakery products’ final appearance, flavor and quality.

Application
Sugar flows are applied over the surface of baked donuts for an even all-round coating. It is the powdered sugar quality that affects the final product coating.

Liquid sugar is prepared from powdered or granulated sugar. This fresh liquid sugar is mixed with recovered sugar to prepare a coating mix according to the recipe specifications. The finer the sugar mix, the better it adheres to the donut surface.

The K-Patents refractometer is used for quality control of the sugar mix before the final stage of the donuts preparation process, i.e. before the sugar coating is applied to the baked donuts. The excess of the sugar mix is shaken off and collected for reuse.

Instrumentation and installation
The K-Patents Sanitary Probe Refractometer PR-43-AP is installed directly at the lower part of the mixer. The refractometer measures the Brix of the sugar coating before it is spread over the surface of the baked donuts. A Flush Mounted Refractometer PR-43-AP-T is available for vessels with a scraper or mixer.

The K-Patents PR-43-AP refractometer is designed to meet the strict sanitary requirements for food and beverage processing. The refractometer withstands Clean-In-Place (CIP) conditions and is available with 3-A Sanitary and EHEDG certification. Moreover, the refractometer provides a full measurement range corresponding to 0-100 Brix and is automatically temperature compensated.
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<tr>
<th>Instrumentation</th>
<th>Description</th>
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<tr>
<td>K-Patents Sanitary Compact Refractometer PR-43-AC</td>
<td>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.</td>
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<tr>
<td>K-Patents Sanitary Probe Refractometer PR-43-AP</td>
<td>K-Patents Sanitary Probe Refractometer PR-43-AP for hygienic installations in large pipes, tanks, cookers, crystallizers and kettles and for higher temperatures up to 150°C (300 °F). The PR-43-AP refractometer is installed in the pipe line or vessel through a 2.5 inch or 4 inch Sanitary clamp, I-clamp, APV Tank bottom flange or Varinline® connection.</td>
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<tr>
<td>K-Patents Sanitary Flush Mounted Refractometer PR-43-AP-T</td>
<td>K-Patents Sanitary Flush Mounted Refractometer PR-43-AP-T for hygienic flush mounting installations in cookers, cooling crystallizers and other vessels that have scrapers or mixers. Installation through an APV Tank bottom flange.</td>
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**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.