PUDDING SLURRY

Typical end products
Rice pudding and other dairy desserts.

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

Introduction
The production of dairy desserts, for example rice pudding, has high product quality and taste requirements. In order to ensure end product homogeneity and consistency, it is of utmost importance to continuously control the quality of the pudding slurry.

Application
Rice pudding is prepared from rice mixed with hot water or milk and sugar, and possibly other ingredients depending on the recipe, such as cinnamon and raisins.

Rice pudding in hot water or milk is prepared by blending pre-cooked rice with a sugar syrup to form a first coating on the rice grains. The sugar-coated rice is then blended with an aqueous starch slurry to form a second coating on the rice grains. The amount of water used to prepare the coating is limited so that no subsequent drying step is necessary.

The sugar syrup for the first coating on the rice is prepared by dry blending sugar, salt, flavors and colors, and then adding a limited quantity of water. The mixture is then heated for a sufficient period of time at a temperature high enough to dissolve all of the water-soluble ingredients. The amount of water added is the minimum required to create a solution at elevated temperatures. This means that when the sugar syrup is cooled it will solidify to a dry mass.

The starch slurry is prepared by mixing starch and a sufficient (but limited) amount of water to form a uniform dispersion.

Sugar syrup is then blended with a predetermined quantity of pre-cooked rice to evenly coat the rice with the syrup. The resulting mixture is blended with the starch slurry and mixed until the rice is dry and there are no clumps.

The mixed mass is pumped with a rotary lobe pump to a continuous cooker to achieve integrity of the grains. To ensure a desirable product, the solids content recommended to be 25-40 %.

At this stage product bacteriological safety is ensured through pasteurization. Pasteurization is also the reason for the dairy products’ extended shelf life.
Then the pudding slurry is cooled and filled into single use packages.

**Instrumentation and installation**

The K-Patents Sanitary Refractometer PR-43-A is installed in the pipe after the cooking stage. The refractometer measures the total dissolved solids of the liquid phase before the pudding slurry moves on to further treatment. If the pudding slurry complies with the recipe’s texture, it continues to the pasteurization stage. If the product is out-of-specification, it is returned to the mixing stage.

The K-Patents PR-43-A is designed to meet the highest hygiene requirements for aseptic dairy production. The refractometer is available with 3-A Sanitary and EHEDG certifications.

The K-Patents refractometer also provides Ethernet and 4-20 mA output signals for real-time process control. Moreover, The K-Patents refractometer measurement is not influenced by the solid components such as rice grains in the slurry.

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<tr>
<th>Instrumentation</th>
<th>Description</th>
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<tr>
<td><img src="image.png" alt="" /></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><img src="image.png" alt="" /></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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| 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. |