CA-ARABONATE

Introduction

Ca-Arabonate is used to manufacture Vitamin B-2, also known as Riboflavin. Corn is converted into glucose, which is then oxidized and purified by an ion exchanger into Ca-Arabonate. Ca-Arabonate is precipitated and separated by centrifugation, then dissolved in water before further processing into Vitamin B-2.

Application

The solid Ca-Arabonate is taken from the centrifuge and fed into a tank where it is dissolved in water to about 50 % at a process temperature of 90 °C (194 °F). It is very important that the concentration of Ca-Arabonate is kept constant before it enters the following production steps.

Instrumentation and installation

The K-Patents Sanitary Process Refractometer PR-43-A provides real-time control in a procedure, which otherwise must be performed by weighing out a calculated amount of water with the timed addition of solid Ca-Arabonate from the centrifuge. The K-Patents refractometer ensures precise control of Ca-Arabonate to water concentrations.

The K-Patents refractometer PR-43-A is used by the operator to ensure that each tank has the correct Ca-Arabonate concentration before the solution enters the next phase of production. The raw and in process materials are controlled to achieve defect free production.

The typical measurement range is 10-50 % b.w. and the normal process temperature is around 90 °C (194 °F). Automatic prism cleaning with an integral steam nozzle is recommended.

As an added benefit, the K-Patents refractometer can record process data for every batch or lot via Ethernet. It is ideal for the Process Analytical Technology (PAT) framework and for the Good Manufacturing Practice (GMP) in the production of Active Pharmaceutical Ingredients (APIs).

Due to its unique digital sensing technology, the K-Patents refractometer is accurate and does not drift in the presence of bubbles or suspended particles. The refractometer is delivered factory calibrated and does not require re-calibration. Moreover, verification is easily performed using standard refractive index liquids.
When many instruments are required, the K-Patents Multichannel User Interface (MI) connects up to 4 refractometers, thus reducing the investment cost. The MI provides user authentication, electronic records, data logging, event log and audit trail, all in compliance with pharmaceutical requirements.

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<th>Instrumentation</th>
<th>Description</th>
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<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. |