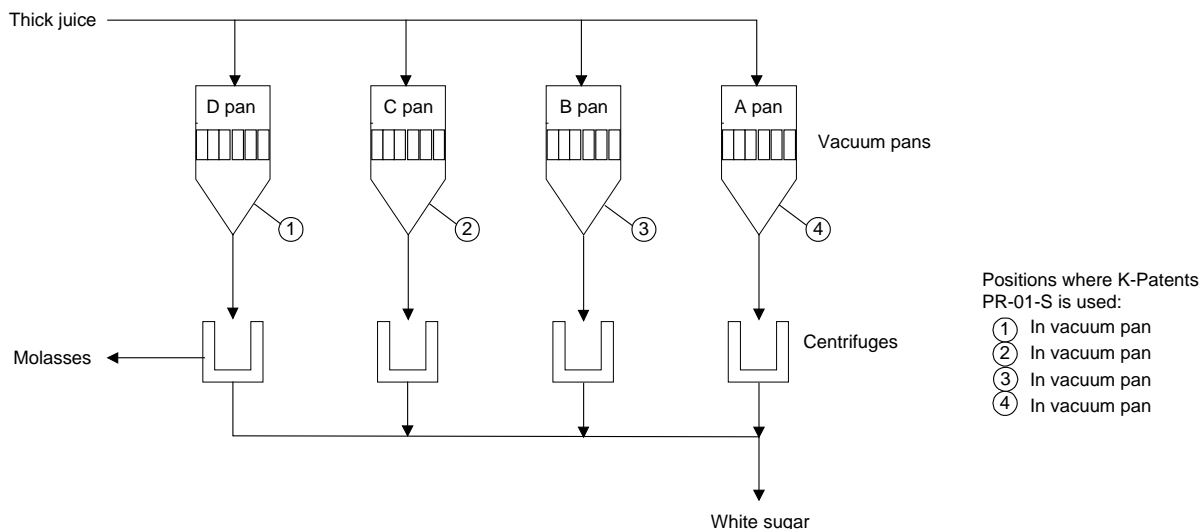


Cane Sugar Vacuum Pan



Cane Sugar

See also

- Cane Sugar Process (Milling and Refining) 1.02.00*
- Cane Sugar Affination 1.01.01*
- Cane Sugar Decolourisation 1.02.02*
- Cane Sugar Evaporation 1.02.03*
- Cane Sugar Recovery Pan 1.02.05*

Introduction

Fine thick juice liquor, which is affinated, clarified, filtered, decoloured, softened and finally evaporated by a multiple effect evaporator, is fed to a vacuum boiling pan. Crystallization is initiated by seeding the concentrated liquor with very fine crystals. The process is continued until the crystals reach the desired size.

The resultant mixture of crystals and mother liquor is fed in centrifugal separators and the sugar crystals are washed with hot water to remove any adhering syrup.

Application

There are many variables in a crystallizer which must be kept under control (temperature, pressure, crystal size, supersaturation etc.) To achieve a uniform and repeatable crystallisation the concentration of the standard liquor should be kept constant.

After seeding the concentration of the mother liquor drops. The reason for this is partly that sugar is taken from the mother liquor to the crystals and partly because some juice may be added to prevent spontaneous crystallisation.

In this phase the supersaturation control is critical for the final result of the stroke. The number of crystals should be constant from the seeding to the end of the stroke. If the supersaturation drop is too big, the crystals will stop growing and even melt. If the supersaturation remains too high, new crystals will form spontaneously. Also with too high supersaturation the crystals will start to grow in an irregular shape.

Installation

In the vacuum boiling pans K-Patents Process Refractometer, PR-01-S is used to determine the seeding point and to monitor the drop of mother liquor concentration after the seeding.

K-Patents PR-01-S is the only refractometer which can measure the concentration of the liquid part without an influence of the crystals.

K-Patents PR-01-S is installed direct in a crystallizer. The prism keeps clean due to the rubbing action of the crystals. Typical measurement range is 65-90 Brix.