TOBACCO JUICE (NICOTINE, C10H14N2)

Typical end products
Tobacco cigarettes.

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

Introduction

In the manufacturing of tobacco cigarettes, tobacco leaves are pretreated and separated into lamina, stems and veins. Typically, the best part of the tobacco leaves (the lamina) are used in the manufacture of the premium brands. Therefore, a lot of stems and scraps are left over.

The stems, veins, dust and fines are not automatically discarded. These are further processed into a tobacco product referred to as reconstituted tobacco.

Application

During the manufacture of reconstituted tobacco, a continuous sheet is produced, which is sent to the primary processing facility along with the tobacco lamina.

In this process, the leftovers are soaked in water to form a tobacco juice slurry. The slurry is then evaporated to the desired concentration and sprayed onto the paper.

The reconstituted tobacco sheet is dried and cut into shapes similar to that of tobacco lamina. The product is then used as cigarette filling alone or mixed with regular tobacco leaves. This method results in a consistent flavor and provides a unique brand taste to the final cigarettes.

Instrumentation and installation

The K-Patents Sanitary Process Refractometer PR-43-A measures in-line the concentration of tobacco juice (nicotine) in the slurry after extraction. The refractometer is installed in two locations: after the extraction vessel to monitor the Brix concentration of the tobacco juice, and after evaporation. The fast response of the refractometer helps to monitor the extraction process and to ensure the target concentration is achieved.

The tobacco process contains a lot of particles and bubbles, which can cause measurement drift and errors for density meters. The K-Patents refractometer is able to measure accurately despite of the suspended particles, bubbles or color changes and the measurement is selective to the liquid phase.

The typical measurement range of tobacco juice is 10-40 %. Automatic prism wash with water is recommended in this application. Special prism gaskets are available on request.
### Instrumentation Description

**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.

**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.

### 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.

### Prism wash systems

Prism wash system components are a refractometer with integral wash nozzle mounted at the refractometer probe or in a flow cell, wash supply line components and a Multi user interface MI with relay module for prism wash diagnostics and control. Alternative wash media can be used for wash, e.g. steam, high-pressure water and warm water (hot condensate).

### Measurement range

Refractive Index (nD) 1.3200 – 1.5300, corresponding to 0-100 Brix.