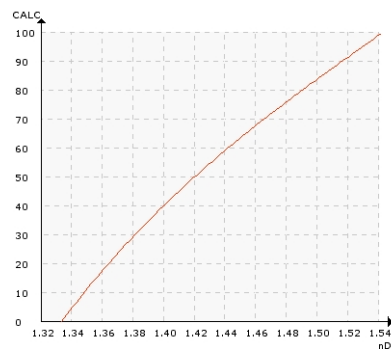


TOMATO KETCHUP AND SAUCES

Typical end products

Tomato ketchup, tomato sauce

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



Introduction

Tomato ketchup/sauce is one of the most common used condiments. The recipe, viscosity and solids content of sauces and ketchups vary widely and a tomato sauce and ketchup can be based on whole peeled tomatoes, but more typically they are made from tomato concentrate. They also contain water, sugar, vinegar, salt and seasoning. The desired product viscosity is achieved using a starch based thickener.

Application

Ketchup manufacturer receives tomato paste or puree from tomato concentrator. In the mixing tank the product is then diluted with water to the proper brix. After that some sugar/sweetener, salt and

preservatives are added to the mixture according to the recipe.

After the tomato paste has been diluted and mixed with other ingredients it proceeds to sterilization and de-aeration. The ketchup must be de-aerated to prevent discoloration and growth of bacteria. Excess air might also create unattractive air pockets and impede the closure process. Once mixed, the product may be passed through a high pressure homogenizer or colloid mill to obtain the required consistency.

Ketchup is then kept in the holding tank to be further packed in containers, glass bottles or pouch packs.

During the ketchup preparation process it is very important to constantly monitor and control the level of product concentration which has an impact on ketchup consistency.

Installation

The K-Patents Sanitary Refractometer PR-23-AC is installed at three locations:

- 1) in mixing/ dilution tank. The refractometer ensures constant Brix-value of the tomato paste as the paste delivered from different countries may differ in concentration.
- 2) in line to final product holding. After the sterilization and de-aeration processes the tomato concentrate may have concentration variations. The refractometer provides the final quality control measurement before storing the ketchup in a holding tank.

3) in the filling line. The refractometer measures the concentration of the end product before bottling.

The K-Patents refractometer provides constant quality control over the whole process, thus, assuring top quality of the end product. The refractometer is 3A Sanitary approved and EHEDG tested. The instrument design withstands CIP- and SIP-cleaning.

K-Patents Sanitary Compact Refractometer PR-23-AC meets the demands of the EU Regulations aiming at Safety of Food Contact Materials. Moreover, all K-Patents' products fulfil the traceability requirements of food industry.

Instrumentation



Description

K-Patents Sanitary Compact Refractometer PR-23-AC for small pipe line sizes of 2.5 inch and smaller.

The PR-23-AC sensor 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 or Varivent® connection.

Measurement range:

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