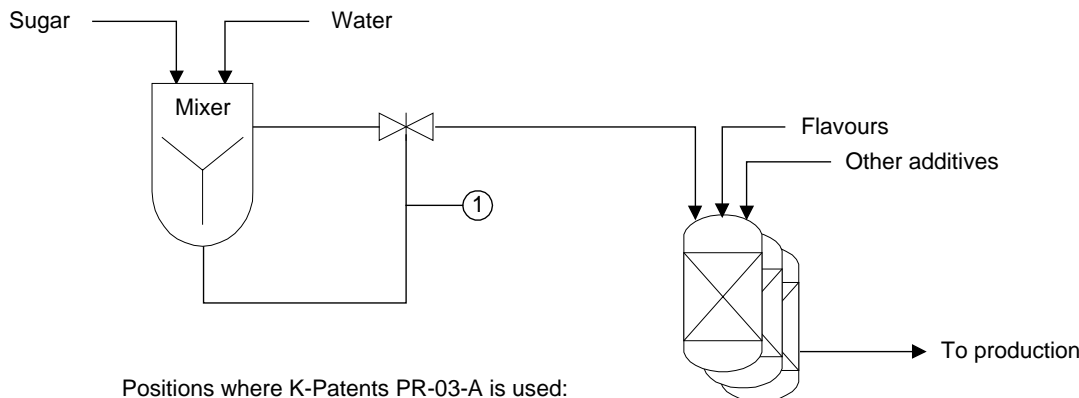


### Sugar Dissolvers



Positions where K-Patents PR-03-A is used:

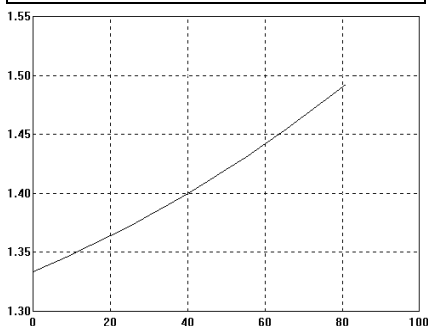
- ① In sugar feed control

### Sugar

**Typical end products**

Chocolate, candies, caramel, jellies

**Chemical curve: R.I. per Brix**



R.I. Reference Temp. 20°C

### Introduction

It is common in food production processes that sugar has to be dissolved in water. Such processes are found especially in confectionery and soft drink industries, but also in canned products e.g. in canned fruit in sugar solution.

### Application

The crystal sugar is typically dissolved continuously in water. There are different mixing techniques in use. The newest is a so-called “jet mixer” which ensures extremely fast dissolving.

In order to obtain a uniform product quality, the Brix of the sugar solution has to be controlled carefully. For example too much or too little sugar affects on the composition of toffee or too much sugar in soft drinks means huge losses for the manufacturers.

The concentration of the sugar solution is adjusted by water injection. If the concentration is too high the valve in the pipeline outlet is closed and more water is added to the mixer.

### Installation

K-Patents Sanitary Refractometer, PR-03-A is installed in the outlet of the mixer. It measures the concentration of dissolved sugar. Typical measurement ranges are 60-80 Brix and process temperatures about 90-110°C (203-230°F).

The sugar solution contains a lot of air bubbles. Traditional density meters are affected by these bubbles. So the only way to get an accurate measurement is to use PR-03-A. In addition, the high temperature conditions can only be met with K-Patents PR-03-A.

The accurate measurement of PR-03-A is also needed for economic reasons. Sugar is rather expensive raw material and there is no benefit for selling products with higher sugar contents.