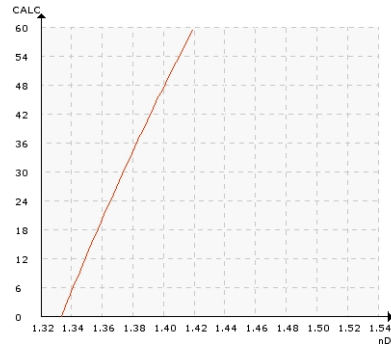


## ASPIRIN

### Typical end products

Aspirin

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



### Introduction

Aspirin is the most widely sold over-the-counter drug. The production process involves the reaction of Salicylic acid and acetic anhydride in glass lined vessels. The liquid produced is pumped to a crystallizer, where it is cooled down to start the crystallization to Aspirin. The Aspirin is then filtered to remove the acetic acid and solvent, which are recovered and possibly recycled. The crystals are then washed and filtered again. The crystals are sent to sifting, granulating and tableting after drying.

### Application


The K-Patents Process Refractometer PR-23-AP is highly effective at obtaining the selective measurement necessary to detect the onset of Aspirin crystallization during the liquid phase. The refractometer gives an instant indication of liquid concentration drop, which happens dramatically when crystal formation starts. This allows the consistent control of crystallization.

### Installation

The K-Patents Process Refractometer is installed in the vacuum crystallizer. Due to its unique digital operation, the K-Patents refractometer measures the true concentration of the mother liquor uninfluenced by Aspirin crystals or bubbles present in the pan. Appropriate equipment with hazardous and intrinsic safety approvals are available when required.

The K-Patents Process Refractometer is an ideal real-time instrument, which complies with pharmaceutical industry standards and regulations, including PAT, GAMP, CIP/SIP, 21 CFR Part 11 and validation. Its ability to measure and control parameters, such as Refractive Index  $n_D$ , contributes significantly to the development of effective drugs

and manufacturing processes. The K-Patents PR-23 series complies with pharmaceutical drug production regulations for process wetted part materials, sealing and surface roughness. No animal derived media are used in the electro-polishing process.

Instrumentation	Description
	<p>K-Patents Sanitary Probe Refractometer PR-23-AP for installations in large pipes, tanks, cookers, crystallizers and kettles, and for higher temperatures up to 150°C (300 °F). Installation through a 3A Sanitary clamp.</p>
<p>Area classification:</p>	<p>Intrinsic safety and hazardous area approvals available.</p>
<p>Measurement range:</p>	<p>Refractive Index (nD) 1.3200 – 1.5300, corresponding to 0-100 Brix.</p>