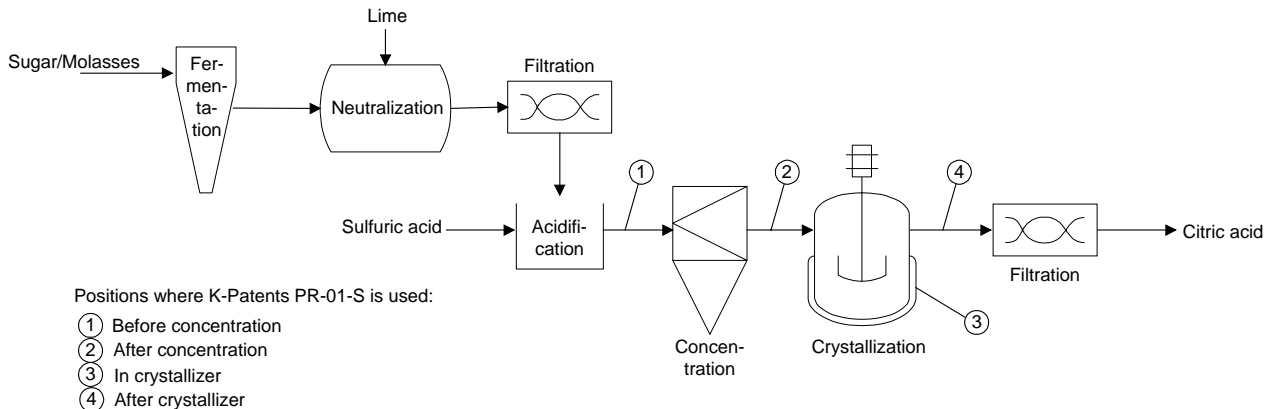


### Citric Acid



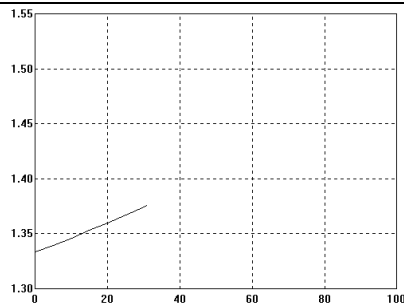
### Citric acid (C<sub>6</sub>H<sub>8</sub>O<sub>7</sub>)

Soluble in  
water

Typical end products/ uses:

Pharmaceutical, food, industrial applications, beverages, jams, laundry detergents, cosmetics, tobacco

Chemical curve: R.I. per Conc%b.w.



R.I. Ref. temp 20°C

### Introduction

Citric acid is a colorless crystal or white crystalline powder.

### Application

Citric acid process is quite similar to beet sugar process. Sugar or molasses is fermented and during the fermentation all the required nutrients are added. In order to separate calcium citrate from the rest lime is added in neutralization phase. Then calcium citrate is acidified with sulphuric acid, which converts it to soluble citric acid and insoluble calcium sulfate. The aqueous citric acid is concentrated in evaporators before the crystallizer. Citric acid production can be finished in two different ways: either citric acid crystals are filtered from the slurry and dried or citric acid is delivered as a solution of 50%.

### Installation

K-Patents Process Refractometer, PR-01-S measures the concentration of citric acid in the evaporator and crystallizer (vacuum pan) to keep the process in balance and consequently to achieve the optimum benefit. This is possible with real time and accurate measurement that only refractometer can provide.

Common measurement range in the crystallizer is 60-95% and temperature is between 40-60°C (104-140°F). The end product range is typically 45-65% and temperature varies from 20-40°C (68-104°F).