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 MARKETING INFORMATION

Applications in the CHEMICAL sector

## Organic Chemical Products Department

**CITRIC ACID**

In plants for the production of citric acid from fermentation of beet sugar molasses, the chemical-physical analyses carried out by automatic analyzers are aimed at the automatic regulation of continuous processes.

We have installed various automatic analyzers that concern different points of the production processes in this sector, very similar to that of the sugar industry.

A citric acid production plant can be represented as shown in the figure below.

**PROCESSES INVOLVED:**
**Blending**

A sugar solution obtained by dilution of molasses is used for the preparation of culture broth. For this phase, called the blending, the **UR20** refractometer, having a scale in, **BRIX** degrees is used.

**Fermentation**

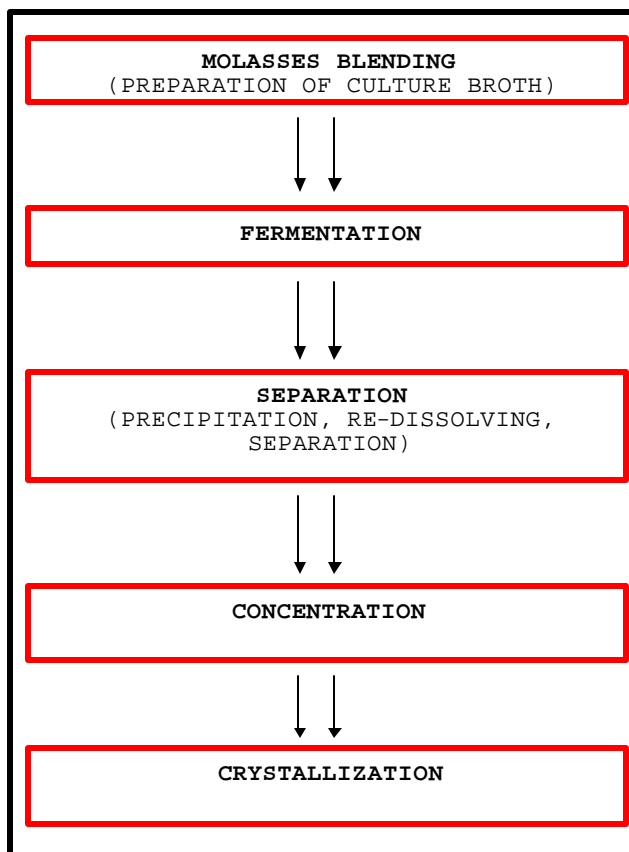
In the fermentation phase, the **pH and dissolved oxygen** are measured continuously; for this measurement, the **RM-00** series of instruments and sensors is used.

**Concentration**

For automatic control of the **concentration** phases of both the citric acid solution and the slops the **UR20** refractometer is used, mounted at the outlet of each block of evaporators.

**Crystallization**

The **UR20** Refractometer is used during the formation of crystals, to check the **super-saturation phase**, mounted directly on the cooking bowl.



Generally speaking, as these are continuous processes where the management of energy recovery, and production yields is absolutely fundamental for the budget, there are many "secondary" points in which instruments for the automatic measurement and control of concentrations can be applied.