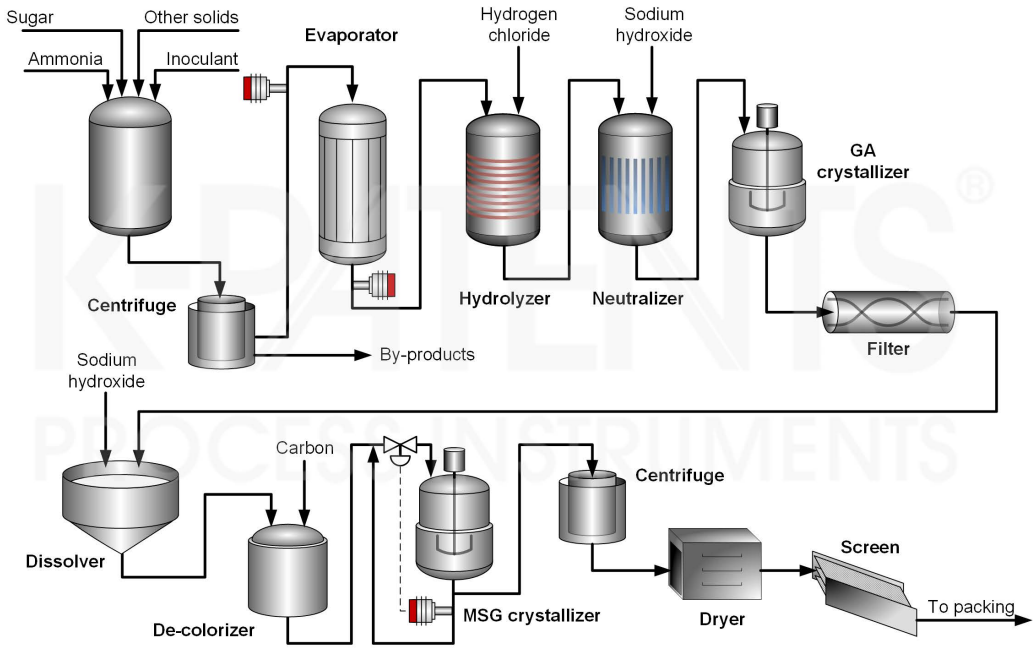
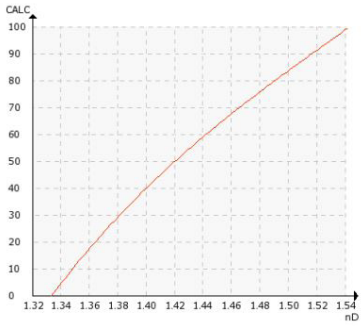


MONOSODIUM GLUTAMATE, MSG ($C_8H_8NNaO_4 .H_2O$)

Typical end products

MSG for barbecue sauce, salad dressings, snack food, tortilla chips, seasoning mixtures etc.

Chemical curve: R.I.per Brix at Ref. Temp. of 20˚C



Introduction

Monosodium glutamate, more commonly referred to as *MSG*, is a sodium salt ($C_5H_8NNaO_4$) of the non-essential amino acid glutamic acid. It is used to intensify the natural flavor of meats and vegetables.

Application

Several U.S. companies have developed their own microbiological process, others have obtained it from the Japanese. The principal process steps are fermentation, concentration, hydrolysis, neutralization and acidification, crystallization, separation and purification.

One of the most important areas of concern for end-product quality control is crystallization.

The principle measurement is total density, which is measured at the crystallizer outlet. This is used to regulate the flow of fresh liquor into the crystallizer circulation, thereby keeping the supersaturation levels within specifications. This continuous monitoring maintains process consistency.

Instrumentation and installation

The K-Patents Sanitary Probe Refractometer PR-43-AP is installed directly in the crystallizer or between the outlet and the heat-exchanger in the crystallizer vessel recirculation-pipe.

The refractometer can also be installed in the feed and outlet lines of the evaporator. The K-Patents refractometer provides 4-20 mA and Ethernet output signals that can be used for automatic control of the evaporation step to achieve the target concentration and to reduce energy consumption.

The typical measurement range of MSG is 45-65 Brix and the process temperature is about 60 ºC (140 ºF).

PHARMACEUTICALS AND BIOCHEMICALS

APPLICATION NOTE | **6.03.01**

MONOSODIUM GLUTAMATE (MSG) CRYSTALLIZATION

Instrumentation	Description
	K-Patents Sanitary Probe Refractometer PR-43-AP for hygienic installations in large pipes, tanks, cookers, crystallizers and kettles and for higher temperatures up to 150°C (300 °F). The PR-43-AP refractometer is installed in the pipe line or vessel through a 2.5 inch or 4 inch Sanitary clamp, I-clamp, APV Tank bottom flange or Varinline® connection.
User Interface	Selectable multichannel MI, compact CI or a web-based WI user interface options allow the user to select the most preferred way to access and use the refractometer measurement and diagnostics data.
Measurement range	Refractive Index (nD) 1.3200 – 1.5300, corresponding to 0-100 Brix.