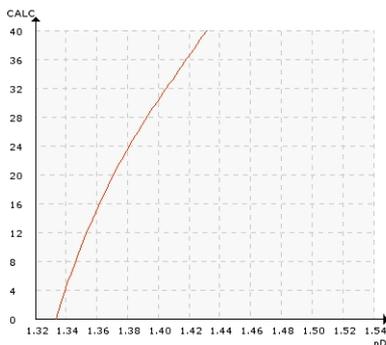


## GELATINE

### Typical end products

Gelling agent in food, pharmaceuticals, photography and cosmetics

Chemical curve: Anhydride in Acetic acid R.I.per Conc% b.w. at Ref. Temp. of 20 °C



### Introduction

Collagen is the main organic component of bone and skin in mammals. Acid and liming process production methods are used to produce gelatine, which is purified protein derived from the selective hydrolysis of collagen.

Gelatine is an organic, colloidal protein substance, whose principal value depends on its coagulative, protective and adhesive powers. Gelatines swell in

cold water but are insoluble in it. They dissolve in hot water to produce very viscous solutions.

Gelatines are manufactured from bones and hides, and are used in different industries: photographic, pharmaceutical and food industries.

### Application

The acid process method consists of placing the bones or skins in a vat containing a dilute solution of acid for a determined period. The solution is then washed in cold water, which reduces the pH to approximately pH 4.

The liming process method consists of placing the bones or hides into liming pits with lime slurry. At the end of this operation, the raw material is washed to remove residual lime and the hydrolysed organic impurities.

The next stage, where the K-Patents Process Refractometer PR-23-GP is used, is the most important in providing different qualities of gelatine. At this point, the gelatine extract with a concentration of around 5% is filtered, deionised in an ion-exchanger and concentrated in multiple-effect vacuum evaporators. A 15% solution is obtained and filtered through cellulose filter-cakes and evaporated up to 30-40%. The concentrated solution is then

<b>CHEMICALS AND ALLIED</b>	
<b>APPLICATION NOTE</b>	<b>4.06.05</b>
<b>GELATINE EVAPORATION</b>	

sterilized, cooled and extruded to gelatine sheets. The final gelatine product is dried in a tunnel dryer.

The typical measurement ranges for gelatine production are 0-15% or 0-40% with a process temperature of about 60°C (140°F). Steam cleaning is recommended for concentrations of more than 5%.

### Installation

The K-Patents refractometer is used between filtration and the evaporation plant. The sensor is installed in the pipe directly after the circulation pump.

Instrumentation	Description
	<p>K-Patents Process Refractometer PR-23-GP is an industrial refractometer for large pipe sizes and tanks, cookers, crystallizers and kettles. Installation through a flange or clamp connection.</p>
<p>Automatic prism wash:</p>	<p><b>Prism wash with steam:</b> The components of a steam wash system are a sensor with integral steam nozzle mounted at the sensor head, a shut-off valve for steam line and an indicating transmitter equipped with relays to drive the wash valves.</p>
<p>Measurement range:</p>	<p>Refractive Index (nD) 1.3200 – 1.5300, corresponding to 0-100 % by weight.</p>