

## Ion Exchange Systems



Our process is now installed on gelatine produced from all types of pre-treatment systems including limed and acid pre-treated ossein, limed and caustic pre-treated hides, pigskin and chromed hide splits. Application of the treated gelatine ranges from edible, to pharmaceutical to photographic. Because of our involvement and attention to detail, we have identified and eliminated problems, which, on occasions, the gelatine manufacturer did not even know existed.

As a specialist dedicated to the gelatine industry, Adamelia has invented new methods for purifying gelatine and identifying the most commercially advantageous techniques to guarantee continuity of quality. Our installations are spread throughout the World and have enabled our clients to achieve higher profit margins together with consolidation of existing gelatine sales and increased penetration of expanding markets, due to the improved quality of the finished product.

This has only been achieved by our continuing dedication to improvement of existing qualities and manufacturing techniques. All our systems employ state of the art computer aided design and manufacturing techniques have evolved to produce sanitary installations of the highest quality.

Our processes are able to guarantee gelatine with residual ions:

- a) Calcium and magnesium less than 20mgm/ltr in the dried gelatine.
- b) Phosphate less than 100mgm/ltr in the dried gelatine
- c) Ash less than 0.1% normally less that 0.05% in the dried gelatine.

We manufacture both separate and mixed-bed Ion Exchange systems. The Ion Exchange system employed is dependent on the type of Gelatine and its composition.

Essentially, we invented a new process technique, which reduces gelatine losses during de-ashing to negligible proportions. Similarly, we also improve the use of regenerant chemicals, extend the life of treatment resins and, most importantly, preserve or improve the quality of gelatine as presented to the treatment installation. For example, our experience suggests that yield losses with traditional, Water based, ion exchange are in the order of 5% of production, ie 50 kilos of gelatine per tonne produced. Our system guarantees losses not greater than 2% and generally less than 1%. Thus a typical 3000 tonne per year production facility could increase its yield by between 120 and 130 tonnes without any additional labour, raw material, evaporation or drying costs. At a nominal value of \$6000 per tonne, this represents a saving of \$750,000 per year.

The quality of material processed by our installations varies according to the source of the raw material and also how the manufacturer controls his pre-extraction processes to make a desired product. As a guide, however, the average bloom achieved is as follows:

**Pig skin derived material:** 240 with a peak of 327 bloom.

**Limed ossein:** 230 with a peak of 320 bloom.

**Caustic hides:** 225 with a peak of 347 bloom.

The ash content of our treated gelatine is always less than 0.1% and on average less than 0.05% with a total dissolved solid content in the range of 25-50 milligrams per litre. Discrete ions can be very low depending on the type of gelatine processed with, as an example, calcium less than 20 milligrams per kilo, phosphates less than 60 milligrams per kilo. For certain applications we can provide gelatine with calcium and magnesium less than 10mgm per kilo in the dried product. Consumption of regeneration chemicals is always improved and generally we reduce the caustic soda consumption by 50% by comparison with more traditional purification techniques.

Historically, we estimate to improve yields and reduce operating costs by the value of US \$200,000 per 1000 tonnes of production.

We calculate that more than 100,000 tonnes of gelatine is now purified annually using Adamelia installations throughout the world. Fully automatic installations are always installed and the software employed produces a flexible and easily managed operator/system interface. Computer aided draughting and manufacturing facilities are now employed and as a result we can respond efficiently and quickly to each individual specific application.

Our success has been achieved by addressing each purchaser's specific requirement. We maintain a continuous dialogue with our existing customers and are always available to solve the problems, which may occur on rare occasions. Any improvements obtained as a result of our continuing research are always made available to the existing installations.

**ADAMELIA**

Endeavour House  
Hampton Heath Industrial Estate  
Malpas Cheshire SY14 8LU  
England

**Tel:** 44 (0) 1948 820620

**Fax:** 44 (0) 1948 820120

**Email:** [enquiries@adamelia.com](mailto:enquiries@adamelia.com)