

CREAMING LATEX WITH TRAGON SEED GUM

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As a result of investigations carried out at the Rubber Research Institute, a British patent has been granted for the use of carob seed gum or, as it is better known in Malaya, "Tragon A" as a *creaming agent for latex*.

The details of the patent are as follows:—

Patent Specification No. 430,935

Application Date: March 12, 1934

Complete Specification Left: Feb. 25, 1935

Complete Specification Accepted: June 27, 1935

COMPLETE SPECIFICATION

Improvements in and relating to the Concentration of Latex

This invention relates to the concentration of rubber latex and has especial reference to processes for the concentration of ammoniated normal latex by creaming, wherein creaming agents, usually colloid substances, are added to the latex and cause its separation into an upper layer of concentrated latex cream and a lower layer or layers containing mainly serum constituents.

It has been proposed to concentrate rubber latex by adding thereto mucilages such as Carragheen moss, Iceland moss, and diagam, i.e. a powder prepared from the seed pod of the locust or carob tree, in certain circumstances as an aqueous extract, and heating the latex for some time at 40—60°C.

It is usual to cream the latex for not more than 72 hours, and then to separate the cream for shipment; the disadvantage of processes for the concentration of latex in this manner hitherto effected has been the tendency of the latex cream further to separate into layers on standing, and one object of the present invention is to provide a process for the concentration of latex by creaming which will give a stable and homogeneous product of maximum concentration in a short period.

In accordance with the invention a process for the concentration by creaming of ammoniated normal latex involves the addition of a solution of carob seed gum as creaming agent, this gum consisting essentially of the hemi-cellulose material extracted from the seeds of the locust or carob bean *Ceratonia Siliqua*.

The invention also provides as a further aspect, by which a more highly concentrated and yet homogeneous and stable latex cream is obtained after a short period of treatment, an increase in the pH value of the latex prior to treatment by augmenting the ammonia content, preferably to about 1.5% by weight of the dry rubber content thereof instead of the more usual 0.5%, tests having shown that with normal latex ammoniated to this extent and treated with the carob seed gum as creaming agent according to the present invention, a concentrated latex of approximately 60% dry rubber is readily obtained which is homogeneous and stable in that it does not cream further on standing.

In the practice of the invention according to one example of the process, normal latex containing approximately 35% dry rubber by weight is treated with aqueous ammonia until its ammonia (NH_3) content amounts to between 1.5% and 1.6% by weight, whereafter there is added to the latex a freshly-prepared solution of carob seed gum consisting of three parts of gum per 100 parts by weight of water, the solution being prepared by boiling the gum with water.

A swollen gum can be prepared in the cold but the dissolved gum is preferred.

The proportions are advantageously 0.3 part of carob seed gum by weight per 100 parts of water in the latex, and during a period of 48 hours the latex separates into two portions, namely an upper layer of latex cream constituting about 55% of the original volume of latex and containing about 58.4% dry rubber content, and a lower layer constituted by a solution of serum substances in which, however, some rubber may be present.

The concentrated cream contains approximately 0.94% ammonia, and in spite of its high dry rubber content does not exhibit any tendency to re-cream on standing but remains homogeneous and stable and is consequently a very marketable product, easily handled by the consumer.

Apparatus in which the process can be conveniently carried out advantageously comprises a vessel with side taps so positioned that the cream can be run off without disturbing the serum underneath, thereby avoiding the disturbance and slight re-mixing of the serum and cream which is unavoidably attendant upon the use of a vessel having a single tap at the bottom. If desired also provision may be made for slightly heating the vessel so as to accelerate the creaming process and thereby reduce the time necessary to obtain a cream of the maximum concentration.

It is preferable in all cases to use a freshly-prepared gum solution in the treatment owing to the fact that the solutions are unstable and, when left, deteriorate as creaming agents.

By the process according to the present invention a creamed latex can be obtained after a short period, say 48 hours, having a high and definite dry rubber content and which is not liable to change appreciably by the time the latex reaches the consumer, the product being especially suitable for manufacturing processes where concentrated latex is usually employed.

Having now particularly described and ascertained the nature of the said invention, and in what manner the same is to be performed, it is declared that the claim is:—

1. A process for the concentration of rubber latex by creaming, involving the addition as a creaming agent of carob seed gum consisting essentially of the hemi-cellulose material extracted from the seeds of the locust or carob bean *Ceratonia Siliqua*.

2. A process for the concentration of rubber latex according to claim 1, wherein the pH value of the latex is increased prior to the treatment to accelerate creaming and to stabilise the resultant cream.

3. A process for the concentration of field latex according to either of the preceding claims, wherein the ammonia content is augmented to about 1.5% by weight on the dry rubber content, prior to treatment to expedite the concentration.

4. A process according to any of the preceding claims, wherein the creaming agent consists of a freshly-prepared solution of carob seed gum containing about three parts of gum per 100 parts by weight of water.

5. The product obtained by the process according to any of the preceding claims comprising a concentrated latex cream containing about 60% dry rubber.

6. The process for the concentration of rubber latex by creaming substantially as described.

This patent will shortly be registered in the Straits Settlements and the Malay States.

Producers are asked not to overlook the broad terms of British Patent No. 226,440 of Isidor Traube.

Kuala Lumpur,

29th October, 1935