

Procedure for the thermoplastic starch obtaining and thermoplastic starch suitable to be obtained from that procedure.

DESCRIPTION OF THE TECHNOLOGY

New procedure to obtaining a starch from at least one starch source from legume and at least one plasticiser. The objective is the obtaining of a thermoplastic starch suitable to be obtained from this procedure and their use for the manufacture of, among others, packages and agricultural films.

MARKET APPLICATION SECTORS

Packaging
Agricultural films

TECHNICAL ADVANTAGES AND BUSINESS BENEFITS

Starch can be transformed in thermoplastic starch (TPS) with the use of the suitable plasticisers. This TPS can be used in packaging manufacture.

Due to their low oxygen permeability, it can be used in good oxygen barrier requirements applications.

It is confirmed that the structural properties of the starch, which have high influence on their application, depends on the granules structure of the starch, especially the amorphous and semi-crystalline areas.

The starch source consist in legume starch, which shows unique structural properties.

CURRENT STATE OF DEVELOPMENT

This is a novel process for obtaining thermoplastic starch characterized by using at least one source of starch from legumes, preferably pea starch, as well as at least one plasticizer.

It is known the good properties of water as plasticizer for starch because of their interaction with the hydroxyl groups of the polymer. However, it has been found that products obtained from the extrusion of starch with water as the only plasticizer used, become brittle along the time at room temperature, which is not desirable. Therefore, in order to provide flexibility, other plasticizers will be used, for example polyols and preferably glycerol or sorbitol.

Other plasticizers may also be employed such as ethylene glycol, diethylene glycol or polyethylene glycol.

Depending on the polarity of the plasticizer, the degree of interaction with the starch molecules can vary considerably, causing differences in the destructurization process. Preferably, the plasticizer used will be glycerin.

INTELLECTUAL PROPERTY RIGHTS

The product and the manufacturing methods described are patented at national level.

Title: Procedure for the thermoplastic starch obtaining and thermoplastic starch suitable to be obtained from that procedure.

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COLLABORATION SOUGHT

Companies interested in the following system of cooperation:

Agreement about patent license to implementation and to use of methodology.

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RELATED IMAGES



Image 1



Image 2

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