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THERMOPLASTIC MATERIAL AND A PROCESS FOR THE MANUFACTURE OF SAME

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The present invention relates to a thermoplastic material and process for the manufacture of same, which by heat treatment under pressure in moulds may be hardened to shaped objects, such as buttons, door-handles and the like.

It is previously known to produce artificial thermoplastic materials for similar purposes by condensation of phenols, thio urea, casein etc. with aldehydes, preferably formaldehyde.

It has now been found that a thermoplastic material may be obtained by treating the meat of fishes at elevated temperatures with an aqueous solution of an aldehyde, preferably formaldehyde. The fish meat is used in raw or dried form, preferably as fish meal. It is believed that it is the protein in the fish meat which reacts with the aldehyde to form the new product. However, also the skin and the bones of fish may be treated simultaneously. In such case these ingredients serve as fillers.

Example 1

Dried fish meal is mixed with water to a slurry. 25 cc. of a 40% formaldehyde solution per. kg. fish meal (calculated on dry weight) is added and the mixture heated. The reaction starts at about 70 degrees centigrade and according as the temperature rises the grains become heavier and settle on the bottom. After a treatment of about 6 hours at 100 degrees centigrade a workable thermoplastic material is obtained.

By further increasing the excess of the 40% formaldehyde solution used the heat treatment at 100° may be reduced to a quarter of an hour.

The finished thermoplastic material is filtered off and dried.

Example 2

Less water than in Example 1 is used, the fish meal being mixed with 250 cc. water and 25 cc. of a 40% formaldehyde solution per kg. fish meal which is heated under pressure at 110° for a quarter of an hour. A plastic mass is obtained which, after having been dried in the air during several days, results in a suitable thermoplastic material.

The invention also comprises moulded products obtained by hardening the thermoplastic material in moulds at temperatures from 150 to about 200° C.

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