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(54) Title: PROCESS FOR MANUFACTURE OF PLASTICISED HOMOPOLYMERIC POLYVINYL ALCOHOL AND PLASTICISED POLYVINYL ALCOHOL POLYMER OBTAINED THEREFROM

(57) Abstract: A method for manufacture of plasticised homopolymeric polyvinyl alcohol, the method comprising the steps of: introducing into a mixing reactor a polyvinyl alcohol polymer comprising polyvinyl alcohol or a blend thereof having a degree of hydrolysis in the range of 93wt% to 98wt%; wherein the mixing reactor comprises a blending chamber having a primary inlet, a primary outlet and at least two inter-engaging components extending between the primary inlet and primary outlet, the components being arranged to apply a shearing force to the polymer while the polymer is conveyed by the components from the inlet through a reaction zone to the outlet; one or more secondary inlets located downstream from the primary inlet for introducing reactants comprising a processing aid, a plasticiser and a reactive stabiliser to the chamber to form a reaction mixture; wherein the plasticiser is selected from the group consisting of: sugar alcohols, diols, triols, polyols and mixtures thereof; wherein the reactive stabiliser is selected from the group consisting of: sodium stearate, potassium oleate, sodium benzoate, calcium stearate, stearic acid, dimethyl propionic acid, and mixtures thereof; wherein the blending chamber comprises a plurality of heated regions arranged so that the mixture is subjected to a temperature profile whereby the temperature increases from the inlet to the outlet; a secondary outlet located between the reaction zone and primary outlet arranged to allow removal of processing aid from the chamber; reacting the processing agent, plasticiser and polymer in the reaction zone to form plasticised polymer; and allowing the plasticised polymer to pass from the primary outlet.

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