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(54) Title: A METHOD TO ENABLE RECYCLING OF POLYESTER WASTE MATERIAL AND A SYSTEM FOR APPLYING THE METHOD

(57) Abstract: The present invention pertains to a process to enable the recycling of a stream of polyester waste material by depolymerising the polyester by alcoholysis, the process comprising at least a first stage of depolymerisation and a separate second consecutive stage of depolymerisation, to which first and second stages the stream of polymer waste material is subjected in a continuous manner, wherein in the first stage of the two consecutive stages, the stream of polyester waste material is continuously fed to an extruder operated at a temperature above the melting temperature of the polyester, while a first amount of alcohol is co-fed to the extruder, in order to produce a fluid mixture comprising a melt of the at least partly depolymerised polyester, and wherein in the second stage, the said fluid mixture is continuously fed to a continuously stirred tank reactor (CSTR) operated at a temperature above the melting temperature of the polyester, while co-feeding a second amount of alcohol to the CSTR, wherein a residence time in the CSTR is used to provide at the outlet of the CSTR a continuous stream of polyester depolymerised into an oligomeric ester. The invention also pertains to a system for applying this method.



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