ABSTRACT OF THE DISCLOSURE

METHOD FOR PREPARING EVA COPOLYMER WITH HIGH ETHYLENE CONTENT BY SOLUTION POLYMERIZATION UNDER A LOW TO A MEDIUM PRESSURE

The invention provides a method for preparing an EVA copolymer with a high ethylene content by solution polymerization under a low to a medium pressure, and belongs to the technical field of organic macromolecular compounds. The method comprises the following steps: initiating with a free radical initiator(s), a copolymerization reaction between ethylene and vinyl acetate in a solvent in a reactor under a low to a medium pressure to obtain the EVA copolymer; and continuing to add ethylene during the reaction to maintain the low to medium pressure, wherein the low to medium pressure is 1-101 MPa, and a ratio of a mass of the vinyl acetate to a mass of the initially added ethylene is (1:1) to (1:20). The amount of ethylene incorporated in the EVA copolymer prepared according to the method is ≥ 50wt%, and the EVA copolymer has properties equivalent to those of an EVA copolymer obtained by bulk polymerization at high temperature under high pressure, and is applicable to application fields to which the EVA copolymer prepared with a conventional method is applicable. Meanwhile, compared with the conventional method for preparing the EVA copolymer at high temperature under high pressure, the method according to the invention also greatly reduces the equipment investment and the high energy-consumption cost during production.