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(54) Title: BULK HOMOGENEOUS POLYMERIZATION PROCESS FOR ETHYLENE PROPYLENE COPOLYMERS

Defects for a polymer chain segment growing from left to right

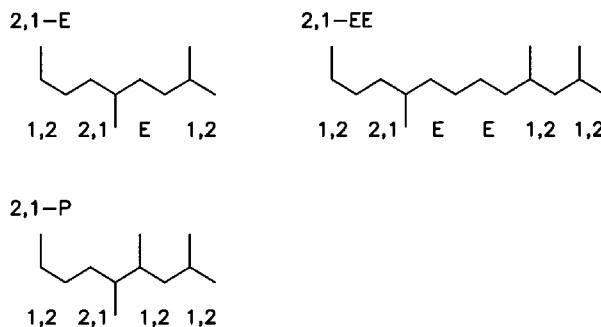


FIG. 2

(57) Abstract: Provided are bulk homogeneous polymerization processes for producing ethylene propylene random copolymers. The process includes contacting in a reactor or in a series of reactors propylene monomer, ethylene comonomer with one or more catalyst systems and optional solvent, wherein the reactor train is at a temperature of between 65°C and 180°C and at a pressure no lower than 10 MPa below the cloud point pressure of the polymerization system and less than 1500 MPa, and wherein the polymerization system for the reactor train is in its dense fluid state to form a polymer reactor effluent including a homogeneous fluid phase polymer-monomer mixture in the reactor train, and wherein the resultant copolymer product comprises between 10 wt% and 20 wt% randomly distributed ethylene and the concentration of total region defects in the continuous propylene segments of the random EP copolymer is between 40 and 150%.

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