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(54) Title: A PROCESS FOR PRODUCING LONG-CHAIN BRANCHED ETHYLENE-BASED POLYMERS

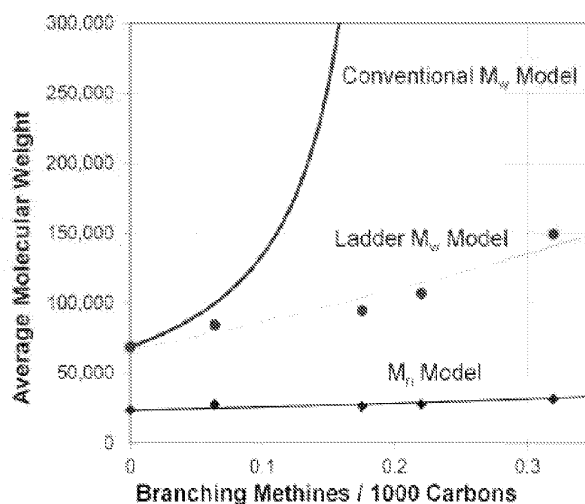


FIG. 1

(57) Abstract: The disclosure are directed to a process for polymerizing ethylene-based polymers. The process includes polymerizing ethylene and optionally one or more (C₃-C₁₄) α -olefin monomer, and at least one diene, in the presence of at least one multi-chain catalyst and at least one single-chain catalyst. The process may include a solvent. The multi-chain catalyst in the process includes a plurality of polymerization sites. Long-chain branched polymers are synthesized by connecting the two polymer chains of the multi-chain catalyst with the diene, the joining of the two polymer chains being performed in a concerted manner during the polymerization. The ethylene-based polymers are produced and include at least two molecular weight polymer fractions. The multi-chain catalyst produces the high molecular weight fraction, which is the long-chain branched polymer.

[Continued on next page]

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