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(54) Title: SOLVENT MANAGEMENT VIA TWO-PHASE ETHYLENE FEED TO SECOND REACTOR TO INCREASE ETHYLENE-BASED POLYMER OUTPUT

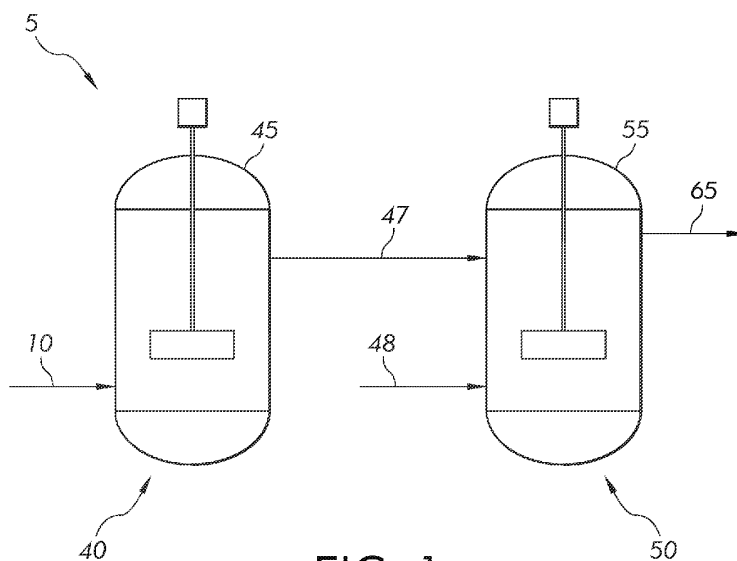


FIG. 1

(57) Abstract: Embodiments of a dual reactor solution polymerization method comprising: introducing a first feed comprising ethylene monomer, optionally hydrogen, optionally C₃-C₁₂ alpha-olefin comonomer, and hydrocarbon solvent to a first polymerization reactor to produce via solution polymerization at a temperature from 100 to 225 °C a first reactor product comprising ethylene-based polymer; and introducing the first reactor product and a two-phase second feed comprising ethylene monomer, hydrocarbon solvent, optionally hydrogen, and optionally C₃-C₁₂ alpha-olefin comonomer to a second polymerization reactor to produce via solution polymerization ethylene-based polymer, wherein a ratio by weight of the summation of the hydrocarbon solvent plus comonomer to ethylene monomer in the two-phase second feed is from 0.1 to 2.2.

[Continued on next page]

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