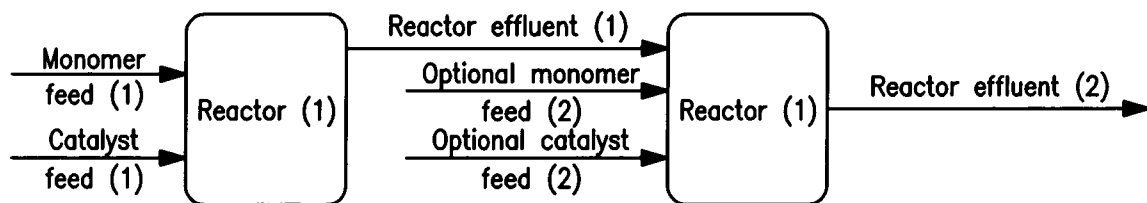


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Production of polymer blends in two-stage series reactor configuration
(Prior Art)

**FIG. 1**

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The effect of polymerization temperature on the molecular weight and melting point of polypropylene made in supercritical polypropylene using MAO-activated (μ -dimethylsilyl)bis(2-methyl-4-phenylindenyl)zirconium dichloride (Q-Zr-MAO) at 30 kpsi

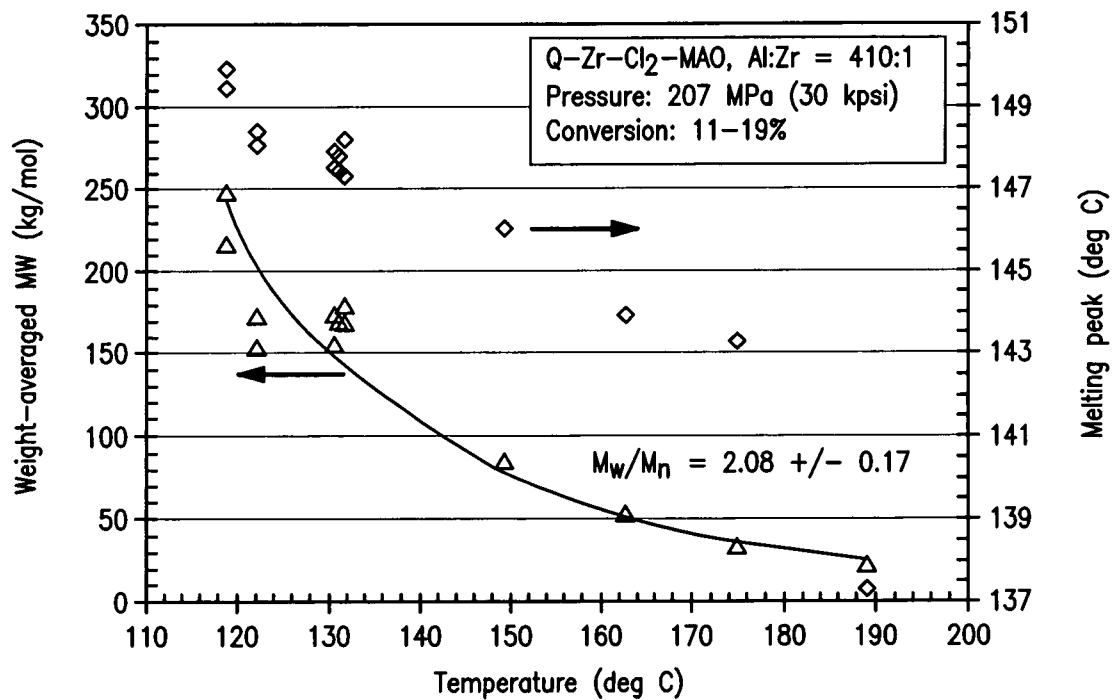
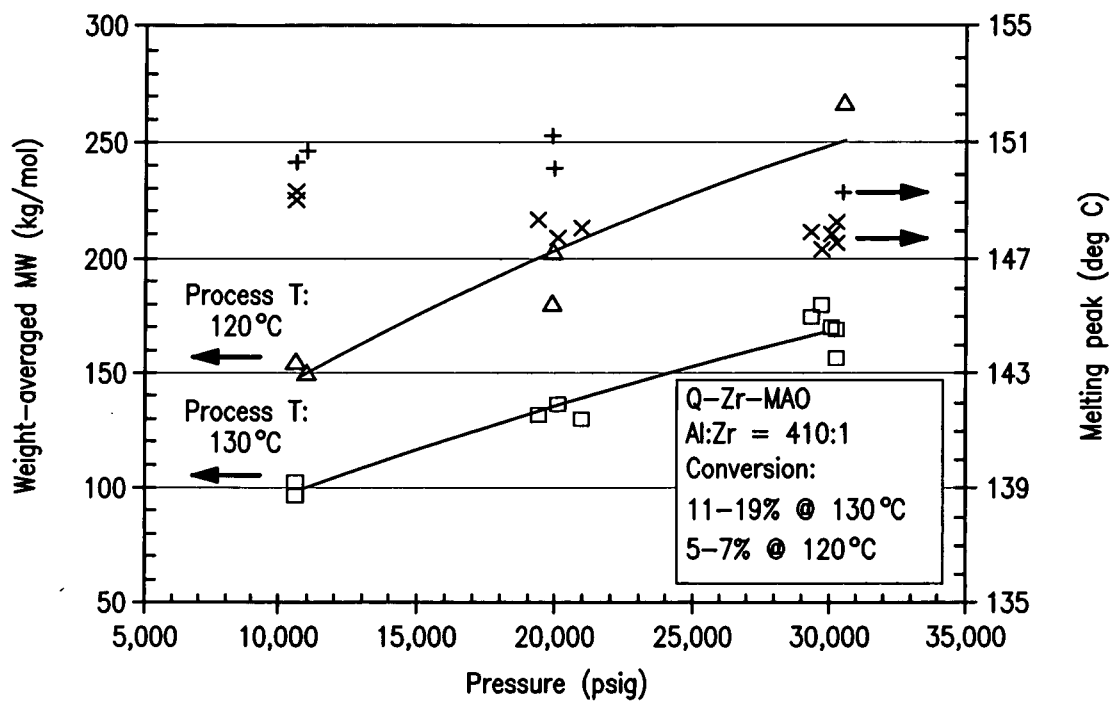


FIG. 2

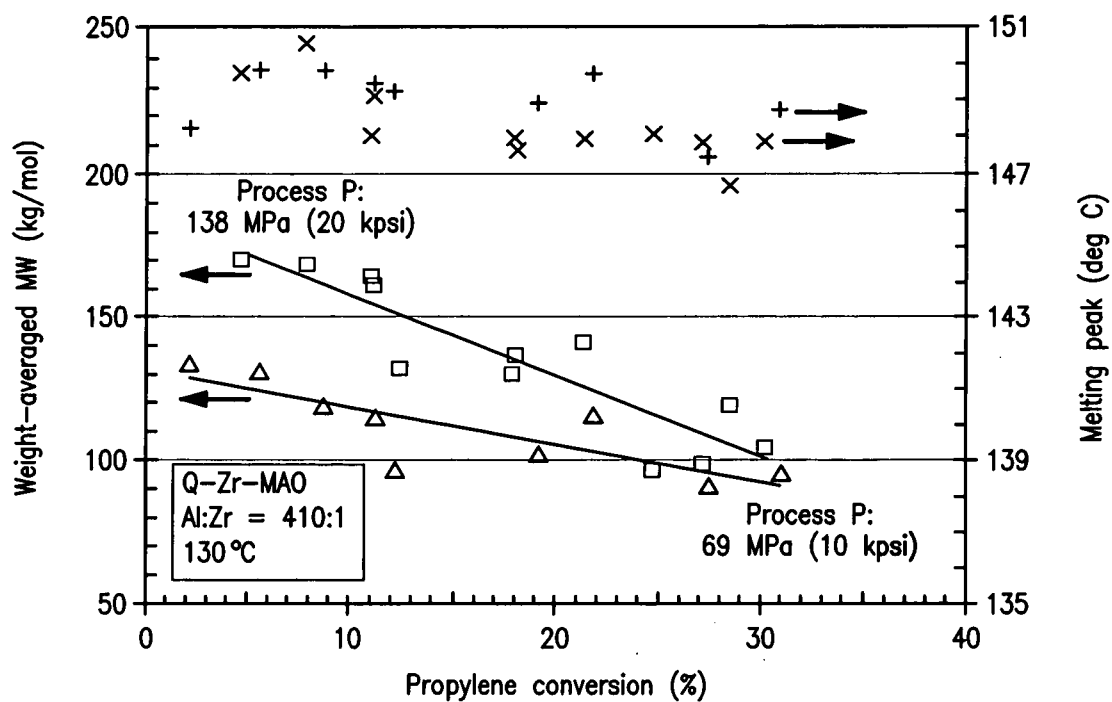
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The effect of polymerization pressure on the molecular weight and melting point of polypropylene made in supercritical propylene using MAO-activated (μ -dimethylsilyl)bis(2-methyl-4-phenylindenyl)zirconium dichloride (Q-Zr-MAO) at 120 and 130 °C

**FIG. 3**

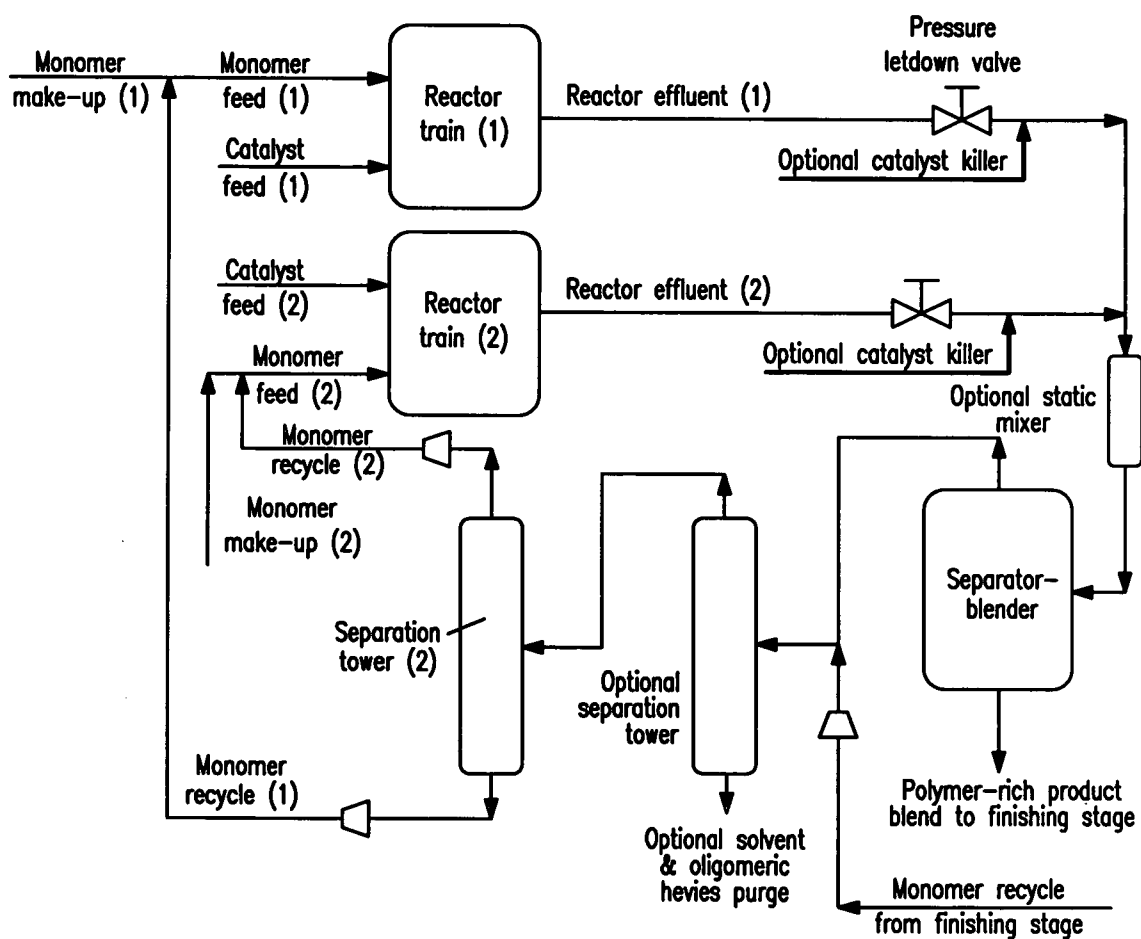
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The effect of propylene conversion in the polymerization of supercritical propylene with MAO-activated (μ -dimethylsilyl)bis(2-methyl-4-phenylindenyl)zirconium dichloride (Q-Zr-MAO) at 130 °C and 10 or 20 kpsi pressure

**FIG. 4**

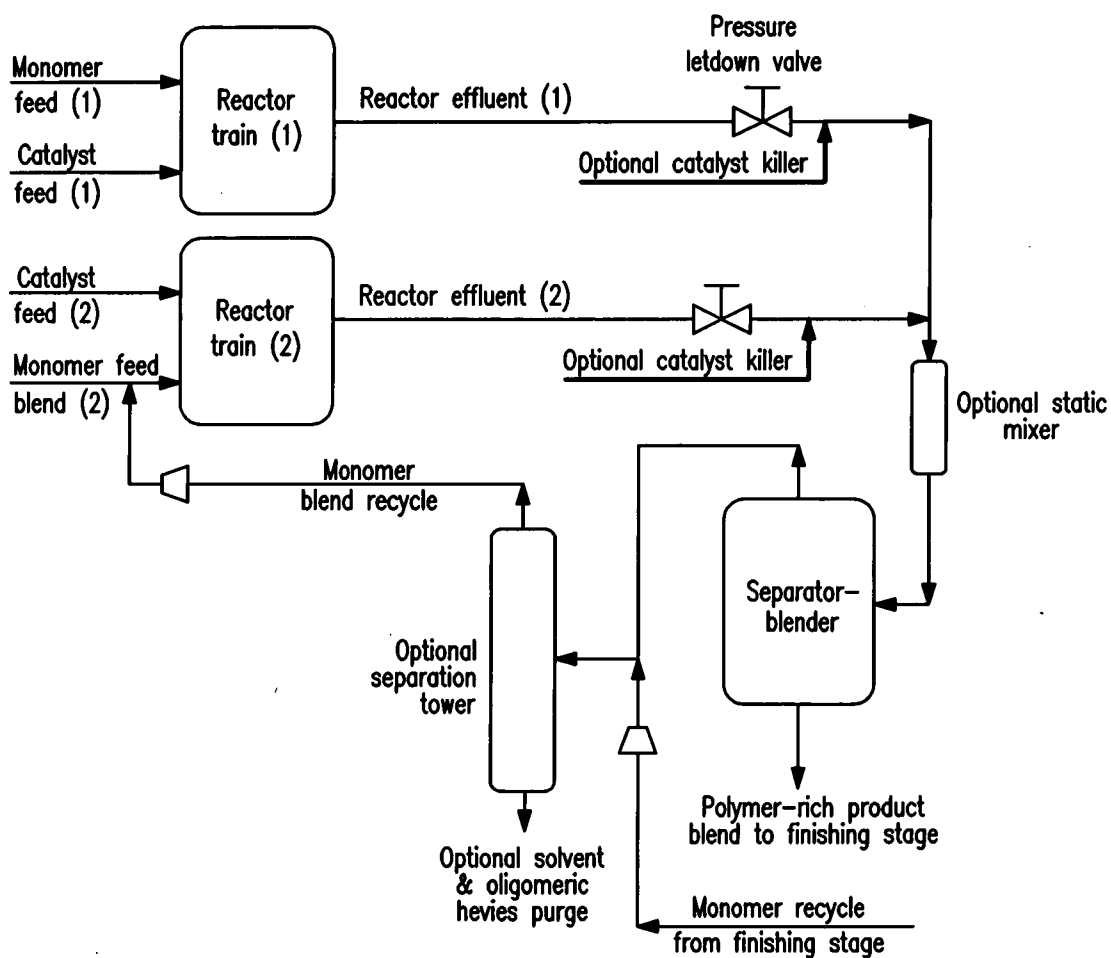
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Prior art monomer recycle process with full recovery of individual monomer components (monomer recycles (1) and (2)) used in conjunction with a fluid phase in-line polymer blending process

**FIG. 5**

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Exemplary monomer recycle process for fluid phase in-line blending of polymers with one separator vessel (separator-blender), the combined monomer recycle stream of reactor trains (1) and (2) recycled to train (2) without recovering individual monomer components

**FIG. 6**

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Exemplary monomer recycle process for fluid phase in-line blending of polymers with one separator vessel (separator-blender) and with additive/polymer blending component option, the combined monomer recycle stream of reactor trains (1) and (2) recycled to train (2) without recovering individual monomer components

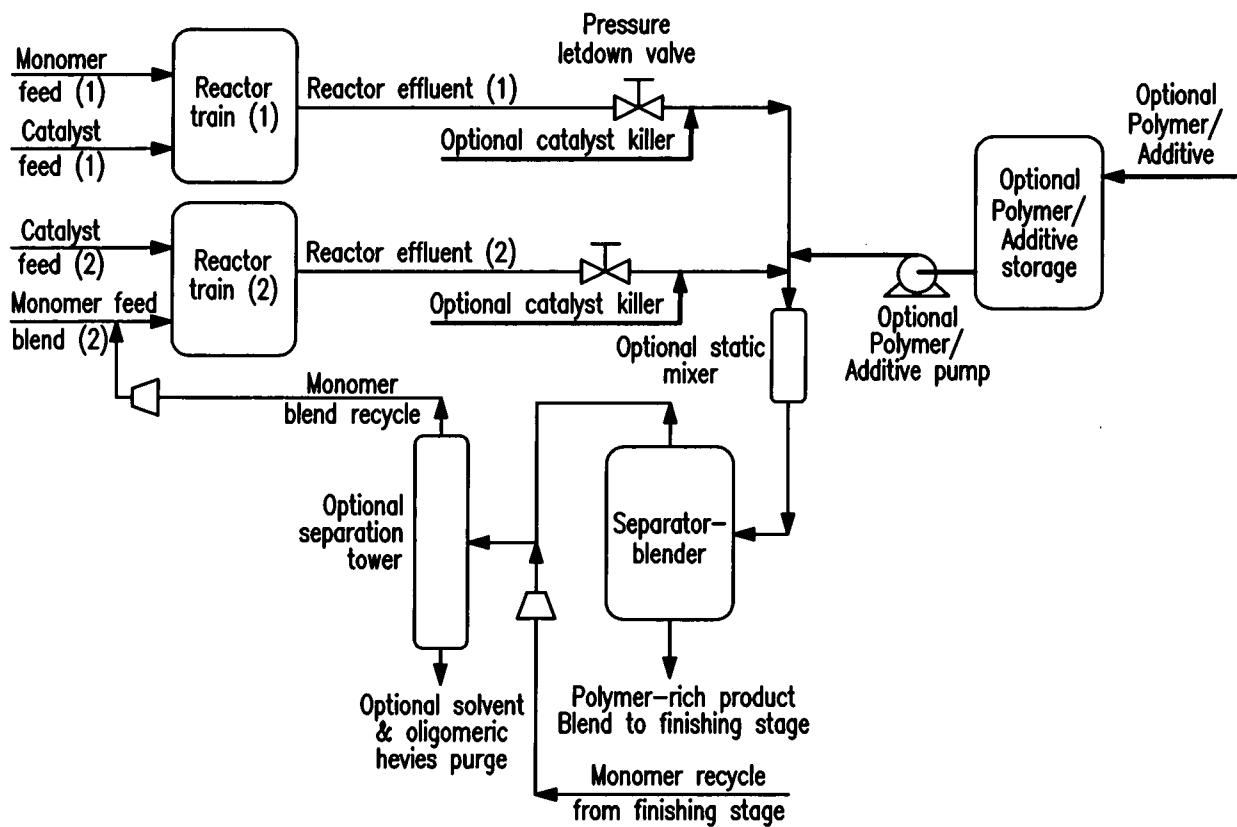
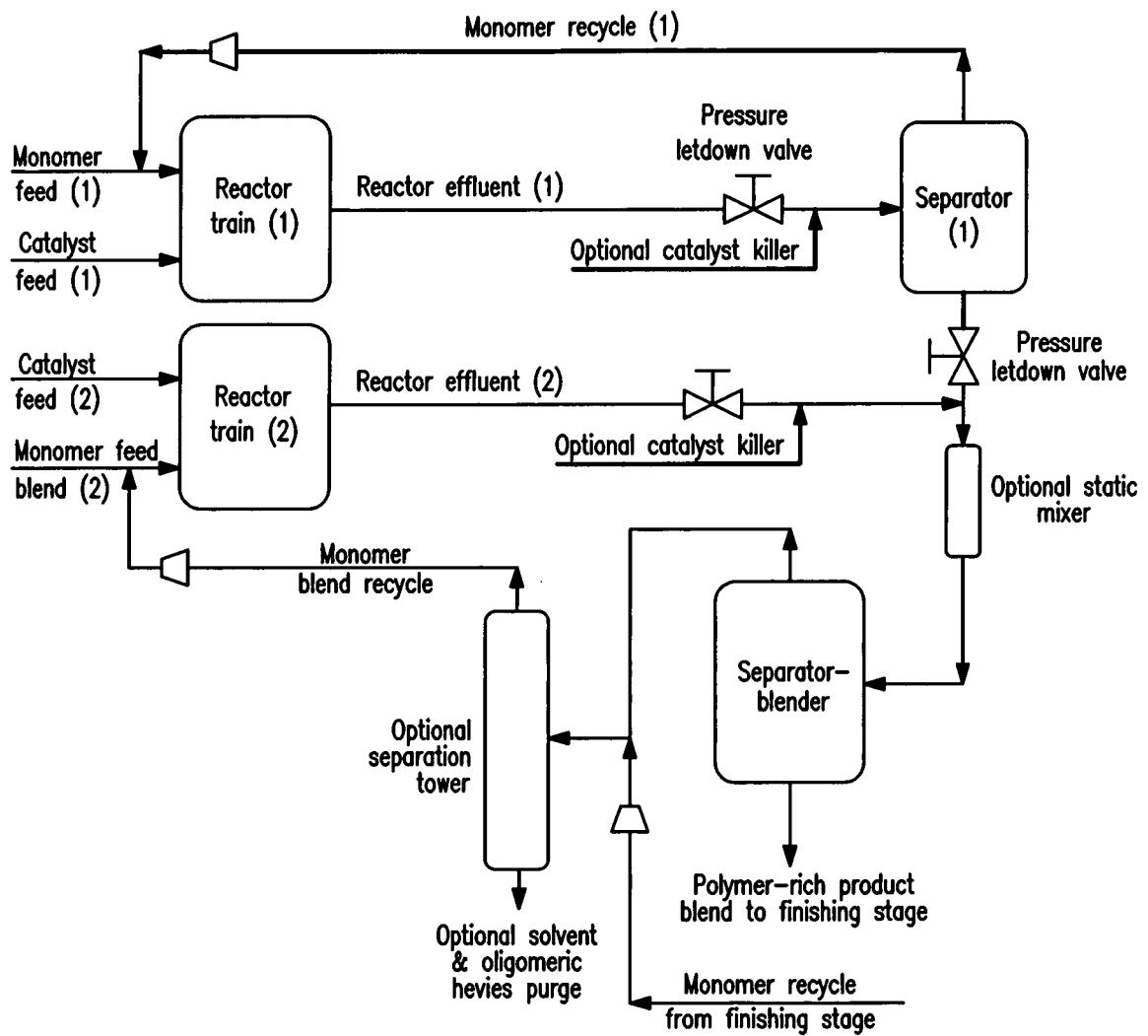


FIG. 7

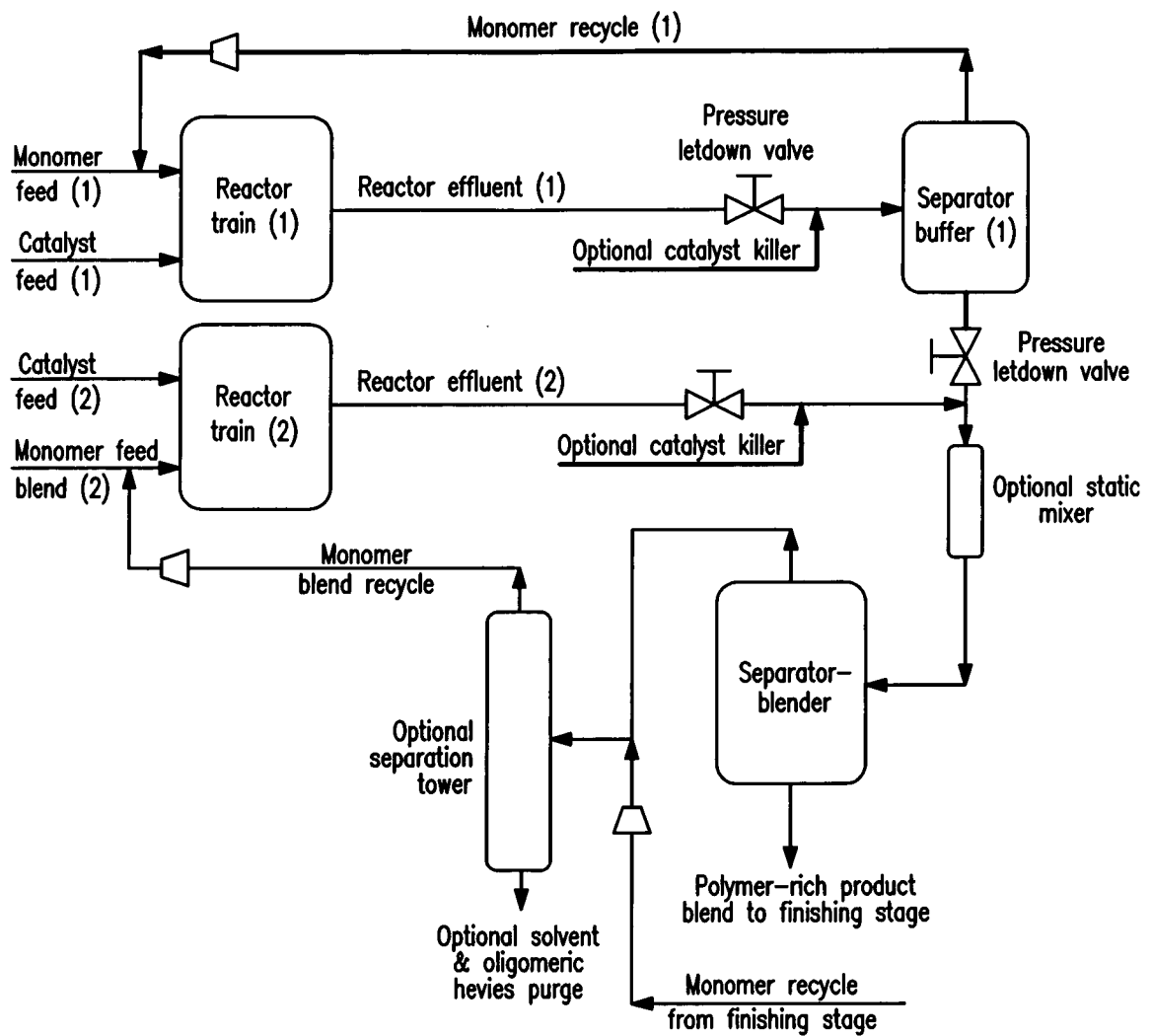
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Monomer Recycle Process For Fluid Phase In-Line Blending Of Polymers With Two Separation Vessels

**FIG. 8**

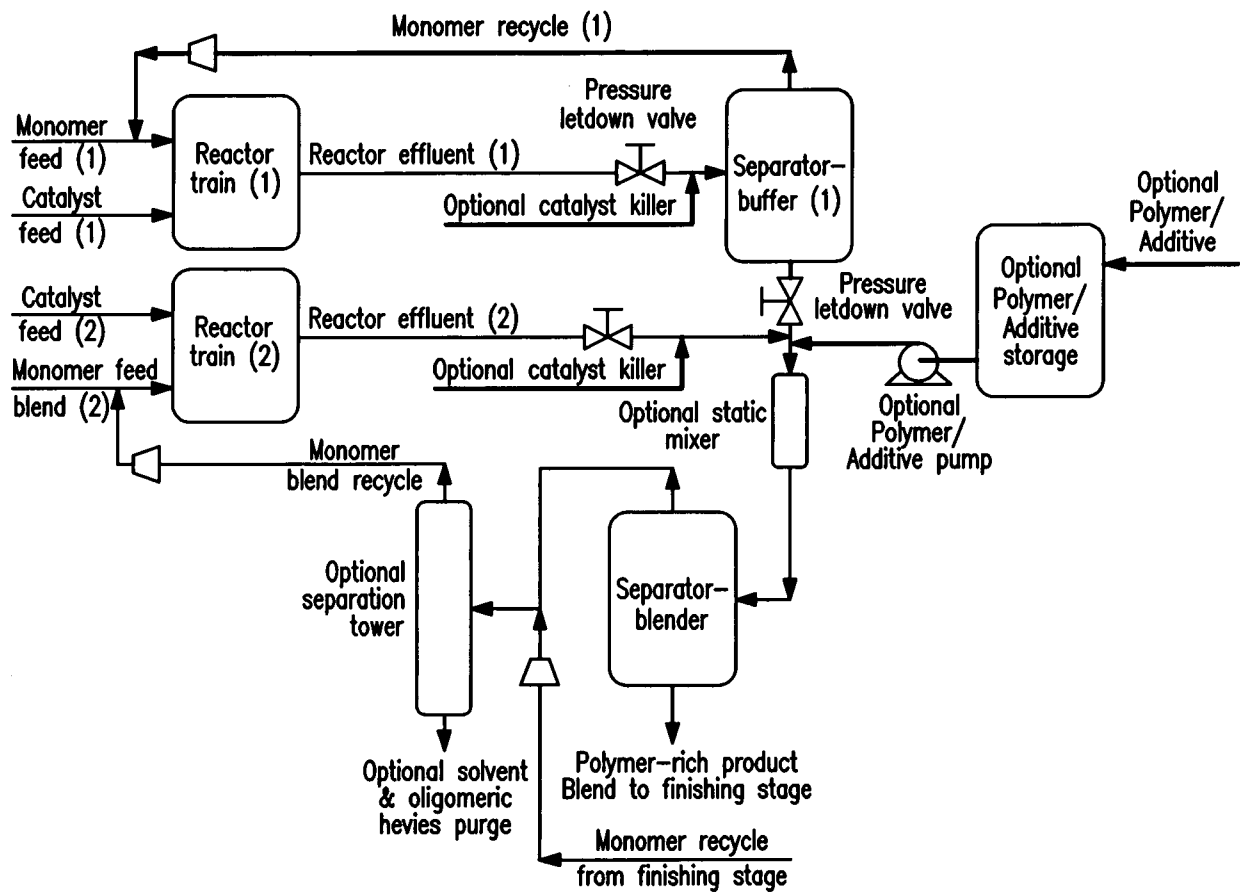
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Monomer Recycle Process For Fluid-Phase In-Line Polymer Blending With Two Separation Vessels With A Product Effluent Buffer Tank That Also Serves As Monomer/Product Separator For Improved Blend Ratio Control

**FIG. 9**

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Exemplary monomer recycle process for fluid phase in-line blending of polymers with two separation vessels and with additive/polymer blending component option

**FIG. 10**

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Exemplary monomer recycle process for fluid phase in-line blending of polymers with two separation vessels, one also serving as buffer, and with additive/polymer blending component option

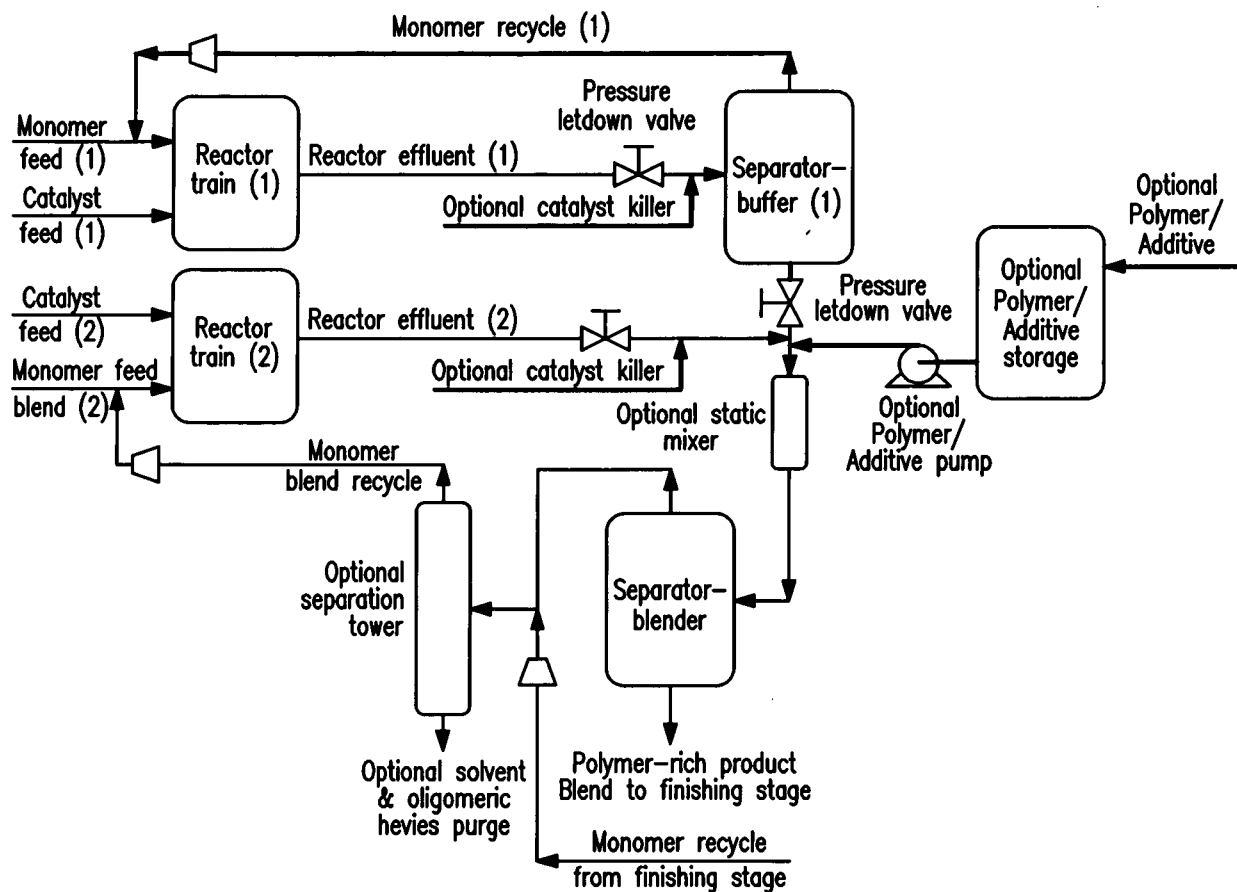


FIG. 11

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Cloud point isotherms for Polymer Achieve™ 1635

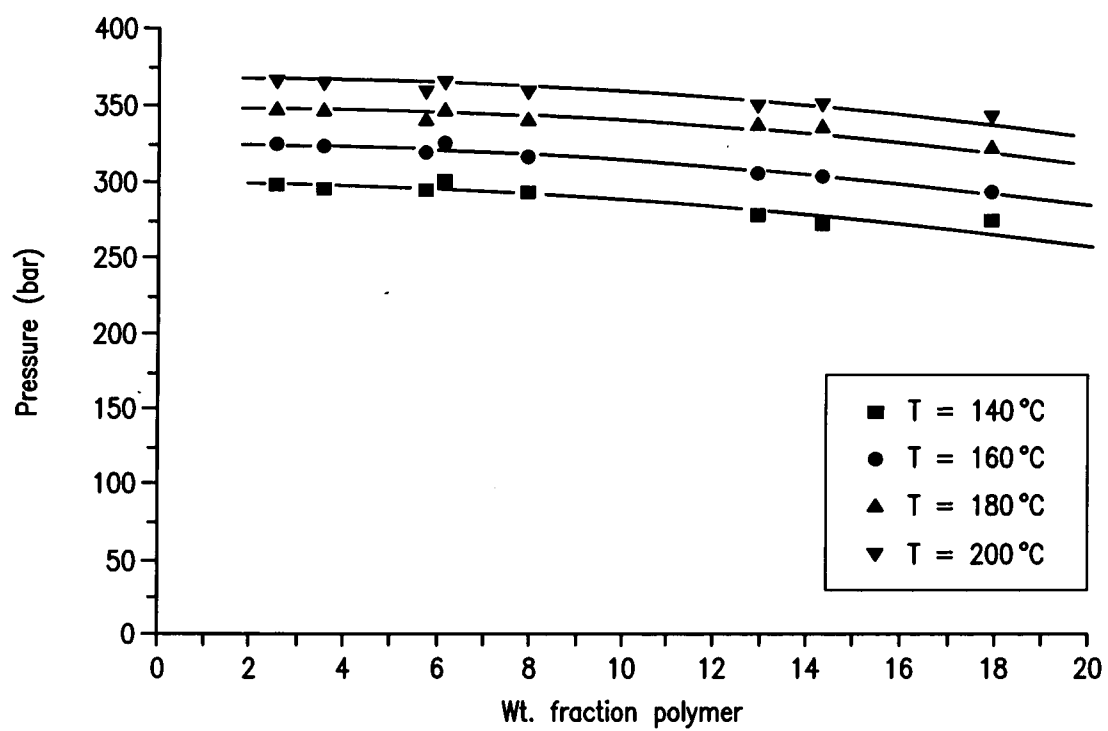


FIG. 12

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Cloud point isotherms for Polymer PP 45379 dissolved in bulk propylene

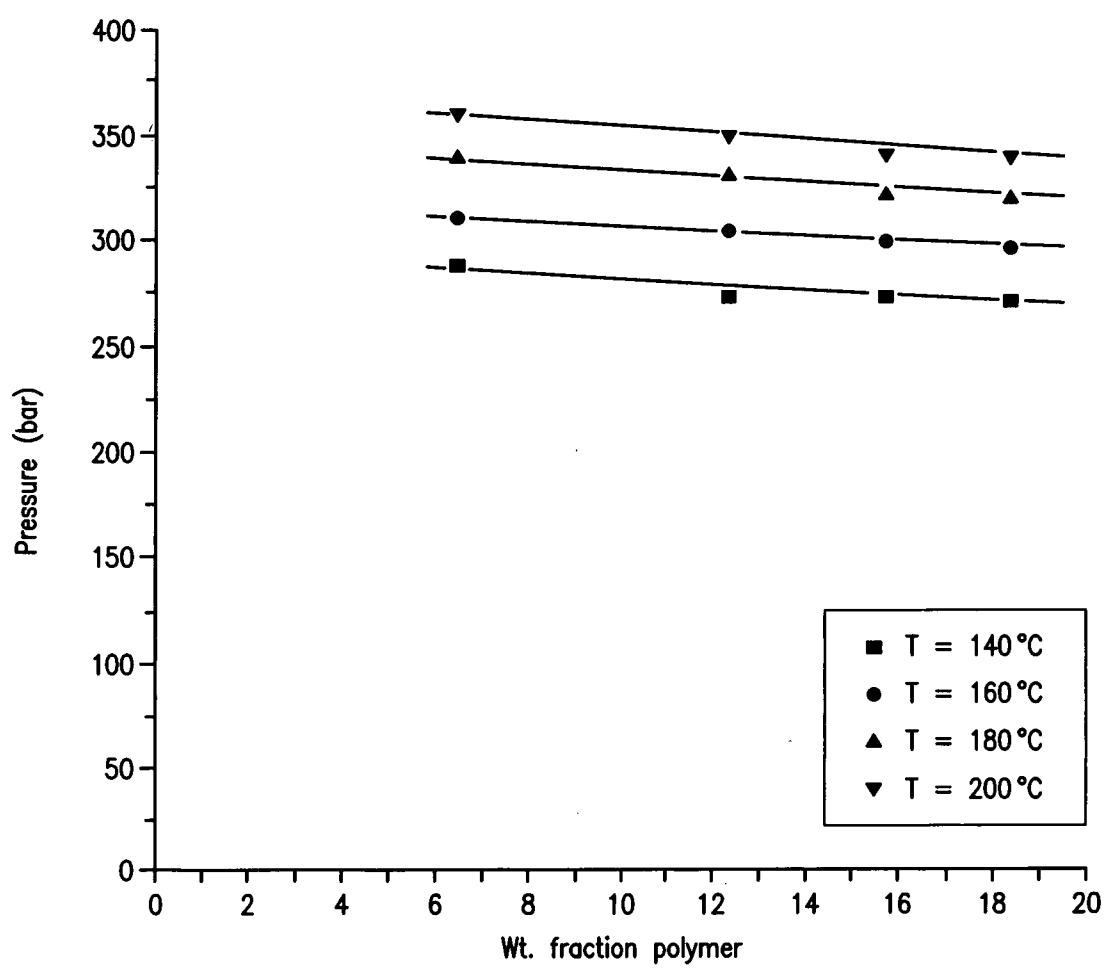


FIG. 13

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Cloud point isotherms for Polymer PP 4062 dissolved in bulk propylene

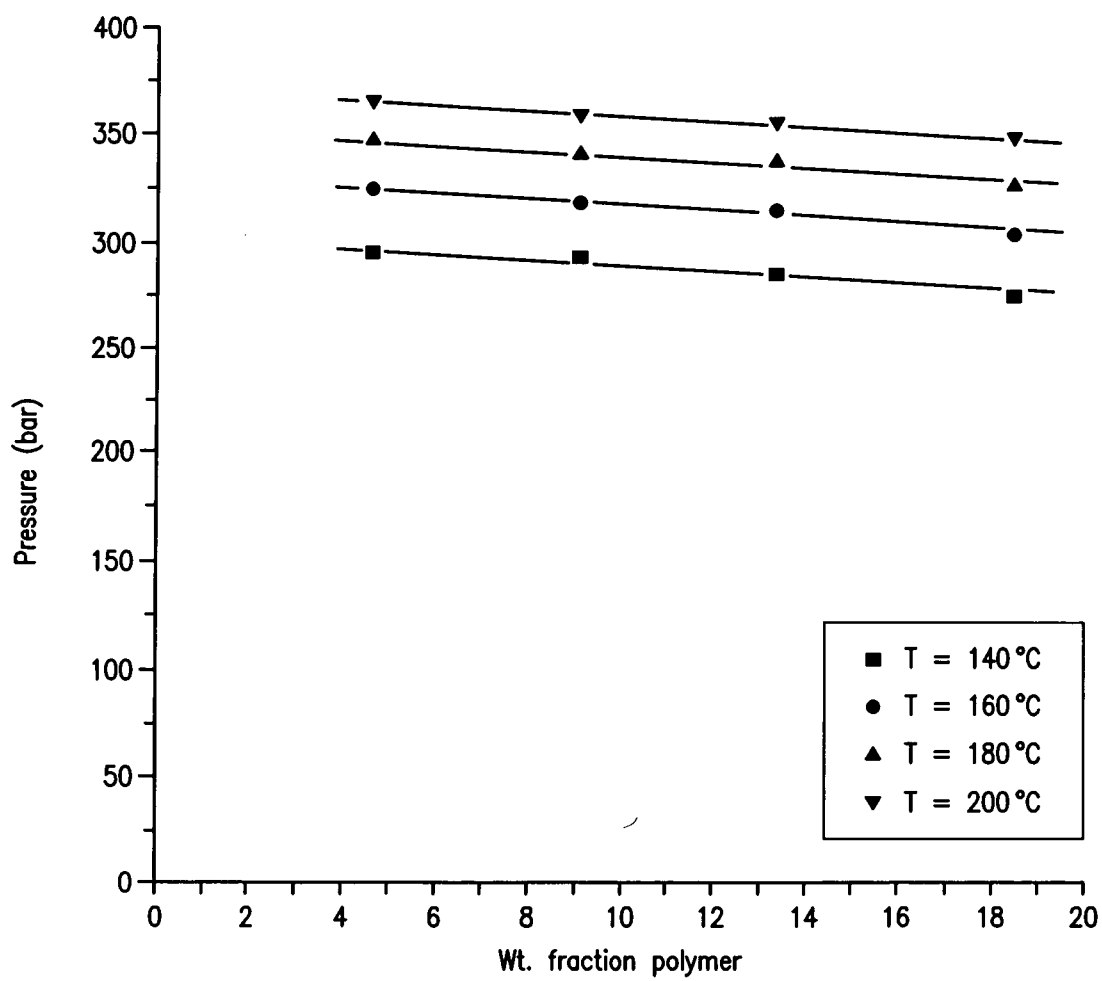


FIG. 14

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Cloud point isotherms for Polymer Achieve™ 1635 dissolved in bulk propylene

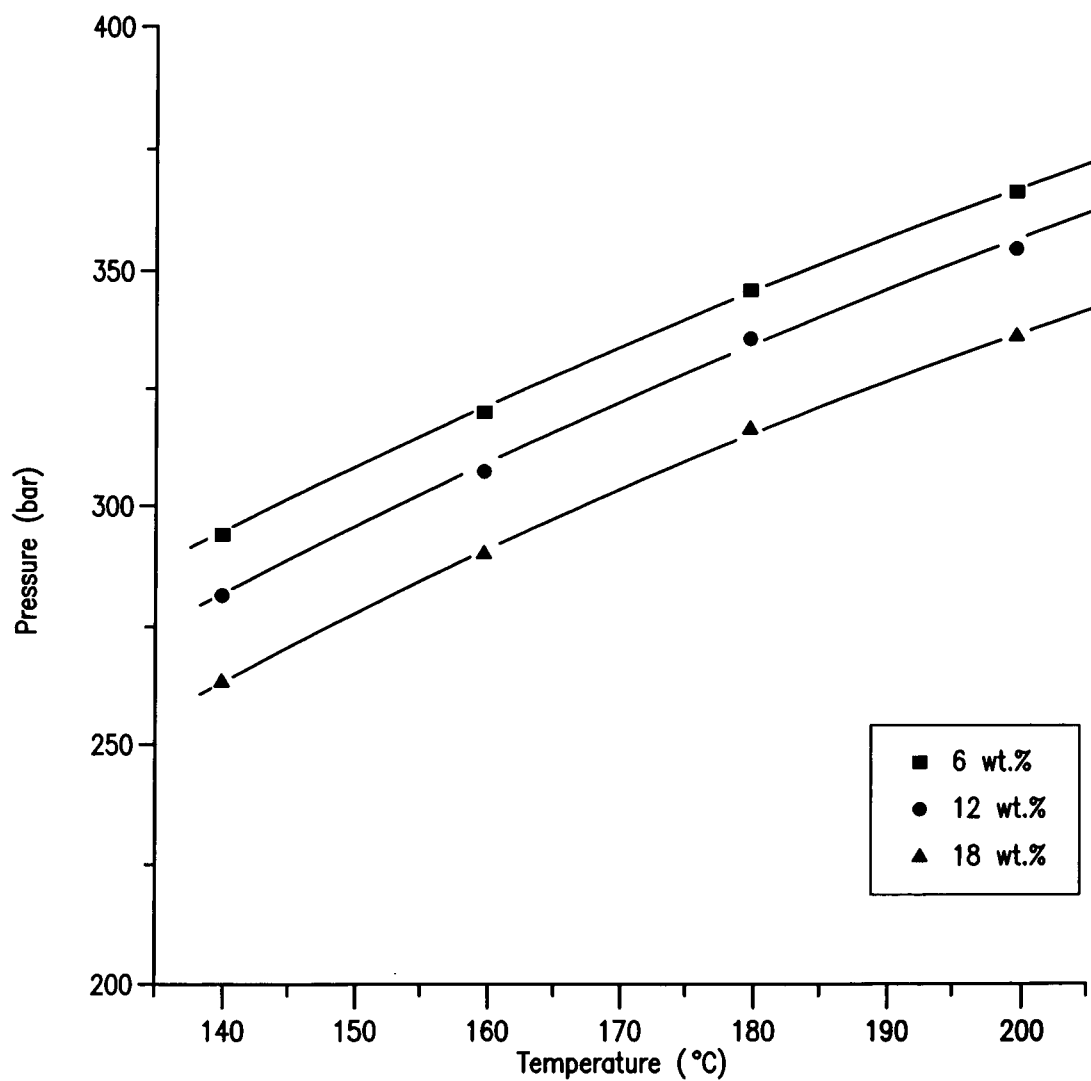


FIG. 15

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Cloud point isopleths for Polymer PP 45379 dissolved in bulk propylene

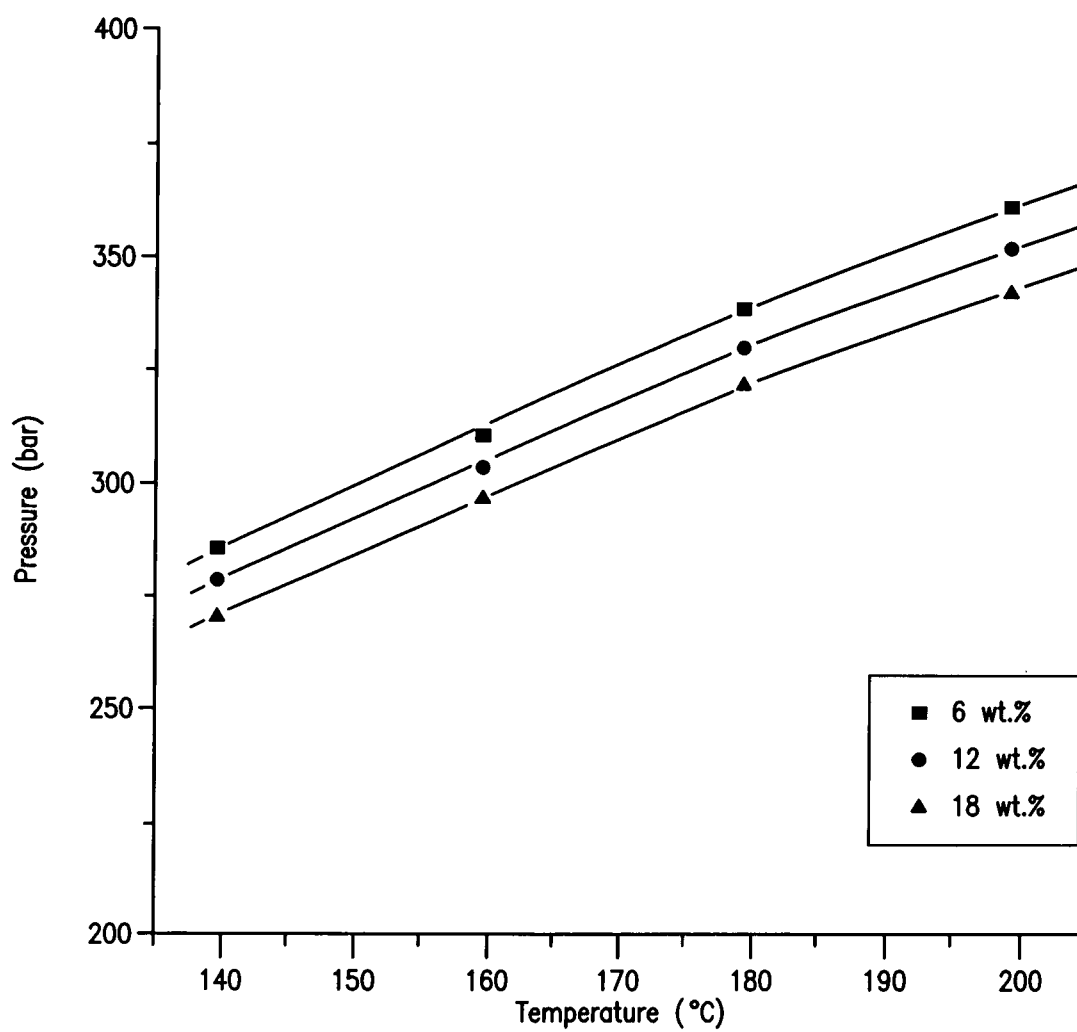


FIG. 16

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Cloud point isopleths for Polymer PP 4062 dissolved in bulk propylene

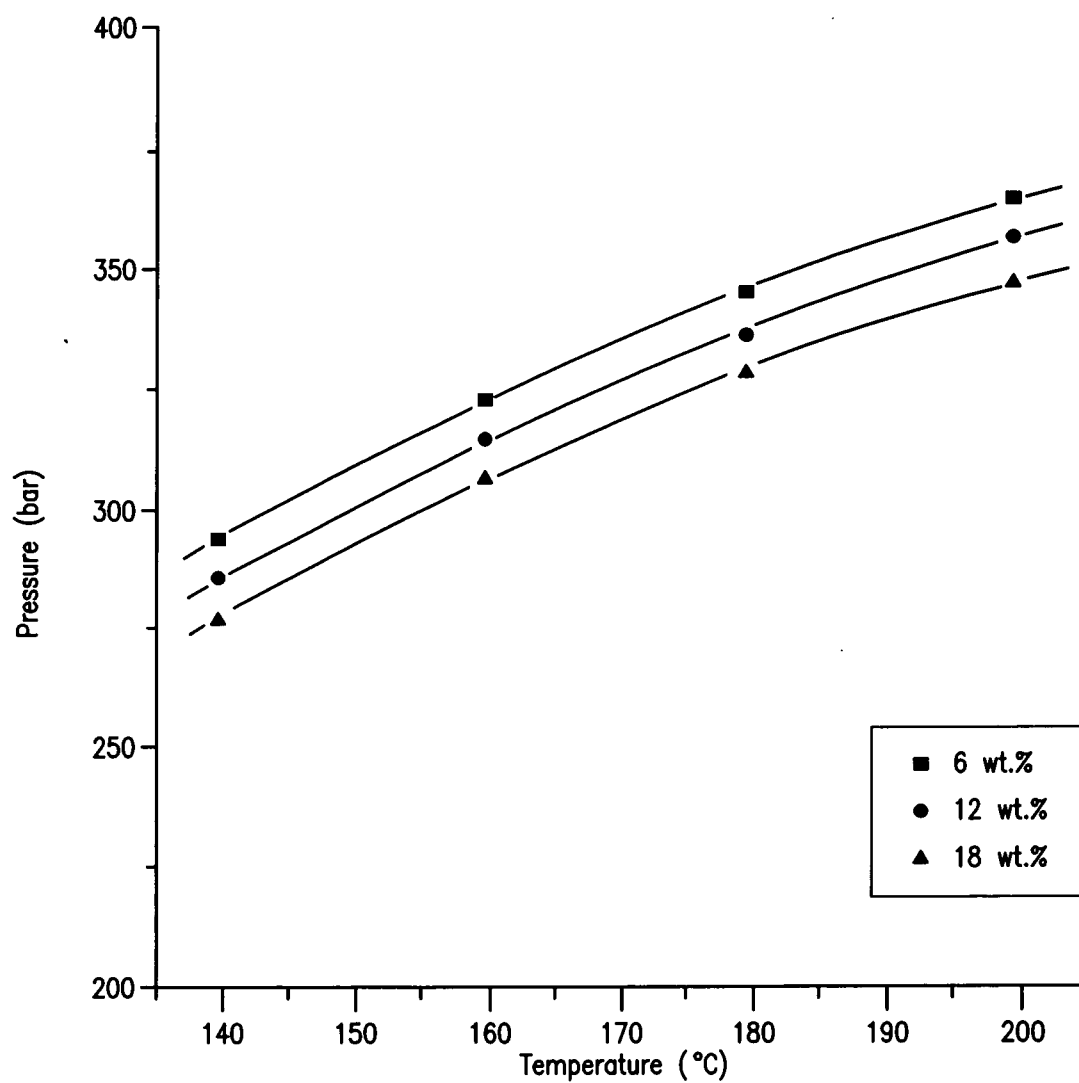
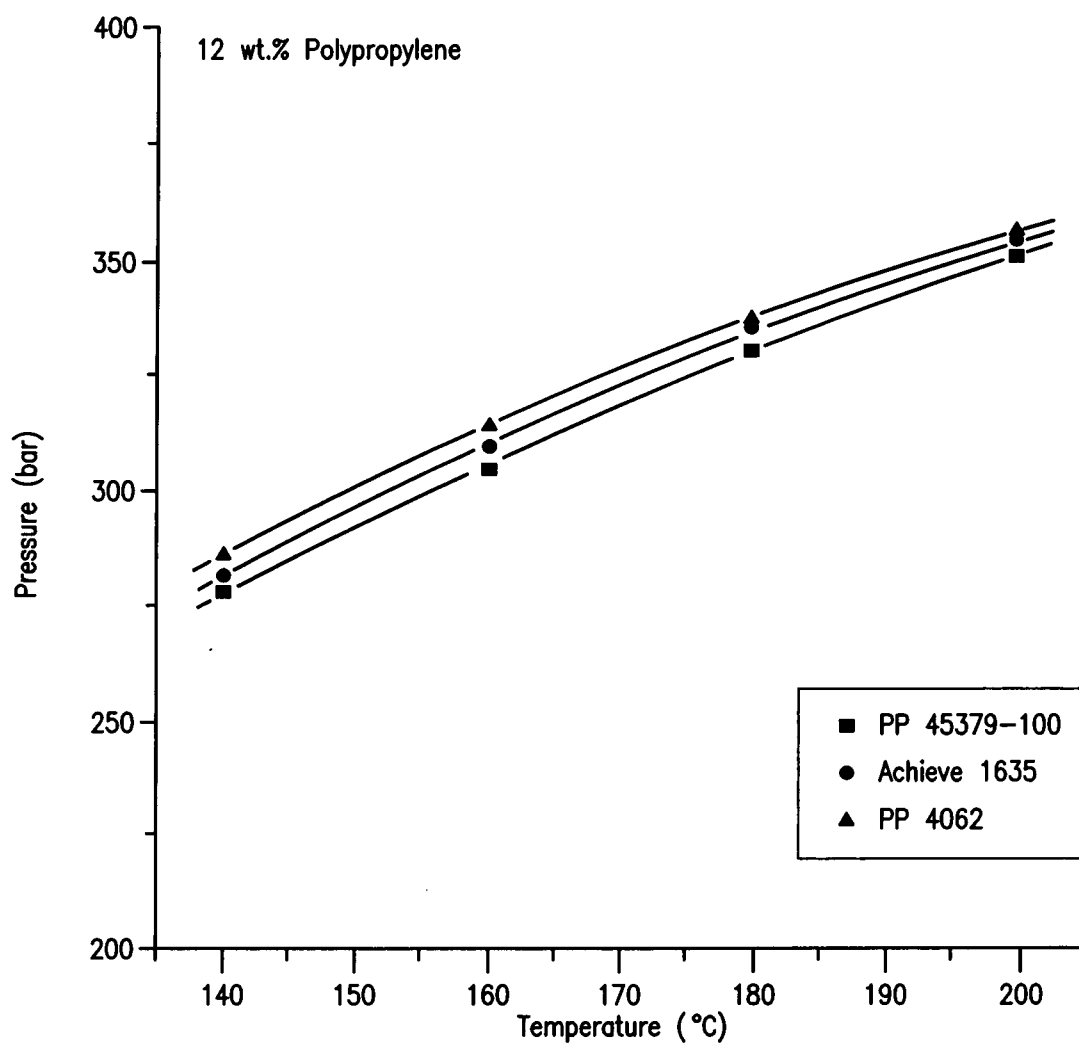


FIG. 17

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Comparison of isopleths for PP 45379, Achieve™ 1635 and PP 4062 dissolved in bulk propylene

**FIG. 18**

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Comparison of isopleths for Achieve™ 1635 and literature data

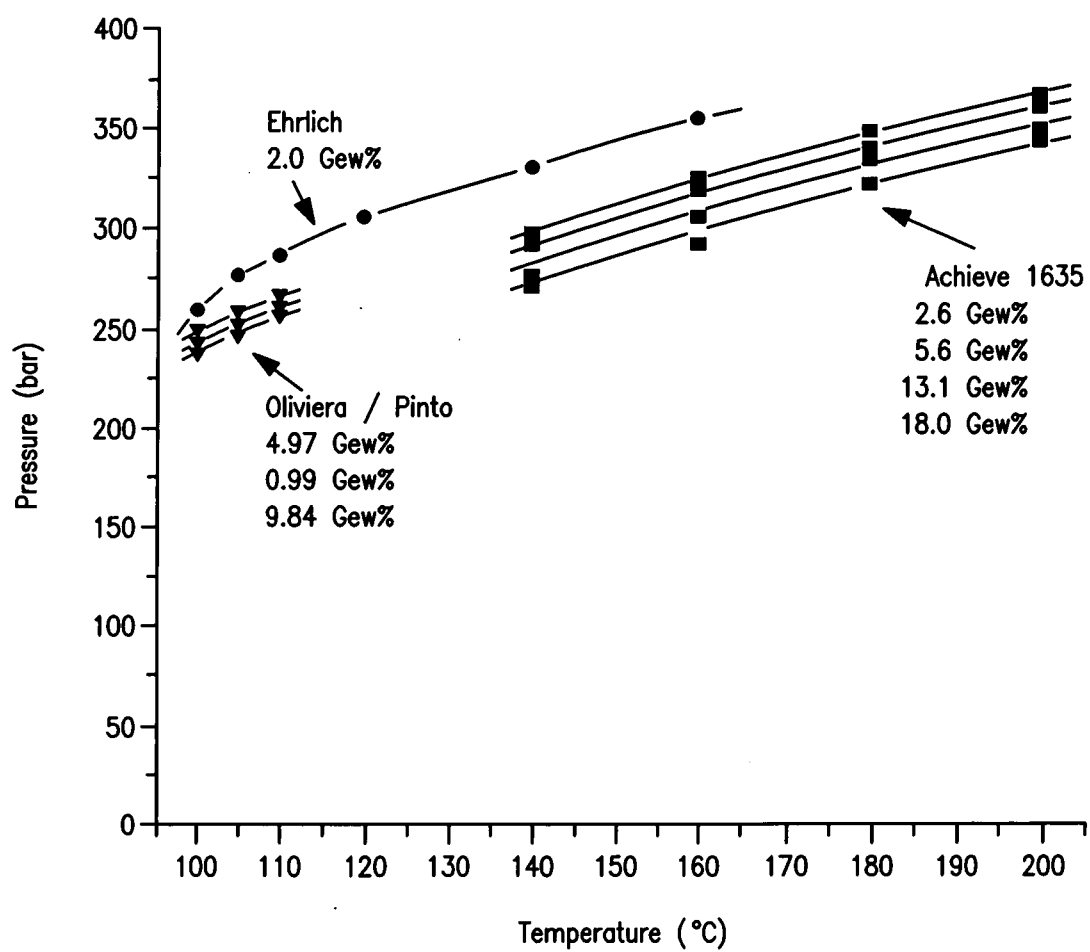


FIG. 19

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Comparison of isopleths for PP 45379 and literature data

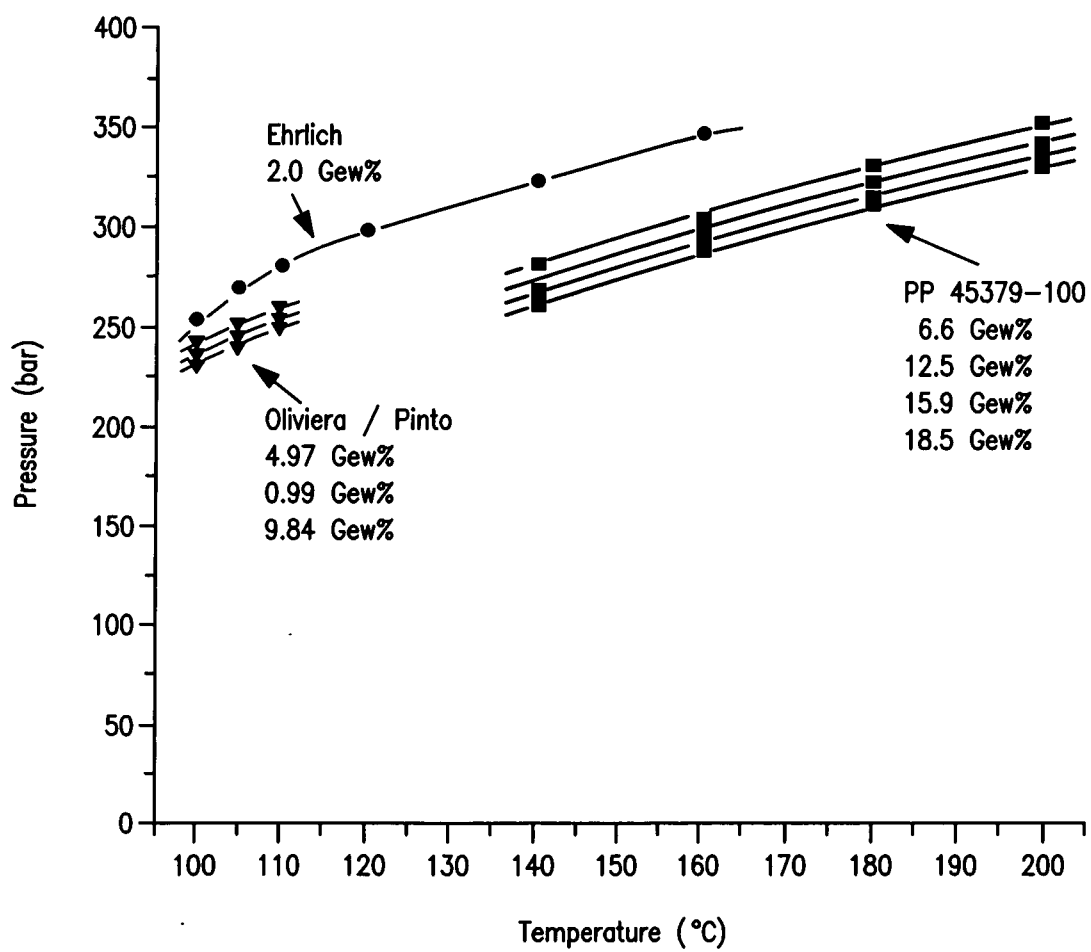


FIG. 20

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Comparison of isopleths for PP 4062 and literature data

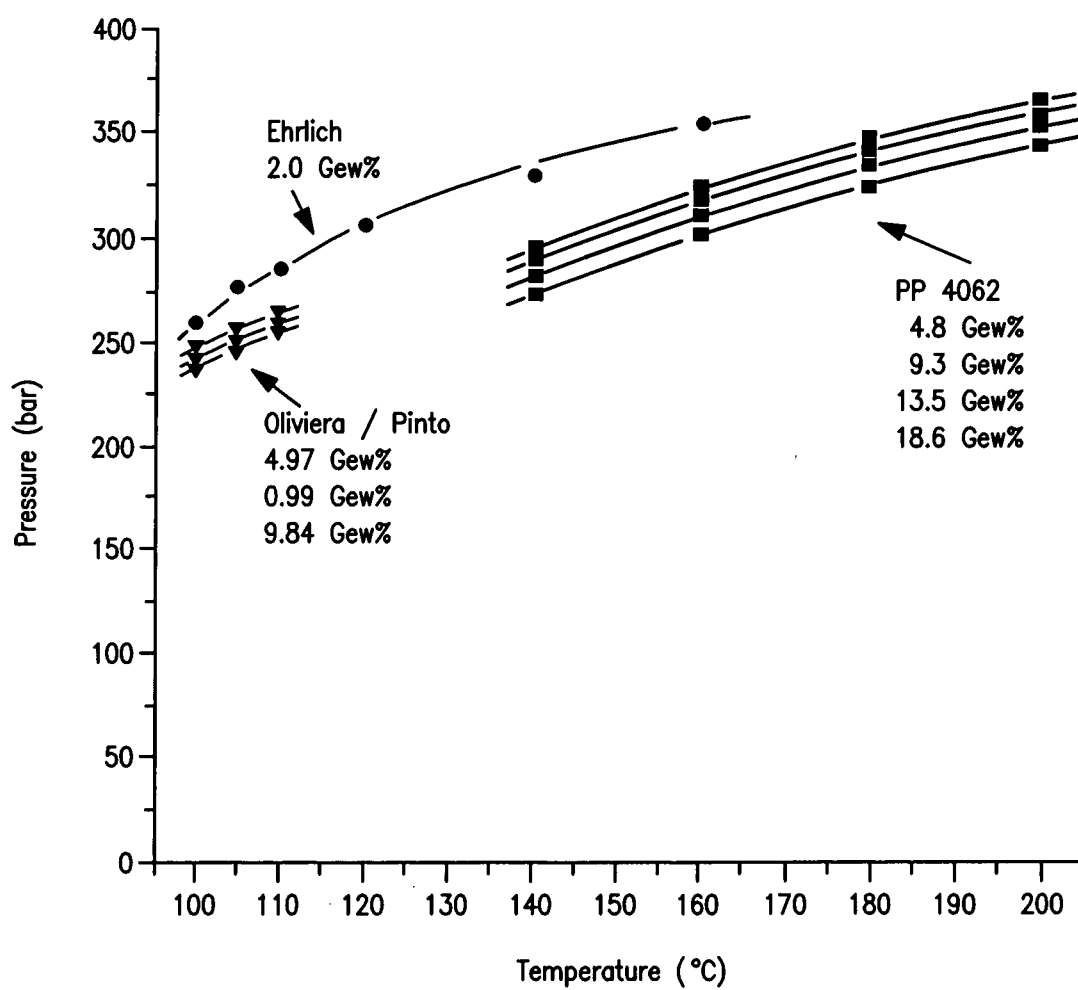


FIG. 21

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Basic phase diagram for mixture of propylene monomer with polymer

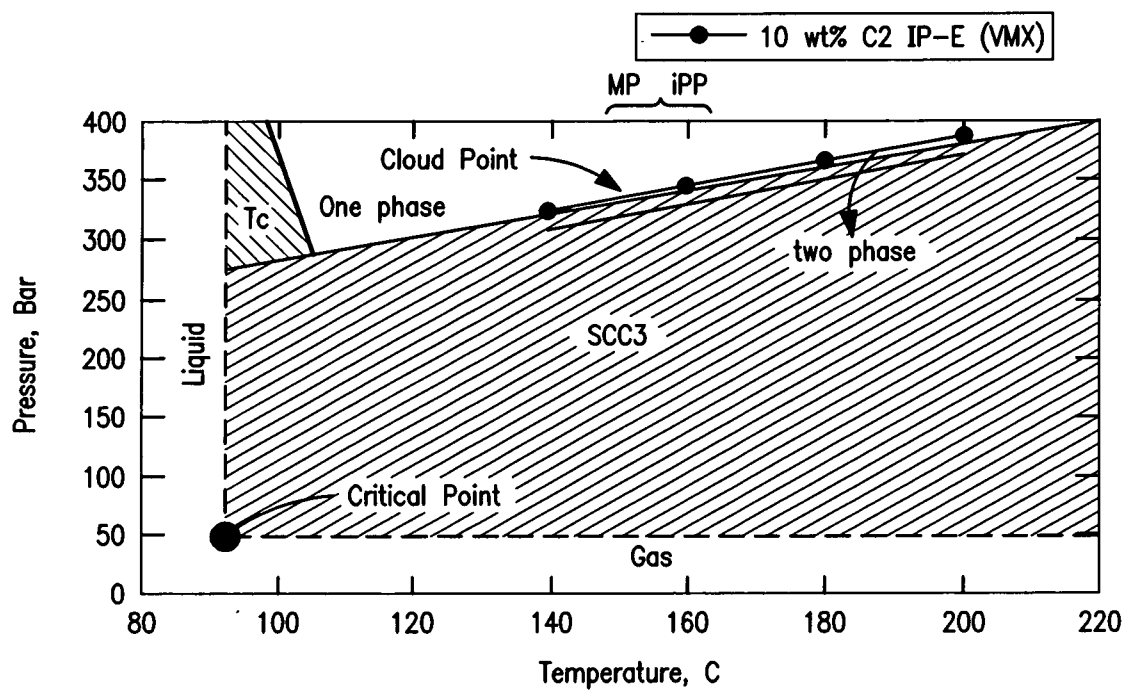
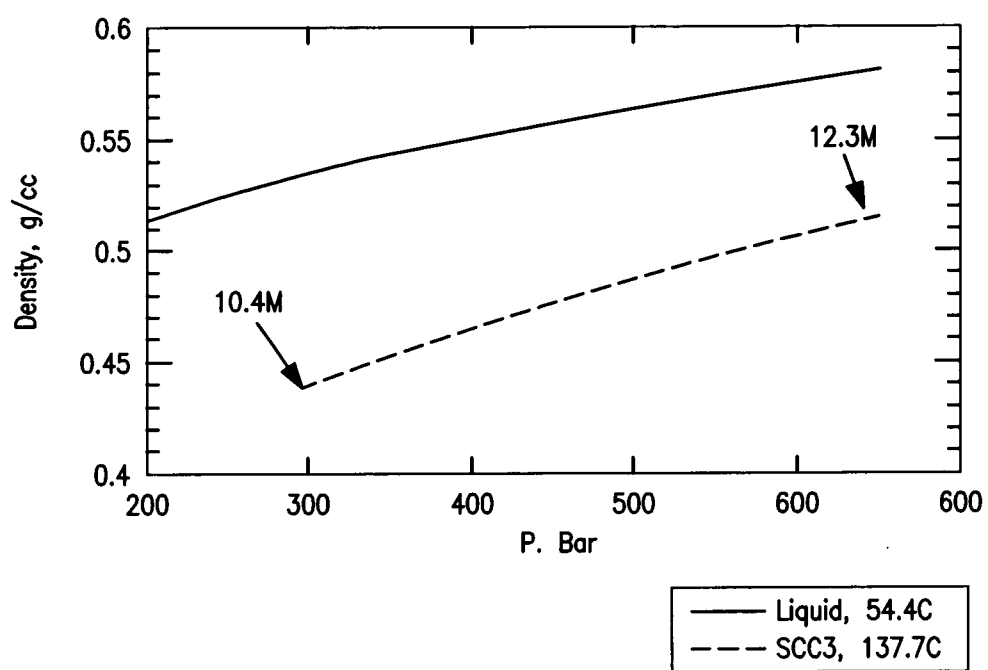


FIG. 22

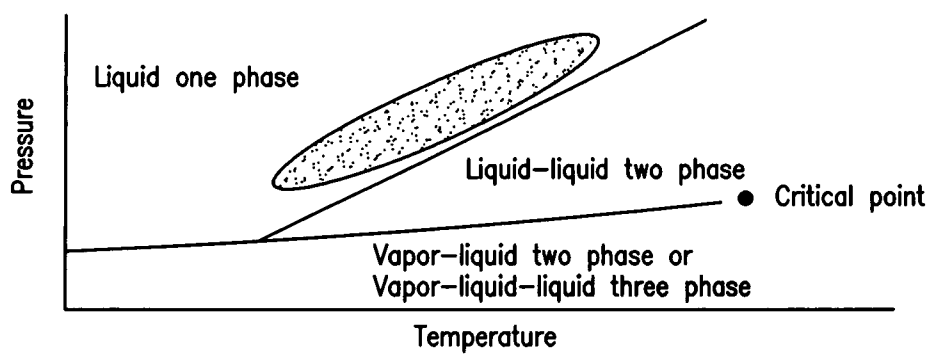
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Comparison of the density of supercritical propylene with liquid propylene

**FIG. 23**

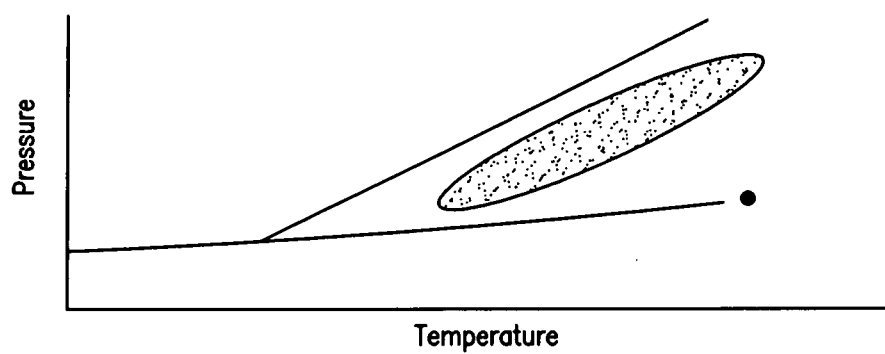
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Operating regime with process disclosed for a reactor operating in a single fluid phase

**FIG. 24**

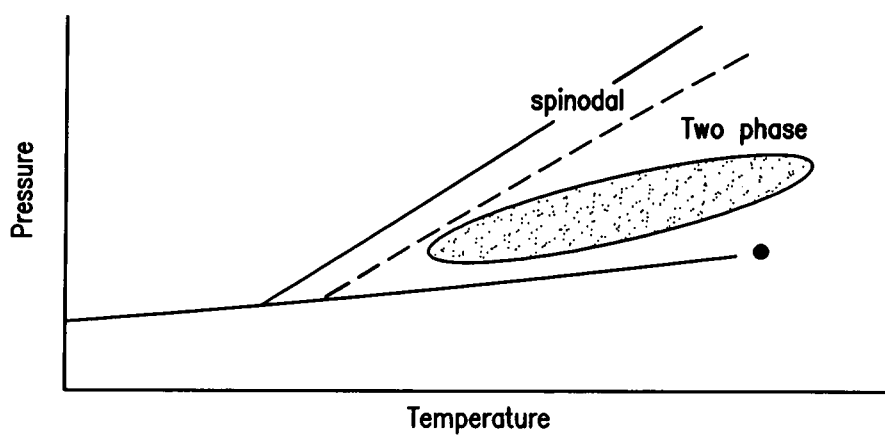
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Operating regime with process disclosed for a reactor operating in a fluid-fluid phase

**FIG. 25**

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Operating regime with process disclosed herein for a gravity separator

**FIG. 26**