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(54) **LOW VISCOSITY POLY-ALPHA-OLEFINS**

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(58) **Field of Classification Search**

USPC 585/17, 18, 502, 520, 521, 522, 523

See application file for complete search history.

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(57) **ABSTRACT**

A low viscosity poly(apha-olefin) (PAO) is produced by contacting one or more C3 to C24 alpha-olefins with an unbridged, substituted bis cyclopentadienyl transition metal compound, a non-coordinating anion activator, and an alkylaluminum compound. The molar ratio of transition metal compound to activator is 10:1 to 0.1:1, and the molar ratio of alkyl aluminum compound to transition metal compound is 1:4 to 4000:1. The transition metal compound has either (a) at least one non-isoolefin substitution on both cyclopentadienyl rings, or (b) at least two substitutions on at least one cyclopentadienyl ring. The PAO is comprised of at least 50 mole % of C3 to C24 alpha-olefins and has a kinematic viscosity at 100° C. of 20 cSt or less.

16 Claims, No Drawings