

Title (en)

Copolymer blends and their use as additive to improve the cold flow properties of middle distillates

Title (de)

Copolymermischungen und ihre Verwendung als Additiv zur Verbesserung der Kaltfließeigenschaften von Mitteldestillaten

Title (fr)

Mélanges de copolymères et leurs utilisations comme additif pour l'amélioration des propriétés d'écoulement à froid de distillats moyens

Publication

EP 1134275 B1 20060830 (DE)

Application

EP 01104848 A 20010228

Priority

DE 10012269 A 20000314

Abstract (en)

[origin: EP1134275A2] An additive for improving the cold flow properties of intermediate distillates containing 10-95 wt.% of a copolymer (A) of lower olefins and vinyl esters, a copolymer (B) containing 40-60 mole % of bivalent structural units, and (C) various copolymers (different from A and B) of ethylene and one or more vinyl or acrylic esters which alone show activity in improving the cold flow properties of intermediate distillates is new. An additive for improving the cold flow properties of intermediate distillates containing 10-95 wt.% of a copolymer (A) of lower olefins and vinyl esters, containing (A1) 85-97 mole% of bivalent structural units of formula (I): $R<1>$ and $R<2> = H$ or Me, and (A2) at least 3 mole of bivalent structural units of formula (II): where $R<3> = 6-16C$ saturated and branched alkyl with a tertiary C atom, bonding $R<3>$ to a carboxyl function, a copolymer (B) containing (B1) 40-60 mole % of bivalent structural units, of formula (III): or (IV): where a and b each = 0 or 1, $a+b = 1$, (B2) 0-20 mole% of bivalent structural units of formula (V): and optionally (B3) 0-20 mole% of bivalent structural units derived from polyolefins, where these are derived from 3-5C monoolefins, where (a) $R<4> = 10-40 C$ alkyl or alkenyl, alkoxyalkyl with 1-100 C alkoxy units and 1-30 C in alkyl residue, (b) $R<5> = OCOR<1>2$ or $COOR<1>2$, where $R<1>2 = 1-3C$ alkyl, and (c) the number of C atoms of the (B3) structural units based on polyolefin molecules is 35-350, and (d) $R<1>1 = H$ or Me, and optionally (C) various copolymers (different from A and B) of ethylene and one or more vinyl or acrylic esters which alone show activity in improving the cold flow properties of intermediate distillates. An Independent claim is included for: a fuel including an intermediate distillate and 0.001-2 wt.% of the additive.

IPC 8 full level

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CPC (source: EP US)

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