

## Title (en)

Polyfunctional additive for fuel oils

## Title (de)

Mehrfunktionelles Additiv für Brennstofföle

## Title (fr)

Additif polyfonctionnel pour huiles combustibles

## Publication

**EP 1116781 B1 20050831 (DE)**

## Application

**EP 00128083 A 20001221**

## Priority

DE 10000649 A 20000111

## Abstract (en)

[origin: EP1116781A1] Additive for improving the cold flow and lubricating properties of diesel fuel comprises an oil-soluble amphiphile and an ethylene/vinyl carboxylate/olefin terpolymer. Additive for improving the cold flow and lubricating properties of diesel fuel comprises: (a) 5-95 wt. % of at least one oil-soluble amphiphile of formula (I) and/or (II): (b) 5-95 wt.% of a terpolymer having a melt viscosity of 20-10,000 mPas at 140 degrees C and comprising vinyl 2-20C aliphatic monocarboxylate units (9-18 mole%), olefin units (0.5-5 mole%) and ethylene units (to 100 mole %).  $R_{<1>} < CO-X-R_{<2>}_y$  (I)  $R_{<1>} > X-R_{<2>}$  (II)  $R_{<1>} = 1-50C$  alkyl, alkenyl, hydroxyalkyl or aryl;  $X = NH, NR_{<3>}, O$  or  $S$ ;  $y = 1-4$ ;  $R_{<2>} = H$  or OH-substituted 2-10C alkyl;  $R_{<3>} = 1-20C$  alkyl or N-containing and/or OH-substituted 2-10C alkyl. Independent claims are also included for the following; (1) diesel fuel containing the additive; (2) a mixture of the additive and a paraffin dispersant of formula (III) or a comb polymer of formula (IV) in a ratio of 1:10 to 20:1  $R_{<51>} = 4-50C$  alkyl or alkenyl;  $R_{<52>} =$  ethylene and/or propylene;  $n = 5-100$ ;  $p = 0-50$ ;  $A = R', COOR', OCOR', RCOOR'$  or  $OR'$ ;  $D = H, Me, A$  or  $R$ ;  $E = H$  or  $A$ ;  $G = H, R, RCOOR',$  aryl or heterocyclyl;  $M = H, COOR, OCOR, OR$  or  $COOH$ ;  $N = H, R, COOR, OCOR, COOH$  or aryl;  $R' = 8-150C$  hydrocarbyl;  $R = 1-10C$  hydrocarbyl;  $m = 0.4-1.0$ ;  $n = 0-0.6$ .

## IPC 1-7

**C10L 1/14**; **C10L 10/04**

## IPC 8 full level

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## Cited by

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## DOCDB simple family (application)

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