

Title (en)

Use of carboxylic acids and derivatives thereof as solvent for hydroxyl groups carrying polymers

Title (de)

Verwendung von Carbonsäuren und deren Derivaten als Lösemittel für hydroxylgruppenhaltige polymere

Title (fr)

Utilisation d'acides carboxyliques et leurs dérivés pour dissoudre des polymères portant des groupes hydroxyles

Publication

EP 1134274 B1 20061129 (DE)

Application

EP 01104846 A 20010228

Priority

DE 10012947 A 20000316

Abstract (en)

[origin: EP1134274A2] Lubricity additive for fuel oil contains: (A) 10-95 wt.% oil-soluble amphiphilic aliphatic or aromatic amide, (thio)carboxylic, imine and/or (thio)ether compound(s); and (B) 5-90 wt.% copolymer (weight average molecular weight 500-100000 g/mole; hydroxyl (OH) number 10-350 mg KOH/g) of olefinically unsaturated compounds including 5-80 mole-% OH compound(s) and 20-95 mole-% compound(s) with an NOTLESS 6 carbon hydrocarbon chain. Lubricity additive for fuel oil contains: (A) 10-95 wt.% oil-soluble amphiphilic aliphatic or aromatic amide or (thio)carboxylic compound(s) of formula $R_{<1>}C(O)XR_{<2>}y$ (I) and/or imine or (thio)ether compound(s) of formula $R_{<1>}XR_{<2>}$ (II); and (B) 5-90 wt.% copolymer(s) with a weight average molecular weight (Mw) of 500-100000 g/mole and hydroxyl (OH) number of 10-350 mg KOH/g, comprising units of (B.1) 5-80 mole % olefinically unsaturated compound(s) with free OH group(s), (B.2) 20-95 mole-% olefinically unsaturated compound(s) with a hydrocarbon chain containing NOTLESS 6 carbon (C) atoms and (B.3) 0-40 mole % comonomer(s) selected from (meth)acrylic acid and esters, vinyl esters and ethers and alkenes. $R_{<1>} = 1-50$ C (hydroxy)alkyl, alkenyl or aryl; $X = NH$, $NR_{<3>}$, O or S; $y = 1, 2, 3$ or 4 ; $R_{<2>} =$ hydrogen (H) or 2-10 C hydroxyalkyl; $R_{<3>} = N$, 2-10 C hydroxyalkyl and/or 1-20 C alkyl; or $XR_{<2>} = NR_{<41>}R_{<42>}$; $R_{<41>} = -(R_{<43>}-NR_{<44>})_m-R_{<45>}$; $R_{<42>} = -(R_{<43>}-NR_{<44>})_n-R_{<45>}$; $R_{<43>} = 2-10$ C alkylene; $R_{<44>} = H$, methyl, 2-10 C alkyl, $R_{<1>}CO-$ or alkoxy; $R_{<45>} = H$ or $R_{<1>}CO-$; $m, n = 0-20$. Independent claims are also included for: (a) fuel oil, comprising a middle distillate containing ≤ 0.05 wt.% sulfur, and 0.001-2 wt.% of the additive; and (b) mixtures of the additive with flow enhancers, comb polymers and/or paraffin dispersants.

IPC 8 full level

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