

Title (en)
Blends of carboxylic acids, derivatives thereof and hydroxyl groups carrying polymers, and use thereof to improve the lubricating activity of oils

Title (de)
Mischungen aus Carbonsäuren, deren Derivaten und hydroxylgruppenhaltigen polymeren, sowie deren Verwendung zur Verbesserung der Schmierwirkung von Ölen

Title (fr)
Mélanges d'acides carboxyliques, leurs dérivés et de polymères portant des groupes hydroxyles, et leurs utilisations pour l'amélioration du pouvoir lubrifiant d'huiles

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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.

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