

Title (en)

Overbased sulfurised alkaline earth metal alkylsalicylate-alkylphenate as detergent/dispersant lubricating oil additives

Title (de)

Überbasische schwefelhaltige Erdalkalimetall Alkylsalicylate-Alkylphenate Detergenz-Dispergierzusätze für Schmieröle

Title (fr)

Additifs détergents-dispersants pour huiles lubrifiantes du type alkylsalicylates-alkylphénates, alcoolino-terreux sulfurisés et suralcalinisés

Publication

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Application

EP 97102055 A 19950314

Priority

- EP 95913194 A 19950314
- FR 9403138 A 19940317

Abstract (en)

New detergent-dispersant additives are obtd. by (A) neutralisation of alkylphenols contg. 35 - 85% (wt.) of linear 12-40 (pref. 18-30)C alkylphenols mixed with 15-65% (wt.) of branched-chain 9-24 (pref. 12) C alkyl phenols, with an alkaline earth base in the presence of 1-4C carboxylic acids, the operation being effected at at least 215 deg. C, with gradual application of vacuum to eliminate water of reaction in the absence of any solvent to form an azeotrope; (B) carboxylation of the alkyl phenate obtd. in (A) to transform at least 22% (pref. 25%) (moles) of the initial alkyl phenols to alkyl salicylates - using CO₂ gas at 180-240 pref. 190-220 deg. C at atmos. pressure to 15x10^{<5>} Pa (15 bars) for 1-8 hrs. - opt. in the presence of a dilution oil 100 N at the beginning or end of steps (A) or (B); (C) sulphurisation and over-basing of the mixt. of alkyl-phenates and -salicylates obtd. with elementary S in the presence of an alkaline earth base - a mono-alcohol of B, Pr, greater than 150 deg. C (pref. more than 175) and possibly an alkylene glycol (or alkyl ether deriv.) at 145-180 (pref. 150-160) deg. C.; (D) elimination of alkylene-glycol and mono-alcohol by distn.; (E) filtration to eliminate sediment; and (F) degassing to air at 80-160 (pref. 110-14) deg. C, until a grading of 1A on a copper strip (according to the ASTM D130 test) effected for 1 hr at 150 deg. C) was obtd.

Abstract (fr)

La présente invention a pour objet des additifs détergents dispersants pour huiles lubrifiantes. Ils sont préparés par neutralisation, carboxylation, sulfurisation-suralcalinisation, carbonatation, distillation, filtration et dégazage à partir d'alkyl phénols contenant de 35 à 85 % en poids de substituants alkyles linéaires. Ce procédé ne nécessite pas, à la phase neutralisation, la présence d'un tiers solvant, lequel, en formant un azéotrope avec l'eau, favorise l'élimination de l'eau provenant de la réaction de neutralisation. Les additifs selon l'invention présentent des propriétés améliorées de stabilité à l'hydrolyse, de dispersion, de compatibilité et de moussage.

IPC 1-7

C07C 65/10; **C10M 159/22**; **C07G 17/00**

IPC 8 full level

C10M 159/22 (2006.01); **C10N 30/04** (2006.01); **C10N 40/08** (2006.01)

CPC (source: EP US)

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Citation (applicant)

- US 3036971 A 19620529 - OTTO FERDINAND P
- FR 1563557 A 19690411
- FR 2625220 A1 19890630 - OROGIL [FR]

Cited by

EP1236791A1; WO2012070007A1; US6642190B2; US7960319B2

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