

Title (en)

SUPERBASIC DETERGENT-DISPERSANT ADDITIVES STABLE TO HYDROLYSIS, AND PROCESS FOR THEIR PREPARATION

Publication

EP 0219382 B1 19890322 (FR)

Application

EP 86401962 A 19860908

Priority

FR 8513731 A 19850917

Abstract (en)

[origin: EP0219382A1] 1. Overbased detergent-dispersant additives for lubricating oils, characterised in that they are obtained by : a) neutralisation of an alkylphenol carrying one or several C8 -C30 alkyl substituents, by means of an alkaline earth base in the presence of a "vector" alcohol, chosen from the C1 -C3 monoalcohols, alkylene glycols or alkoxy alkanols of the formula $R(OR')_x OH$ where R is a C1 -C4 alkyl radical, R' is a C2 -C3 alkyl radical and x is equal to 1 or 2 and of a third solvent forming an azeotrope with the reaction liquid chosen from aromatic or aliphatic hydrocarbons having a boiling point higher than 70 degrees C and alcohols having a boiling point higher than 120 degrees C, the said neutralisation operation being performed at a temperature at least equal to that at which the azeotrope is formed, the quantities of reagents used corresponding with the following molar ratios : - alkaline earth base/alkylphenol in the range from 0.5 to 2 - "vector" alcohol/alkylphenol in the range from 0.05 to 3, b) distillation of the reaction medium obtained under a current of nitrogen until the "vector" alcohol and the azeotrop are totally eliminated, c) carboxylation of the alkylphenate formed in alkylsalicylate by means of carbon dioxide gas at a temperature of 100 to 185 degrees C under a pressure of at least 5 bars for at least 3 hours in the presence of a dilution oil or of an aromatic solvent, the quantity of CO₂ corresponding with that required to obtain a conversion ratio expressed in acids of the alkylphenate to alkylsalicylate of between approximately 5 and 45%, d) sulphurisation-superalkalization of the alkylphenate-alkylsalicylate mixture obtained by elementary sulphur in the presence of an alkaline earth base, of an alkylene glycol and of a third solvent chosen from aromatic hydrocarbons, aliphatic hydrocarbons and alcohols having a boiling point higher than 120 degrees C, at a temperature of the order of 140 to 230 degrees C, the quantities of reagents used corresponding with the following molar ratios : - sulphur/initial alkylphenol in the range from 0.7 to 1.5 - total alkaline earth base/initial alkylphenol from 1.7 at least - alkaline earth base for superalkalisation/alkylene glycol in the range from 1 to 1,6 ; then carbonation of the medium obtained with carbon dioxide gas at a temperature of 100-185 degrees C under a pressure close to atmospheric pressure, the quantity of CO₂ used being between that which can be completely absorbed by the reaction medium and an excess of 30% of this quantity, e) hydrolysis as necessary, and then removal by distillation of the alkylene glycol and of the third solvent after addition of dilution oil.

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