

Title (en)

Mineral oils containing detergent additives with improved cold flowability

Title (de)

Detergenzadditive enthaltende Mineralöle mit verbesserter Kältefließfähigkeit

Title (fr)

Huiles minérales contenant des additifs détergents avec capacité de fluidité au froid améliorée

Publication

EP 1801187 B2 20220323 (DE)

Application

EP 06025303 A 20061207

Priority

- DE 102005061465 A 20051222
- DE 102006045813 A 20060928

Abstract (en)

[origin: EP1801187A2] Use of at least an oil-soluble polyoxy alkylene compound comprising an oil soluble, amphiphilic compound containing at least a 10-500C- alkyl or alkenyl and a polar group with two or more nitrogen atoms for improving the cold flow characteristic of mineral oil in a distillating agent containing at least an ash free, a detergent additive containing nitrogen, where the oil-soluble polyoxy alkylene compound is e.g. an oil soluble ester, ether, ether/ester of alkoxylated polyol. Use of at least an oil-soluble polyoxy alkylene compound comprising an oil soluble, amphiphilic compound containing at least a 10-500C- alkyl or alkenyl and a polar group with two or more nitrogen atoms for improving the cold flow characteristic of mineral oil in a distillating agent containing at least an ash free, a detergent additive containing nitrogen, where the oil-soluble polyoxy alkylene compound is an oil soluble ester, ether, ether/ester of alkoxylated polyol with at least three 2-5C-alkylene oxide and polyol containing repetitive alkoxy per hydroxy group or at least two aliphatic 12-30C-hydrocarbon. Independent claims are included for: (1) a composition comprising at least an ash free, detergent additive containing nitrogen, which is an oil soluble, amphiphilic compound containing at least a 10-500C- alkyl- or alkenyl with two or more nitrogen atoms bonded to a polar group, and at least an oil soluble polyoxy alkylene compound, which is an oil soluble ester, ether or ether/ester of alkoxylated polyol with at least three 2-5C-alkylene oxide, and repetitive alkoxy per hydroxyl group; and (2) a distillative agent with a sulfur content of less than 100 ppm and 20-90 vol.% of agent exhibits a distillative boiling range of less than 120[deg]C, comprising the composition (10-10000 ppm) and at least a mineral oil cold flow improver.

IPC 8 full level

C10L 1/14 (2006.01); **C10L 1/198** (2006.01); **C10L 10/14** (2006.01)

CPC (source: EP KR US)

C10L 1/143 (2013.01 - EP US); **C10L 1/146** (2013.01 - EP US); **C10L 1/19** (2013.01 - KR); **C10L 1/1985** (2013.01 - EP US); **C10L 1/22** (2013.01 - KR); **C10L 10/14** (2013.01 - EP US); **C10L 1/1641** (2013.01 - EP US); **C10L 1/196** (2013.01 - EP US); **C10L 1/1981** (2013.01 - EP US); **C10L 1/2222** (2013.01 - EP US); **C10L 1/2225** (2013.01 - EP US); **C10L 1/224** (2013.01 - EP US); **C10L 1/2383** (2013.01 - EP US)

Citation (opposition)

Opponent :

- US 2005138859 A1 20050630 - JACKSON GRAHAM [GB], et al
- WO 9523200 A1 19950831 - EXXON CHEMICAL PATENTS INC [US], et al
- WO 9503377 A1 19950202 - EXXON CHEMICAL PATENTS INC [US], et al
- WO 9928416 A1 19990610 - EXXON CHEMICAL PATENTS INC [US], et al
- EP 0061895 B2 19921216
- WO 9504117 A1 19950209 - EXXON CHEMICAL PATENTS INC [US], et al

Cited by

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