

Title (en)
Fuel oil compositions

Title (de)
Heizölzusammensetzungen

Title (fr)
Compositions de carburant

Publication
EP 1947161 A1 20080723 (EN)

Application
EP 07121827 A 20071128

Priority

- EP 06126055 A 20061213
- EP 07121827 A 20071128

Abstract (en)
A middle-distillate fuel oil composition comprises minor amounts of (A) a quaternary ammonium salt of a polycarboxylic acid; and (B) a polyalkylene amine detergent. The concentrations of (A) and (B) endow the composition with better low temperature properties than a corresponding composition in which (A) is replaced with (Aref), an amine salt of a polycarboxylic acid analogous to (A) and which is not a quaternary ammonium salt; and the concentration of (B) is such that it would adversely affect the low temperature properties of (Aref) in the corresponding composition.

IPC 8 full level
C10L 1/14 (2006.01); **C10L 1/222** (2006.01); **C10L 10/14** (2006.01); **C10L 10/16** (2006.01)

CPC (source: EP)
C10L 1/143 (2013.01); **C10L 1/2222** (2013.01); **C10L 10/14** (2013.01); **C10L 10/16** (2013.01); **C10L 1/224** (2013.01); **C10L 1/2383** (2013.01)

Citation (applicant)

- GB 960493 A 19640610 - CALIFORNIA RESEARCH CORP
- EP 0908507 A1 19990414 - EXXON CHEMICAL PATENTS INC [US]
- EP 0244616 A2 19871111 - BASF AG [DE]
- WO 9828346 A1 19980702 - FERRO CORP [US]
- EP 0451380 B1 19931222 - ETHYL PETROLEUM ADDITIVES LTD [GB]
- US 3912764 A 19751014 - PALMER JR JOHN F
- GB 1440219 A 19760623 - COOPER LTD ETHYL
- US 3172892 A 19650309
- US 3219666 A 19651123
- US 3272746 A 19660913 - LE SUER WILLIAM M, et al
- US 3310492 A 19670321 - BENOIT JR GEORGE J
- US 3341542 A 19670912 - LE SUER WILLIAM M, et al
- US 3444170 A 19690513 - NORMAN GEORGE R, et al
- US 3455831 A 19690715 - DAVIS JAMES B
- US 3455832 A 19690715 - DAVIS JAMES B
- US 3576743 A 19710427 - WIDMER ROBERT, et al
- US 3630904 A 19711228 - MUSSER JERRY L, et al
- US 3632511 A 19720104 - LIAO CHIEN-WEI
- US 3804763 A 19740416 - MEINHARDT N
- US 4234435 A 19801118 - MEINHARDT NORMAN A, et al
- EP 0336664 A2 19891011 - EXXON CHEMICAL PATENTS INC [US]
- EP 0263703 A2 19880413 - EXXON CHEMICAL PATENTS INC [US]
- JN. OF THE INSTITUTE OF PETROLEUM, vol. 52, no. 510, 1996, pages 173 - 285

Citation (search report)

- [DX] EP 0908507 A1 19990414 - EXXON CHEMICAL PATENTS INC [US]
- [X] US 2005183325 A1 20050825 - SUTKOWSKI ANDREW C [GB]
- [X] US 2001048099 A1 20011206 - SCHIELD JOHN A [US]

Cited by
WO2017202735A1; US11359155B2

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC MT NL PL PT RO SE SI SK TR

Designated extension state (EPC)

AL BA HR MK RS

DOCDB simple family (publication)
EP 1947161 A1 20080723

DOCDB simple family (application)
EP 07121827 A 20071128