

Title (en)

Fuel oils comprising middle distillates and oils of vegetable or animal origin with improved cold properties.

Title (de)

Brennstofföle aus Mitteldestillaten und Ölen pflanzlichen oder tierischen Ursprungs mit verbesserten Kälteeigenschaften

Title (fr)

Huiles combustibles comprenant des distillats moyens et des huiles d'origine végétale ou animale et ayant des propriétés à froid améliorées.

Publication

**EP 1541662 B1 20150902 (DE)**

Application

**EP 04028306 A 20041130**

Priority

DE 10357880 A 20031211

Abstract (en)

[origin: EP1541662A1] Fuel oil composition comprises a mineral oil, an oil of vegetable or animal origin, and a cold flow improver comprising a copolymer (I) of ethylene and an acrylic or vinyl ester and a comb polymer (II) of an olefin (IIa) with an alkyl group attached to the double bond and an ethylenically unsaturated dicarboxylic acid N-alkyl amide or imide (IIb), where the sum Q of the molar average alkyl chain lengths in (IIa) and (IIb) is 21-28. Fuel oil composition comprises a mineral oil, an oil of vegetable or animal origin, and a cold flow improver comprising a copolymer (I) of ethylene and 8-21 mole% of an acrylic or vinyl ester with a C1-C18 alkyl group and a comb polymer (II) of an olefin (IIa) with a C8-C18 alkyl group attached to the double bond and an ethylenically unsaturated dicarboxylic acid amide or imide (IIb) with a C8-C16 alkyl group attached to the amide or imide group, where the sum Q of the molar average alkyl chain lengths in (IIa) and (IIb) is 21-28.

IPC 8 full level

**C10L 1/14** (2006.01); **C10L 1/192** (2006.01); **C10L 1/02** (2006.01); **C10L 1/04** (2006.01); **C10L 1/18** (2006.01); **C10L 1/195** (2006.01); **C10L 1/196** (2006.01); **C10L 1/197** (2006.01); **C10L 1/22** (2006.01); **C10L 1/224** (2006.01); **C10L 1/236** (2006.01); **C10L 10/14** (2006.01)

CPC (source: EP KR US)

**C10L 1/14** (2013.01 - KR); **C10L 1/143** (2013.01 - EP US); **C10L 1/146** (2013.01 - EP US); **C10L 1/1955** (2013.01 - EP US); **C10L 1/1963** (2013.01 - EP US); **C10L 1/1973** (2013.01 - EP US); **C10L 1/2364** (2013.01 - EP US); **C10L 1/19** (2013.01 - EP US); **C10L 1/221** (2013.01 - EP US); **C10L 1/224** (2013.01 - EP US)

Citation (examination)

EP 1526167 A2 20050427 - CLARIANT GMBH [DE]

Cited by

US11566196B2; WO2018108534A1; EP1935967A1; GB2429210A; GB2429210B; CN110088253A; US2021163837A1; WO2010081634A1; WO2011095249A1; WO2005097953A1; US7942941B2; US9663740B2; US10947467B2

Designated contracting state (EPC)

BE DE FR GB HU IT NL

DOCDB simple family (publication)

**EP 1541662 A1 20050615**; **EP 1541662 B1 20150902**; CA 2490049 A1 20050611; DE 10357880 A1 20050728; DE 10357880 B4 20080529; HU E027738 T2 20161128; JP 2005171256 A 20050630; JP 5025080 B2 20120912; KR 101139276 B1 20120426; KR 20050058223 A 20050616; US 2005126072 A1 20050616; US 7815697 B2 20101019

DOCDB simple family (application)

**EP 04028306 A 20041130**; CA 2490049 A 20041210; DE 10357880 A 20031211; HU E04028306 A 20041130; JP 2004357284 A 20041209; KR 20040104256 A 20041210; US 988504 A 20041210