

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 1541663 B1 20160120 (DE)

Application

EP 04028307 A 20041130

Priority

DE 10357878 A 20031211

Abstract (en)

[origin: EP1541663A1] 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) comprising alkyl (meth)acrylate, alkyl vinyl ester, alkyl vinyl ether, alkyl (meth)acrylamide, alkyl allyl ether or alkyl diketene units, where the sum R of the molar average alkyl chain lengths in (II) is 11-14. 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) comprising alkyl (meth)acrylate, alkyl vinyl ester, alkyl vinyl ether, alkyl (meth)acrylamide, alkyl allyl ether or alkyl diketene units, where the sum R of the molar average alkyl chain lengths of the monomer units in (II) is 11-14.

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)

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 1/1966** (2013.01 - EP US); **C10L 1/221** (2013.01 - EP US); **C10L 1/224** (2013.01 - EP US)

Cited by

US10131776B2; US8381701B2; WO2007113035A1; WO2010081634A1; WO2011095249A1

Designated contracting state (EPC)

BE DE FR GB HU IT NL PL SE

DOCDB simple family (publication)

EP 1541663 A1 20050615; **EP 1541663 B1 20160120**; CA 2490031 A1 20050611; CA 2490031 C 20130709; DE 10357878 A1 20050728; DE 10357878 B4 20080529; DE 10357878 C5 20130725; HU E028480 T2 20161228; JP 2005200637 A 20050728; JP 5025081 B2 20120912; KR 101136333 B1 20120423; KR 20050058217 A 20050616; PL 1541663 T3 20160729; US 2005126070 A1 20050616; US 7473284 B2 20090106

DOCDB simple family (application)

EP 04028307 A 20041130; CA 2490031 A 20041210; DE 10357878 A 20031211; HU E04028307 A 20041130; JP 2004358277 A 20041210; KR 20040104062 A 20041210; PL 04028307 T 20041130; US 97257704 A 20041025