

Title (en)

Cold flow improver for fuel oils of vegetable or animal origin

Title (de)

Kaltfliessverbesserer für Brennstofföle pflanzlichen oder tierischen Ursprungs

Title (fr)

Agent d'amélioration de l'écoulement à froid pour huiles combustibles d'origine végétale ou animale

Publication

EP 1526168 A3 20050511 (DE)

Application

EP 04024235 A 20041012

Priority

DE 10349850 A 20031025

Abstract (en)

[origin: EP1526168A2] New additive comprises 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 (meth)acrylate, vinyl ester, vinyl ether, (meth)acrylamide, allyl ether or diketene units with C8-C16 alkyl groups, where the sum of the molar average alkyl chain lengths in (II) is 11-14. An independent claim is also included for a fuel oil composition comprising a fuel oil of animal or vegetable origin and an additive as above.

IPC 1-7

C10L 1/14; **C10L 1/18**; **C10L 1/22**

IPC 8 full level

C10L 1/192 (2006.01); **C10L 1/02** (2006.01); **C10L 1/10** (2006.01); **C10L 1/14** (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 1/234** (2006.01); **C10L 1/236** (2006.01); **C10L 10/14** (2006.01); **C10L 1/18** (2006.01)

CPC (source: EP KR US)

C10L 1/143 (2013.01 - EP KR US); **C10L 1/146** (2013.01 - EP KR US); **C10L 1/19** (2013.01 - KR); **C10L 1/195** (2013.01 - EP US); **C10L 1/1955** (2013.01 - EP KR US); **C10L 1/1963** (2013.01 - EP KR US); **C10L 1/1966** (2013.01 - KR); **C10L 1/1973** (2013.01 - EP KR US); **C10L 1/221** (2013.01 - KR); **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)

Citation (search report)

- [X] WO 9410267 A1 19940511 - EXXON CHEMICAL PATENTS INC [US], et al
- [PX] EP 1380635 A2 20040114 - CLARIANT GMBH [DE]
- [X] EP 0485774 A1 19920520 - BASF AG [DE]
- [PX] EP 1391498 A1 20040225 - SANYO CHEMICAL IND LTD [JP]
- [A] WO 0138461 A1 20010531 - ASS OCTEL [GB], et al
- [A] EL-GAMAL I M ET AL: "Polymeric structures as cold flow improvers for waxy residual fuel oil", FUEL, IPC SCIENCE AND TECHNOLOGY PRESS, GUILDFORD, GB, vol. 76, no. 14-15, November 1997 (1997-11-01), pages 1471 - 1478, XP004286979, ISSN: 0016-2361

Cited by

EP1881053A3; KR101412451B1; EP1881055A3; EP1881054A3; EP1541663A1; US8968428B2; US8961622B2; US8979951B2; US9133409B2; US9212332B2

Designated contracting state (EPC)

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

DOCDB simple family (publication)

EP 1526168 A2 20050427; **EP 1526168 A3 20050511**; **EP 1526168 B1 20151223**; CA 2486040 A1 20050425; CA 2486040 C 20120313; DE 10349850 A1 20050616; DE 10349850 B4 20080619; DE 10349850 C5 20111208; JP 2005133095 A 20050526; JP 5025077 B2 20120912; KR 101075808 B1 20111025; KR 20050039658 A 20050429; PL 1526168 T3 20160630; US 2005108924 A1 20050526; US 7476264 B2 20090113

DOCDB simple family (application)

EP 04024235 A 20041012; CA 2486040 A 20041022; DE 10349850 A 20031025; JP 2004308246 A 20041022; KR 20040084893 A 20041022; PL 04024235 T 20041012; US 97266704 A 20041025