

Title (en)

USE FOR IMPROVING THE FUEL EFFICIENCY OF ENGINE OIL COMPOSITIONS FOR LARGE LOW AND MEDIUM SPEED ENGINES BY REDUCING THE TRACTION COEFFICIENT

Title (de)

VERWENDUNG ZUR VERBESSERUNG DER KRAFTSTOFFEFFIZIENZ VON MOTORÖLZUSAMMENSETZUNGEN FÜR GROSSE MOTOREN MIT NIEDRIGER UND MITTLERER GESCHWINDIGKEIT MITTELS REDUZIERUNG DES TRAKTIONSKOEFFIZIENTEN

Title (fr)

UTILISATION POUR AMELIORER LE RENDEMENT ÉNERGÉTIQUE DE COMPOSITIONS D'HUILE MOTEUR POUR MOTEURS À FAIBLE, MOYENNE ET GRANDE VITESSES, PAR RÉDUCTION DU COEFFICIENT DE TRACTION

Publication

EP 3527649 A1 20190821 (EN)

Application

EP 19167430 A 20110128

Priority

- US 33720510 P 20100201
- US 33720410 P 20100201
- US 33721510 P 20100201
- US 33721310 P 20100201
- US 33718210 P 20100201
- EP 11706660 A 20110128
- US 2011022959 W 20110128

Abstract (en)

The present invention is directed to a method for improving the fuel efficiency of large engine oil compositions by reducing the traction coefficient of the oil by formulating the oil using at least two base stocks of different kinematic viscosity wherein the differences in kinematic viscosity between the base stocks is at least 32 mm/s, and, preferably, additizing the composition with a salicylate detergent, a mixture of salicylate-phenate detergents or a mixture of sulfonate and phenate detergents.

IPC 8 full level

C10M 111/04 (2006.01); **C10M 169/04** (2006.01); **C10N 10/02** (2006.01); **C10N 10/04** (2006.01); **C10N 30/06** (2006.01); **C10N 40/25** (2006.01); **C10N 40/26** (2006.01)

CPC (source: EP)

C10M 111/04 (2013.01); **C10M 169/042** (2013.01); **C10M 2203/1025** (2013.01); **C10M 2205/0285** (2013.01); **C10M 2207/028** (2013.01); **C10M 2207/26** (2013.01); **C10M 2207/262** (2013.01); **C10M 2219/046** (2013.01); **C10N 2010/02** (2013.01); **C10N 2010/04** (2013.01); **C10N 2020/02** (2013.01); **C10N 2030/06** (2013.01); **C10N 2040/252** (2020.05)

Citation (applicant)

- US 5726133 A 19980310 - BLAHEY ALAN G [CA], et al
- US 6191081 B1 20010220 - CARTWRIGHT STANLEY JAMES [CA], et al
- US 2005059563 A1 20050317 - SULLIVAN WILLIAM T [US], et al
- US 2003191032 A1 20031009 - DECKMAN DOUGLAS E [US], et al
- US 2006276355 A1 20061207 - CAREY JAMES T [US], et al
- US 2007289897 A1 20071220 - CAREY JAMES T [US], et al
- US 2007298990 A1 20071227 - CAREY JAMES T [US], et al
- US 2008207475 A1 20080828 - HAIGH HEATHER M [US], et al
- US 6140281 A 20001031 - BLAHEY ALAN GARY [CA], et al
- US 6645922 B2 20031111 - DUNN ADRIAN [GB], et al
- US 7101830 B2 20060905 - OWEN YOLANDA [GB], et al
- US 4956122 A 19900911 - WATTS RAYMOND F [US], et al
- US 6080301 A 20000627 - BERLOWITZ PAUL J [US], et al
- US 6090989 A 20000718 - TREWELLA JEFFREY C [US], et al
- US 6165949 A 20001226 - BERLOWITZ PAUL J [US], et al
- US 4906350 A 19900306 - LUCIEN JACQUES [FR], et al
- US 5075269 A 19911224 - DEGNAN THOMAS F [US], et al
- US 4149178 A 19790410 - ESTES EARL M
- US 3382291 A 19680507 - BRENNAN JAMES A
- US 3742082 A 19730626 - BRENNAN J
- US 3769363 A 19731030 - BRENNAN J
- US 3876720 A 19750408 - HEILMAN WILLIAM J, et al
- US 4239930 A 19801216 - ALLPHIN N LEE [US], et al
- US 4367352 A 19830104 - WATTS JR LEWIS W, et al
- US 4413156 A 19831101 - WATTS JR LEWIS W [US], et al
- US 4434408 A 19840228 - BABA YASUHARU [JP], et al
- US 4910355 A 19900320 - SHUBKIN RONALD L [US], et al
- US 5068487 A 19911126 - THERIOT KEVIN J [US]
- US 4218330 A 19800819 - SHUBKIN RONALD L [US]
- WO 2009123800 A1 20091008 - EXXONMOBIL CHEM PATENTS INC [US], et al
- WO 2007011832 A1 20070125 - EXXONMOBIL CHEM PATENTS INC [US], et al
- US 2009036725 A1 20090205 - WU MARGARET M [US], et al
- US 5382739 A 19950117 - ATKINS MARTIN P [GB], et al
- US 4827064 A 19890502 - WU MARGARET M [US]
- US 4827073 A 19890502 - WU MARGARET M [US]
- US 5012020 A 19910430 - JACKSON ANDREW [US], et al
- US 5146021 A 19920908 - JACKSON ANDREW [US], et al
- FERDINAND RODRIGUES: "Principles of Polymer Systems", 1970, MCGRAW-HILL BOOK
- KLAMANN: "Lubricants and Related Products", VERLAG CHEMIE
- M. W. RANNEY: "Lubricant Additives", 1973, NOYES DATA CORPORATION OF PARKRIDGE

Citation (search report)

- [Y] US 6429178 B1 20020806 - SKINNER PHILIP [GB], et al
- [XY] US 2009186784 A1 20090723 - DIGGS NANCY Z [US], et al
- [XY] US 2008020954 A1 20080124 - HAIGH HEATHER M [US], et al

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)

WO 2011094562 A1 20110804; EP 2531581 A1 20121212; EP 2531581 B1 20180711; EP 2531582 A1 20121212; EP 2531582 B1 20180725; EP 2531583 A1 20121212; EP 2531583 B1 20180718; EP 2531584 A1 20121212; EP 2531584 B1 20190619; EP 2531585 A1 20121212; EP 2531585 B1 20180620; EP 3527649 A1 20190821; EP 3527650 A1 20190821; JP 2013518935 A 20130523; JP 2013518936 A 20130523; JP 2013518937 A 20130523; JP 2013518938 A 20130523; JP 2013518939 A 20130523; JP 2016000827 A 20160107; JP 5755251 B2 20150729; JP 5755252 B2 20150729; JP 5755253 B2 20150729; JP 5755254 B2 20150729; JP 5852012 B2 20160203; JP 6050450 B2 20161221; SG 182502 A1 20120830; SG 182504 A1 20120830; SG 182697 A1 20120830; SG 182699 A1 20120830; SG 182700 A1 20120830; WO 2011094566 A1 20110804; WO 2011094571 A1 20110804; WO 2011094571 A8 20121011; WO 2011094575 A1 20110804; WO 2011094582 A1 20110804

DOCDB simple family (application)

US 2011022955 W 20110128; EP 11705318 A 20110128; EP 11705319 A 20110128; EP 11705321 A 20110128; EP 11706660 A 20110128; EP 11706663 A 20110128; EP 19167430 A 20110128; EP 19167432 A 20110128; JP 2012551332 A 20110128; JP 2012551334 A 20110128; JP 2012551336 A 20110128; JP 2012551338 A 20110128; JP 2012551340 A 20110128; JP 2015175400 A 20150907; SG 2012051652 A 20110128; SG 2012051678 A 20110128; SG 2012054748 A 20110128; SG 2012054789 A 20110128; SG 2012054805 A 20110128; US 2011022959 W 20110128; US 2011022965 W 20110128; US 2011022971 W 20110128; US 2011022980 W 20110128