

Title (en)
Engine lubrication

Title (de)
Motorschmierung

Title (fr)
Lubrification de moteur

Publication
EP 2090642 A1 20090819 (EN)

Application
EP 09151448 A 20090127

Priority
US 2802108 A 20080208

Abstract (en)
A trunk piston or cross-head diesel engine having a centrifuge system including a sealing medium is lubricated with a lubricant which, for the cross-head engine, is a system lubricant and which contains 0.04 to 5 mass %, expressed as active ingredient, of a combination of one or more linked aromatic compounds and one or more nitrogen containing ashless disperants, in a mass: mass ratio in the range of 1:3 to 9:1.

IPC 8 full level
C10M 141/06 (2006.01); **C10M 141/10** (2006.01); **C10M 161/00** (2006.01)

CPC (source: EP US)
C10M 141/06 (2013.01 - EP US); **C10M 141/10** (2013.01 - EP US); **C10M 161/00** (2013.01 - EP US); **C10M 2203/1006** (2013.01 - EP US); **C10M 2207/04** (2013.01 - EP US); **C10M 2207/046** (2013.01 - EP US); **C10M 2207/262** (2013.01 - EP US); **C10M 2207/28** (2013.01 - EP US); **C10M 2207/288** (2013.01 - EP US); **C10M 2209/101** (2013.01 - EP US); **C10M 2215/28** (2013.01 - EP US); **C10M 2219/086** (2013.01 - EP US); **C10M 2223/045** (2013.01 - EP US); **C10N 2020/04** (2013.01 - EP US); **C10N 2030/04** (2013.01 - EP US); **C10N 2030/52** (2020.05 - EP US); **C10N 2040/252** (2020.05 - EP US)

Citation (applicant)
• US 2006189492 A1 20060824 - BERA TUSHAR K [US], et al
• US 5498809 A 19960312 - EMERT JACOB [US], et al
• US 5663130 A 19970902 - EMERT JACOB [US], et al
• US 5705577 A 19980106 - ROSSI ALBERT [US], et al
• US 5814715 A 19980929 - CHEN FRANK JOUNG-YEI [US], et al
• US 6022929 A 20000208 - CHEN FRANK JOUNG-YEI [US], et al
• US 6030930 A 20000229 - EMERT JACOB [US], et al
• US 4952739 A 19900828 - CHEN FRANK J [US]
• US 3087936 A 19630430 - LE SUER WILLIAM M
• US 3172892 A 19650309
• US 3215707 A 19651102 - RENSE RUDOLPH J
• US 3231587 A 19660125 - RENSE RUDOLPH J
• US 3272746 A 19660913 - LE SUER WILLIAM M, et al
• US 3275554 A 19660927 - HENDRIK WAGENAAR ADRIAAN
• US 3381022 A 19680430 - LE SUER WILLIAM M
• US 3442808 A 19690506 - TRAISE THORNTON P, et al
• US 3565804 A 19710223 - HONNEN LEWIS R, et al
• US 3912764 A 19751014 - PALMER JR JOHN F
• US 4110349 A 19780829 - COHEN JEROME MARTIN
• US 4234435 A 19801118 - MEINHARDT NORMAN A, et al
• GB 1440219 A 19760623 - COOPER LTD ETHYL
• US 4857217 A 19890815 - GUTIERREZ ANTONIO [US], et al
• US 4956107 A 19900911 - GUTIERREZ ANTONIO [US], et al
• US 4963275 A 19901016 - GUTIERREZ ANTONIO [US], et al
• US 5229022 A 19930720 - SONG WON R [US], et al
• US 4102798 A 19780725 - RYER JACK, et al
• US 4113639 A 19780912 - LONSTRUP THORKILD F, et al
• US 4116876 A 19780926 - BROIS STANLEY J, et al
• GB 989409 A 19650414 - GEN ELECTRIC
• US 5053152 A 19911001 - STECKEL THOMAS F [US]
• EP 0208560 A2 19870114 - EXXON CHEMICAL PATENTS INC [US]
• US 3632511 A 19720104 - LIAO CHIEN-WEI
• US 3254025 A 19660531 - LE SUER WILLIAM M
• US 4839071 A 19890613 - GUTIERREZ ANTONIO [US], et al
• US 4839072 A 19890613 - GUTIERREZ ANTONIO [US], et al
• US 4579675 A 19860401 - SAWICKI ROBERT A [US], et al
• US 3185704 A 19650525 - KAHN DONALD J, et al
• US 4663064 A 19870505 - NALESNIK THEODORE E [US], et al
• US 4612132 A 19860916 - WOLLENBERG ROBERT H [US], et al
• US 5334321 A 19940802 - HARRISON JAMES J [US], et al
• US 5356552 A 19941018 - HARRISON JAMES J [US], et al
• US 5716912 A 19980210 - HARRISON JAMES J [US], et al
• US 5849676 A 19981215 - HARRISON JAMES J [US], et al
• US 5861363 A 19990119 - WILLIS JR WILLIAM W [US], et al
• US 5328622 A 19940712 - EMERT JACOB [US], et al
• US 5026495 A 19910625 - EMERT JACOB [US], et al
• US 5085788 A 19920204 - EMERT JACOB [US], et al
• US 5259906 A 19931109 - POPLAWSKI JOHN R [US], et al
• US 5407591 A 19950418 - EMERT JACOB [US], et al

- US 4686054 A 19870811 - WISOTSKY MAX J [US], et al
- W. W. YAU; J. J. KIRKLAND; D. D. BLY: "Modern Size Exclusion Liquid Chromatography", 1979, JOHN WILEY AND SONS
- "Industry Services Department", December 1996, AMERICAN PETROLEUM INSTITUTE (API) PUBLICATION, article "Engine Oil Licensing and Certification System"

Citation (search report)

- [X] EP 1693434 A2 20060823 - INFINEUM INT LTD [GB]
- [A] EP 1528099 A1 20050504 - INFINEUM INT LTD [GB]
- [X] WO 9600766 A1 19960111 - EXXON RESEARCH ENGINEERING CO [US], et al
- [PX] US 2008039349 A1 20080214 - DODD JAMES C [GB], et al
- [A] DE 10356436 A1 20050714 - CLARIANT GMBH [DE]
- [A] WO 9213933 A1 19920820 - EXXON CHEMICAL PATENTS INC [US]
- [A] ABBOTT F P ET AL: "EVALUATION OF MARINE DIESEL ENGINE OIL WATER SEPARATION PROCEDURES", SPRING TECHNICAL CONFERENCE OF THE ASME INTERNAL COMBUSTIONENGINE DIVISION, XX, XX, vol. 11, 1 January 1900 (1900-01-01), pages 39 - 50, XP009040948

Cited by

EP2607462A1; CN103173263A; EP3502217A1; EP3492566A1; EP3192858A1; EP4174154A1; US12006486B2; EP3257921A1; EP3741832A2; EP3321347A1; EP4174152A1; EP4174153A1; US11859149B2; US12031103B2; EP3492567A1; EP4303287A1; EP3851507A1; EP3926026A1; EP3770235A1; EP4039782A1

Designated contracting state (EPC)

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 SE SI SK TR

Designated extension state (EPC)

AL BA RS

DOCDB simple family (publication)

EP 2090642 A1 20090819; EP 2090642 B1 20120404; AT E552326 T1 20120415; AU 2009200452 A1 20090827; AU 2009200452 B2 20130307; CA 2653107 A1 20090808; CA 2653107 C 20160719; CN 101503646 A 20090812; CN 101503646 B 20150218; ES 2380884 T3 20120521; JP 2009185293 A 20090820; JP 5517469 B2 20140611; SG 155131 A1 20090930; US 2009203559 A1 20090813

DOCDB simple family (application)

EP 09151448 A 20090127; AT 09151448 T 20090127; AU 2009200452 A 20090206; CA 2653107 A 20090206; CN 200910007149 A 20090209; ES 09151448 T 20090127; JP 2009049874 A 20090206; SG 2009008616 A 20090206; US 2802108 A 20080208