

Title (en)
Lubricating oil composition

Title (de)
Schmierölszusammensetzung

Title (fr)
Composition d'huile lubrifiante

Publication
EP 2371934 A1 20111005 (EN)

Application
EP 11159502 A 20110324

Priority
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• EP 11159502 A 20110324

Abstract (en)
A lubricating oil composition having a phosphorus content of up to 0.12 wt%, a sulfated ash content of up to 1.2 wt% comprising (a) a major amount of an oil of lubricating viscosity; (b) an alkali metal or alkaline earth metal alkyl salicylate lubricating oil detergent providing from 7-15 mmol salicylate soap per kilogram of lubricating oil composition; (c) one or more dispersants providing the lubricating oil composition with from at least 0.12 wt% to 0.20 wt% atomic nitrogen, based on the weight of the lubricating oil composition, and (d) a dispersant-viscosity modifier.

IPC 8 full level
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Citation (applicant)
• EP 1167497 A2 20020102 - CHEVRON ORONITE JAPAN LTD [JP]
• US 3632511 A 19720104 - LIAO CHIEN-WEI
• US 3442808 A 19690506 - TRAISE THORNTON P, et al
• US 3087936 A 19630430 - LE SUER WILLIAM M
• 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
• US 6734148 B2 20040511 - BELL IAN A W [GB], et al
• US 6743757 B2 20040601 - BELL IAN A W [GB], et al
• US 4152499 A 19790501 - BOERZEL PAUL [DE], et al
• US 4867890 A 19890919 - COLCLOUGH TERENCE [GB], et al
• "Industry Services Department", December 1996, article "Engine Oil Licensing and Certification System"
• W. W. YAU, J. J. KIRKLAND, D. D. BLY: "Modern Size Exclusion Liquid Chromatography", 1979, JOHN WILEY AND SONS

Citation (search report)
• [X] US 2008153722 A1 20080626 - VAN LEEUWEN JEROEN [NL], et al
• [X] US 2006116300 A1 20060601 - ARROWSMITH STEPHEN [GB], et al
• [X] US 2003096716 A1 20030522 - LOCKE CHRISTOPHER J [GB], et al
• [X] US 2008146473 A1 20080619 - VAN LEEUWEN JEROEN [NL], et al
• [A] US 2004259742 A1 20041223 - MISHRA MUNMAYA K [US], et al
• [X] US 2006276353 A1 20061207 - IRVING MATTHEW D [GB], et al

Cited by
KR20190107085A; RU2720234C2; EP3476923A1; US10443011B2; US10513668B2; US10214703B2; US10421922B2; US11155764B2; US10377963B2; US10336959B2; US10370615B2; WO2018136138A1; US10550349B2; US10280383B2; US10443558B2; EP3101095B1

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