

Title (en)
Low phosphorus lubricants.

Title (de)
Phosphorarme Schmiermittel.

Title (fr)
Lubrifiants à basse teneur en phosphore.

Publication
EP 0280580 A2 19880831 (EN)

Application
EP 88301712 A 19880226

Priority
GB 8704682 A 19870227

Abstract (en)
Lubricants having antiwear, corrosion inhibition and antioxidant performance appropriate to modern oil requirements with reduced or zero amounts of phosphorous and without the need for large amounts and/or expensive forms of antioxidant comprise 5 to 500 parts per million by weight (ppm) of added copper present in oil-soluble form, one or more added oil-soluble sulphur-containing compounds and a bearing corrosion inhibitor.

IPC 1-7
C10M 135/00; C10M 141/08; C10M 141/12; C10M 161/00; C10M 167/00

IPC 8 full level
C10M 163/00 (2006.01); **C10M 135/00** (2006.01); **C10M 141/08** (2006.01); **C10M 141/12** (2006.01); **C10M 161/00** (2006.01); **C10M 167/00** (2006.01); **C10N 10/02** (2006.01); **C10N 10/08** (2006.01); **C10N 30/10** (2006.01); **C10N 30/12** (2006.01); **C10N 40/00** (2006.01); **C10N 40/25** (2006.01)

CPC (source: EP KR)
C10M 129/10 (2013.01 - EP); **C10M 129/38** (2013.01 - EP); **C10M 129/42** (2013.01 - EP); **C10M 129/58** (2013.01 - EP); **C10M 133/52** (2013.01 - EP); **C10M 135/04** (2013.01 - EP); **C10M 135/06** (2013.01 - EP); **C10M 135/18** (2013.01 - EP); **C10M 135/20** (2013.01 - EP); **C10M 135/30** (2013.01 - EP); **C10M 135/36** (2013.01 - EP); **C10M 139/00** (2013.01 - EP); **C10M 141/08** (2013.01 - KR); **C10M 141/12** (2013.01 - EP); **C10M 145/12** (2013.01 - EP); **C10M 145/16** (2013.01 - EP); **C10M 149/04** (2013.01 - EP); **C10M 149/10** (2013.01 - EP); **C10M 149/22** (2013.01 - EP); **C10M 159/20** (2013.01 - EP); **C10M 159/24** (2013.01 - EP); **C10M 161/00** (2013.01 - EP); **C10M 167/00** (2013.01 - EP); **C10M 2207/023** (2013.01 - EP); **C10M 2207/024** (2013.01 - EP); **C10M 2207/026** (2013.01 - EP); **C10M 2207/027** (2013.01 - EP); **C10M 2207/028** (2013.01 - EP); **C10M 2207/09** (2013.01 - EP); **C10M 2207/123** (2013.01 - EP); **C10M 2207/125** (2013.01 - EP); **C10M 2207/127** (2013.01 - EP); **C10M 2207/129** (2013.01 - EP); **C10M 2207/144** (2013.01 - EP); **C10M 2207/146** (2013.01 - EP); **C10M 2207/16** (2013.01 - EP); **C10M 2207/22** (2013.01 - EP); **C10M 2207/26** (2013.01 - EP); **C10M 2207/262** (2013.01 - EP); **C10M 2207/289** (2013.01 - EP); **C10M 2209/082** (2013.01 - EP); **C10M 2209/086** (2013.01 - EP); **C10M 2215/04** (2013.01 - EP); **C10M 2215/042** (2013.01 - EP); **C10M 2215/064** (2013.01 - EP); **C10M 2215/065** (2013.01 - EP); **C10M 2215/08** (2013.01 - EP); **C10M 2215/082** (2013.01 - EP); **C10M 2215/086** (2013.01 - EP); **C10M 2215/22** (2013.01 - EP); **C10M 2215/221** (2013.01 - EP); **C10M 2215/225** (2013.01 - EP); **C10M 2215/226** (2013.01 - EP); **C10M 2215/24** (2013.01 - EP); **C10M 2215/26** (2013.01 - EP); **C10M 2215/28** (2013.01 - EP); **C10M 2215/30** (2013.01 - EP); **C10M 2217/022** (2013.01 - EP); **C10M 2217/023** (2013.01 - EP); **C10M 2217/028** (2013.01 - EP); **C10M 2217/046** (2013.01 - EP); **C10M 2217/06** (2013.01 - EP); **C10M 2219/022** (2013.01 - EP); **C10M 2219/024** (2013.01 - EP); **C10M 2219/044** (2013.01 - EP); **C10M 2219/046** (2013.01 - EP); **C10M 2219/062** (2013.01 - EP); **C10M 2219/066** (2013.01 - EP); **C10M 2219/068** (2013.01 - EP); **C10M 2219/08** (2013.01 - EP); **C10M 2219/082** (2013.01 - EP); **C10M 2219/087** (2013.01 - EP); **C10M 2219/088** (2013.01 - EP); **C10M 2219/10** (2013.01 - EP); **C10M 2219/102** (2013.01 - EP); **C10M 2219/104** (2013.01 - EP); **C10M 2219/106** (2013.01 - EP); **C10M 2219/108** (2013.01 - EP); **C10M 2227/00** (2013.01 - EP); **C10M 2227/06** (2013.01 - EP); **C10M 2227/061** (2013.01 - EP); **C10M 2227/062** (2013.01 - EP); **C10M 2227/063** (2013.01 - EP); **C10M 2227/065** (2013.01 - EP); **C10M 2227/066** (2013.01 - EP); **C10N 2010/00** (2013.01 - EP); **C10N 2010/02** (2013.01 - EP); **C10N 2010/04** (2013.01 - EP); **C10N 2010/12** (2013.01 - EP); **C10N 2040/25** (2013.01 - EP); **C10N 2040/251** (2020.05 - EP); **C10N 2040/255** (2020.05 - EP); **C10N 2040/28** (2013.01 - EP); **C10N 2070/02** (2020.05 - EP)

Cited by
EP4357443A1; EP0814148A3; US5731273A; US5558805A; EP1624043A3; US5994277A; EP2337831A4; EP0444830A1; EP0391649A3; GB2623137A; US7612025B2; US8163681B2; US7563752B2; US7625847B2; WO2008079715A1; WO9531522A1; WO9525781A1; WO0218521A3; WO9507962A1; WO2023161795A1

Designated contracting state (EPC)
AT BE CH DE ES FR GB GR IT LI LU NL SE

DOCDB simple family (publication)
EP 0280580 A2 19880831; EP 0280580 A3 19890712; EP 0280580 B1 19921104; AR 244317 A1 19931029; AT E82020 T1 19921115; AU 1235188 A 19880901; AU 603186 B2 19901108; BR 8800835 A 19881004; CA 1306741 C 19920825; DE 3875630 D1 19921210; DE 3875630 T2 19930318; DK 103788 A 19880828; DK 103788 D0 19880226; ES 2045102 T3 19940116; GB 8704682 D0 19870401; JP 2505019 B2 19960605; JP S63304096 A 19881212; KR 880010106 A 19881007; KR 960014933 B1 19961021; MX 170110 B 19930909; MY 103223 A 19930529; NO 172853 B 19930607; NO 172853 C 19930915; NO 880846 D0 19880226; NO 880846 L 19880829; SG 50093 G 19930625; ZA 881262 B 19880822

DOCDB simple family (application)
EP 88301712 A 19880226; AR 31018188 A 19880226; AT 88301712 T 19880226; AU 1235188 A 19880226; BR 8800835 A 19880226; CA 560012 A 19880226; DE 3875630 T 19880226; DK 103788 A 19880226; ES 88301712 T 19880226; GB 8704682 A 19870227; JP 4569288 A 19880227; KR 880002058 A 19880227; MX 1058088 A 19880226; MY P119880200 A 19880226; NO 880846 A 19880226; SG 50093 A 19930417; ZA 881262 A 19880223