

Title (en)

A low sulfur and low phosphorus lubricating oil composition

Title (de)

Schmierölzusammensetzung mit niedrigem Gehalt an Schwefel und Phosphor

Title (fr)

Composition d'huile lubrifiant à faible teneur en soufre et en phosphore

Publication

EP 1785477 A1 20070516 (EN)

Application

EP 06255466 A 20061024

Priority

US 27395205 A 20051114

Abstract (en)

The present invention is directed to a low sulfur and low phosphorus lubricating oil composition comprising (a) a major amount of an oil of lubricating viscosity and (b) one or more dispersants (c) one or more anti-oxidants and (d) one or more detergents, wherein the lubricating oil composition is essentially free of zinc di-alkyl di-thiophosphates and contains no more than 0.1 weight percent sulfur and provided the lubricating oil composition does not contain alkylated and non-alkylated aromatic amines and tri-nuclear molybdenum compounds. The present invention is also directed to a low sulfur and low phosphorus lubricating oil composition comprising (a) an oil of lubricating viscosity (b) a borated dispersant and a non-borated dispersant (c) a molybdenum anti-oxidant and a phenolic anti-oxidant and (d) a high overbased and a low overbased calcium sulfonate, wherein the lubricating oil composition is essentially free of zinc di-alkyl di-thiophosphates and contains no more than 0.1 weight percent sulfur and provided the lubricating oil composition does not contain alkylated and non-alkylated aromatic amines and tri-nuclear molybdenum compounds. The present invention is also directed to method for lubricating internal combustion engines, which comprises lubricating the engine with a low sulfur and low phosphorus lubricating oil compositions of the present invention.

IPC 8 full level

C10M 163/00 (2006.01)

CPC (source: EP US)

C10M 163/00 (2013.01 - EP US); **C10M 2207/026** (2013.01 - EP US); **C10M 2207/028** (2013.01 - EP US); **C10M 2215/28** (2013.01 - EP US); **C10M 2219/046** (2013.01 - EP US); **C10M 2219/068** (2013.01 - EP US); **C10N 2030/40** (2020.05 - EP US); **C10N 2030/42** (2020.05 - EP US); **C10N 2030/43** (2020.05 - EP US); **C10N 2040/252** (2020.05 - EP US); **C10N 2060/14** (2013.01 - EP US)

Citation (search report)

- [XD] US 2004077506 A1 20040422 - ARROWSMITH STEPHEN [GB], et al
- [XD] US 6159911 A 20001212 - KATAFUCHI TADASHI [JP]
- [X] EP 1533362 A1 20050525 - INFINEUM INT LTD [GB]
- [X] US 2003148895 A1 20030807 - ROBSON ROBERT [GB], et al
- [XD] US 2003158048 A1 20030821 - FARNG LIEHPAO O [US], et al

Citation (examination)

- JP 2002053888 A 20020219 - CHEVRON ORONITE LTD
- US 2004192562 A1 20040930 - MORITA EITARO [JP]
- WO 2006005711 A1 20060119 - SHELL INT RESEARCH [NL], et al
- US 3798163 A 19740319 - PALMER R
- EP 1598412 A1 20051123 - NIPPON OIL CORP [JP]
- WO 2004074414 A1 20040902 - NIPPON OIL CORP [JP], et al
- US 5744430 A 19980428 - INOUE KIYOSHI [JP], et al

Cited by

EP3250664A4

Designated contracting state (EPC)

DE FR GB NL

Designated extension state (EPC)

AL BA HR MK YU

DOCDB simple family (publication)

EP 1785477 A1 20070516; CA 2567263 A1 20070514; JP 2007138165 A 20070607; JP 5431641 B2 20140305; SG 132615 A1 20070628; US 2007111904 A1 20070517

DOCDB simple family (application)

EP 06255466 A 20061024; CA 2567263 A 20061107; JP 2006307085 A 20061113; SG 2006078349 A 20061113; US 27395205 A 20051114