

Title (en)  
LUBRICATING OIL COMPOSITION FOR INTERNAL COMBUSTION ENGINE

Title (de)  
SCHMIERÖLZUSAMMENSETZUNG FÜR VERBRENNUNGSMOTOR

Title (fr)  
COMPOSITION D'HUILE DE LUBRIFICATION POUR UN MOTEUR A COMBUSTION

Publication  
**EP 1439217 A1 20040721 (EN)**

Application  
**EP 02770233 A 20021015**

Priority  

- JP 0210679 W 20021015
- JP 2001315941 A 20011012
- JP 2002086145 A 20020326
- JP 2002086146 A 20020326
- JP 2002086147 A 20020326

Abstract (en)  
A lubricating oil composition for internal combustion engine, comprising a lubricating base oil; (A) a triphosphate represented by formula (1) below in an amount of 0.01 to 0.2 percent by mass in terms of phosphorus; (B) succinimide and/or derivative thereof in an amount of 0.01 to 0.3 percent by mass in terms of nitrogen; (C) an alkali metal or alkaline earth metal detergent in an amount of 0.05 to 1 percent by mass in terms of metal; and (D) a phenol-based and/or amine-based anti-oxidants in an amount of 0.01 to 3 percent by mass:  $O = P(OR_{<1>})_3$  wherein the groups of  $R_{<1>}$  are each independently a hydrocarbon group having 1 to 30 carbon atoms and are the same or different from each other. The lubricating oil composition is excellent in anti-wear properties, base number retaining properties, high temperature detergency, and low friction characteristics.

IPC 1-7  
**C10M 163/00**

IPC 8 full level  
**C10M 163/00** (2006.01); **C10M 129/10** (2006.01); **C10M 133/12** (2006.01); **C10M 133/16** (2006.01); **C10M 133/56** (2006.01); **C10M 135/00** (2006.01); **C10M 137/04** (2006.01); **C10M 159/20** (2006.01); **C10N 10/02** (2006.01); **C10N 10/04** (2006.01); **C10N 30/04** (2006.01); **C10N 30/06** (2006.01); **C10N 30/08** (2006.01); **C10N 40/12** (2006.01); **C10N 40/25** (2006.01)

CPC (source: EP US)  
**C10M 163/00** (2013.01 - EP US); **C10M 2207/023** (2013.01 - EP US); **C10M 2207/026** (2013.01 - EP US); **C10M 2207/262** (2013.01 - EP US); **C10M 2207/289** (2013.01 - EP US); **C10M 2215/06** (2013.01 - EP US); **C10M 2215/064** (2013.01 - EP US); **C10M 2215/086** (2013.01 - EP US); **C10M 2215/28** (2013.01 - EP US); **C10M 2219/00** (2013.01 - EP US); **C10M 2219/044** (2013.01 - EP US); **C10M 2219/046** (2013.01 - EP US); **C10M 2223/04** (2013.01 - EP US); **C10M 2223/041** (2013.01 - EP US); **C10M 2223/045** (2013.01 - EP US); **C10M 2227/09** (2013.01 - EP US); **C10N 2010/02** (2013.01 - EP US); **C10N 2010/04** (2013.01 - EP US); **C10N 2030/04** (2013.01 - EP US); **C10N 2030/06** (2013.01 - EP US); **C10N 2030/08** (2013.01 - EP US); **C10N 2030/10** (2013.01 - EP US); **C10N 2030/43** (2020.05 - EP US); **C10N 2030/52** (2020.05 - EP US); **C10N 2040/12** (2013.01 - EP US); **C10N 2040/25** (2013.01 - EP US)

Cited by  
EP1829952A4; EP2944682A4; EP2154231A4; GB2444131A; GB2444131B; US8709988B2; US9909083B2; WO2006068203A1; US8071518B2; US8481467B2; EP2675876B1; EP2141220B1

Designated contracting state (EPC)  
DE FR GB

DOCDB simple family (publication)  
**EP 1439217 A1 20040721**; **EP 1439217 A4 20090902**; **EP 1439217 B1 20120620**; US 2004242434 A1 20041202; WO 03033629 A1 20030424

DOCDB simple family (application)  
**EP 02770233 A 20021015**; JP 0210679 W 20021015; US 82248004 A 20040412