

Title (en)  
Lubricating oil compositions and concentrates and the use thereof

Title (de)  
Schmierölszusammensetzungen, Konzentrate und ihre Verwendung

Title (fr)  
Compositions d'huile lubrifiante et de concentrés et leur utilisation

Publication  
**EP 0516461 B1 19960228 (EN)**

Application  
**EP 92304930 A 19920529**

Priority  
US 70686291 A 19910529

Abstract (en)  
[origin: EP0516461A1] Oleaginous compositions and additive concentrates therefor having enhanced performance characteristics comprise at least a) one or more oil-soluble metal hydrocarbyl dithiophosphates or dithiocarbamates; and b) one or more oil-soluble boron-free additive compositions formed by heating (i) at least one boron-free oil-soluble ashless dispersant containing basic nitrogen and/or at least one hydroxyl group, with (ii) at least one inorganic phosphorus acid such that a liquid boron-free phosphorus-containing composition is formed.

IPC 1-7  
**C10M 141/10**; C10M 141/08; C10M 163/00

IPC 8 full level  
**C10M 159/12** (2006.01); **C10M 141/08** (2006.01); **C10M 141/10** (2006.01); **C10M 161/00** (2006.01); **C10M 163/00** (2006.01);  
C10N 10/02 (2006.01); C10N 10/04 (2006.01); C10N 20/00 (2006.01); C10N 30/04 (2006.01); C10N 30/06 (2006.01); C10N 30/10 (2006.01);  
C10N 30/12 (2006.01); C10N 40/04 (2006.01); C10N 40/25 (2006.01); C10N 70/00 (2006.01)

CPC (source: EP US)  
**C10M 129/38** (2013.01 - EP); **C10M 129/95** (2013.01 - EP); **C10M 133/52** (2013.01 - EP); **C10M 135/18** (2013.01 - EP);  
**C10M 137/10** (2013.01 - EP); **C10M 141/08** (2013.01 - EP); **C10M 141/10** (2013.01 - EP); **C10M 159/16** (2013.01 - EP);  
**C10M 159/20** (2013.01 - EP); **C10M 159/22** (2013.01 - EP); **C10M 159/24** (2013.01 - EP); **C10M 163/00** (2013.01 - EP US);  
C10M 2203/10 (2013.01 - EP); C10M 2203/102 (2013.01 - EP); C10M 2205/00 (2013.01 - EP); C10M 2205/02 (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 2207/123 (2013.01 - EP); C10M 2207/125 (2013.01 - EP); C10M 2207/129 (2013.01 - EP); C10M 2207/144 (2013.01 - EP);  
C10M 2207/146 (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 2207/34 (2013.01 - EP); C10M 2209/084 (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 2215/086 (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 2217/023 (2013.01 - EP); C10M 2217/028 (2013.01 - EP); C10M 2217/042 (2013.01 - EP); C10M 2217/043 (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 2219/066 (2013.01 - EP); C10M 2219/068 (2013.01 - EP);  
C10M 2219/087 (2013.01 - EP); C10M 2219/088 (2013.01 - EP); C10M 2219/089 (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 2223/04 (2013.01 - EP);  
C10M 2223/042 (2013.01 - EP); C10M 2223/045 (2013.01 - EP); C10M 2225/041 (2013.01 - EP); C10M 2227/061 (2013.01 - EP);  
C10M 2229/02 (2013.01 - EP); C10M 2229/041 (2013.01 - EP); C10M 2229/05 (2013.01 - EP); C10N 2010/00 (2013.01 - EP);  
C10N 2010/02 (2013.01 - EP); C10N 2010/04 (2013.01 - EP); C10N 2010/06 (2013.01 - EP); C10N 2010/08 (2013.01 - EP);  
C10N 2010/12 (2013.01 - EP); C10N 2010/14 (2013.01 - EP US); C10N 2010/16 (2013.01 - EP US); C10N 2020/01 (2020.05 - EP);  
C10N 2070/02 (2020.05 - EP)

Cited by  
US7744660B2; EP0622443A3; CN108659930A; EP0638632A3; EP0663436A1; US6605571B1; WO2005003265A1; WO9952998A1

Designated contracting state (EPC)  
BE DE ES FR GB IT

DOCDB simple family (publication)  
**EP 0516461 A1 19921202**; **EP 0516461 B1 19960228**; AU 1523492 A 19921203; AU 657528 B2 19950316; CA 2065945 A1 19921130;  
DE 69208526 D1 19960404; DE 69208526 T2 19960613; JP H05179273 A 19930720

DOCDB simple family (application)  
**EP 92304930 A 19920529**; AU 1523492 A 19920429; CA 2065945 A 19920414; DE 69208526 T 19920529; JP 15618492 A 19920525