

Title (en)  
Lubricant compositions providing wear protection at reduced phosphorus levels.

Title (de)  
Veschleisschutz-Schmiermittelzusammensetzungen mit geringem Phosphorgehalt.

Title (fr)  
Compositions lubrifiantes anti-usures ayant des teneurs faibles en phosphore.

Publication  
**EP 0277729 A1 19880810 (EN)**

Application  
**EP 88300500 A 19880121**

Priority  
US 600487 A 19870121

Abstract (en)  
An additive composition suitable for blending passenger car and heavy duty oils comprising (a) zinc dialkyldithiophosphate having both primary and secondary character such the primary to secondary ratio is about 1:1 to about 5:1, said zinc dialkyldithiophosphate being present in an amount such that a lubricating oil containing an effective amount of the additive composition will have a phosphorus level not greater than about 0.1 wt%; (b) a succinimide dispersant; and (c) a total base number such that a lubricating oil containing an effective amount of the additive composition will have a TBN of at least 8.

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

IPC 8 full level  
**C10M 163/00** (2006.01)

CPC (source: EP)  
**C10M 133/52** (2013.01); **C10M 137/10** (2013.01); **C10M 159/16** (2013.01); **C10M 159/22** (2013.01); **C10M 159/24** (2013.01); **C10M 163/00** (2013.01); **C10M 2207/028** (2013.01); **C10M 2207/262** (2013.01); **C10M 2215/04** (2013.01); **C10M 2215/042** (2013.01); **C10M 2215/064** (2013.01); **C10M 2215/086** (2013.01); **C10M 2215/24** (2013.01); **C10M 2215/26** (2013.01); **C10M 2215/28** (2013.01); **C10M 2217/042** (2013.01); **C10M 2217/043** (2013.01); **C10M 2217/046** (2013.01); **C10M 2217/06** (2013.01); **C10M 2219/046** (2013.01); **C10M 2219/087** (2013.01); **C10M 2219/088** (2013.01); **C10M 2219/089** (2013.01); **C10M 2223/045** (2013.01); **C10M 2227/061** (2013.01); **C10N 2010/04** (2013.01); **C10N 2040/25** (2013.01); **C10N 2040/251** (2020.05); **C10N 2040/252** (2020.05); **C10N 2040/253** (2020.05); **C10N 2040/255** (2020.05); **C10N 2040/28** (2013.01)

Citation (search report)  
• [X] EP 0131400 A2 19850116 - LUBRIZOL CORP [US]  
• [X] US 3190833 A 19650622 - ALAN RHODES  
• [X] EP 0113045 B1 19860507  
• [A] EP 0167295 A2 19860108 - EXXON RESEARCH ENGINEERING CO [US]

Cited by  
EP0444830A1; GB2303378A; GB2303378B; EP0725129A3; EP0648830A3; US5726134A; AU692579B2; JPH09512584A; US5652201A; CN113930271A; EP0552892A1; US5326485A; AU656835B2; US5719107A; USRE39648E; EP0638632A3; EP1213341A1; EP0317348A1; EP0317354A1; CN101798545A; US6004910A; EP4306624A1; US6767871B2; US7744660B2; US6649575B2; WO2018033785A1; WO2005003265A1; WO2009108367A3; WO9324599A1; WO9529976A1; WO9601885A1; WO9412595A1; EP1391500A1; EP0373454A1; EP4202023A1; US8088720B2

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

DOCDB simple family (publication)  
**EP 0277729 A1 19880810; EP 0277729 B1 19920311; DE 3868949 D1 19920416**

DOCDB simple family (application)  
**EP 88300500 A 19880121; DE 3868949 T 19880121**