

Title (en)  
Ashless additive formulations suitable for hydraulic oil applications

Title (de)  
Aschefreie Zusatzformulierungen für Hydrauliköl

Title (fr)  
Compositions d'additifs sans cendre pour des huiles hydrauliques.

Publication  
**EP 1529830 A1 20050511 (EN)**

Application  
**EP 04256761 A 20041102**

Priority  
US 70164603 A 20031104

Abstract (en)  
An ashless additive formulation, particularly suited for hydraulic oil applications, comprising a particular concentration of a monothiophosphate ester and a dithiophosphate ester was found to have improved performance properties and good compatibility with calcium containing packages. Lubricating compositions employing these monothiophosphate and dithiophosphate esters allow for low phosphorous content lubricating oil compositions.

IPC 1-7  
**C10M 141/10**; **C10M 137/10**

IPC 8 full level  
**C10M 169/04** (2006.01); **C10M 133/16** (2006.01); **C10M 137/10** (2006.01); **C10M 141/10** (2006.01); **C10N 20/00** (2006.01); **C10N 30/00** (2006.01); **C10N 40/08** (2006.01)

CPC (source: EP US)  
**C10M 137/105** (2013.01 - EP US); **C10M 141/10** (2013.01 - EP US); **C10M 2203/1006** (2013.01 - EP US); **C10M 2207/026** (2013.01 - EP US); **C10M 2207/289** (2013.01 - EP US); **C10M 2209/084** (2013.01 - EP US); **C10M 2209/101** (2013.01 - EP US); **C10M 2209/103** (2013.01 - EP US); **C10M 2215/064** (2013.01 - EP US); **C10M 2215/08** (2013.01 - EP US); **C10M 2215/22** (2013.01 - EP US); **C10M 2215/222** (2013.01 - EP US); **C10M 2215/223** (2013.01 - EP US); **C10M 2223/047** (2013.01 - EP US); **C10M 2229/02** (2013.01 - EP US); **C10N 2030/06** (2013.01 - EP US); **C10N 2030/12** (2013.01 - EP US); **C10N 2030/42** (2020.05 - EP US); **C10N 2030/45** (2020.05 - EP US); **C10N 2040/08** (2013.01 - EP US)

Citation (search report)  
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