

Title (en)  
Improved demulsified lubricating oil compositions.

Title (de)  
Demulgierte Schmieröle.

Title (fr)  
Compositions démulsionnées d'huiles lubrifiantes.

Publication  
**EP 0330522 A2 19890830 (EN)**

Application  
**EP 89301931 A 19890227**

Priority  
US 16069088 A 19880226

Abstract (en)  
In accordance with one aspect, the present invention is directed to a lubricating oil additive mixture comprising (A) a lubricating oil dispersant additive comprising at least one of (1) ashless dispersants and/or (2) polymeric viscosity index improver dispersants, and (B) a demulsifier additive comprising the reaction product of an alkylene oxide and an adduct obtained by reacting a bis-epoxide with a polyhydric alcohol. In a preferred embodiment, the lubricating oil additive mixtures further comprises (C) a compatibilizer additive for the demulsifier, which comprises a glycol ester or a hydroxyamide derivative of a carboxylic acid having a total of from 24 to 90 carbon atoms and at least one carboxylic group per molecule, for enhanced solubility, viz. stability, of the demulsifier in the oil solutions containing such dispersants.

IPC 1-7  
**C10M 161/00; C10M 165/00; C10M 167/00**

IPC 8 full level  
**C10L 1/192** (2006.01); **C10L 1/195** (2006.01); **C10L 1/198** (2006.01); **C10L 1/234** (2006.01); **C10L 1/24** (2006.01); **C10L 10/08** (2006.01); **C10L 10/18** (2006.01); **C10M 157/04** (2006.01); **C10M 159/16** (2006.01); **C10M 161/00** (2006.01); **C10M 165/00** (2006.01); **C10M 167/00** (2006.01); **C10N 30/00** (2006.01); **C10N 30/02** (2006.01); **C10N 30/04** (2006.01); **C10N 30/06** (2006.01); **C10N 30/20** (2006.01); **C10N 40/25** (2006.01)

CPC (source: EP)  
**C10M 129/10** (2013.01); **C10M 129/24** (2013.01); **C10M 129/40** (2013.01); **C10M 129/50** (2013.01); **C10M 129/54** (2013.01); **C10M 129/76** (2013.01); **C10M 129/93** (2013.01); **C10M 129/95** (2013.01); **C10M 133/16** (2013.01); **C10M 133/52** (2013.01); **C10M 135/10** (2013.01); **C10M 135/18** (2013.01); **C10M 135/30** (2013.01); **C10M 137/10** (2013.01); **C10M 143/00** (2013.01); **C10M 143/04** (2013.01); **C10M 145/02** (2013.01); **C10M 145/06** (2013.01); **C10M 145/26** (2013.01); **C10M 145/34** (2013.01); **C10M 145/36** (2013.01); **C10M 145/38** (2013.01); **C10M 149/00** (2013.01); **C10M 149/22** (2013.01); **C10M 159/16** (2013.01); **C10M 159/20** (2013.01); **C10M 159/22** (2013.01); **C10M 159/24** (2013.01); **C10M 161/00** (2013.01); **C10M 165/00** (2013.01); **C10M 167/00** (2013.01); **C10M 2203/06** (2013.01); **C10M 2203/10** (2013.01); **C10M 2205/00** (2013.01); **C10M 2205/02** (2013.01); **C10M 2205/024** (2013.01); **C10M 2207/023** (2013.01); **C10M 2207/026** (2013.01); **C10M 2207/027** (2013.01); **C10M 2207/028** (2013.01); **C10M 2207/08** (2013.01); **C10M 2207/123** (2013.01); **C10M 2207/125** (2013.01); **C10M 2207/126** (2013.01); **C10M 2207/129** (2013.01); **C10M 2207/141** (2013.01); **C10M 2207/144** (2013.01); **C10M 2207/146** (2013.01); **C10M 2207/16** (2013.01); **C10M 2207/22** (2013.01); **C10M 2207/26** (2013.01); **C10M 2207/262** (2013.01); **C10M 2207/282** (2013.01); **C10M 2207/287** (2013.01); **C10M 2207/288** (2013.01); **C10M 2207/289** (2013.01); **C10M 2207/34** (2013.01); **C10M 2209/02** (2013.01); **C10M 2209/082** (2013.01); **C10M 2209/084** (2013.01); **C10M 2209/086** (2013.01); **C10M 2209/103** (2013.01); **C10M 2209/104** (2013.01); **C10M 2209/105** (2013.01); **C10M 2209/106** (2013.01); **C10M 2209/107** (2013.01); **C10M 2209/108** (2013.01); **C10M 2209/109** (2013.01); **C10M 2215/04** (2013.01); **C10M 2215/042** (2013.01); **C10M 2215/06** (2013.01); **C10M 2215/065** (2013.01); **C10M 2215/08** (2013.01); **C10M 2215/082** (2013.01); **C10M 2215/086** (2013.01); **C10M 2215/12** (2013.01); **C10M 2215/122** (2013.01); **C10M 2215/24** (2013.01); **C10M 2215/26** (2013.01); **C10M 2215/28** (2013.01); **C10M 2217/00** (2013.01); **C10M 2217/02** (2013.01); **C10M 2217/022** (2013.01); **C10M 2217/028** (2013.01); **C10M 2217/04** (2013.01); **C10M 2217/042** (2013.01); **C10M 2217/043** (2013.01); **C10M 2217/046** (2013.01); **C10M 2217/06** (2013.01); **C10M 2219/022** (2013.01); **C10M 2219/044** (2013.01); **C10M 2219/046** (2013.01); **C10M 2219/066** (2013.01); **C10M 2219/068** (2013.01); **C10M 2219/084** (2013.01); **C10M 2219/085** (2013.01); **C10M 2219/086** (2013.01); **C10M 2219/087** (2013.01); **C10M 2219/088** (2013.01); **C10M 2219/089** (2013.01); **C10M 2219/10** (2013.01); **C10M 2219/102** (2013.01); **C10M 2219/104** (2013.01); **C10M 2219/106** (2013.01); **C10M 2223/04** (2013.01); **C10M 2223/042** (2013.01); **C10M 2223/045** (2013.01); **C10M 2223/065** (2013.01); **C10M 2223/12** (2013.01); **C10M 2225/04** (2013.01); **C10M 2227/061** (2013.01); **C10M 2227/09** (2013.01); **C10M 2229/041** (2013.01); **C10N 2010/02** (2013.01); **C10N 2010/04** (2013.01); **C10N 2040/00** (2013.01); **C10N 2040/02** (2013.01); **C10N 2040/04** (2013.01); **C10N 2040/042** (2020.05); **C10N 2040/044** (2020.05); **C10N 2040/046** (2020.05); **C10N 2040/08** (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); **C10N 2040/30** (2013.01); **C10N 2040/32** (2013.01); **C10N 2040/34** (2013.01); **C10N 2040/36** (2013.01); **C10N 2040/38** (2020.05); **C10N 2040/40** (2020.05); **C10N 2040/42** (2020.05); **C10N 2040/44** (2020.05); **C10N 2040/50** (2020.05); **C10N 2070/02** (2020.05)

Cited by  
GB2307916A; US5652202A; US5558802A; EP0972819A1; EP0430528A1; CN116162485A; US5753598A; EP0704519A1; US5747433A; EP2341340A3; WO9600766A1; WO2009002775A1; WO9213933A1; WO03087277A3; EP2251401A2; US8048834B2; WO2019055291A1; EP2039741A1; US7897552B2; EP2559748A1; EP2952562A1; EP2067843A1; EP2952564A1; WO2018125956A1; EP2077316A2; US6579329B1; US7951758B2; EP2650350A1; WO2020131441A1; EP2135925A1; US7632788B2; EP2196522A1; EP2363454A1; US8008237B2; US8211840B2; WO2019014092A1; US6423670B2; US7772167B2; EP2584025A1; EP2650349A1; EP2977436A1; EP2453000A1; US8278254B2; EP3263676A2; EP1724329A1; DE102009034983A1; WO2013182581A1; WO2019028310A1; WO2019133255A1; WO2020131440A1; WO2020139333A1; EP2031045A1; US6207624B1; EP2457984A1; EP3252130A1; WO2019133191A1; EP3569679A1; WO2020131439A1; EP3800236A1; US7867958B2; EP3222699A1; EP3372658A1; US11299690B2; EP1801190A1; EP1637580A1; US7879774B2; EP2692840A1; EP3222698A1; US11292980B2; EP2154230A1; DE102007023939A1; US7897548B2; EP2390306A1; US8741821B2; US8778857B2; EP3546549A1; EP2161326A1; EP2489637A1; US8333945B2; EP2690165A1; EP3135750A1; EP3778841A1; EP4353805A1; EP2163602A1; US7179769B2; EP2692839A1; EP3222700A1; EP3434755A1; DE102008009042A1; EP2261311A1; US9663743B2; EP3366754A1; WO2019090038A1; EP3521403A1; EP2048218A1; EP4353804A1; EP2143781A1; EP1728848A1; EP2290043A1; EP2371932A1; EP2913384A1; EP4357443A1; US6649574B2; DE102009034984A1; EP2233554A1; EP2290038A2; EP2290041A2; EP2365049A1; EP2374866A1; US8703681B2; EP3473694A1; WO2019240965A1

Designated contracting state (EPC)  
AT BE CH DE ES FR GB IT LI NL SE

DOCDB simple family (publication)

**EP 0330522 A2 19890830; EP 0330522 A3 19900207; EP 0330522 B1 19941012;** AT E112797 T1 19941015; AU 3071089 A 19890831; AU 611264 B2 19910606; BR 8900859 A 19891017; CA 1331599 C 19940823; DE 68918728 D1 19941117; DE 68918728 T2 19950216; DK 88089 A 19890827; DK 88089 D0 19890224; ES 2060752 T3 19941201; IL 89210 A0 19890910; IL 89210 A 19920621; JP 2696380 B2 19980114; JP H02229892 A 19900912; MX 15063 A 19930601; MX 172791 B 19940113; NO 890785 D0 19890224; NO 890785 L 19890828

DOCDB simple family (application)

**EP 89301931 A 19890227;** AT 89301931 T 19890227; AU 3071089 A 19890224; BR 8900859 A 19890224; CA 590597 A 19890209; DE 68918728 T 19890227; DK 88089 A 19890224; ES 89301931 T 19890227; IL 8921089 A 19890207; JP 4336389 A 19890227; MX 1506389 A 19890224; NO 890785 A 19890224