

Title (en)  
Hydraulic fluid with improved properties.

Title (de)  
Hydraulische Flüssigkeit mit verbesserten Eigenschaften.

Title (fr)  
Fluide hydraulique à propriétés améliorées.

Publication  
**EP 0028789 A1 19810520 (DE)**

Application  
**EP 80106748 A 19801103**

Priority  
DE 2945094 A 19791108

Abstract (en)  
[origin: US4371448A] A hydraulic fluid which substantially fulfils the specification DOT 5 is described. This hydraulic fluid essentially consists of (A) about 20 to 40% by weight of at least one boric acid ester obtained from orthoboric acid, diethylene glycol and an ethylene glycol monoalkyl ether; (B) 30 to 60% by weight of at least one ethylene glycol monoalkyl ether; (C) 10 to 40% by weight of at least one bis-(ethylene glycol monoalkyl ether)-formal; (D) 0.1 to 5% by weight of at least one alkylamine; and (E) 0.05 to 5% by weight of at least one stabilizer and/or inhibitor; the percentages by weight in each case being relative to the total weight of the fluid.

Abstract (de)  
Es wird eine hydraulische Flüssigkeit beschrieben, die die Spezifikation DOT 5 weitgehend erfüllt. Diese hydraulische Flüssigkeit besteht im wesentlichen aus A) etwa 20 bis 40 Gew.-% von mindestens einem Borsäureester aus Orthoborsäure, Diethylenglykol und einem Ethylenglykolmonoalkylether; B) 30 bis 60 Gew.-% von mindestens einem Ethylenglykolmonoalkylether; C) 10 bis 40 Gew.-% von mindestens einem Bis-(ethylenglykolmonoalkylether)-formel; D) 0.1 bis 5 Gew.-% von mindestens einem Alkylamin; und E) 0.05 bis 5 Gew.-% von mindestens einem Stabilisator und/oder Inhibitor; Gewichtsprozente jeweils bezogen auf das Gesamtgewicht der Flüssigkeit.

IPC 1-7  
**C10M 3/48**

IPC 8 full level  
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CPC (source: EP US)  
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• FR 2281372 A1 19760305 - BASF AG [DE]  
• DE 2437936 A1 19760219 - BASF AG  
• EP 0013925 A1 19800806 - HOECHST AG [DE]  
• US 3711411 A 19730116 - SAWYER A, et al  
• DE 2532228 A1 19760129 - UNION CARBIDE CORP  
• US 3925223 A 19751209 - COFFMAN ROBERT L, et al  
• DE 2438038 A1 19750220 - CHUO KAGAKU KOGYO KK  
• FR 2278759 A1 19760213 - UNION CARBIDE CORP [US]  
• FR 2240283 A1 19750307 - CHUO KAGAKU KOGYO KK [JP]  
• GB 1508143 A 19780419 - BASF AG  
• NL 7410396 A 19750213 - CHUO KAGAKU KOGYO KK

Cited by  
EP0323163A1; EP0454110A1; CZ299651B6; KR100861969B1; WO02081604A1

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