

Title (en)  
Lubricating oil composition for cellulose base wet friction material

Title (de)  
Schmiermittelzusammensetzung für Nassreibungsmaterial auf Zellulosebasis

Title (fr)  
Composition d'huile lubrifiante pour matériau de friction humide à base de cellulose

Publication  
**EP 1057882 A1 20001206 (EN)**

Application  
**EP 00111046 A 20000531**

Priority  
JP 15774299 A 19990604

Abstract (en)  
There is disclosed a lubricating oil composition for cellulose base wet friction material which comprises a base oil blended with (A) a boron-containing imide base dispersant (e.g. boron treated polyalkenyl succinimide) having a weight-average molecular weight in the range of 500 to 3000 and having a ratio by weight of boron to nitrogen (B/N) in the range of 0.1 to 1.5 in such a blending amount that the boron content and the nitrogen content each derived from the component (A) are made to be at least 60 ppm by weight and at least 100 ppm by weight, respectively based on the base oil. The above lubricating oil composition enhances peeling resistant durability for a friction material, especially a cellulose base friction material without impairing the wear resistance or scoring resistance of a steel material element, and is well suited for use in a cellulose base friction material for a starting and running device and a transmission clutch that are used in an automatic transmission of an automobile.

IPC 1-7  
**C10M 133/56**; **C10M 141/12**; **C10M 159/12**

IPC 8 full level  
**C10M 169/04** (2006.01); **C10M 101/02** (2006.01); **C10M 105/04** (2006.01); **C10M 105/14** (2006.01); **C10M 105/32** (2006.01); **C10M 133/56** (2006.01); **C10M 139/00** (2006.01); **C10M 141/10** (2006.01); **C10N 30/06** (2006.01); **C10N 40/04** (2006.01)

CPC (source: EP US)  
**C10M 133/56** (2013.01 - EP US); **C10M 135/04** (2013.01 - EP US); **C10M 135/06** (2013.01 - EP US); **C10M 135/18** (2013.01 - EP US); **C10M 135/22** (2013.01 - EP US); **C10M 135/24** (2013.01 - EP US); **C10M 137/02** (2013.01 - EP US); **C10M 141/10** (2013.01 - EP US); **C10M 2207/024** (2013.01 - EP US); **C10M 2207/289** (2013.01 - EP US); **C10M 2215/04** (2013.01 - EP US); **C10M 2215/064** (2013.01 - EP US); **C10M 2215/086** (2013.01 - EP US); **C10M 2215/22** (2013.01 - EP US); **C10M 2215/221** (2013.01 - EP US); **C10M 2215/225** (2013.01 - EP US); **C10M 2215/226** (2013.01 - EP US); **C10M 2215/26** (2013.01 - EP US); **C10M 2215/28** (2013.01 - EP US); **C10M 2215/30** (2013.01 - EP US); **C10M 2217/046** (2013.01 - EP US); **C10M 2217/06** (2013.01 - EP US); **C10M 2219/022** (2013.01 - EP US); **C10M 2219/024** (2013.01 - EP US); **C10M 2219/066** (2013.01 - EP US); **C10M 2219/068** (2013.01 - EP US); **C10M 2219/082** (2013.01 - EP US); **C10M 2219/083** (2013.01 - EP US); **C10M 2219/084** (2013.01 - EP US); **C10M 2219/085** (2013.01 - EP US); **C10M 2223/02** (2013.01 - EP US); **C10M 2223/04** (2013.01 - EP US); **C10M 2223/042** (2013.01 - EP US); **C10M 2223/049** (2013.01 - EP US); **C10M 2223/10** (2013.01 - EP US); **C10M 2223/12** (2013.01 - EP US); **C10M 2225/04** (2013.01 - EP US); **C10M 2227/061** (2013.01 - EP US); **C10M 2229/041** (2013.01 - EP US); **C10N 2040/04** (2013.01 - EP US); **C10N 2040/042** (2020.05 - EP US); **C10N 2040/044** (2020.05 - EP US); **C10N 2040/046** (2020.05 - EP US)

Citation (search report)

- [X] EP 0136185 A2 19850403 - COOPER EDWIN INC [US]
- [X] EP 0628623 A1 19941214 - IDEMITSU KOSAN CO [JP]
- [X] EP 0562172 A1 19930929 - IDEMITSU KOSAN CO [JP]
- [X] EP 0695799 A2 19960207 - LUBRIZOL CORP [US]
- [X] EP 0646639 A1 19950405 - LUBRIZOL CORP [US]
- [X] US 4634543 A 19870106 - OKADA TAHEI [JP], et al
- [X] US 4428849 A 19840131 - WISOTSKY MAX J [US]
- [A] DE 4438456 A1 19960502 - DEUTSCHE FORSCH LUFT RAUMFAHRT [DE]

Cited by  
GB2444357A; GB2444357B

Designated contracting state (EPC)  
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

DOCDB simple family (publication)  
**EP 1057882 A1 20001206**; JP 2000345182 A 20001212; US 2002165102 A1 20021107

DOCDB simple family (application)  
**EP 00111046 A 20000531**; JP 15774299 A 19990604; US 13937802 A 20020507