

Title (en)  
LUBRICANT COMPOSITION

Title (de)  
SCHMIERMITTELZUSAMMENSETZUNG

Title (fr)  
COMPOSITION LUBRIFIANTE

Publication  
**EP 3572485 A4 20201104 (EN)**

Application  
**EP 18742030 A 20180119**

Priority  
• JP 2017007937 A 20170119  
• JP 2018001663 W 20180119

Abstract (en)  
[origin: EP3572485A1] The present invention provides a lubricating oil composition containing a base oil (A), zinc dithiophosphate (B), a metal sulfonate (C), and an ashless friction modifier (D) containing a boronated alkenyl succinimide (D1), which is to be used for a machine equipped with at least one of a wet type brake and a wet type clutch. The lubricating oil composition is not only excellent in oxidation stability but also favorable in an effect for suppressing the generation of squeal and braking properties, and is suitably applicable to machines equipped with a wet type brake or wet type clutch.

IPC 8 full level  
**C10M 163/00** (2006.01); **C10M 169/04** (2006.01)

CPC (source: EP US)  
**C10M 135/10** (2013.01 - US); **C10M 137/10** (2013.01 - US); **C10M 139/00** (2013.01 - US); **C10M 141/10** (2013.01 - US); **C10M 159/22** (2013.01 - US); **C10M 159/24** (2013.01 - US); **C10M 163/00** (2013.01 - EP); **C10M 169/048** (2013.01 - EP); **C10M 2203/1025** (2013.01 - EP); **C10M 2207/026** (2013.01 - EP); **C10M 2207/262** (2013.01 - EP); **C10M 2209/084** (2013.01 - EP); **C10M 2215/04** (2013.01 - EP); **C10M 2215/064** (2013.01 - EP); **C10M 2215/223** (2013.01 - US); **C10M 2215/28** (2013.01 - EP); **C10M 2219/046** (2013.01 - EP); **C10M 2223/045** (2013.01 - EP); **C10N 2010/04** (2013.01 - US); **C10N 2030/02** (2013.01 - EP); **C10N 2030/04** (2013.01 - EP); **C10N 2030/06** (2013.01 - EP); **C10N 2030/10** (2013.01 - EP); **C10N 2030/40** (2020.05 - EP); **C10N 2040/04** (2013.01 - EP); **C10N 2040/08** (2013.01 - EP US)

Citation (search report)  
• [X1] US 2009082233 A1 20090326 - KASAI MORITSUGU [JP]  
• [X1] WO 2014156325 A1 20141002 - JX NIPPON OIL & ENERGY CORP [JP]  
• [X1] US 2016075964 A1 20160317 - KOMATSUBARA HITOSHI [JP]  
• [X1] JP 2003041283 A 20030213 - NIPPON OIL CORP  
• See references of WO 2018135645A1

Cited by  
EP3699259A4; US11499112B2

Designated contracting state (EPC)  
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)  
**EP 3572485 A1 20191127; EP 3572485 A4 20201104**; CN 110168061 A 20190823; CN 110168061 B 20220517; JP 7058226 B2 20220421; JP WO2018135645 A1 20191107; US 2019367834 A1 20191205; WO 2018135645 A1 20180726

DOCDB simple family (application)  
**EP 18742030 A 20180119**; CN 201880007342 A 20180119; JP 2018001663 W 20180119; JP 2018562466 A 20180119; US 201816478007 A 20180119