Title (en)

LUBRICANT OIL COMPOSITION AND INTERNAL-COMBUSTION-ENGINE FRICTION REDUCTION METHOD

Title (de)

SCHMIERÖLZUSAMMENSETZUNG UND REIBUNGSVERRINGERUNGSVERFAHREN FÜR BRENNKRAFTMASCHINE

Title (fr)

COMPOSITION D'HUILE LUBRIFIANTE ET PROCÉDÉ DE RÉDUCTION DE FROTTEMENT DE MOTEUR À COMBUSTION INTERNE

Publication

EP 3279292 A1 20180207 (EN)

Application

EP 16772852 A 20160329

Priority

- JP 2015074366 A 20150331
- JP 2016060168 W 20160329

Abstract (en)

A lubricating oil composition which exhibits an excellent friction-reducing effect and excellent fuel consumption reducing properties is provided. The lubricating oil composition includes a lubricating base oil (A), a molybdenum compound (B), and an ashless friction modifier (C), wherein the lubricating oil composition includes a binuclear organic molybdenum compound represented by the following general formula (I) as the molybdenum compound (B), with the content of the binuclear organic molybdenum compound as converted into molybdenum atoms being 0.030 mass% or more and 0.140 mass% or less based on the total amount of the lubricating oil composition; and an ester-based ashless friction modifier (C1) and/or an amine-based ashless friction modifier (C2) as the ashless friction modifier (C), with the total content of the ester-based ashless friction modifier (C1) and the amine-based ashless friction modifier (C2) being more than 0.1 mass% and 1.8 mass% or less based on the total amount of the lubricating oil composition: in the general formula (I), R 1 to R 4 each represents a hydrocarbon group having 4 to 22 carbon atoms, R 1 to R 4 may be the same as or different from each other, and X 1 to X 4 each represents a sulfur atom or an oxygen atom.

IPC 8 full level

C10M 141/12 (2006.01); **C10M 101/02** (2006.01); **C10M 107/02** (2006.01); **C10M 129/68** (2006.01); **C10M 129/76** (2006.01); **C10M 133/04** (2006.01); **C10M 135/18** (2006.01); **C10M 137/10** (2006.01); **C10M 139/00** (2006.01); **C10M 145/14** (2006.01); C10N 10/04 (2006.01); C10N 10/12 (2006.01); C10N 30/00 (2006.01); C10N 30/06 (2006.01); C10N 40/25 (2006.01)

CPC (source: EP KR US)

C10M 129/76 (2013.01 - KR US); **C10M 139/00** (2013.01 - US); **C10M 141/08** (2013.01 - EP KR US); **C10M 141/12** (2013.01 - EP KR US); C10M 2203/1025 (2013.01 - EP US); C10M 2205/0285 (2013.01 - EP US); C10M 2207/026 (2013.01 - EP KR US); C10M 2207/28 (2013.01 - EP US); C10M 2207/283 (2013.01 - KR US); C10M 2207/289 (2013.01 - EP KR US); C10M 2209/084 (2013.01 - EP KR US); C10M 2215/02 (2013.01 - EP US); C10M 2215/042 (2013.01 - EP KR US); C10M 2215/064 (2013.01 - EP KR US); C10M 2215/28 (2013.01 - EP US); C10M 2219/068 (2013.01 - EP KR US); C10M 2223/045 (2013.01 - EP US); C10M 2227/00 (2013.01 - US); C10M 2227/066 (2013.01 - EP US); C10N 2010/04 (2013.01 - EP US); C10N 2010/12 (2013.01 - EP US); C10N 2030/04 (2013.01 - US); C10N 2030/06 (2013.01 - EP US); C10N 2030/54 (2020.05 - US); C10N 2030/68 (2020.05 - EP US); C10N 2040/25 (2013.01 - EP KR US)

C-Set (source: EP US)

EP

1. C10M 2203/1025 + C10N 2020/02
2. C10M 2215/28 + C10N 2060/14

US

1. C10M 2215/28 + C10N 2060/14
2. C10M 2203/1025 + C10N 2020/02

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

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

US 2017121626 A1 20170504; CN 106459809 A 20170222; EP 3279292 A1 20180207; EP 3279292 A4 20180822; EP 3279292 B1 20240501; JP 2016193995 A 20161117; JP 6114330 B2 20170412; KR 20170134965 A 20171207; WO 2016158971 A1 20161006

DOCDB simple family (application)

US 201615318559 A 20160329; CN 201680001679 A 20160329; EP 16772852 A 20160329; JP 2015074366 A 20150331; JP 2016060168 W 20160329; KR 20177018254 A 20160329