

Title (en)
LUBRICATING OIL COMPOSITION

Title (de)
SCHMIERÖLZUSAMMENSETZUNG

Title (fr)
COMPOSITION D'HUILE LUBRIFIANTE

Publication
EP 2716743 A4 20141119 (EN)

Application
EP 12790030 A 20120120

Priority
• JP 2011117733 A 20110526
• JP 2012051219 W 20120120

Abstract (en)
[origin: EP2716743A1] The present invention provides a lubricating oil composition exhibit excellent friction reduction properties with a small amount of molybdenum. The lubricating oil composition comprises a lubricating base oil, (A) a phosphoric acid ester metal salt represented by formula (1) and (B) an organic molybdenum compound with a ratio of molybdenum to sulfur of 1 : 3.5 or greater. (In formula 1, R 1 to R 4 are each a hydrocarbon group having 1 to 30 carbon atoms, an alkyl or alkenyl group having 1 to 30 carbon atoms, or an alkylthioethyl comprising an alkyl group having 1 to 30 carbon atoms and may be the same or different from each other; X 1 , X 2 , X 3 and X 4 are each sulfur or oxygen, either X 1 or X 2 is oxygen or both are oxygen, and either X 3 or X 4 is oxygen or both are oxygen; and Y is a metal element.)

IPC 8 full level
C10M 137/10 (2006.01); **C10M 141/10** (2006.01); **C10N 10/12** (2006.01); **C10N 30/06** (2006.01); **C10N 40/25** (2006.01)

CPC (source: EP US)
C10M 135/18 (2013.01 - US); **C10M 137/12** (2013.01 - US); **C10M 141/10** (2013.01 - EP US); **C10M 2203/1025** (2013.01 - EP US); **C10M 2207/262** (2013.01 - EP US); **C10M 2209/084** (2013.01 - EP US); **C10M 2209/103** (2013.01 - EP US); **C10M 2215/28** (2013.01 - EP US); **C10M 2219/068** (2013.01 - EP US); **C10M 2223/045** (2013.01 - EP US); **C10N 2010/12** (2013.01 - EP US); **C10N 2030/06** (2013.01 - EP US); **C10N 2030/43** (2020.05 - EP US); **C10N 2030/44** (2020.05 - EP US); **C10N 2030/52** (2020.05 - EP US); **C10N 2040/04** (2013.01 - EP US); **C10N 2040/25** (2013.01 - EP US); **C10N 2040/252** (2020.05 - EP US); **C10N 2040/255** (2020.05 - EP US)

Citation (search report)
• [X] US 5696065 A 19971209 - TANAKA NORIYOSHI [JP], et al
• [X] WO 9507963 A1 19950323 - EXXON CHEMICAL PATENTS INC [US]
• [X] US 5916851 A 19990629 - HOSONUMA KUNIHICO [JP], et al
• [I] EP 0761804 A1 19970312 - ASAHI DENKA KOGYO KK [JP]
• [E] WO 2012126985 A1 20120927 - SHELL INT RESEARCH [NL], et al
• [X] US 2005107269 A1 20050519 - YAGISHITA KAZUHIRO [JP], et al
• See references of WO 2012160840A1

Cited by
US2021032528A1; US11697756B2; US11999915B2; US11767596B2; WO2021021891A1; WO2021021888A1; WO2022026434A1

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 2716743 A1 20140409; **EP 2716743 A4 20141119**; CN 103717718 A 20140409; CN 103717718 B 20160120; JP 2012246362 A 20121213; JP 5756342 B2 20150729; US 2014100148 A1 20140410; WO 2012160840 A1 20121129

DOCDB simple family (application)
EP 12790030 A 20120120; CN 201280037071 A 20120120; JP 2011117733 A 20110526; JP 2012051219 W 20120120; US 201214122074 A 20120120