Title (en)

LUBRICANT COMPOSITIONS FOR DIRECT INJECTION ENGINES

Title (de)

SCHMIERMITTELZUSAMMENSETZUNGEN FÜR DIREKTEINSPRITZMOTOREN

Title (fr)

COMPOSITIONS LUBRIFIANTES POUR MOTEURS À INJECTION DIRECTE

Publication

EP 3271442 A1 20180124 (EN)

Application

EP 15714720 A 20150318

Priority

US 2015021145 W 20150318

Abstract (en)

[origin: WO2016148708A1] The invention is directed to a method for reducing low speed pre-ignition events in a spark-ignited direct injection internal combustion engine by supplying to the sump a lubricant composition which contains an oil of lubricating viscosity and an overbased sodium detergent. The metal overbased detergent may be selected from sulfonate detergents, phenate detergents, and salicylate detergents, especially sulfonate detergents with a metal ratio of at least 5.

IPC 8 full level

C10M 159/20 (2006.01); C10N 10/02 (2006.01); C10N 10/04 (2006.01); C10N 30/00 (2006.01); C10N 30/04 (2006.01); C10N 40/25 (2006.01)

CPC (source: EP KR)

C10M 159/20 (2013.01 - EP KR); C10M 2215/064 (2013.01 - EP KR); C10M 2215/28 (2013.01 - EP KR); C10M 2217/026 (2013.01 - EP KR); C10N 2030/04 (2013.01 - EP KR); C10N 2040/255 (2020.05 - EP KR)

Citation (search report)

See references of WO 2016148708A1

Citation (examination)

KAZUO TAKEUCHI ET AL: "Investigation of Engine Oil Effect on Abnormal Combustion in Turbocharged Direct Injection - Spark Ignition Engines", SAE INTERNATIONAL JOURNAL OF FUELS AND LUBRICANTS, vol. 5, no. 3, 30 January 2012 (2012-01-30), pages 1017 - 1024, XP055203823, ISSN: 1946-3960, DOI: 10.4271/2012-01-1615

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)

WO 2016148708 A1 20160922; AU 2015387205 A1 20171005; BR 112017019935 A2 20180612; CA 2980110 A1 20160922; CN 107636131 A 20180126; EP 3271442 A1 20180124; JP 2018512485 A 20180517; KR 102366772 B1 20220222; KR 20170128563 A 20171122

DOCDB simple family (application)

US 2015021145 W 20150318; AU 2015387205 A 20150318; BR 112017019935 A 20150318; CA 2980110 A 20150318; CN 201580079996 A 20150318; EP 15714720 A 20150318; JP 2017548445 A 20150318; KR 20177029922 A 20150318