

Title (en)
LUBRICATING OIL COMPOSITONS

Title (de)
SCHMIERÖLZUSAMMENSETZUNGEN

Title (fr)
COMPOSITIONS D'HUILE LUBRIFIANTE

Publication
EP 3814461 B1 20230823 (EN)

Application
EP 19763098 A 20190624

Priority

- US 201862690577 P 20180627
- IB 2019055302 W 20190624

Abstract (en)
[origin: WO2020003097A1] Disclosed is a natural gas engine lubricating oil composition which comprises: (a) a major amount of an oil of lubricating viscosity having a kinematic, (b) greater than about 2 wt. % but less than about 4 wt. %, based on the total weight of the natural gas engine lubricating oil composition, of one or more phenolic antioxidants, (c) about 0.1 to about 1 wt. %, based on the total weight of the natural gas engine lubricating oil composition, of one or more aminic antioxidants, (d) one or more metal dithiophosphates, and (e) one or more alkali metal or alkali earth metal phenate detergents having a TBN of about 150 to about 250 on an oil free basis, wherein the one or more alkali metal or alkali earth metal phenate detergents provide at least about 0.10 wt. % of alkali metal or alkali earth metal to the natural gas engine lubricating oil composition.

IPC 8 full level
C10M 141/06 (2006.01)

CPC (source: EP US)
C10M 129/10 (2013.01 - US); **C10M 133/12** (2013.01 - US); **C10M 137/10** (2013.01 - US); **C10M 141/06** (2013.01 - EP); **C10M 141/08** (2013.01 - US); **C10M 141/10** (2013.01 - US); **C10M 159/22** (2013.01 - US); **C10M 2207/023** (2013.01 - US); **C10M 2207/026** (2013.01 - EP); **C10M 2207/028** (2013.01 - EP); **C10M 2215/064** (2013.01 - EP US); **C10M 2219/089** (2013.01 - US); **C10M 2223/045** (2013.01 - US); **C10M 2223/047** (2013.01 - EP); **C10N 2010/04** (2013.01 - US); **C10N 2030/02** (2013.01 - US); **C10N 2030/04** (2013.01 - US); **C10N 2030/10** (2013.01 - EP US); **C10N 2030/45** (2020.05 - US); **C10N 2030/52** (2020.05 - EP US); **C10N 2040/25** (2013.01 - EP US)

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)
WO 2020003097 A1 20200102; AU 2019293378 A1 20201203; CA 3102048 A1 20200102; CN 112334566 A 20210205; EP 3814461 A1 20210505; EP 3814461 B1 20230823; US 2020002638 A1 20200102

DOCDB simple family (application)
IB 2019055302 W 20190624; AU 2019293378 A 20190624; CA 3102048 A 20190624; CN 201980041516 A 20190624; EP 19763098 A 20190624; US 201916449528 A 20190624