

Title (en)

METHOD FOR REDUCING LOW SPEED PRE-IGNITION

Title (de)

METHODE ZUR REDUZIERUNG VON FRÜHZÜNDUNGEN BEI NIEDRIGEN DREHZAHLN

Title (fr)

MÉTHODE POUR RÉDUIRE LE PRÉ-ALLUMAGE À FAIBLE VITESSE

Publication

**EP 3697873 B1 20210526 (EN)**

Application

**EP 18797347 A 20181016**

Priority

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- US 2018056008 W 20181016

Abstract (en)

[origin: WO2019079246A1] Use of an unleaded gasoline fuel composition for reducing the occurrence of Low Speed Pre-Ignition (LSPI) in a spark-ignition internal combustion engine, wherein the unleaded gasoline fuel composition comprises a gasoline base fuel and detergent additive package, wherein the detergent additive package comprises a Mannich base detergent mixture, wherein the mixture comprises a first Mannich base detergent component derived from a di- or polyamine and a second Mannich base detergent component derived from a monoamine, wherein the weight ratio of the first Mannich base detergent to the second Mannich base detergent mixture ranges from about 1:6 to about 3:1, and wherein the spark-ignition internal combustion engine is lubricated with a lubricant composition comprising from 1200ppmw to 3000ppmw of calcium, based on the total lubricant composition.

IPC 8 full level

**C10L 1/22** (2006.01)

CPC (source: EP US)

**C10L 1/143** (2013.01 - US); **C10L 1/1616** (2013.01 - US); **C10L 1/1985** (2013.01 - US); **C10L 1/221** (2013.01 - EP); **C10L 1/2222** (2013.01 - US); **C10L 1/224** (2013.01 - US); **C10L 10/10** (2013.01 - EP); **C10L 2200/0423** (2013.01 - EP US); **C10L 2250/04** (2013.01 - US); **C10L 2270/023** (2013.01 - EP US)

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