

Title (en)

CLEAN-BURNING GASOLINE ADDITIVE TO ELIMINATE VALVE SEAT RECESSION AND TOXIC DEPOSITS

Title (de)

SAUBERBRENNENDER BENZINZUSATZ ZUR BESEITIGUNG VON VENTILSITZVERSCHLEISS UND TOXISCHEN ABLAGERUNGEN

Title (fr)

ADDITIF POUR ESSENCE À COMBUSTION PROPRE PERMETTANT D'ÉLIMINER UNE USURE DE SIÈGE DE SOUPAPE ET DES DÉPÔTS TOXIQUES

Publication

**EP 3921392 A1 20211215 (EN)**

Application

**EP 19888587 A 20191126**

Priority

- US 201862771292 P 20181126
- US 2019063353 W 20191126

Abstract (en)

[origin: US2020165534A1] A fuel additive for fuel formulations comprising calcium sulfonates in an amount effective to limit or eliminate valve seat recession in engines utilizing such fuel formulations. The fuel additive may also include a detergent, particularly in an amount to enhance the VSR limiting effect of the calcium sulfonates. Also included are fuel formulations containing calcium sulfonates in a concentration effective to limit vale seat recession in engines utilizing the fuel formulations. Methods for treating VSR in piston engines are also provided.

IPC 8 full level

**C10L 1/12** (2006.01); **C10L 1/183** (2006.01); **C10L 1/234** (2006.01); **C10L 10/18** (2006.01)

CPC (source: EP US)

**C10L 1/14** (2013.01 - EP); **C10L 1/143** (2013.01 - EP); **C10L 1/1832** (2013.01 - US); **C10L 1/2468** (2013.01 - US); **C10L 1/2493** (2013.01 - US); **C10L 1/303** (2013.01 - US); **C10L 10/04** (2013.01 - EP US); **C10L 10/08** (2013.01 - EP); **C10L 1/1608** (2013.01 - EP); **C10L 1/1832** (2013.01 - EP); **C10L 1/221** (2013.01 - EP); **C10L 1/223** (2013.01 - EP); **C10L 1/226** (2013.01 - EP); **C10L 1/234** (2013.01 - EP); **C10L 1/238** (2013.01 - EP); **C10L 1/2437** (2013.01 - EP); **C10L 1/303** (2013.01 - EP); **C10L 2200/0213** (2013.01 - EP); **C10L 2200/0423** (2013.01 - EP); **C10L 2230/081** (2013.01 - EP US); **C10L 2230/083** (2013.01 - EP US); **C10L 2230/16** (2013.01 - EP US); **C10L 2230/18** (2013.01 - EP US); **C10L 2250/04** (2013.01 - US); **C10L 2270/023** (2013.01 - EP US); **C10L 2270/04** (2013.01 - EP US)

Designated contracting state (EPC)

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Designated extension state (EPC)

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DOCDB simple family (publication)

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**US 201916696429 A 20191126**; CA 3121161 A 20191126; EP 19888587 A 20191126; US 2019063353 W 20191126; US 202318300800 A 20230414