

Title (en)

METHOD FOR OPERATING INTERNAL COMBUSTION ENGINE WITH A FUEL COMPOSITION

Title (de)

VERFAHREN ZUM BETREIBEN EINER BRENNKRAFTMASCHINE MIT EINER KRAFTSTOFFZUSAMMENSETZUNG

Title (fr)

PROCEDE DE FONCTIONNEMENT D'UN MOTEUR A COMBUSTION INTERNE A L'AIDE D'UNE COMPOSITION DE COMBUSTIBLE

Publication

**EP 1478717 A2 20041124 (EN)**

Application

**EP 03709136 A 20030218**

Priority

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- US 35790002 P 20020219

Abstract (en)

[origin: WO03070861A2] A method for preventing combustion chamber deposits from causing start-failures in an internal combustion engine comprises operating the engine with a fuel composition that contains a normally liquid fuel and a nitrogen-containing detergent that includes a polyetheramine; a Mannich reaction product of a hydrocarbyl-substituted phenol, an aldehyde and an amine; or a mixture thereof. The method is effective in preventing start-failures in multi-valve, low friction, spark-ignited engines.

IPC 1-7

**C10L 1/22; C10L 10/00**

IPC 8 full level

**C10L 1/14** (2006.01); **C10L 1/22** (2006.01); **C10L 1/222** (2006.01); **C10L 1/238** (2006.01); **C10L 1/2387** (2006.01); **C10L 10/00** (2006.01);  
**C10L 10/04** (2006.01); **C10L 1/18** (2006.01)

CPC (source: EP US)

**C10L 1/14** (2013.01 - EP US); **C10L 1/143** (2013.01 - EP US); **C10L 1/221** (2013.01 - EP US); **C10L 1/2222** (2013.01 - EP US);  
**C10L 1/238** (2013.01 - EP US); **C10L 1/2387** (2013.01 - EP US); **C10L 10/04** (2013.01 - EP US); **C10L 10/06** (2013.01 - EP US);  
**C10L 1/1985** (2013.01 - EP US)

Citation (search report)

See references of WO 03070861A2

Designated contracting state (EPC)

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DOCDB simple family (publication)

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