

## Title (en)

IMPROVEMENTS IN AND RELATING TO LUBRICATING COMPOSITIONS08877119.1

## Title (de)

VERBESSERUNGEN AN UND IM ZUSAMMENHANG MIT SCHMIERMITTELZUSAMMENSETZUNGEN

## Title (fr)

AMÉLIORATIONS APPORTÉES ET RELATIVES À DES COMPOSITIONS DE LUBRIFICATION

## Publication

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## Application

**EP 18193945 A 20180912**

## Priority

EP 17193419 A 20170927

## Abstract (en)

A method of reducing low-speed pre-ignition (LSPi) in a direct-injected spark-ignited internal combustion engine comprising lubricating the crankcase of the engine with a composition comprising a combination of a molybdenum-containing additive and a boron-containing additive. Preferably, the composition comprises a calcium detergent providing a calcium content of at least 0.08 wt.%, based on the weight of the lubricating oil composition.

## IPC 8 full level

**C10M 141/12** (2006.01); **C10N 10/04** (2006.01); **C10N 10/12** (2006.01); **C10N 40/25** (2006.01); **C10N 60/14** (2006.01)

## CPC (source: CN EP KR US)

**C10M 125/04** (2013.01 - KR); **C10M 125/26** (2013.01 - KR); **C10M 129/54** (2013.01 - US); **C10M 135/10** (2013.01 - US); **C10M 135/18** (2013.01 - US); **C10M 137/10** (2013.01 - US); **C10M 141/10** (2013.01 - US); **C10M 141/12** (2013.01 - EP US); **C10M 155/04** (2013.01 - US); **C10M 161/00** (2013.01 - CN); **C10M 169/044** (2013.01 - US); **F01M 9/00** (2013.01 - CN); **C10M 2201/003** (2013.01 - US); **C10M 2201/05** (2013.01 - KR); **C10M 2201/066** (2013.01 - EP US); **C10M 2201/087** (2013.01 - EP KR US); **C10M 2203/1025** (2013.01 - EP US); **C10M 2205/173** (2013.01 - EP US); **C10M 2207/026** (2013.01 - EP US); **C10M 2207/144** (2013.01 - US); **C10M 2207/262** (2013.01 - EP US); **C10M 2215/064** (2013.01 - EP US); **C10M 2215/28** (2013.01 - EP US); **C10M 2217/028** (2013.01 - US); **C10M 2219/044** (2013.01 - US); **C10M 2219/046** (2013.01 - EP US); **C10M 2219/062** (2013.01 - EP US); **C10M 2219/068** (2013.01 - CN EP US); **C10M 2223/045** (2013.01 - EP US); **C10M 2223/047** (2013.01 - EP US); **C10M 2223/065** (2013.01 - EP US); **C10M 2227/061** (2013.01 - CN EP US); **C10M 2229/00** (2013.01 - CN US); **C10N 2010/04** (2013.01 - EP KR US); **C10N 2010/12** (2013.01 - KR); **C10N 2030/04** (2013.01 - US); **C10N 2030/06** (2013.01 - CN); **C10N 2030/40** (2020.05 - EP US); **C10N 2030/42** (2020.05 - EP US); **C10N 2030/43** (2020.05 - EP US); **C10N 2030/44** (2020.05 - EP US); **C10N 2030/52** (2020.05 - EP US); **C10N 2040/10** (2013.01 - US); **C10N 2040/25** (2013.01 - CN KR); **C10N 2040/255** (2020.05 - EP US)

## C-Set (source: CN EP US)

## CN

**C10M 2219/068 + C10N 2010/12**

## EP

1. **C10M 2219/068 + C10N 2010/12**
2. **C10M 2223/047 + C10N 2010/12**
3. **C10M 2219/062 + C10N 2010/12**
4. **C10M 2223/065 + C10N 2010/12**
5. **C10M 2203/1025 + C10N 2020/02**
6. **C10M 2207/262 + C10N 2010/04**
7. **C10M 2223/045 + C10N 2010/04**
8. **C10M 2219/046 + C10N 2010/04**
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## US

1. **C10M 2219/068 + C10N 2010/12**
2. **C10M 2215/28 + C10N 2060/14**
3. **C10M 2223/047 + C10N 2010/12**
4. **C10M 2219/062 + C10N 2010/12**
5. **C10M 2223/065 + C10N 2010/12**
6. **C10M 2207/262 + C10N 2010/04**
7. **C10M 2223/045 + C10N 2010/04**
8. **C10M 2203/1025 + C10N 2020/02**
9. **C10M 2219/046 + C10N 2010/04**

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