

Title (en)  
**METAL DETERGENTS**

Title (de)  
**METALLREINIGUNGSMITTEL**

Title (fr)  
**DÉTERGENTS DE MÉTAUX**

Publication  
**EP 3205708 A1 20170816 (EN)**

Application  
**EP 16155672 A 20160215**

Priority  
**EP 16155672 A 20160215**

Abstract (en)  
Sulfurised calcium phenate detergents having a reduced unsulfurised alkyl-substituted phenol content are made by: (A) providing, made from an unsulfurised alkyl-substituted phenol, a sulfurised calcium phenate detergent that, optionally, may have been further reacted with carbon dioxide; (B) adding to the detergent from 1 to 100 mass % , based on the mass of the detergent, of an organic solvent that has a boiling point of above 100°C and below the boiling point of the unsulfurised alkyl-substituted phenol; and (C) removing the organic solvent from the detergent thereby to reduce the unsulfurised alkyl-substituted phenol content.

IPC 8 full level  
**C10M 135/30** (2006.01); **C10M 159/22** (2006.01); **C10M 169/04** (2006.01); **C10M 177/00** (2006.01); **C10N 10/04** (2006.01); **C10N 40/25** (2006.01)

CPC (source: EP)  
**C10M 135/30** (2013.01); **C10M 159/22** (2013.01); **C10M 177/00** (2013.01); **C10M 2219/087** (2013.01); **C10M 2219/088** (2013.01); **C10M 2219/089** (2013.01); **C10N 2040/25** (2013.01); **C10N 2040/252** (2020.05); **C10N 2060/10** (2013.01); **C10N 2070/00** (2013.01)

Citation (applicant)  
• US 8772209 B2 20140708 - MAHIEUX CEDRICK [US], et al  
• WO 2015153160 A1 20151008 - LUBRIZOL CORP [US]  
• EP 2682451 A1 20140108 - INFINEUM INT LTD [GB]  
• "Engine Oil Licensing and Certification System", 1 December 1998, THE AMERICAN PETROLEUM INSTITUTE

Citation (search report)  
• [I] US 2014142015 A1 20140522 - MAHIEUX CEDRICK [US], et al  
• [A] US 2014142347 A1 20140522 - MAHIEUX CEDRICK [US], et al  
• [A] EP 2065367 A1 20090603 - CHEVRON ORONITE CO [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

Designated extension state (EPC)  
BA ME

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