

Title (en)  
Marine engine lubrication

Title (de)  
Schmierung für einen Schiffsmotor

Title (fr)  
Lubrification de moteur marin

Publication  
**EP 2703477 A3 20150902 (EN)**

Application  
**EP 13167474 A 20130513**

Priority  
• EP 12171196 A 20120607  
• EP 13167474 A 20130513

Abstract (en)  
[origin: EP2703477A2] A two-stroke, cross-head, slow-speed, compression-ignited marine engine is operated by (i) fuelling it with a diesel fuel, as a pilot fuel, and with a low sulphur fuel, as a main fuel; and (ii) lubricating the engine cylinder(s) with a lubricant having a BN of 20 or less and having a detergent additive system comprising one or more different metal detergents having a surfactant group selected from phenate, salicylate and sulphonate, or one or more complex metal detergents containing two or more different surfactant soap groups selected from phenate, salicylate and sulphonate, and a distilled cashew nut shell liquid or hydrogenated distilled cashew nut shell liquid.

IPC 8 full level  
**C10M 163/00** (2006.01); **C10N 30/04** (2006.01); **C10N 30/06** (2006.01); **C10N 30/08** (2006.01); **C10N 40/25** (2006.01)

CPC (source: EP KR)  
**C10M 163/00** (2013.01 - EP); **F01M 9/00** (2013.01 - KR); **F01M 9/02** (2013.01 - KR); **F02B 77/00** (2013.01 - KR); **C10M 2207/023** (2013.01 - EP); **C10M 2207/028** (2013.01 - EP); **C10M 2207/262** (2013.01 - EP); **C10M 2219/066** (2013.01 - EP); **C10N 2010/04** (2013.01 - EP); **C10N 2030/04** (2013.01 - EP); **C10N 2030/06** (2013.01 - EP); **C10N 2030/08** (2013.01 - EP); **C10N 2030/52** (2020.05 - EP); **C10N 2040/252** (2020.05 - EP); **C10N 2060/14** (2013.01 - EP)

Citation (search report)  
• [A] US 5711270 A 19980127 - PEDERSEN PETER SUNN [DK]  
• [A] EP 1728849 A1 20061206 - INFINEUM INT LTD [GB]  
• [A] EP 2447346 A1 20120502 - INFINEUM INT LTD [GB]  
• [A] PATIL A S ET AL: "Functional fluids and additives based on vegetable oils and natural products: a review of the potential", JOURNAL OF SYNTHETIC LUBRICATION, LEAF COPPIN PUBLISHING LTD., DEAL, KENT, GB, vol. 15, no. 3, 1 October 1998 (1998-10-01), pages 193 - 211, XP009145968, ISSN: 0265-6582, DOI: 10.1002/JSL.3000150304

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Designated extension state (EPC)  
BA ME

DOCDB simple family (publication)  
**EP 2703477 A2 20140305; EP 2703477 A3 20150902**; AU 2013206212 A1 20140109; AU 2013206212 B2 20160929; CA 2818538 A1 20131207; CN 103484206 A 20140101; JP 2013253244 A 20131219; KR 20130137546 A 20131217

DOCDB simple family (application)  
**EP 13167474 A 20130513**; AU 2013206212 A 20130607; CA 2818538 A 20130607; CN 201310225317 A 20130607; JP 2013120888 A 20130607; KR 20130064401 A 20130605