

## Title (en)

MATERIALS AND PROCESSES FOR REDUCING COMBUSTION BY-PRODUCTS IN A LUBRICATION SYSTEM FOR AN INTERNAL COMBUSTION ENGINE

## Title (de)

MATERIALIEN UND VERFAHREN ZUR REDUKTION DER VERBRENNUNGSNEBENPRODUKTE BEI EINEM SCHMIERSYSTEMS FÜR EINEN VERBRENNUNGSMOTOR

## Title (fr)

MATERIAUX ET PROCEDES DE REDUCTION DE SOUS-PRODUITS DE COMBUSTION DANS UN SYSTEME DE LUBRIFICATION POUR UN MOTEUR A COMBUSTION INTERNE

## Publication

**EP 1881866 A4 20110907 (EN)**

## Application

**EP 06770893 A 20060522**

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## Abstract (en)

[origin: WO2006127652A2] A lubrication system having an oil filter modified to replace or supplement the performance of lubricant additives that may be used within an internal combustion engine to increase the performance of a lubricant is described. The formulation of the lubricant is changed in accordance with the chemicals placed in the oil filter. For example, when the oil filter contains a strong base, the lubricant concentration of detergent will decrease, in some cases to zero, while the dispersant concentration in the lubricant will increase. The dispersant is the ideal weak base to neutralize combustion acid at the piston ring zone, carry the resultant weak base- combustion acid complex to the strong base in the oil filter, undergo ion exchange with the strong base, immobilize the acid in the oil filter and recycle the dispersant back to the piston ring zone for reuse as an acid neutralization agent. The reduction or elimination of detergent from the lubricant will reduce the fouling of the emission filter and of deposit formation on engine parts such as the piston. The oil filter may also contain an additive which is slowly released into the lubricant. For example, a ZnDDP anti-wear additive may be slowly released from the oil filter to the lubricant. Because the ZnDDP has low molecular weight alkyl groups it has limited solubility in the lubricant. The rate of release is limited by the equilibrium concentration of the additive in the lubricant. As a result, a relatively constant concentration of the additive may be maintained in the lubricant. The resultant closed system allows the oil drain intervals to be significantly extended.

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- [ID] US 5068044 A 19911126 - BROWNAWELL DARRELL W [US], et al
- [A] WO 2005012468 A1 20050210 - LUBRIZOL CORP [US], et al
- See references of WO 2006127652A2

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