

Title (en)
Oil additive concentrates and lubricants of enhanced performance capabilities.

Title (de)
Öladditivkonzentrate und Schmieröle mit verbesserten Leistungen.

Title (fr)
Concentrés d'additifs pour huile et lubrifiants aux performances améliorées.

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Application
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Abstract (en)
Additive concentrates, lubricating oil compositions and the use thereof are described. The compositions comprise one or more of each of the following oil-soluble additive components: a) a Mannich base ashless dispersant; b) a metal-free sulphur-containing antiwear and/or extreme pressure agent; c) a metal-free phosphorus-containing and nitrogen-containing antiwear and/or extreme pressure agent; and optionally but preferably, d) an amine salt of a carboxylic acid. Oils containing such additive components exhibit excellent performance under heavy duty service such as in the planetary spur gear test. In addition, such oils exhibit good demulsibility in the ASTM D1401 test procedure and good clean gear performance in the CRC L-60 test.

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