

Abstract**Lubricating Oil Compositions**

5 This invention relates to a lubricating oil composition comprising or resulting from the admixing of: a) 50 to 99 mass% of one or more base oils; b) 0.1 to 15 mass% of one or more functionalized olefin copolymer having an Mn of from 10,000 to 35,000 g/mol; c) 0.1 to 20 mass% of one or more detergents wherein the detergent comprises at least one calcium detergent having a TBN of more than 100 mg KOH/g; at least one calcium detergent having a TBN of 100 mg KOH/g or less; and at least one
10 magnesium detergent, where the difference in the TBN's for the Ca detergents is at least 100 mg KOH/g; d) 0.01 to 40 mass% of one or more dispersants wherein the dispersants comprise at least one borated dispersant and at least one non borated dispersant; e) 0.01 to 20 of mass% sulfurized fatty acid ester; f) 0.01 to 5 mass% of one or more amine or phenol based antioxidants; and g) 0.001 to 15 mass% of molybdenum containing compound, where the lubricating oil composition has: 1) a sulfated ash content
15 of 0.9 mass% or less; 2) a Mack T-11 final soot % @ 15 cSt of 6.7 % or more; 3) a total base number of 5 to 30 mg KOH/g; 4) HTCBT of copper level increase of 20 ppm or less; 5) T-13 IR peak EOT of 40 abs/cm or less; and 6) Cam wear outlet of 45 μ m or less.

Figure 3