

**HIGH VISCOSITY INDEX COMB POLYMER VISCOSITY MODIFIERS
AND METHODS OF MODIFYING LUBRICANT VISCOSITY USING SAME**

ABSTRACT

5 A comb copolymer viscosity modifier may be made by polymerization
comprising at least, or consisting essentially of, the following monomers: (a) a
hydrogenated polybutadiene-based (alk)acrylate ester macromonomer (which repeat
units may comprise from 7.0 wt% to 18 wt% of the repeat units of the comb
copolymer viscosity modifier); (b) a C₃-C₈ alkyl (alk)acrylate ester monomer (which
10 repeat units may comprise from 40 wt% to 71 wt% or from 45 wt% to 64 wt% of the
repeat units of the comb copolymer viscosity modifier); and (c) a C₁₂-C₂₄ alkyl
(alk)acrylate ester monomer, wherein repeat units based on the C₁₂-C₂₄ alkyl
(alk)acrylate ester monomer comprise at least 21.0 wt% (and optionally up to 35.0
wt%) of repeat units of the comb copolymer viscosity modifier. Lubricant
15 compositions comprising the comb copolymer viscosity modifier, as well as uses
thereof and methods for modifying viscosity, are also contemplated herein.

No figure