

**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)
(optionally from 7.0 wt% to 18 wt%, by repeat units, of) a hydrogenated
polybutadiene-based (alk)acrylate ester macromonomer; (b) (optionally from 33 wt%
to 64 wt% or from 38 wt% to 58 wt%, by repeat units, of) a C₃-C₈ alkyl (alk)acrylate
10 ester monomer; (c) (optionally up to 35.0 wt%, by repeat units, of) a C₁₂-C₂₄ alkyl
(alk)acrylate ester monomer; and (d) (optionally from 3.0 wt% to 27 wt%, by repeat
units, of) a C₆-C₂₀ aryl, aralkyl, or alkaryl (alk)acrylate ester monomer, such that a
sum of repeat units due to (c) plus (d) constitute at least 21.0 wt% of repeat units of
the comb copolymer viscosity modifier. Lubricant compositions comprising the
15 comb copolymer viscosity modifier, as well as uses thereof and methods for
modifying viscosity and dispersancy, are also contemplated.

No Figure