this context is the improvement of the volumetric efficiency of the hydraulic systems. This is favorably influenced by higher lubricant viscosities, since leakage flows in the hydraulic pump are minimized as a result. However, improvement in the volumetric efficiency is accompanied by reduced mechanical efficiency. In the case of transmission oils, however, mechanical efficiency is crucial, which is the reason why low viscosities and, in particular, low coefficients of traction of the lubricant oil are required in the transmission oil sector. Therefore, the development of energy-efficient hydraulic oils does not permit any conclusions about the development of transmission oils.

WO 2012/025901 A1 discloses the use of comb polymers in lubricants in combination with particular friction modifiers. There is no disclosure of combinations of comb polymers and base oils specifically matched to the demands of transmission oils.

Since the properties of the lubricants disclosed in the prior art are still unsatisfactory in relation to use as a transmission oil and in respect of the reduction in fuel consumption, it is the aim of the present invention to provide a transmission oil formulation having a kinematic minimum viscosity at 100°C of 5.5 mm^2/s to ASTM D445 after a 20 h tapered roller bearing test CEC-L-45-A-99, and simultaneously high shear dilution. In addition, the kinematic fresh oil viscosity at 100°C should be not more than 6.4 mm^2/s to ASTM D445 and preferably about 6.0 mm^2/s. The transmission oil formulation should also have a high viscosity index, preferably a viscosity index of greater than 180 to ASTM D2270, more preferably greater than 190.

In addition, the transmission oil formulation should have a low coefficient of traction. The coefficient of traction is the force required to move a load, divided by the load. The numerical value of the coefficient expresses how easy it is to shear a lubricant film. Transmission oils ideally have a low coefficient of traction because, when the coefficient of traction is low, less energy is consumed because of lubricant shearing.

This object is achieved in one aspect by a transmission oil formulation comprising
(i) a base oil having a kinematic viscosity at 100°C of at least 1.5 mm^2/s to ASTM D445 and an aromatics content of less than 15% by weight to ASTM D 2007; and
(ii) a copolymer obtained by free-radical polymerization from a monomer composition, said monomer composition comprising the following monomers:
(A) 30% to 50% by weight of an ester of (meth)acrylic acid and a hydroxylated hydrogenated polybutadiene, where the hydroxylated hydrogenated polybutadiene has a number-average molar mass M_n to DIN 55672-1 of 4000 to 6000 g/mol;
(B1) 0.2% to 50% by weight of methyl (meth)acrylate;
(B2) 0.2% to 50% by weight of butyl (meth)acrylate;
(B3) 0.2% to 5% by weight of C5-C30 alkyl (meth)acrylates;
(C) 10% to 50% by weight of styrene monomers having 8 to 17 carbon atoms; and
(D) 0% to 5% by weight of further free-radically polymerizable comonomers,

where the sum total of the proportions by weight of monomers (B1), (B2) and (B3) is at least 10% by weight.

In another aspect, there is provided the use of a transmission oil formulation as disclosed above as transmission oil for reducing the fuel consumption of motor vehicles.