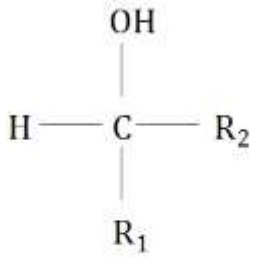
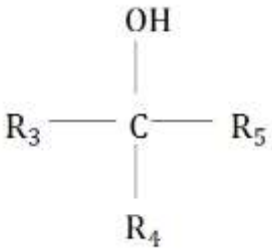
MULTIFUNCTIONAL BRANCHED POLYMERS WITH IMPROVED LOW-TEMPERATURE PERFORMANCE

ABSTRACT

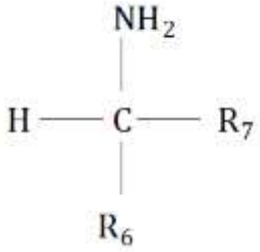
A viscosity index improver comprising a reaction product of (i) an acylated copolymer obtainable by acylating a copolymer of ethylene and one or more C_3-C_{10} alpha-olefins having an Mn of 3,000 to 250,000 g/mol; and (ii) a compound of the formulae (I)-(V):



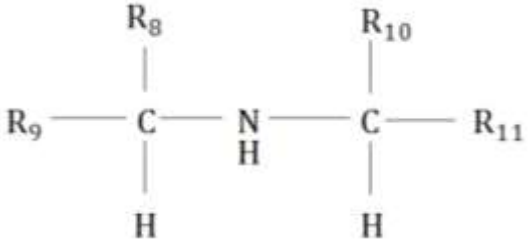
(I);



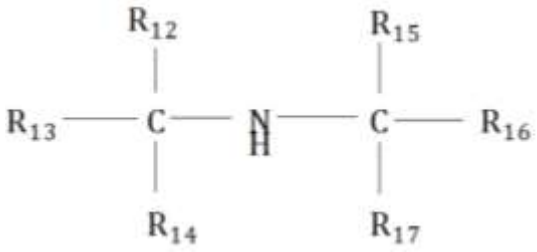
(II);



(III);



(IV);



(V);

wherein R_1, R_6, R_8, R_9, R_{10}, R_{12} and R_{15} are independently selected from a hydrogen and an optionally substituted linear or branched alkyl or alkenyl group, and R_2, R_3, R_4, and R_5 R_7, R_{11}, R_{13}, R_{14}, R_{16}, and R_{17} are independent selected from an optionally substituted linear or branched alkyl or alkenyl group, and a sum of the number of carbon atoms in each compound of the formulae (I)-(V) is from 6 to 31.

[Figure 1]