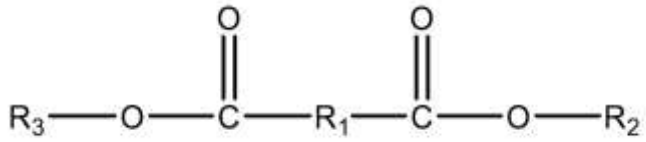
WHAT IS CLAIMED IS:

1. A method for lubricating a transmission having an electric or a hybrid-electric motor, the method comprising:

lubricating a transmission combined with an electric or a hybrid-electric motor with a lubricant;

the lubricant including a poly(meth)acrylate copolymer and a solvent system including a base oil component blended with a branched diester component;

the branched diester component has the structure of Formula I:



(Formula I)

wherein

R_1 is a carbon chain having n-2 carbons with n being an integer from 6 to 10; and

R_2 and R_3 are the same or different and each includes a C8 to C10 branched alkyl chain;

the base oil component including one or more oils selected from API Group I to Group V base oils;

the poly(meth)acrylate copolymer has a weight average molecular weight of 10,000 to 50,000 g/mol, wherein the poly(meth)acrylate copolymer has 5 to 40 mol percent monomer units derived from the C1 to C4 linear or branched alkyl (meth)acrylates, 50 to 90 mol percent monomer units derived from the C12 to C20 linear or branched alkyl (meth)acrylates, and more than 0 and up to 10 mol percent of the nitrogen-containing dispersant monomer units; and

wherein the lubricant includes amounts of the branched diester component and amounts of the poly(meth)acrylate copolymer effective so that the lubricant exhibits an electrical conductivity measured per ASTM D2624-15 at 75ºC of 80,000 pS/m or less and a thermal conductivity measured per ASTM D7896-14 at 80ºC of 134 mW/m*K or more.

2. The method of claim 1, wherein the branched diester component is a reaction product of one or more dicarboxylic acids having an internal carbon chain length of 6 to 10 carbons and one or more alcohols having a branched carbon chain length of 6 to 12 carbons.

3. The method of claim 1, wherein the branched diester component is selected from the group consisting of bis(6-methylheptyl) hexanedioate; bis(8-methylnonyl) hexanedioate; bis(2-ethylhexyl) decanedioate; bis(2-ethylhexyl) hexanedioate; and combinations thereof.

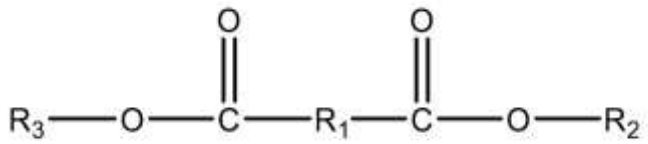
4. A transmission and lubricant for an electric or a hybrid-electric vehicle, the transmission and lubricant comprising:

a transmission coupled to an electric or a hybrid-electric motor;

a lubricating composition of the transmission in contact with at least portions of the electric or the hybrid-electric motor; and

the lubricating composition including (i) an solvent system having a blend of one or more base oils selected from API Group I to Group V oils and a branched diester, and (ii) a copolymer viscosity index improver having a weight average molecular weight of 10,000 to 50,000 g/mol, wherein the copolymer viscosity index improver has 5 to 40 mol percent monomer units derived from the C1 to C4 linear or branched alkyl (meth)acrylates, 50 to 90 mol percent monomer units derived from the C12 to C20 linear or branched alkyl (meth)acrylates, and more than 0 and up to 10 mol percent of the nitrogen-containing dispersant monomer units;

wherein the branched diester has the structure of Formula I:



(Formula I)

wherein

R_1 is a carbon chain having n-2 carbons with n being an integer from 6 to 10;

R_2 and R_3 are the same or different and each includes a C8 to C10 branched alkyl chain; and

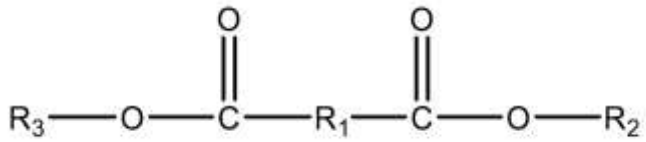
wherein the lubricating composition includes amounts of the branched diester and amounts of the copolymer viscosity index improver effective to achieve an electrical conductivity measured per ASTM D2624-15 at 75ºC of 80,000 pS/m or less and a thermal conductivity measured per ASTM D7896-14 at 80ºC of 134 mW/m*K or more.

5. The transmission and lubricant of claim 4, wherein the branched diester is selected from the group consisting of bis(6-methylheptyl) hexanedioate; bis(8-methylnonyl)

hexanedioate; bis(2-ethylhexyl) decanedioate; bis(2-ethylhexyl) hexanedioate; and combinations thereof.

6. A lubricating composition for electric or hybrid-electric motors, the lubricating composition comprising:

a solvent system including one or more API Group I to Group V base oils blended with a branched diester having the structure of Formula I:



(Formula I)

wherein

R_1 is a carbon chain having n-2 carbons with n being an integer from 6 to 10;

R_2 and R_3 are the same or different and each includes a C8 to C10 branched alkyl chain;

a copolymer viscosity index improver having a weight average molecular weight of 10,000 to 50,000 g/mol, wherein the copolymer viscosity index improver has 5 to 40 mol percent monomer units derived from the C1 to C4 linear or branched alkyl (meth)acrylates, 50 to 90 mol percent monomer units derived from the C12 to C20 linear or branched alkyl (meth)acrylates, and more than 0 and up to 10 mol percent of the nitrogen-containing dispersant monomer units; and

further including amounts of the branched diester in the solvent system and amounts of the copolymer viscosity index improver effective to achieve an electrical conductivity measured per ASTM D2624-15 at 75ºC of 80,000 pS/m or less and a thermal conductivity measured per ASTM D7896-14 at 80ºC of 134 mW/m*K or more at the same time.

7. The lubricating composition of claim 6, wherein the lubricating composition includes 5 to 40 weight percent of the branched diester and 8 to 15 weight percent of the copolymer viscosity index improver on an oil-free basis.

8. The lubricating composition of claim 6, wherein an ester-to-copolymer weight ratio in the lubricating composition is 1.4 to 5.0, wherein the copolymer is measured on an oil-free basis.

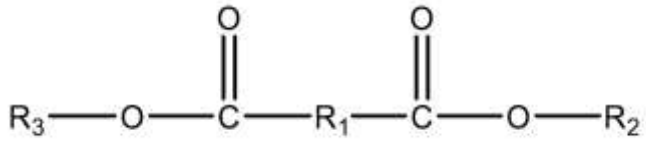
9. The lubricating composition of claim 6, wherein the copolymer viscosity index improver has a polydispersity index of 1 to 3.

10. A method of blending a lubricant for a driveline, the method comprising:

blending amounts of a poly(meth)acrylate copolymer and amounts of a solvent system to form a lubricant;

the solvent system including a base oil component and a branched diester component;

the branched diester component has the structure of Formula I:



(Formula I)

wherein R_1 is a carbon chain having n-2 carbons with n being an integer from 6 to 10; and R_2 and R_3 are the same or different and each includes a C8 to C10 branched alkyl chain;

the base oil component including one or more oils selected from API Group I to Group V base oils;

the poly(meth)acrylate copolymer has a weight average molecular weight of 10,000 to 50,000 g/mol, wherein the poly(meth)acrylate copolymer has 5 to 40 mol percent monomer units derived from the C1 to C4 linear or branched alkyl (meth)acrylates, 50 to 90 mol percent monomer units derived from the C12 to C20 linear or branched alkyl (meth)acrylates, and more than 0 and up to 10 mol percent of the nitrogen-containing dispersant monomer units; and

wherein the blended lubricant includes the amounts of the branched diester component and the amounts of the poly(meth)acrylate copolymer exhibits an electrical conductivity measured per ASTM D2624-15 at 75ºC of 80,000 pS/m or less and a thermal conductivity measured per ASTM D7896-14 at 80ºC of 134 mW/m*K or more.

11. The method of blending a lubricant of claim 10, wherein the branched diester component is a reaction product of one or more dicarboxylic acids having an internal carbon chain length of 6 to 10 carbons and one or more alcohols having a branched carbon chain length of 6 to 12 carbons.

12. The method of blending a lubricant of claim 10, wherein the branched diester component is selected from the group consisting of bis(6-methylheptyl) hexanedioate; bis(8-methylnonyl) hexanedioate; bis(2-ethylhexyl) decanedioate; bis(2-ethylhexyl) hexanedioate; and combinations thereof.

13. The method of blending a lubricant of claim 10, wherein an ester-to-copolymer weight ratio in the lubricating composition is 1.4 to 5.0, wherein the copolymer is measured on an oil-free basis.

14. The method of blending a lubricant of claim 10, wherein an ester-to-copolymer weight ratio in the lubricating composition is 2.5 to 5.0, wherein the copolymer is measured on an oil-free basis.