CLAIMS

We claim:

1. An adhesive composition comprising:

a polyolefin composition comprising a homopolymer of propylene or a copolymer of propylene and ethylene or a C_4 to C_{10} alpha-olefin; a nucleating agent effective for decreasing the set time for the adhesive composition by at least 10% in comparison to an otherwise identical adhesive composition in which the nucleating agent is absent;

wherein the adhesive composition has a Dot T-Peel of 1 Newton or more on Kraft paper.

2. The adhesive composition of claim 1, wherein the nucleating agent is a metal salt.

3. The adhesive composition of claim 1, wherein the nucleating agent is an organic compound having a crystallization temperature greater than the crystallization temperature of the polyolefin composition.

4. The adhesive composition of claim 1, wherein the nucleating agent is effective to increase the onset crystallization temperature of the polyolefin composition relative to the adhesive composition in which the nucleating agent is absent.

5. The adhesive composition of claim 1, wherein the nucleating agent is effective to increase the onset crystallization temperature of the polyolefin composition by at least 2°C relative to the adhesive composition in which the nucleating agent is absent.

6. The adhesive composition of claim 1, wherein the nucleating agent may be selected from the group consisting of sodium benzoate, talc, glycerol alkoxide salts, cyclic carboxylic acid salts, bicyclic carboxylic acid salts, glycerolates, and hexahydrophtalic acid salts.

7. The adhesive composition of claim 1, wherein the nucleating agent comprises a salt of bicyclo [2.2.1] heptane dicarboxylate.

8. The adhesive composition of claim 1, wherein the adhesive composition comprises about 25 wt% wax or less.

~~9. The adhesive composition of claim 1, wherein the adhesive composition comprises about 5~~ wt% wax or less.

10. The adhesive composition of claim 1, wherein the adhesive composition comprises substantially no wax.

11. The adhesive composition of claim 1, wherein the polyolefin composition comprises a copolymer of propylene and ethylene.

12. The adhesive composition of claim 1, wherein the polyolefin composition comprises a blended multi-modal polymer.

13. The adhesive composition of claim 12, wherein the blended multi-modal polymer comprises a first polymer, wherein the first polymer is a copolymer of propylene and ethylene or a C_4 to C_{10} olefin; and a second polymer, wherein the second polymer is a copolymer of propylene and ethylene or a C_4 to C_{10} olefin.

14. The adhesive composition of claim 13, wherein the first polymer and second polymer have a difference in heat of fusion of about 20 J/g or more.

15. The adhesive composition of claim 13, wherein the difference in heat of fusion between the first polymer and second polymer is about 30 J/g or more.

16. The adhesive composition of claim 14, wherein the first polymer has a heat of fusion of about 50 J/g or more, and the second polymer has a heat of fusion of about 30 J/g or less.

17. The adhesive composition of claim 14, wherein the first polymer has a heat of fusion of about 65 J/g to about 85 J/g and the second polymer has a heat of fusion of about 10 J/g to about 30 J/g.

18. The adhesive composition of claim 14, wherein the first polymer has a heat of fusion of ~~about 80 J/g or more, and the second polymer has a heat of fusion of about 50 J/g or less.~~

19. The adhesive composition of claim 14 wherein the first polymer has a heat of fusion of about 50 J/g or more, and the second polymer has a heat of fusion of about 15 J/g or less.

20. The adhesive composition of claim 1, wherein the nucleating agent is present in an amount of 200 to 5000 ppm.

21. An adhesive composition comprising:
a polyolefin composition comprising a homopolymer of propylene or a copolymer of propylene and ethylene or a C_4 to C_{10} alpha-olefin;
a nucleating agent comprising an inorganic solid particle or an organic component having a crystallization temperature greater than that of the polyolefin composition;
wherein the adhesive composition has a Dot T-Peel of 1 Newton or more on Kraft paper.

22. The adhesive composition of claim 21, wherein the nucleating agent is present in an amount of 200 to 5000 ppm.

23. An adhesive composition comprising:
a polyolefin composition comprising a homopolymer of propylene or a copolymer of propylene and ethylene or a C_4 to C_{10} alpha-olefin;
a nucleating agent effective for decreasing the set time for the adhesive composition in comparison to an otherwise identical adhesive composition in which the nucleating agent is absent, wherein the nucleating agent is an organic metal salt; and
wherein the adhesive composition has a Dot T-Peel of 1 Newton or more on Kraft paper.

24. The adhesive composition of claim 23, wherein the nucleating agent is present in an amount of 200 to 5000 ppm.

CLAIMS:

We claim:

1. An adhesive composition comprising:

a polyolefin composition comprising a homopolymer of propylene or a copolymer of propylene and ethylene or a C_4 to C_{10} alpha-olefin;

a nucleating agent effective for decreasing the set time for the adhesive composition by at least 10% in comparison to an otherwise identical adhesive composition in which the nucleating agent is absent;

wherein the adhesive composition has a Dot T-Peel of 1 Newton or more on Kraft paper;

wherein the polyolefin composition comprises a blended multi-modal polymer comprising a first polymer and a second polymer, wherein the first polymer has a heat of fusion of about 65 J/g to about 85 J/g and the second polymer has a heat of fusion of about 10 J/g to about 30 J/g.

2. The adhesive composition of claim 1, wherein the nucleating agent is a metal salt.

3. The adhesive composition of claim 1, wherein the nucleating agent is an organic compound having a crystallization temperature greater than the crystallization temperature of the polyolefin composition.

4. The adhesive composition of claim 1, wherein the nucleating agent is effective to increase the onset crystallization temperature of the polyolefin composition relative to the adhesive composition in which the nucleating agent is absent.

5. The adhesive composition of claim 1, wherein the nucleating agent is effective to increase the onset crystallization temperature of the polyolefin composition by at least 2°C relative to the adhesive composition in which the nucleating agent is absent.

6. The adhesive composition of claim 1, wherein the nucleating agent is selected from the group consisting of sodium benzoate, talc, glycerol alkoxide salts, cyclic carboxylic acid salts, bicyclic carboxylic acid salts, glycerolates, and hexahydrophtalic acid salts.

7. The adhesive composition of claim 1, wherein the nucleating agent comprises a salt of bicyclo[2.2.1]heptane dicarboxylate.

8. The adhesive composition of claim 1, wherein the adhesive composition comprises about 25 wt % wax or less.

9. The adhesive composition of claim 1, wherein the adhesive composition comprises about 5 wt % wax or less.

10. The adhesive composition of claim 1, wherein the adhesive composition comprises substantially no wax.

11. The adhesive composition of claim 1, wherein the polyolefin composition comprises a copolymer of propylene and ethylene.

12. The adhesive composition of claim 1, wherein the first polymer is a copolymer of propylene and ethylene or a C_4 to C_{10} olefin; and wherein the second polymer is a copolymer of propylene and ethylene or a C_4 to C_{10} olefin.

13. The adhesive composition of claim 1, wherein the first polymer and second polymer have a difference in heat of fusion of about 20 J/g or more.

14. The adhesive composition of claim 1, wherein the difference in heat of fusion between the first polymer and second polymer is about 30 J/g or more.

15. The adhesive composition of claim 1, wherein the nucleating agent is present in an amount of 200 to 5000 ppm.

16. An adhesive composition comprising:
a polyolefin composition comprising a homopolymer of propylene or a copolymer of propylene and ethylene or a C_4 to C_{10} alpha-olefin;
a nucleating agent comprising an inorganic solid particle or an organic component having a crystallization temperature greater than that of the polyolefin composition;

wherein the adhesive composition has a Dot T-Peel of 1 Newton or more on Kraft paper;

wherein the polyolefin composition comprises a blended multi-modal polymer comprising a first polymer and a second polymer, wherein the first polymer has a heat of fusion of about 65 J/g to about 85 J/g and the second polymer has a heat of fusion of about 10 J/g to about 30 J/g.

17. The adhesive composition of claim 16, wherein the nucleating agent is present in an amount of 200 to 5000 ppm.

18. An adhesive composition comprising:

a polyolefin composition comprising a homopolymer of propylene or a copolymer of propylene and ethylene or a C_4 to C_{10} alpha-olefin;

a nucleating agent effective for decreasing the set time for the adhesive composition in comparison to an otherwise identical adhesive composition in which the nucleating agent is absent, wherein the nucleating agent is an organic metal salt; and

wherein the adhesive composition has a Dot T-Peel of 1 Newton or more on Kraft paper;

wherein the polyolefin composition comprises a blended multi-modal polymer comprising a first polymer and a second polymer, wherein the first polymer has a heat of fusion of about 65 J/g to about 85 J/g and the second polymer has a heat of fusion of about 10 J/g to about 30 J/g.

19. The adhesive composition of claim 18, wherein the nucleating agent is present in an amount of 200 to 5000 ppm.