SUMMARY

[0012] The above and other needs are met by a marking composition according to the current disclosure. The inventive marking composition exhibits improved structural integrity, color coverage, color intensity and uniformity, as well as smooth and slick laydown with minimal exertion of pressure along with less flaking when applied to a substrate or on other writing surfaces. The marking composition as herein provided is also substantially free of tackiness to the touch.

[0012a] In one aspect, the present disclosure provides a marking composition comprising:

a condensation polymer which is a reaction product of a diol and a dicarboxylic acid, in an amount from 10% to 90% by weight of the composition;

one or more fatty acids containing from 10 to 24 carbon atoms, or an ester thereof, in an amount from 20% to 80% by weight of the composition; and

a colorant, in an amount from 1% to 15% by weight of the composition,

wherein the polymer has a Shore D hardness value from 35 to 65, and

wherein the polymer comprises from 20% to 80% by weight of the composition.

[0012b] In another aspect, the present disclosure also provides a writing instrument comprising a marking composition,

wherein the writing instrument is selected from the group consisting of crayons, wax pastels, grease pencils, water-soluble crayons, colored ink markers, colored charcoals, and chalks; and

wherein the marking composition comprises

a condensation polymer which is a reaction product of a diol and a dicarboxylic acid, in an amount from 10% to 90% by weight of the composition;

one or more fatty acids containing from 10 to 24 carbon atoms, or an ester thereof, in an amount from 20% to 80% by weight of the composition; and a colorant, in an amount from 1% to 15% by weight of the composition,

wherein the polymer has a Shore D hardness value from 35 to 65, and

wherein the polymer comprises from 20% to 80% by weight of the composition.

[0013] According to one embodiment, the marking composition includes a condensation polymer which is a reaction product of a diol and a dicarboxylic acid. The condensation

WHAT IS CLAIMED IS:

Claim 1. A marking composition comprising:

a condensation polymer which is a reaction product of a diol and a dicarboxylic acid, in an amount from 10% to 90% by weight of the composition;

one or more fatty acids containing from 10 to 24 carbon atoms, or an ester thereof, in an amount from 20% to 80% by weight of the composition; and

a colorant, in an amount from 1% to 15% by weight of the composition,

wherein the polymer has a Shore D hardness value from 35 to 65, and

wherein the polymer comprises from 20% to 80% by weight of the composition.

Claim 2. The marking composition of Claim 1, wherein the diol and the dicarboxylic acid each contain 2 to 14 carbon atoms.

Claim 3. The marking composition of Claim 1, wherein the polymer is selected from the group consisting of poly(butylene adipate), poly(hexylene succinate), and poly(propylene adipate).

Claim 4. The marking composition of Claim 1, wherein the polymer has a weight average molecular weight of from 5000 to 15,000 daltons and a melting point from 40 °C to 75 °C.

Claim 5. The marking composition of Claim 1, wherein the composition comprises one or more fatty acids containing from 14 to 18 carbon atoms, or an ester thereof, in an amount from 20% to 80% by weight of the composition.

Claim 6. The marking composition of Claim 1, wherein the one or more fatty acids comprise are fully saturated fatty acids.

Claim 7. The marking composition of Claim 1, wherein the one or more fatty acids have a weight average molecular weight of from 100 to 400 daltons.

Claim 8. The marking composition of Claim 1, wherein the colorant is an inorganic pigment.

Claim 9. The marking composition of Claim 1, wherein the colorant is a pigment having an average particle size from 0.1 micron to 25 microns.

Claim 10. The marking composition of Claim 1, wherein the colorant is derived from plants or vegetables.

Claim 11. The marking composition of Claim 1, further comprising one or more additives selected from the group consisting of rust preventives, anticorrosive agents, fillers, leveling agents, viscosity modifiers, drying agent, plasticizers, foam inhibitors, mold release agents, and polymer stabilizers.

Claim 12. A writing instrument comprising a marking composition,

wherein the writing instrument is selected from the group consisting of crayons, wax pastels, grease pencils, water-soluble crayons, colored ink markers, colored charcoals, and chalks; and

wherein the marking composition comprises

a condensation polymer which is a reaction product of a diol and a dicarboxylic acid, in an amount from 10% to 90% by weight of the composition;

one or more fatty acids containing from 10 to 24 carbon atoms, or an ester thereof, in an amount from 20% to 80% by weight of the composition; and

a colorant, in an amount from 1% to 15% by weight of the composition,

wherein the polymer has a Shore D hardness value from 35 to 65, and

wherein the polymer comprises from 20% to 80% by weight of the composition.

Claim 13. The writing instrument of Claim 12, wherein the diol and the dicarboxylic acid each contain 2 to 14 carbon atoms.

Claim 14. The writing instrument of Claim 12, wherein the polymer is selected from the group consisting of poly(butylene adipate), poly(hexylene succinate), and poly(propylene adipate).

Claim 15. The writing instrument of Claim 12, wherein the polymer has a weight average molecular weight of from 5000 to 15,000 daltons and a melting point from 40 °C to 75 °C.

Claim 16. The writing instrument of Claim 12, wherein the marking composition comprises one or more fatty acids containing from 14 to 18 carbon atoms, or an ester thereof, in an amount from 20% to 80% by weight of the composition.

Claim 17. The writing instrument of Claim 12, wherein the one or more fatty acids comprise are fully saturated fatty acids.

Claim 18. The writing instrument of Claim 12, wherein the one or more fatty acids have a weight average molecular weight of from 100 to 400 daltons.

Claim 19. The writing instrument Claim 12, wherein the colorant is an inorganic pigment.

Claim 20. The writing instrument of Claim 12, wherein the colorant is a pigment having an average particle size from 0.1 micron to 25 microns.

Claim 21. The writing instrument of Claim 12, wherein the colorant is derived from plants or vegetables.

Claim 22. The writing instrument of Claim 12, wherein the marking composition further comprises one or more additives selected from the group consisting of rust preventives, anticorrosive agents, fillers, leveling agents, viscosity modifiers, drying agent, plasticizers, foam inhibitors, mold release agents, and polymer stabilizers.

Claim 23. The writing instrument of Claim 12, wherein the writing instrument is a crayon.

Claim 24. The marking composition of Claim 1, wherein the dicarboxylic acid is selected from the group consisting of succinic acid, adipic acid, and mixtures thereof.

Claim 25. The writing instrument of Claim 12, wherein the dicarboxylic acid is selected from the group consisting of succinic acid, adipic acid, and mixtures thereof.