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WRINKLE FINISH

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This invention deals with a new wrinkling coating composition and a method of making it.

It is an object of this invention to provide wrinkling coating compositions which yield coatings of a great durability.

It is still another object of this invention to provide coatings which are characteristic by a very uniform wrinkle-textured surface.

It is still another object of this invention to provide wrinkle coating compositions which do not require the addition of a plasticizer.

These and other objects are accomplished by mixing a mono- or diglyceride of conjugated double-bonded fatty acids, the so called wrinkling oil fatty acids, with a solution of a resin of the polyvinyl butyral group.

It has been found that a mixture containing from 1 to 10 parts by volume of a resin solution that contains from 0.5 to 1 pound resin per 1 gallon of solvent, and one volume of monoglyceride or diglyceride of wrinkling oil fatty acid are satisfactory. However, a ratio of 1 volume of glyceride to from 3 to 7 parts by volume of a solution having approximately 0.7 pound of resin per 1 gallon of solvent is preferred.

In the following, two examples are given for the purpose of illustrating the invention without the intention of limiting it to the data given in the examples.

Example I

A monoglyceride of tung oil acids was produced by mixing 26.25 pounds of raw tung oil with 5.75 of glycerine and 0.25 pound of litharge and heating the mixture to a temperature of from 440° to 450° F. for 30 minutes. Thereafter, the temperature was raised to 500° F., and then heating was immediately discontinued. Approximately 0.125 pound of cobalt acetate was then added.

In a separate batch, a resin solution was prepared by mixing 2 pounds of polyvinyl butyral resin, 1.5 gallons of butanol and 1.5 gallons of butyl acetate.

Finally, 1 volume of the monoglyceride and 3 volumes of the resin solution were mixed. A surface coated with this composition showed, after drying and baking, a uniformly textured wrinkle pattern, had great hardness and yet sufficient flexibility so as to prevent cracking when it was subjected to bending or the like stresses.

Example II

For the preparation of a monoglyceride, twenty-four pounds oiticica oil fatty acids and eight pounds of glycerine were mixed and heated to

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approximately 450° F. One-eighth of a pound of cobalt acetate was then added under stirring and the mixture was heated to 500° F. and then allowed to cool. One volume of this monoglyceride was then mixed with seven volumes of a resin solution which was prepared according to the directions given in Example I. The coating composition of this example proved to be as satisfactory as the one described in Example I.

The coating compositions of my invention may be applied to metals, fabrics, paper or other materials to be coated by any methods known in the art. Thus, for instance, they may be applied by immersion, by spraying, or by knifing. The films, after application, are preferably dried prior to baking; this may be done by allowing the composition to air dry, or else it may also be carried out by slightly heating the articles. Baking is preferably carried out with infrared heat.

Monoglycerides and diglycerides of the wrinkling oil fatty acids are equally satisfactory for the process and products of the invention. The coatings obtained from monoglycerides have a higher degree of plasticity than those produced from diglycerides; however, both kinds of coatings are plastic and flexible enough so as to make the addition of a special plasticizer material unnecessary.

Any wrinkling oil, which is any oil having conjugated double-bonds, or the acids are operative for the process of the invention.

The quantity of the solvent is not critical, it being greatly dependent upon the way by which the composition is applied to the articles to be coated. Thus, compositions for spraying require a greater quantity of solvent than do compositions for knifing. A great many other solvents than those mentioned in the examples are usable; for instance, ethyl acetate or a mixture of ethyl acetate with ethanol, or mixtures of butanol and butyl acetate in proportions different from those given in the examples are a few examples of the great number of solvents which were found applicable.

It will be understood that other additional materials which are known to those skilled in the art may be added to the compositions set forth above; thus, for instance, pigments, dyes and fillers may be incorporated into the compositions of the invention.

It will be also understood that while there have been described herein certain specific embodiments of my invention, it is not intended thereby to have the invention limited to or subscribed by these specific details given in view of

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the fact that the invention is susceptible to various modifications and changes which come within the spirit of the disclosure and the scope of the appended claims.

I claim:

1. In a method of making a wrinkling coating composition, the step of mixing from 1 to 10 parts by volume of a resin solution having from 0.5 to 1 pound of polyvinyl butyral resin per 1 gallon of solvent with 1 part by volume of a glyceride of conjugated double-bonded oil fatty acid in which from one to two of the hydroxyl groups of the glycerine are bonded to said acid radical.

2. In a method of making a wrinkling coating composition, the step of mixing from 1 to 10 parts by volume of a resin solution having from 0.5 to 1 pound of polyvinyl butyral resin per 1 gallon of solvent with 1 part by volume of a monoglyceride of conjugated double-bonded oil fatty acid.

3. In a method of making a wrinkling coating composition, the step of mixing from 1 to 10 parts by volume of a resin solution having from 0.5 to 1 pound of polyvinyl butyral resin per 1 gallon of solvent with 1 part by volume of a diglyceride of conjugated double-bonded oil fatty acid.

4. In a method of making a wrinkling coating composition, the step of mixing from 1 to 10 parts by volume of a resin solution having from 0.5 to 1 pound of polyvinyl butyral resin per 1 gallon of solvent with 1 part by volume of a glyceride of tung oil, said glyceride having at least one free hydroxyl group.

5. In a method of making a wrinkling coating composition, the step of mixing from 1 to 10 parts by volume of a resin solution having from 0.5 to 1 pound of polyvinyl butyral resin per 1 gallon of solvent with 1 part by volume of tung oil fatty acid monoglyceride.

6. In a method of making a wrinkling coating composition, the step of mixing from 1 to 10 parts by volume of a resin solution having from 0.5 to 1 pound of polyvinyl butyral resin per 1 gallon of solvent with 1 part by volume of oiticica oil fatty acid monoglyceride.

7. In a method of making a wrinkling coating composition, the step of mixing from 1 to 10 parts by volume of a resin solution having from 0.5 to 1 pound of polyvinyl butyral resin per 1 gallon of solvent with 1 part by volume of oiticica oil fatty acid diglyceride.

8. In a method of making a wrinkling coating composition, the step of mixing from 3 to 7 parts by volume of a solution of polyvinyl butyral resin with 1 part by volume of a glyceride of conjugated double-bonded oil fatty acid in which from 1 to 2 of the hydroxyl groups of the glycerine are bonded to said acid radical, said resin solution containing from 0.5 to 1 pound of resin per gallon of solvent.

9. In a method of making a wrinkling coating composition, the step of mixing from 3 to 7 parts by volume of a solution of polyvinyl butyral resin with 1 part by volume of a glyceride of conjugated double-bonded oil fatty acid in which from 1 to 2 of the hydroxyl groups of the glycerine are bonded to said acid radical, said resin solution containing approximately 0.7 pound of resin per gallon of solvent.

10. In a method of making a wrinkling coating composition, the step of mixing from 3 to 7 parts by volume of a resin solution having from 0.5 to 1 pound of polyvinyl butyral resin per gallon of solvent, with 1 part by volume of a glyceride of tung oil fatty acid in which from 1

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to 2 of the hydroxyl groups of the glycerine are bonded to said acid radical.

11. In a method of making a wrinkling coating composition, the step of mixing from 3 to 7 parts by volume of a resin solution having from 0.5 to 1 pound of polyvinyl butyral resin per gallon of solvent with one part by volume of a glyceride of oiticica oil fatty acid in which from 1 to 2 of the hydroxyl groups of the glycerine are bonded to said acid radical.

12. In a method of making a wrinkling coating composition, the step of mixing 3 parts by volume of polyvinyl butyral resin solution with 1 part by volume of tung oil fatty acid monoglyceride.

13. In a method of making a wrinkling coating composition, the step of mixing 7 parts by volume of a solution of polyvinyl butyral resin with 1 part by volume of oiticica oil fatty acid monoglyceride.

14. A method of making wrinkling coating compositions comprising the step of heating 26.25 pounds of raw tung oil, 5.75 pounds of glycerine and 0.25 pound of litharge to from 440° to 450° F. for thirty minutes, raising the temperature to 500° F., adding 0.125 pound of cobalt acetate and adding to 1 volume of said mixture approximately 3 volumes of a resin solution containing two pounds of polyvinyl butyral resin, 1.5 gallons of butanol and 1.5 gallons of butyl acetate.

15. A method of making a wrinkling coating composition comprising the steps of heating 24 pounds of oiticica oil fatty acids and 8 pounds of glycerine to approximately 450° F., adding one-eighth of a pound of cobalt acetate and heating the mixture to 500° F., adding to 1 volume of said mixture, after cooling, 7 volumes of a resin solution, said resin solution containing 2 pounds of polyvinyl butyral resin, 1.5 gallons of butanol and 1.5 gallons of butyl acetate.

16. A wrinkling coating composition comprising from 1 to 10 parts by volume of a solution of polyvinyl butyral resin having from 0.5 to 1 pound of resin per 1 gallon of solvent, admixed with 1 part by volume of a glyceride of conjugated double-bonded oil fatty acids in which from 1 to 2 of the hydroxyl groups of the glycerine are bonded to said acid radicals.

17. A wrinkling coating composition comprising from 1 to 10 parts by volume of a solution of polyvinyl butyral resin having from 0.5 to 1 pound of resin per 1 gallon of solvent, admixed with 1 part by volume of a monoglyceride of conjugated double-bonded oil fatty acid.

18. A wrinkling coating composition comprising from 1 to 10 parts by volume of a solution of polyvinyl butyral resin having from 0.5 to 1 pound of resin per 1 gallon of solvent, admixed with 1 part by volume of a diglyceride of conjugated double-bonded oil fatty acid.

19. A wrinkle coating composition comprising from 1 to 10 parts by volume of a solution of polyvinyl butyral resin having from 0.5 to 1 pound of resin per 1 gallon of solvent, mixed with 1 part by volume of monoglyceride of tung oil fatty acids.

20. A wrinkle coating composition comprising from 1 to 10 parts by volume of a solution of polyvinyl butyral resin having from 0.5 to 1 pound of resin per 1 gallon of solvent mixed with 1 part by volume of monoglyceride of oiticica oil fatty acids.

21. A wrinkle coating composition comprising from 1 to 10 parts by volume of a solution of polyvinyl butyral resin having from 0.5 to 1 pound of resin per 1 gallon of solvent mixed with 1 part

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by volume of diglyceride of oiticica oil fatty acids.

22. A wrinkle coating composition comprising from 3 to 7 parts by volume of a polyvinyl butyral resin solution having 0.7 pound of resin per 1 gallon of solvent and 1 volume of glyceride of conjugated double-bonded oil fatty acids in which from 1 to 2 of the hydroxyl groups of the glycerine are bonded to said acid radicals.

23. A wrinkle coating composition comprising 3 parts by volume of a solution of polyvinyl butyral resin and 1 part by volume of monoglyceride of tung oil fatty acids.

24. A wrinkle coating composition comprising approximately 7 parts by volume of polyvinyl butyral resin solution and 1 part by volume of monoglyceride of oiticica oil fatty acids.

25. In a method of making a wrinkling coating composition, the step of mixing from 1 to 10 parts by volume of a resin solution having from 0.5 to 1

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pound of polyvinyl butyral resin per 1 gallon of solvent with 1 part by volume of tung oil fatty acid diglyceride.

26. A wrinkle coating composition comprising from 1 to 10 parts by volume of a solution of polyvinyl butyral resin having from 0.5 to 1 pound of resin per 1 gallon of solvent mixed with 1 part by volume of diglyceride of tung oil fatty acids.

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