United States Patent Office 3,546,007 Patented Dec. 8, 1970

3,546,007

MASONRY SEALING COMPOUND

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No Drawing. Filed Sept. 16, 1968, Ser. No. 760,080
Int. Cl. C04b 41/32
U.S. Cl. 117—123 21 Claims

ABSTRACT OF THE DISCLOSURE

Cinder blocks, concrete blocks, reinforced concrete, brick and stone foundations can be sealed to prevent seepage and ground water from penetrating through masonry foundations by applying as a thin coating to the outside of the foundation a composition prepared from a major amount of a mineral lubricating oil, a minor amount of a soap thickener and a minor amount of an oil soluble polymer from the group of atactic polypropylene, atactic propylene-ethylene copolymer and ethylene vinyl acetate copolymer.

This invention relates to waterproofing and sealing compounds for masonry foundations. The outstanding water resistance of the compositions employed in the present invention provide long lasting water resistant and repelling coatings.

In the past, foundations have been water proofed principally with asphalt based compositions which are either heated prior to their application or dissolved in a suitable solvent. Either manner is less convenient than the process of the present invention wherein the composition is applied at room temperature, i.e., approximately 50–90° F. by either spraying or brushing since the compositions themselves are relatively free-flowing under these conditions. Unlike asphalt, the compositions employed in the present process do not harden over long periods of time, but remain flexible and retain the ability to repel water for many years.

Briefly stated the present invention is a method of sealing masonry surfaces to moisture from the ground, which comprises applying to said surfaces a coating composition selected from the group consisting of: (a) a major amount of a mineral lubricating oil containing at least 40% by volume of aromatic hydrocarbons, a minor proportion of a thickening agent and 0.5–10 wt. percent ethylene vinyl acetate copolymer and (b) a major amount of a mineral lubricating oil, a minor proportion of a thickening agent and a material selected from 2–10 wt. percent oil-soluble atactic polypropylene and 0.3–5 wt. percent oil-soluble atactic propylene-ethylene copolymer.

The coating compositions of the invention contain a major proportion of a mineral lubricating oil. The proportions and percentages in relation to the components of the coating compositions in this specification are by weight of the total coating composition. The oil can be any oil prepared by conventional petroleum refining techniques such as solvent extraction, sulfuric acid treatment, clay treatment and the like, that the oil employed as a sufficiently high aromatic hydrocarbon content. Normally the lubricating oil used in the coating compositions will have a viscosity in the range of 35–180 S.U.S. at 210° F.

When ethylene vinyl acetate is added to the oil the aromatic content of the oil should be at least 40 percent by volume and more preferably should be in excess of 60 percent by volume. This is because of the lack of solubility of ethylene-vinyl acetate in oils having less than 40 volume percent aromatic, which results in an inhomogenous composition thus inadequate sealing properties.

The coating compositions of the invention also contain a thickener. The amount of thickener used is a minor

proportion but should be sufficient to thicken the lubricating oil used to a greaselike consistency. Normally the amount of thickener used will be 5–40 percent. Any conventional thickener can be employed such as the fatty acid metallic soaps, inorganic thickeners such as colloidal silica and bentonite clay, etc. The metal component of the soap can be any of the known soap-forming metals such as sodium, potassium, lithium, barium, aluminum, strontium, calcium, magnesium, etc. although preferably the metal is sodium, lithium, calcium, aluminum, or barium. The fatty acid component of the soap can be derived from any fatty acid containing 10–25 carbon atoms, can be saturated or unsaturated, and can contain hydroxy substituents. As the term fatty acid is used herein it includes only those fatty acids having 10–25 carbon atoms. Examples of suitable fatty acid metallic soaps containing metal and fatty acid components as described include sodium stearate, lithium stearate, lithium oleate, calcium ricinoleate, calcium oleate, aluminum palmitate, etc.

Although the suitable soaps described above are characterized in that all acid anions of the soap molecule are derived from fatty acids, the term fatty acid metallic soap also includes, for the present purpose, the fatty acid complex metallic soaps. These soaps, which have also been referred to in the art as complex soaps, complex soap-salts, etc., contain a polyvalent soap forming metal as the cation of the soap molecule while the anions of the soap molecule are derived from both fatty acids and relatively low molecular weight organic acids. The relatively low molecular weight organic acid anion present will depend mainly upon the polyvalent metal present. Where the polyvalent metal is aluminum the anion is preferably the anion of an aromatic monocarboxylic acid containing 7–12 carbon atoms. Preferably the anion is that of benzoic acid. Where the polyvalent metal is an alkaline earth metal such as calcium, or barium the anion is preferably derived from aliphatic mono- and polycarboxylic acids containing 2–7 carbon atoms. Preferably the anion is that of acetic acid. The fatty acids and polyvalent metals suitable for use in forming fatty acid complex metallic soaps are as previously described. Preferably the polyvalent metal is calcium, aluminum or barium. Examples of fatty acid complex metallic soaps having metal and acid components as described above are aluminum benzoate stearate, aluminum palmitate toluate, calcium stearate acetate, barium oleate propionate, barium linolenate acetate, etc.

The complex soaps can be prepared by methods well known in the art. Thus aluminum benzoate stearate is precipitated from an aqueous solution of sodium stearate and sodium benzoate by the addition thereto of aluminum sulfate. The ratio of benzoate anions to stearate anions in the resulting soaps is determined by the ratio of sodium benzoate to sodium stearate in the aqueous solution. For the present purposes the ratio of benzoate anions to stearate anions in the soap is usually in the range of 0.2:1 to 5:1. It is also well known to prepare the complex in situ in the oil component of the composition. Thus a mixture of acetic acid and stearic acid is admixed with oil after which hydrated lime is added to the admixture and allowed to react with the mixed acids to form the complex soap.

The preparation of ethylene-vinyl acetate copolymer (E/VA) is known in the art. Preparations are shown in U.S. Pat. No. 2,200,429 to Perrin et al. and Canadian Pat. No. 657,977 to Strauss, dated Jan. 29, 1963. Generally, the preparation involves copolymerizing a mixture of ethylene and vinyl acetate by means of a free-radical-producing catalyst, such as oxygen or an organic peroxide at a pressure of 100 to 200 atmospheres and a temperature in the range of 150° C. to 250° C. and recovering

the product. The proportion of vinyl acetate in the copolymer is unimportant for the coating composition of this invention. Generally suitable copolymers will have 15 to 65 weight percent vinyl acetate, preferably 17 to 42 weight percent.

From 0.5 to 10 weight percent of the ethylene-vinyl acetate copolymer can be added to the thickened oil composition. Less than 0.5 weight percent of the copolymer provides no improvement in the water wash off properties. Generally no more than 2 weight percent of the copolymer will be employed in a usual grease composition. For example, a composition containing 4 percent aluminum complex produced a rubbery product when 3 weight percent of the copolymer was added. However, by lowering the soap content it is possible to load more of the copolymer into the composition. It should be pointed out that a coating composition containing a reduced amount of soap and up to 10 weight percent ethylene-vinyl acetate offers no greater wash off protection than a coating composition having a larger amount of soap and containing 2 weight percent ethylene-vinyl acetate. The atactic polypropylene and propylene-ethylene components of the coating compositions can be prepared by methods well known in the olefin polymerization art. Atactic polypropylene can be prepared by subjecting propylene, in an inert solvent such as pentane, hexane, etc. to the action of a metal halide-metal alkyl complex catalyst, the preferred catalyst being titanium trichloride-aluminum triethyl complex. The reaction temperature is maintained at about 140° F. to 180° F. and the pressure at about 100–250 p.s.i.g. The amount of $TiCl_3$ used is usually 0.05–5.0% by weight of solvent and the molar ratio of aluminum to titanium is preferably 0.5–1 to 1.0–1. The amount of solvent employed is usually such that the amount of solvent soluble polypropylene produced is 10–30% by weight of solvent. After a reaction time of 30 minutes to 2 hours the reaction is killed by adding a small amount of methanol. The polymer product consists of both isotactic and atactic polypropylene. The isotactic polymer is insoluble in the solvent and is separated by filtration, etc. The atactic polymer is soluble in the solvent and is recovered therefrom by stripping off the solvent. To insure a high purity atactic polymer is usually desirable to redissolve it in an additional quantity of solvent, separate any insoluble matter, and again strip off the solvent. The molecular weight of the recovered atactic polypropylene will be in the range of 10,000 to 50,000 as determined by intrinsic viscosity in Tetralin at 135° C. and can be varied by varying reaction time. All molecular weight used herein are according to this method. The intrinsic viscosity in Tetralin at 135° C. for atactic polypropylene having a molecular weight in the range of 10,000 to 50,000 will usually be in the range of 0.3 to 1.5.

The solubility of atactic polypropylene in mineral lubricating oil varies depending mainly upon the molecular weight of the polymer and the type of mineral oil used. As the molecular weight increases the solubility decreases. Atactic polypropylene is generally less soluble in paraffinic oils than in naphthenic or aromatic oils. Within the specified molecular weight range, i.e., 10,000–50,000, atactic polypropylene is sufficiently soluble in mineral oils to achieve the beneficial results of the invention.

Atactic propylene-ethylene copolymers (PE) can also be prepared by known methods. One such method involves the same procedure as described above for the preparation of atactic polypropylene except that the charge to the reaction vessel consists of both propylene and ethylene. If the ethylene and propylene are charged simultaneously the ethylene portion of the charge is usually about 0.1% by weight of the propylene. The polymer product will be a random polymer containing about 1–3% ethylene and will contain both isotactic and atactic fractions. The latter fraction is solvent soluble and is separated as described above. The intrinsic viscosity in Tetralin at 135° C. of the polymer, which is a measure of the molecular weight of the polymer can be varied between about 0.1 to 6.0 by changes in the reaction time. The propylene-ethylene copolymers suitable for the present purpose are characterized in terms of intrinsic viscosity rather than molecular weight because for these polymers the correlation between intrinsic viscosity and molecular weight is not known with certainty in the prior art. If the ethylene and propylene are alternately charged to the reaction vessel, atactic block copolymer and isotactic block copolymer are obtained, which copolymers will usually have an ethylene content of less than 5%. Solely atactic propylene-ethylene copolymers can be prepared by the use of a catalyst system comprising an aluminum compound such as diethylaluminum chloride and a vanadium compound such as the diethyl ester of chloro-orthovanadic acid. Such catalysts and the techniques of polymerization are described in detail in Union of South Africa Pat. No. 69,939, issued to Hercules Powder Co. The vanadium-aluminum catalyst system is especially useful in preparing copolymers of high (e.g., 40–75%) ethylene content.

The solubility of atactic propylene-ethylene copolymers in mineral oils also varies as described above for atactic polypropylene. Copolymers having an intrinsic viscosity in Tetralin at 135° C. in the range of 0.3 to 4.0 are sufficiently oil soluble to achieve the beneficial results of the invention. The amount of polymer incorporated in the coating composition should be 2–10% in the case of atactic polypropylene and 0.3–5.0% in the case of atactic propylene-ethylene copolymer. Within these ranges higher amounts of polymer generally results in greater improvement in the water resistance; consequently the amount of polymer used can be adjusted to give the water resistance desired in the particular conditions contemplated. Preferably the amount of atactic polypropylene is 3–7% and the amount of atactic propylene-ethylene copolymer is 0.5–2.0%.

The polymer component of the coating composition can be incorporated into the composition during the preparation thereof or subsequently thereto. For example, the thickeners are added to the lubricating oil at a temperature of about 200° F., stirring until uniform, heating to about 350–500° F., and cooling to room temperature. Proper consistency is generally reached at some point in the cooling cycle. Where additives such as oxidation inhibitors are to be included in the composition they are usually milled in at about 200° F. in the cooling cycle. The specific techniques employed vary depending mainly upon the actual thickeners used and are well known in the art. The copolymer can be added to the oil at about the same time the soap or other thickener is added to the oil, or, alternatively, can be milled in at some point, preferably about 300° F., in the cooling cycle. In either case the polymer dissolves in the oil to produce a coating composition having improved adhesive-cohesive properties. In order to improve the rate of dissolution of the polymer in the oil, it has generally been found preferable to add the polymer to the oil at or about the time the thickener is added, i.e., after addition of the thickener and prior to heating to the elevated temperature.

The following examples illustrate the invention more specifically. A water spray resistance test used to evaluate the coating composition in the examples. The test utilizes a chrome plated steel panel 2" by 6" by 1/16". Two parallel lines on the panel divide it into three adjacent rectangular areas, the center area being 2" by 4", the two outer areas being 1" by 2". The test panel is weighed to the nearest 0.001 of a gram. The 2" x 4" area is covered by a layer of the coating composition to be tested, 1/32" thick, any material outside of this area is removed from the panel. The panel is weighed to the nearest 0.001 of a gram and is then mounted 12" away from a nozzle attached to a water line. The nozzle used is identified as

Full Jet #½ GG–25 and is manufactured by Spraying Systems, Inc., Chicago, Ill. Water at 100° F. and at a nozzle pressure of 20 p.s.i.g. is sprayed onto the panel for a period of 5 minutes, after which the water is shut off and the panel is dried at 150° F. for 1 hour. Next any coating composition on the two 1" by 2" outer areas is scraped off and the panel is again weighed to the nearest 0.001 of a gram. The percent coating composition lost on panel is calculated by:

$$\frac{B-C}{B-A}\times 100 = \text{percent coating composition lost on panel}$$

A=weight of clean dry test panel
B=weight of initially coated test panel
C=weight of spray exposed coated test panel

The coating compositions employed were prepared in the following manner:

ETHYLENE VINYL ACETATE

The soap components were added to one half of the total volume of oil to be employed at room temperature The mixture was then heated to 240° F. and held at this temperature and stirred for about 20 minutes to complete the saponification. After the saponification the ethylene-vinyl acetate copolymer, if any, is added. The balance of the oil is added and the mixture is stirred until uniform. The mixture is then heated to a temperature of 400° F., held there for 5–10 minutes and is then cooled to 200° F. where grease-like consistency has been reached. At this point any functional additives, i.e., antioxidant etc., are blended in. The composition is milled at 150° F. in a Gaulin Homogenizer at a pressure at 1000 p.s.i.g. and is then allowed to cool to room temperature.

EXAMPLE 1

Lithium soap coating composition without copolymer

Component:	Wt. percent
Petroleum oil	81.50
12 hydroxy stearic acid	4.25
12 hydroxy glycerides	4.25
Lead naphthenate	2.00
Sulfurized sperm oil	8.00

Lithium hydroxide 0.15 lb./lb. of fat.

The petroleum oil is a blend of 53.00 parts by weight of an oil containing 45.5 volume percent aromatics and having a viscosity at 100° F. of 300–320 SUS API gravity at 60° F. of 19–22, and open cup flash point of 350° F. and 28.50 parts by weight of an oil containing 50.0 volume percent aromatics and having a viscosity at 210° F. of 130–140 SUS, API gravity at 60° F. of 17–14, and open cup flash point of 490° F. The coating composition has a water washoff of 44.0 percent.

EXAMPLE 2

Lithium soap with copolymer

The same composition as in Example 3 was prepared with 2 weight percent ethylene-vinyl acetate copolymer,[1] having index of 5–7 and containing 27–29 weight percent vinyl acetate, based on the total weight of the coating composition. Water washoff was 7.7 percent.

EXAMPLE 3

Aluminum complex soap without copolymer

Component:	Wt. percent
Petroleum oil	84.35
Stearic acid	2.62
Benzoic acid	1.38
Kolate 65 [2]	6.15
Phenyl-β-naphthyl amine	0.50
Zinc oxide	5.00

[2] Diisopropoxy palmitate cyclic aluminum oxide trimer can be prepared according to U.S. Pat. 2,979,497 to Rinse.

[1] "Elvax 260"—Du Pont.

The petroleum oil is a blend of 56.00 parts by weight of a oil containing 46.0 volume percent aromatics and having a viscosity at 100° F. of 500–530 SUS, API gravity at 60° F. of 18–21, and open cup flash point of 370° F. and 28–35 parts by weight of an oil containing 50.0 volume percent aromatics and having a viscosity at 210° F. of 130–140 SUS, API gravity at 60° F. of 17–19 and open cup flash point of 490° F. The water washoff was 12.0 percent.

EXAMPLE 4

Aluminum complex with copolymer

The composition of Example 3 was prepared with 1 weight percent ethylene-vinyl acetate copolymer (Elvax 260) based on the total weight of the coating composition. Water washoff was 3.4 percent.

EXAMPLE 5

Atactic polypropylene and propylene-ethylene copolymer

44 parts of mineral lubricating oil was heated in a blending vessel to 240° F. and held at this temperature while adding 1 part lithium hydroxide and 11.7 parts stearic acid to the oil. The oil has the following properties: viscosity at 100° F.—50.7 S.U.S., viscosity at 210° F.—63 S.U.S., viscosity index—93, pour point—0° F., flash point—490° F., fire point—555° F., A.P.I. gravity—29.3. After adding the lithium hydroxide and stearic acid the mixture was stirred at 240° F. for about 20 minutes. Next 44 more parts of oil were added and the mixture stirred until uniform. The mixture was then heated to a temperature of 375° F., held there for 5–10 minutes and then cooled to 200° F. by 200° F. grease consistency had been reached. The product was milled at 200° F. in a Gaulin Homogenizer at a pressure of 1000 p.s.i.g. and then allowed to cool to room temperature. The soap content is 12%. The composition had a water washoff of 62.5%.

EXAMPLE 6

The procedure was the same as in Example 1 except that at 200° F. in the cooling cycle and just prior to milling 5.3 parts of atactic polypropylene were added. The atactic polypropylene has the following properties:

Molecular weight: 20,000
Intrinsic viscosity in Tetralin at 135° C.: 0.5
Specific gravity: 0.86

The atactic polypropylene content of the final product is 5%. The water washoff was 9%. By comparing Examples 5 and 6 it is apparent that the addition of atactic polypropylene effects a distinct improvement in water washoff.

EXAMPLE 7

An aluminum complex soap-oil composition was prepared by adding 10 parts aluminum benzoate stearate to 55 parts of oil at 190° F., stirring the mixture for about 20 minutes until the soap was dissolved in the oil, adding an additional 60 parts oil, stirring another 10–15 minutes, heating the mixture to 410° F., cooling the mixture to 200° F., by which temperature grease like consistency is reached, and milling the resulting product at 200° F. in a Gaulin Homogenizer at 1000 p.s.i.g. The oil used was the same type as in Example 5. The aluminum benzoate stearate soap is obtained by addition of aluminum sulfate to an aqueous solution of sodium benzoate and sodium stearate in which the molar ratio of these salts is 1:1. The water washoff was 98%.

EXAMPLE 8

The procedure is the same as in Example 7 except that at 200° F. in the cooling cycle and just prior to milling 6.6 parts of atactic polypropylene having the same properties as listed in Example 2 was added. The atactic polypropylene content of the final product thus is 5%. The composition had a water washoff of 19.7%. By comparing Examples 7 and 8 it can be seen that the addition of

atactic polypropylene to a fatty acid complex metallic soap thickened composition effects a distinct improvement in water washoff.

EXAMPLE 9

The procedure is the same as in Example 7 except that 6.6 parts of atactic polypropylene having the same properties as listed in Example 7 is added to the oil simultaneously with the soap and no more atactic polypropylene is added thereafter. The final composition had a water washoff of 19%, essentially the same as in Example 8 when the atactic polypropylene was incorporated in during the milling step.

EXAMPLE 10

The procedure is the same as in Example 9 except that 3.9 parts of atactic polypropylene was added. The polymer content of the final product thus is 3% and the water washoff was 40%.

EXAMPLE 11

The procedure is the same as in Example 9 except that 1.26 parts of an atactic propylene-ethylene terminal block copolymer having a terminal block of ethylene is added to the oil. The copolymer has an inherent viscosity in Tetralin at 135° C. of 1.8 and an ethylene content of 4%. The polymer content was 1%. The composition had a water washoff of 9.6%.

EXAMPLE 12

The procedure is the same as in Example 9 except that 1.26 parts of an atactic multiple block propylene-ethylene copolymer was added. The copolymer contains multiple blocks of both ethylene and propylene, has an ethylene content of 1% and an inherent viscosity of 2.3. The product had a polymer content of 1% and a water washoff of 7.7%.

EXAMPLE 13

The procedure is the same as in Example 11 except that 0.63 part of polymer is added. Thus the polymer content was 0.5%. The water washoff was 29.7%.

EXAMPLE 14

The procedure is the same as in Example 12 except that 0.63 part of polymer is added. Thus the polymer content was 0.5%. The water washoff was 24.5%.

EXAMPLE 15

Other polymers

The procedure is the same as in Example 8 except that instead of adding 6.6 parts atactic polypropylene 6.6 parts of polyethylene having a molecular weight of 20,000 is added. The final composition had a water washoff of 90%. This shows that polyethylene is substantially ineffective as a means of reducing water washoff.

EXAMPLE 16

The procedure is the same as in Example 8 except that instead of adding 6.6 parts atactic polypropylene 6.6 parts of polyisobutylene having a molecular weight of 10,000 is added. This molecular weight polyisobutylene is as close to 20,000 molecular weight as can be commercially obtained. The final product has a water washoff of 34.1%.

It is evident from the above examples that atactic polypropylene and atactic ethylene-propylene copolymers not only effect a substantial improvement in the adhesive-cohesive properties of the petroleum based sealing composition but also that these polymers are distinctly superior to other polyolefins. This is brought out more clearly by the data contained in Table I below which summarizes some of the above examples.

TABLE I

Example	Thickener	Polymer	Amount of polymer, wt. percent	Water washoff, percent
1	Lithium soap			44.0
2	do	Ethylene vinyl acetate	2	7.7
6	do	Polypropylene	5	9.0
3	Aluminum complex soap			[1] 12.0
4	do	Ethylene vinyl acetate	1	3.4
7	do			[1] 98.0
8	do	Polypropylene	5	19.7
11	do	Propylene-ethylene	1	9.6
15	do	Polyethylene	5	90.0
16	do	Polyisobutylene	5	34.1

[1] 3 is prepared from much more viscous oil than 7 which also improves water resistance.

The low water washoff compositions described above can be applied to the masonry foundation with a brush or trowel at room temperature, i.e., temperatures in the range of 50–90° F. By heating the compositions for example to around 100–150° F. they may be sprayed onto the foundations. The amount of coating material applied is about ⅛ to ¼" thick layer over the entire foundation area below ground level. For best results the coating compositions should be applied one to two days prior to back filling the ground around the foundation. At low temperatures the product becomes more rubber like, but does not lose its adhesion to the wall surface. At elevated temperatures, the composition does not flow but remains firmly adhered in a softer state to the foundation. The compositions do not harden over an extended period of time and give substantially permanent protection against water seepage into basements.

EXAMPLE 17

A set of 12" x 12" x ½" cement Portland (ASTM C 150–63 Type I) panels is prepared and allowed to harden and cured for approximately two weeks. Each panel is placed into a container so as to substantially divide the container into equal portions. The cement panels are then secured to sides and bottom of the container with a waterproof silicone adhesive. One side of one panel is coated with the composition of Example 8. The other cement panel is left untreated. Water is placed into one side of the container having the untreated cement panel and into side bearing the coating composition of the treated panel to fill about ⅔ of the volume. Within 3 hours the untreated panel is completely dampened and slight moisture is beginning to accumulate on the unfilled side of the container. The water continues to seep through the cement as long as water is present. In the container containing the treated panel no water seepage or stain is observed in the same period of time and none is observed for a period of over 1 year.

The invention claimed is:

1. A method of sealing masonry surfaces to moisture from the ground, which comprises applying to said surfaces a coating composition selected from the group consisting of:

(a) A major amount of a mineral lubricating oil containing at least 40% by volume of aromatic hydrocarbons, a minor proportion of a thickening agent and 0.5–10 wt. percent ethylene vinyl acetate copolymer and

(b) a major amount of a mineral lubricating oil, a minor proportion of a thickening agent and a ma-

terial selected from 2–10 wt. percent oil soluble atactic polypropylene and 0.3–5 wt. percent oil soluble atactic propylene-ethylene copolymer.

2. A method according to claim 1 wherein the coating composition contains ethylene vinyl-acetate containing from 15–65 wt. percent vinyl-acetate.

3. A method according to claim 2 wherein the ethylene vinyl-acetate contains from 17–42 wt. percent vinyl-acetate.

4. A method according to claim 3 wherein the thickening agent is a fatty acid metallic soap.

5. A method according to claim 1 wherein the coating composition contains ethylene vinyl-acetate copolymer the copolymer being present in an amount in the range of 0.5–2 wt. percent.

6. A method according to claim 4 wherein the fatty acid metallic soap is a complex soap.

7. A method according to claim 6 wherein the complex metal soap is a complex aluminum soap.

8. A method according to claim 7 wherein the ethylene vinyl-acetate copolymer is present in an amount in the range of 0.5–2 wt. percent.

9. A method according to claim 4 wherein the fatty acid metallic soap is a lithium soap.

10. A method according to claim 9 wherein the ethylene vinyl-acetate copolymer is present in an amount in the range of 0.5–2 wt. percent.

11. A method according to claim 1 wherein the coating composition contains a polymer selected from the group consisting of oil-soluble atactic polypropylene and oil-soluble atactic propylene-ethylene copolymer, said oil-soluble atactic polypropylene having a molecular weight of 10,000 to 50,000 and said oil-soluble atactic-propylene-ethylene copolymer having an intrinsic viscosity in the range of 0.3–4.0.

12. A method according to claim 11 wherein the thickening agent is a fatty acid metallic soap.

13. A method according to claim 1 wherein the coating composition contains oil-soluble atactic polypropylene.

14. A method according to claim 12 wherein said molecular weight is in the range of 15,000 to 35,000 and said intrinsic viscosity is in the range of 0.5–2.5.

15. A method according to claim 12 wherein the oil-soluble atactic polypropylene is present in the range of 3–7% and the oil-soluble atactic propylene-ethylene copolymer is present in the range of 0.5–2.0%.

16. A method according to claim 11 wherein said molecular weight is in the range of 15,000 to 35,000 and said intrinsic viscosity is in the range of 0.5–2.5.

17. A method according to claim 11 wherein the oil-soluble atactic polypropylene is present in the range of 3–7% and the oil-soluble atactic propylene-ethylene copolymer is present in the range of 0.5–2%.

18. A method according to claim 12 wherein said fatty acid metallic soap is a complex soap.

19. A method according to claim 18 wherin said complex soap is selected from the group consisting of complex aluminum soaps and complex calcium soaps said complex having one anion derived from a fatty acid and having another anion derived from an aromatic carboxylic acid containing 7–12 carbon atoms and said complex calcium soap having one anion derived from a fatty acid having another anion derived from an aliphatic carboxylic acid containing 2–6 carbon atoms.

20. A method according to claim 19 wherein said molecular weight is in the range of 15,000 to 35,000 and said intrinsic viscosity is in the range of 0.5 to 2.5.

21. A method according to claim 19 wherein the oil-soluble atactic polypropylene is present in the range of 3–5 percent and the oil-soluble atactic propylene-ethylene copolymer is present in the range of 0.5–2%.

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U.S. Cl. X.R.

106—14; 117—161, 168