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# PROCESS FOR TAKING SKIN PRINTS

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This invention relates to a new process for making skin prints, such as fingerprints. More specifically, it relates to the taking of skin prints by directly casting the skin pattern on solid, flexible, non-tacky, plastic films.

This application is a continuation in part of Joseph A. Terek et al. application, S.N. 770,307, filed October 29, 1958, now abandoned.

The conventional method for taking direct finger, hand or foot prints still involves, as it has for many years, inking of the skin and application of the inked skin to a paper or card. This method has the advantages of being simple and convenient and of providing prints of fair clarity when properly done. It possesses, however, the obvious disadvantages of being messy and requiring subsequent removal of the black ink from the skin. The preliminary inking of the skin must neither be insufficient nor excessive for good reproduction on the receiving surface. Other difficulties are caused by the fact that the skin surface being printed is not flat. The ball of the finger, for example, must be manipulated to obtain a print of the entire surface area. This may result in lack of uniformity and smudging of the print. Entire hand or foot prints cannot be obtained by this method. The inked record is subject to smudging and must be carefully handled. There are, furthermore, many circumstances which make the use of the ink identification method inconvenient, impractical or impossible.

The object of this invention is to provide a new process for taking direct skin impressions by application to the skin area of a liquid plastic coating, which quickly sets into a solid film and which forms a permanent, indelible, non-smudging cast, reproducing in accurate and minute detail the characteristic skin pattern.

Another object is to provide a method for making skin print reproductions of greater clarity and definition than those produced by such conventional methods as the rolled-ink process.

Still another object is to provide permanent skin print records which can be read directly, reproduced by photographing, or employed for making conventional ink copy prints.

Another object is to provide a unique, positive identification means for the war dead buried under battlefield conditions.

Another object is to provide a means for taking skin print impressions which eliminates the problem of removing ink from the skin and which is simple and easy to apply by anyone with a minimum of instruction.

Broadly speaking, the invention comprises application to the skin, such as that of the finger, palm or sole, of a liquid coating composition comprising either a liquid solution of a solid polymer in a volatile organic solvent, which, upon evaporation of the solvent, sets to form a solid, flexible, non-tacky film, or a polymerizable liquid



which can be cured into a solid, flexible, non-tacky film, allowing the coating to harden, and then stripping the hardened film from the skin. The film, while hardening on the skin, sets into a substantially perfect replica or cast of the ridges and valleys forming the characteristic skin pattern. After stripping from the skin, the solid, flexible, non-tacky film forms a permanent record of the print, which can be employed as such for identification purposes and filed. The plastic cast prints possess greater clarity and definition than prints made by the conventional ink method. Since the plastic coating can be applied evenly to skin areas of any contour, clear, uniform prints can easily be made of the ball of the finger and the entire hand or foot. After stripping of the hardened plastic film, the skin area is left clean.

The process is simple and fast, requires a minimum of components and equipment, and can be applied by any operator with a minimum of instruction.

Our skin printing process is not only exceedingly useful for routine fingerprint identification purposes, but provides a new and important means for positively identifying war dead interred under battlefield conditions. War casualties must frequently be buried in temporary graves and are later exhumed by recovery teams for return to relatives and reburial. This may be a considerable time after burial. Positive identification of the disinterred remains is frequently difficult, if not impossible.

The liquid plastic coating can be easily and rapidly applied to the fingers of the dead prior to burial and the hardened film left on the fingers. Despite disintegration of the fleshy tissue, the plastic fingerprint casts, if made of a polymer composition which resists the severe soil burial conditions, remain intact and provide additional positive identification, which is particularly important where other means of identification, such as tags, may be lost. The plastic fingerprint casts are available to recovery teams returning to the burial site months or even years after interment.

The liquid plastic coating compositions must be settable into solid, flexible, non-tacky films. Flexibility is essential to permit removal and manipulation of the film without breaking or tearing. Freedom from tackiness is important for the desired stripping, handling and filing characteristics. Where the film is stripped after hardening to form an identification print, it is also essential that the film be easily separated from the skin.

We have found that most plastic films, though non-tacky and otherwise suitable for our purpose, adhere to the skin so tenaciously after setting that it is extremely difficult, if not impossible, to strip them. It is interesting to note that many of these same plastic films strip readily from inanimate surfaces. It may be that certain of the skin components exert polar forces or bonds which promote adhesion of the polymer. We have found, therefore, that where the plastic film is to be stripped from the skin, a release agent must be incorporated in the liquid plastic coating, or applied to the skin area before application of the liquid plastic coating. Such agents will be described in more detail below. Where the plastic film is left on the skin of the dead, a release agent can be omitted since at the time of exhumation, the flesh has largely decomposed.

The liquid plastic coating is preferably a fluid solution of a solid polymer dissolved in a volatile organic

solvent, preferably one having a boiling point below 100° C., in which case the applied coating sets rapidly by evaporation of the solvent upon exposure of the large film surface to air, aided when applied to the living, by body warmth. Such polymer solutions have the practical advantages of being preparable in the final form of use long in advance, of indefinitely prolonged shelf life, of being packageable in a single container, and of requiring no further treatment to produce hardening. Films can be made from polymer solutions in volatile organic solvents, which set within a matter of minutes, in some cases as little as a minute or two.

It will be understood that our invention does not encompass the use of aqueous polymer suspensions or emulsions, colloidal or otherwise, such as rubber latices, since we have found them unsuitable for our purpose. Such aqueous suspensions or emulsions are generally too unstable for extended shelf life. Rubber latex, in particular, possesses poor mechanical stability, tending to coagulate rapidly upon stirring, shaking or agitation. Because of this poor stability, latices generally cannot be applied by spraying. Both high and low environmental temperatures are coagulating factors. Rubber latices require the addition of objectionably odorous and/or irritant germicides and anti-oxidants, such as ammonia, sodium pentachlorophenate, aromatic amines and the like, to prevent fermentation, coagulation, and oxidative degradation.

The film-forming properties of aqueous polymer suspensions or emulsions, such as rubber latex, are poor for our purpose. Such compositions are excessively slow drying because the water trapped within the coagulated particles, being a non-solvent for the solid phase, diffuses out very slowly. Syneresis of the coagulating particles also results in shrinkage of the film with consequent distortion when stripped. The rubber films formed from the latex deteriorate rapidly unless vulcanized or cured by the addition of curing agents prior to film formation. This is not practical for the instant use because such agents quickly induce coagulation.

Any natural or synthetic polymer can be employed for our purpose, which can be dissolved in a volatile organic solvent to form a fluid solution and which, after application to the skin and evaporation of the solvent, forms a flexible, non-tacky film. Polymers and copolymers having the desired characteristics per se or by modification with such components as plasticizers to improve flexability and strength, tackiness inhibitors such as finely divided inorganic materials, which are insoluble in the fluid composition, e.g. magnesium oxide and other metal oxides, talc, silica, and carbon black, and the like, are well known to those skilled in the art.

Illustrative examples of solid polymers which can be employed in our process as solutions in volatile organic solvents, include the polyamides which are soluble in volatile solvents at ordinary temperatures, such as the N-alkoxyalkyl polyamide and interpolymer polyamide derivatives; acrylic and methacrylic resins and their copolymers, such as polyacrylamide; polymerized hydrocarbon and halogenated hydrocarbon polymers and copolymers, such as polyethylene, polyvinyl chloride, vinyl chloride copolymerized with vinyl acetate and other esters, polytrifluorochloroethylene, styrene-butadiene, butadiene-acrylonitrile, carboxylic modified butadiene-acrylonitrile; cellulose esters such as cellulose acetate; cellulose ethers such as ethyl cellulose; silicones, such as methyl, vinyl, and phenyl siloxanes; certain partially cured epoxy resins; etc.

The volatile solvents employed are, of course, determined by the solubility characteristics of the particular polymer. They include, for example, methanol, ethanol, propanol, isopropanol, acetone, methylene chloride, chloroform, trichloroethylene, carbon tetrachloride, hexane, benzene, petroleum ether and other volatile petroleum solvents, methyl ethyl ketone, cyclohexane, tetrahydrofuran, etc. In some cases, cosolvent systems, such as methylene chloride - methanol, chloroform - methanol, ethanol-water, can be used for such reasons as improved solubility and reduced viscosity. Where water is employed in a cosolvent system, it should be employed in minor proportion to the volatile organic solvent component.

The concentration of the dissolved polymer is not critical and is dictated only by such practical considerations as the thickness of film desired, the optimum setting time for particular applications and the viscosity of the solution. About 5 to 10% solutions are usually adequate. In general, it is not desirable to increase the concentration of the polymer to the point where viscosity is so excessive as to make application of a thin coating difficult. The concentration at which this occurs varies, of course, with different polymers and different solvents.

Plasticizers suitable for the particular polymer can be dissolved in the polymer-volatile solvent solution. Some examples of a few of the plasticizers which can be employed include dibutyl and dioctyl phthalate, dibutyl and diethyl sebacate, trioctyl, tri-phenyl and tricesyl phosphate, butyl stearate, diacetin, high molecular weight alcohols, such as octanol and decanol, high molecular weight polyesters, such as Paraplex and Laminac, and the like. The substantially water-insoluble plasticizers are preferable for burial purposes to reduce any extraction tendency in wet soil.

Other conditioners, such as tackiness inhibitors, can also be dispersed in the polymer solution. In general, this will not be necessary, since suitable polymers which form non-tacky films can readily be selected.

Polymerizable liquids which can be cured into a solid, non-tacky, flexible film after application to the skin can also be employed. The curing agent can be heat applied to a partially cured liquid polymer, such as certain partially polymerized polyamides; a catayist introduced into a liquid monomer, a mixture of copolymerizable monomers, or a partially cured liquid polymer such as a liquid siloxane, liquid polysulfide polymer, liquid polyester, liquid epoxy, and liquid polyamide; or a reactive atmospheric component such as oxygen or moisture, as in the case of partially cured polyurethanes which harden by reaction with moisture in the air. Such polymerizable liquids are entirely feasible for our purpose, although, in some instances they may require longer setting times than volatile solvent solutions of solid polymers or mixing with a copolymerizable component or a catalyst shortly prior to use.

As aforementioned, the hardened plastic films are generally difficult to strip from the skin. Since strippability is essential except where the film is applied for subsequent identification of the dead after a period of burial, it is necessary, for purposes other than such special application, to provide a release or parting agent either in the liquid plastic compositions or by prior application to the skin area. Such agents are well known, as, for example, in the mold release art and are, in effect, substances which reduce interfacial adhesion between solids by functioning as surfactants which reduce interfacial tension. For solid interfaces it is preferable to use release agents or surfactants in the plastic composition which are sufficiently fluid to migrate to the interface at the drying or setting temperature. It is not essential that the release agent be soluble in the liquid polymer solution or polymerizable liquid so long as it disperses readily, if incorporated into the coating.

The particular release or parting agent chosen either for preliminary application to the skin or for incorporation to the liquid plastic will vary to some extent with the particular polymer composition and can readily be

determined by reference to published literature. In general, such surfactants are of two types. The ionic type is exemplified by compounds such as lecithin, phosphate esters, aliphatic and aryl quaternary ammonium salts, alkyl amide sulfonates and sulfolipids. Such ionic release agents are particularly suitable for use with polar polymers such as the polyamides. The other major type of release or parting agent is a surfactant possessing groups which are lyophilic with respect to the resin and lyophobic toward the other solid contact interface. Examples of such agents include the polyethylene glycols, sulfonated aromatic and aliphatic derivatives, fatty acid amines, halogenated hydrocarbons such as chlorinated waxes, alkyl siloxanes such as the silicone oils, polyoxyethylene derivatives such as polyoxyethylene sorbitan monolaurate, hydrocarbon oils, waxes such as carnauba or paraffin waxes, fatty acids and esters such as stearic acid, oleic acid, palmitic acid, arachidic acid, behenic acid, castor oil or tristearin, and the high molecular weight alcohols such as lauryl alcohol, dodecyl alcohol, cetyl alcohol, or myricyl alcohol.

The amount of release agent included in the plastic coating composition is not critical and varies to some extent with the particular agent and polymer. In general, the amounts necessary are very small, as, for example, about 0.2 to 3% by weight of the polymer, though more can be employed if desired.

The liquid plastic coatings can be applied to the skin area in any suitable and convenient manner, as, for example, by dipping the body member, such as the finger, into the composition, or by spraying. Spraying is particularly convenient and can be accomplished in any desired manner. The liquid can be sprayed from a manually operated container or from one pressurized by an inert gas such as nitrogen or carbon dioxide. It can also, in some cases, be sprayed as an aerosol, where the particular polymer solution is miscible with a propellant agent maintained in the liquid state at normal temperatures by the application of pressure. Such propellant agents include, for example, methyl chloride and various chlorofluoro methanes and ethanes, such as dichlorodifluoromethane (Freon-12), monochlorodifluoromethane (Freon-22), and dichlorotetrafluoroethane (Freon-114).

## EXAMPLE I

N-methoxymethyl polyamide solutions were prepared by dissolving 10 grams of the polyamide in 100 ml. of methylene chloride/methanol in ratios varying from 75:25 to 25:75.

These formed clear, non-gelling solutions of low viscosity, which could be sprayed onto fingers to form thin, tough, flexible, non-tacky, solid films in about 2 to 10 minutes. When 1% of lecithin by weight of the polymer was incorporated into the solution as a release agent, the hardened films stripped easily and cleanly from the fingers, producing a replica resembling the fingertip of a glove. The skin pattern of the finger was perfectly reproduced on the stripped film, forming a permanently embedded, smudge-proof fingerprint record of great clarity and definition. Such prints were compared with conventional rolled-ink prints made by the same individuals. The plastic fingerprint replicas were found in every instance to be considerably clearer.

The plastic finger tip replica can be cut so that it lies flat and mounted on a slide for direct reading. It can also be turned inside out, placed on a finger and used to make copy prints by the conventional ink procedure. Photographic copies can also be made.

Table I summarizes other film-forming polymer solutions which we have prepared and found suitable for our purpose, a small amount of a release agent being added where the film is to be stripped from the skin surface.

*Table I*

| Polymer | Concentration* | Solvent | Plasticizer |
|---|---|---|---|
| Polyvinyl chloride: | | | |
| Geon 121 | 5 | Ethylene chloride/acetone 1:1. | |
| Exon 645 | 5 | do | Dibutyl sebacate 10 phr.[1] |
| Polyvinyl chloride Copolymers: | | | |
| Exon 481 [4] | 20 | Methylene chloride | |
| Exon 485 [4] | 20 | do | |
| Exon 470 [4] | 20 | Acetone | |
| Do.[4] | 20 | do | Di-2-ethylhexyl phthalate, 5 phr. |
| Do.[4] | 20 | do | Di-2-ethylhexyl phthalate, 10 phr. |
| Do.[4] | 20 | do | Di-2-ethylhexyl phthalate, 15 phr. |
| Exon 471 [4] | 20 | do | |
| Do.[4] | 20 | do | Di-2-ethylhexyl phthalate, 5 phr. |
| Do.[4] | 20 | do | Di-2-ethylhexyl phthalate, 10 phr. |
| Do.[4] | 20 | do | Di-2-ethylhexyl phthalate, 15 phr. |
| Bakelite VYNS [3] | 10 | do | |
| Do.[2] | 10 | Cyclohexanone/methyl chloride 10:90. | |
| Do.[2] | 10 | Tetrahydrofuran | |
| Do.[2] | 10 | Methylene chloride | |
| Exon 461 [3] | 10 | do | |
| Do.[3] | 15 | do | |
| Do.[3] | 20 | do | |
| Do.[3] | 30 | do | |
| Do.[3] | 40 | do | |
| Do.[3] | 10 | Acetone | |
| Do.[3] | 15 | do | |
| Do.[3] | 20 | do | |
| Do.[3] | 30 | do | |
| Chlorosulfonated polyethylene (Hypalon). | 10 | Methylene chloride | |
| Balata | 10 | Carbon tetrachloride | |

*Grams per 100 ml. solvent.
[1] Parts per 100 parts resin.
[3] Vinyl chloride/vinyl acetate 90/10.
[2] Fluorinated vinyl chloride-vinyl ester copolymer.
[4] Vinyl chloride/vinyl acetate copolymer.

## EXAMPLE II

The following commercially obtainable polymer solutions can be sprayed to form non-tacky, flexible films, which are strippable when containing a small amount of a release agent, and which are excellent for our purpose:

Cocoon 560 and Cocoon 501, solutions of vinyl chloride-vinyl acetate copolymer in methyl ethyl ketone.

S–115–E, a solution of a terpolymer of vinyl chloride, vinylidene chloride and methyl acrylate.

Hysol 6101–B, a solution of a partially cured epoxy resin which drys to form a non-tacky film.

## EXAMPLE III

A solution of N-methoxymethyl polyamide was prepared by dissolving 10 grams of the polymer in 100 ml. methanol-methylene chloride, 60/40. The solution was loaded into an aerosol container and pressurized with dichlorodifluoromethane (Freon–12) in a ratio of 50 parts polymer solution to 40 parts propellant liquid. The aerosol mixture was readily sprayed, forming films from 2 to 4 mils in thickness with two passes of spray. The films were tack-free in less than 2 minutes and completely hardened in less than 10 minutes.

## EXAMPLE IV

Peroxide polymerization catalysts were added to a liquid silicone polymer (Silastic QS 5330) and the catalyzed liquid applied as a film and allowed to set into flexible, non-tacky films. Curing was complete in 5 minutes.

## EXAMPLE V

8 parts of a 70% solution of cumene hydroperoxide, a catalytic agent, and 6.5 parts of p,p'-dibenzoyl-quinone dioxime, an activator, were added to 100 parts of a partially polymerized liquid polysulfide (Thickol LP 2). The polymerizable liquid sets into flexible, tack-free films in about 5 minutes.

As aforementioned, our fingerprinting technique is highly advantageous as a means for the positive identification of war casualties buried under battlefield conditions. The ease, simplicity and rapidity of the technique make it practical for use under hazardous conditions where speed and a minimum of handling are essential.

Since the plastic films applied to the fingers of the casualty are buried with the body in order to serve as an identification means when the body is exhumed by recovery teams, the plastic must resist deterioration under the rigorous soil burial conditions. It must resist, for example, the action of soil organisms and the products produced by flesh decay. We have found that polyamides which are soluble in volatile organic solvents at ordinary temperatures, e.g. the soluble nylons such as Zytel-61, particularly the N-alkoxyalkyl polyamides, can withstand soil burial without deterioration for indefinitely prolonged periods. Other polymers which are also highly resistant to soil burial conditions include vinyl chloride copolymers, such as vinyl chloride-vinylidene chloride-methyl acrylate terpolymers and siloxane or silicone polymers.

## EXAMPLE VI

A well-composted greenhouse soil was prepared for soil burial tests of finger cast films carrying fingerprint impressions made from the plastics set out below. The soil, mixed and prewetted to about 70% of its waterholding capacity, was placed in plywood boxes. The plastic fingerprint film replicas were photographed and then filled and encased in unseasoned ground pork sausage. These were buried 4 inches deep and 6 inches apart and the soil rewetted to 6 inches in depth to get good contact between soil and sample. The control sample was a well-slitted polyethylene bag filled with meat. The boxes were maintained at temperatures of 24–26° C.

The plastic films were exhumed after 15 weeks of burial in contact with the decaying meat. The films showed no evidence of deterioration, were flexible and strong, and retained the fingerprint impression without loss of clarity.

A. Zytel–61—a soluble nylon, which is an interpolymer condensation product of hexamethylene diamine, adipic acid, sebacic acid and caprolactam.

The film forming solution was prepared by dissolving 10 gm. of the nylon in 50 ml. methylene chloride, 45 ml. methanol and 5 ml. water.

B. Cocoon 560—a commercially available solution of vinyl chloride-vinyl acetate copolymer in methyl ethyl ketone.

C. Cocoon 501—a commercially available solution of vinyl chloride-vinyl acetate copolymer in methyl ethyl ketone.

D. Silastic QS–5330—a peroxide catalyzed liquid silicone polymer.

E. Silicone 81712—a peroxide catalyzed liquid silicone polymer.

F. S–115–E—a solution of a terpolymer of vinyl chloride-vinylidene chloride and methyl methacrylate.

## EXAMPLE VII

The following tests illustrate the application of a release agent to the skin area to facilitate stripping prior to application of the plastic solution.

A. A 10% solution by weight of lecithin in chloroform was applied to the fingers by dipping. Upon drying of the solution, the fingers were sprayed with a solution of nylon, prepared as described in Example VI–A. After the nylon coating set into a solid film, it stripped easily from the fingers and carried an excellent imprint of the skin pattern.

B. A test similar to that described in (A) above was performed except that the plastic coating was a solution of a vinyl chloride/vinyl acetate copolymer in acetone. The results were similar.

C. Tests similar to (A) and (B) above were performed except that the release agent applied directly to the fingers was castor oil. The results were similar.

D. Tests similar to (A) and (B) above were performed except that the release agent applied to the skin was a silicone oil. The results were similar.

The liquid plastic compositions employed for burial application can be colored by addition of a suitable dye or pigment to make the buried fingerprint casts more readily visible to body recovery personnel.

Although this invention has been described with reference to illustrative embodiments thereof, it will be apparent to those skilled in the art that the principles of this invention can be embodied in other inventions but within the scope of the claims.

We claim:

1. A process for making skin print impressions which comprises coating the skin with a liquid plastic composition selected from the group consisting of a solution of a solid, synthetic polymer dissolved in a volatile organic solvent having a boiling point under 100° C., said solid polymer being selected from the group consisting of polyamides, acrylic and methacrylic polymers and their copolymers, polymerized hydrocarbons and halogenated hydrocarbons and their copolymers, cellulose esters, cellulose ethers, silicones, and epoxy polymers, and a polymerized liquid polymerizable to a solid at ordinary temperatures, said polymerizable liquid being selected from the group consisting of liquid, partly polymerized polyamides, silicones, polysulfides, polyesters, epoxies, and polyurethanes, and permitting said liquid plastic composition to set into a solid, flexible, non-tacky film having embedded therein the characteristic surface pattern of said skin, said liquid plastic composition being applied to the skin of a deceased body.

2. A process for making skin print impressions which comprises applying a release agent to the skin and then coating the skin with a liquid plastic composition selected from the group consisting of a solution of a solid, synthetic polymer dissolved in a volatile organic solvent having a boiling point under 100° C., said polymer being selected from the group consisting of polyamides, acrylic and methacrylic polymers and their copolymers, polymerized hydrocarbons and halogenated hydrocarbons and their copolymers, cellulose esters, cellulose ethers, silicones, and epoxy polymers, and a polymerized liquid polymerizable to a solid at ordinary temperatures, said polymerizable liquid being selected from the group consisting of liquid, partly polymerized polyamides, silicones, polysulfides, polyesters, epoxies, and polyurethanes, and permitting said liquid plastic composition to set into a solid, flexible, non-tacky film having embedded therein the characteristic surface pattern of said skin.

3. A process for making skin print impressions which comprises coating the skin with a liquid plastic composition selected from the group consisting of a solution of a solid synthetic polymer dissolved in a volatile organic solvent having a boiling point under 100° C. said solid polymer being selected from the group consisting of polyamides, acrylic and methacrylic polymers and their copolymers, polymerized hydrocarbons and halogenated hydrocarbons and their copolymers, cellulose esters, cellulose ethers, silicones, and epoxy polymers, and a polmerized liquid polymerizable to a solid at ordinary temperatures, said polymerizable liquid being selected from the group consisting of liquid, partly polymerized polyamides, silicones, polysulfides, polyesters, epoxies and polyurethanes, said liquid plastic composi-

tion containing a minor proportion of a release agent to promote strippability of the hardened film, and permitting said liquid plastic composition to set into a solid, flexible, nontacky film having embedded therein the characteristic surface pattern of said skin.

4. The process of claim 1 in which the liquid plastic composition is said solution of a solid synthetic polymer dissolved in said volatile organic solvent.

5. The process of claim 2 in which the liquid plastic composition is said solution of a solid synthetic polymer dissolved in said volatile organic solvent.

6. The process of claim 3 in which the liquid plastic composition is said solution of a solid synthetic polymer dissolved in said volatile organic solvent.

7. The process of claim 5 in which the polymer solution is admixed with a miscible propellent liquid which is maintained in a liquid state at normal temperatures by the application of pressure.

8. The process of claim 6 in which the polymer solution is admixed with a miscible propellent liquid which is maintained in a liquid state at normal temperatures by the application of pressure.

9. The process of claim 7 in which the propellent liquid is dichlorodifluoromethane.

10. The process of claim 8 in which the propellent liquid is dichlorodifluoromethane.

11. The process of claim 4 in which the polymer is a polyamide which is soluble in a volatile solvent at ordinary temperatures.

12. The process of claim 5 in which the polymer is a polyamide which is soluble in a volatile solvent at ordinary temperatures.

13. The process of claim 6 in which the polymer is a polyamide which is soluble in a volatile solvent at ordinary temperatures.

14. The process of claim 12 in which the polyamide is a N-alkoxyalkyl polyamide in a mixture of methylene chloride and methanol.



15. The process of claim 5 in which the polymer is a vinyl polymer.

16. The process of claim 15 in which the polymer is vinyl chloride copolymerized with vinyl acetate.

17. The process of claim 6 in which the polymer is a vinyl polymer.

18. The process of claim 17 in which the polymer is a vinyl polymer copolymerized with vinyl acetate.

19. The process of claim 4 in which the polymer is a vinyl polymer containing chlorine and fluorine substituents.

20. The process of claim 15 in which the vinyl polymer contains chlorine and fluorine substituents.

21. The process of claim 17 in which the vinyl polymer contains chlorine and fluorine substituents.

22. The process of claim 2 in which the polymerizable liquid is a silicone.

23. The process of claim 3 in which the polymerizable liquid is a silicone.

24. The process of claim 11 in which the polyamide is an interpolymer condensation product of hexamethylene diamine, adipic acid, sebacic acid, and caprolactam.

25. The process of claim 12 in which the polyamide is an interpolymer condensation product of hexamethylene diamine, adipic acid, sebacic acid, and caprolactam.

26. The process of claim 13 in which the polyamide is an interpolymer condensation product of hexamethylene diamine, adipic acid, sebacic acid, and caprolactam.

27. The process of claim 2 in which the set, solid film is stripped from the skin.

28. The process of claim 3 in which the set, solid film is stripped from the skin.

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