INTRODUCTION

It is often necessary to apply a material to a part of the body to form an adherent, continuous coat that may be either flexible or semirigid, depending upon the substance(s) and the manner in which it is applied. These materials can serve to (1) provide occlusive protection from the external environment, (2) provide mechanical support, and (3) serve as vehicles for carrying various medications. Materials that have been used for this purpose in the past have included lacquers, varnishes, shellacs, plasters and protectants. Different terms have been used over the years to describe the dosage forms so we begin by first looking at some definitions.

DEFINITIONS

Lacquers
A lacquer has been defined as (1) a gold-colored varnish, consisting chiefly of a solution of pale shellac in alcohol tinged with saffron, anatta, or other coloring materials; used chiefly as a coating for brass, (2) a term applied to various kinds of resinous varnish, capable of taking a hard polish, used in Japan, China, Burma and India for coating articles of wood or other materials, (3) the class of decorative articles made of wood coated with lacquer and often inlaid with ornaments of ivory, mother-of-pearl, or metal; chiefly made in Japan, China and India.¹

A more recent definition is any of various clear or colored synthetic organic coatings that typically dry to form a film by evaporation of a volatile constituent.²

Varnishes
A varnish is defined as resinous matter dissolved in some liquid and used for spreading over a surface in order to give a hard, shining, transparent coat, by which it is made more durable or ornamental.¹ Early literature in 1899 describes “A medical preparation resembling a varnish... Both turpentine and pyrogallol work better as paints and varnishes than the chrysarobin.”³

A more recent definition is a liquid preparation that when spread upon a surface dries forming a hard lustrous typically transparent coating.²

Dental Varnishes
Dental varnishes (cavity liners) are solutions of natural resins and gums in a suitable solvent, of which a thin coating is applied over the surfaces of the cavity preparations before placement of restorations. They are used to seal the dental tubuli in deep-seated cavities so as to protect the pulp from acid-containing dental cements used as a protective agent for the tooth against constituents of restorative materials.

Shellacs
Lac refers to the dark-red resinous incrustation produced on certain trees by the puncture of an insect. The incrusted twigs are called “stick-lac”; the resin broken off the twigs and triturated with water to remove the color is called “seed-lac”; when melted, strained, and formed into irregular thin plates, it is known as “shell-lac” or “shellac”². Shellac is defined as lac that is melted and run in thin plates; formerly used in the manufacture of gramophone records.¹ The term “shell” coming from the appearance of the thin plates and “lac” from the material, forming “shellac”².

Today, shellac is used to refer to a preparation of lac dissolved usually in alcohol and used chiefly as a wood filler and finish. Another recent definition is a purified lac resin usually prepared in thin orange or yellow flakes by heating and filtering and often bleached white.²

Protectants
Collodions are liquid preparations composed of pyroxylin dissolved in a solvent mixture usually composed of alcohol and ether with or without added

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² Professor Emeritus, University of Oklahoma College of Pharmacy
³ Editor in Chief, International Journal of Pharmaceutical Compounding
⁴ Dr. Allen is not affiliated with Paddock Laboratories Inc.
medicinal substances. They are often applied to cuts and small burns as a protective. Application often causes pain but it is effective as an antiseptic and for excluding air from open wounds.

Pyroxylin (soluble gun cotton, collodion cotton) is obtained by the action of a mixture of nitric and sulfuric acids on cotton and consists chiefly of cellulose tetrานitate. It has the appearance of raw cotton when dry but is harsh to the touch. It is frequently available commercially moistened with about 30% alcohol or other similar solvent.

One part of pyroxylin is slowly but completely soluble in 25 parts of a mixture of 3 volumes of ether and 1 volume of alcohol. It is also soluble in acetone and glacial acetic acid. Pyroxylin is precipitated from solution in these solvents upon the addition of water. Note: Pyroxylin, like collodion, is exceedingly flammable and must be stored away from flame in well-closed containers, protected from light.

Collodions are intended for external use. When applied to the skin with a fine camel’s hair brush or glass applicator, the solvent rapidly evaporates, leaving a filmy residue of pyroxylin. This provides an occlusive protective coating to the skin, and when the collodion is medicated it leaves a thin layer of that medication firmly placed against the skin. Naturally, collodions must be applied to dry tissues to effect adhesion to the skin’s surface. The film is useful in holding the edges of an incised wound together. However, its presence on the skin is uncomfortable due to its inelastic nature. The following product, which is flexible, has a greater appeal when a nonpliable film is not required.

Flexible Collodion is prepared by adding 2% of camphor and 3% of castor oil to collodion. The castor oil renders the product flexible, permitting its comfortable use over skin areas that are normally moved, such as fingers and toes. The camphor makes the product waterproof. Physicians frequently apply the coating over bandages or stitched incisions to make them waterproof and to protect them from external stress. The products must be clearly labeled “For External Use Only” or with words of similar effect.

Compound Benzoin Tincture is prepared by the maceration in alcohol of 10% benzoin and lesser amounts of aloe, storax and tolu balsam totaling about 24% of starting material. The drug mixture is best macerated in a wide-mouthed container, since it is difficult to introduce storax, a semi-liquid, sticky material into a narrow-mouthed container. Generally, it is advisable to weigh the storax in the container in which it will be macerated to avoid possible loss through a transfer of the material from one container to another.

Benzoin is the balsamic resin obtained from Styrax benzoin Dryander or Styrax paralleleoneurus Perkins, known in commerce as Sumatra Benzoin, or from Styrax tonkinensis (Pierre) Craib ex Hartwich, or other species. It should be labeled as to whether it is Sumatra Benzoin or Siam Benzoin.

Benzoin is used to protect and toughen skin in the treatment of bedsores, ulcers, cracked nipples, and fissures of the lips and anus. It is also used as an inhalant in bronchitis and other respiratory conditions, one teaspoonful commonly being added to a pint of boiling water. The volatile components of the tincture travel with the steam vapor and are inhaled by the patient. Because of the incompatibility of the alcoholic tincture and water, a mixture of the two produces a milky product with some separation of resinous material. Alcohol or acetone may be used as necessary to remove the residue from the vaporizer after use.

The spraying of lacquers was developed in 1903. World War I led to the development of many new resins and low viscosity cellulose components. After the war, an extensive expansion of the manufacture of lacquers increased the demands for rapid-drying industrial finishes.

The automobile and railroad industries employ lacquers for both exterior and interior finishes. A careful selection of plasticizers and resins has made it possible to produce the necessary properties. In some industries, castor oil is added to the lacquer to obtain the desired flexibility.

Varnishes

The ancient Egyptians were acquainted with the art of varnishing, but its origin appears to have arisen in the East as lacquering. Varnish and lacquer work are, however, generally treated in the arts as separate and distinct. True varnish does not appear to have been known in Europe until the 17th century.

A practical varnish has the following characteristics. First, it is a homogeneous fluid or solution; second, it must be fixed or permanent in effect as to tone of color, transparency (or opaqueness); third, on application in thin layers by brush or otherwise, it should dry within a short period by evaporation of its volatile solvents (alcohol, ether, benzene, spirits of turpentine, etc.); and fourth, upon drying it leaves a film of smooth, lustrous (sometimes purposely dull), elastic oil and resin, impervious to its surrounding atmospheric conditions.

Protectants

Collodion: The first cellulose derivative incorporated in lacquers was pyroxylin or cellulose nitrate (often incorrectly called nitrocellulose or nitrocotton). Alexander Parkes received a patent in 1852 for applying solutions of it to fabrics, but it was not until 1886 that such compositions were first manufactured in the U.S. by the F. Crane Chemical Co.

Compound Benzoin Tincture: The tincture originated in the fifteenth or sixteenth century and through the years probably has acquired more synonyms than any other official preparation. A few of these include Friar’s Balsam, Turlington’s Drops, Persian Balsam, Swedish Balsam, Jerusalem Balsam, Wade’s Drops, and Turlington’s Balsam of Life.

Types of Varnishes

Varnishes may be divided into natural, spirit, oleoresinous and water varnishes.

(1) Natural varnishes are the group of lacquers as used in India, China and Japan and are the saps or juices of trees such as the Rhus vernicifera.

(2) Spirit varnishes are solutions of a resin or other film-forming material in a volatile liquid. When the liquid (thinner, solvent) evaporates, the resin is left behind in the form of a film. A wide range of natural and synthetic resins are available for the manufacture of this type of varnish. The most important natural ones are lac, dammar, Manila and rosin. Synthetic spirit varnish resins and film-forming materials include urea-formaldehyde, vinyl resins, acrylic acid resins and chlorinated rubber. Solvents include petroleum spirits, turpentine, toluene, coal-tar naphtha and alcohol.

(3) Oleoresinous varnishes are mixtures of resins, oils and driers, dissolved in a volatile thinner. Air (oxygen) is necessary to solidify the oil in the residual mixture as the volatile thinner evaporates.

(4) Water varnishes are produced as follows:

Lac water varnishes contain the proportions of six ounces of shellac to one and one-half ounces of borax boiled together to each pint of water. Glazing varnish is made with a mixture of egg white and water preserved by the addition of a little carbolic acid or thymol. Dissolved albumen can take the place of egg whites. Glue varnish is a solution of the proportions of one pound pale glue to every two gallons of water. Crystal water varnish is produced by dissolving, in the following proportions, one pound of good white gum Arabic to one pound of glucose to each three pints of water.

Uses and Current Literature

Dental Varnishes-Fluoride

Fluoride dental varnishes help to reduce the development of enamel white spot lesions. Compared to fluoride foams, fluoride varnishes were found to take less time and resulted in fewer signs of discomfort than foams.

Another study shows that fluoride varnish may offer an efficient nonsurgical alternative for the treatment of decay in children.
Studies too numerous to mention have looked at the effect of fluoride varnishes that are commercially available, including Fluorotop – SR (in India), Fluor Protector 0.9% with fluorosilane: Bifluorid 12; Duraphat (Colgate-Palmolive Co.) containing 5% sodium fluoride and even a polyurethane lacquer containing silane-fluoride.

**Dental Varnishes-Chlorhexidine**
Chlorhexidine has been marketed as a commercial varnish in products such as Cervitec (1% chlorhexidine and 1% thymol) and Chlorzoin (a 2-stage chlorhexidine varnish).

In one study, the application of a chlorhexidine 40% varnish reduced the quantity of the Streptococcus mutans colonies significantly and improved clinical parameters in patients with elevated plaque accumulation.\(^6\)

Another study showed that chlorhexidine-thymol varnish is effective in preventing caries in permanent first molars. The results suggest that the chlorhexidine/thymol-containing varnish may to some extent reduce the viability and metabolic activity of susceptible oral bacteria.\(^7\)

**Dental Varnishes-Other**
Konsberg et al. showed that a single application of a miconazole denture lacquer considerably reduces the number of Candida yeast for a substantial period of time.\(^8\) The study utilized miconazole 55 mg/g of denture lacquer with the application of 1 g of lacquer. It was demonstrated to be safe and almost as effective as administration of the gel four times a day for 2 weeks (3000 mg of miconazole as compared to only 55 mg of miconazole).\(^9\)

**Nail Lacquers**
Onychomycosis, infections of the nail caused by fungi, are among the most common problems. Because of the high incidence of these infections and problems involved in their therapy, they have received much attention. Onychomycosis is a relatively common condition affecting toenails more than fingernails, caused predominantly by dermatophytes. It can cause pain and discomfort and has the potential to be a source of morbidity.

Factors involved in treating nail fungus involve the thickness of the nail, presence of lateral onychomycosis, longitudinal spike, dermatophytoma and severe onycholysis. Single and combination therapy with either terbinafine, itraconazole, (continuous and pulse), fluconazole, or griseofulvin have also been considered. There is some debate involving monotherapy, combination therapy and adjunctive therapy. The primary advantage of the lacquer dosage forms is a significant benefit-risk ratio.

Lipophilic vehicles and especially nail lacquers are more appropriate for topical application on the nail than aqueous systems because of their better adhesion.

Vehicles including medium chain triglycerides and n-octanol and a lacquer based on quaternary poly (methyl methacrylates, Eudragit RL) have been studied. Generally, penetration through the nail plate follows first order kinetics after a long lag-time.

Antifungals that have been used in nail lacquers include Amorolfin 5% Lacquer (Loecryl, Galdema Laboratories), Ciclopirox 8% (Penlac, Aventis Pharma), Tioconazole 28%, and Econazole 1% lacquer containing 0.45 mg per 10 microL of 2-n-nonyl-1,3-dioxolane.

Amorolfin nail lacquer was shown to be more resistant than ciclopirox and tioconazole nail lacquers to chemical trauma from soaps and to mechanical aggressions from the immediate nail environment.\(^9\)

Topically applied ciclopirox nail lacquer may be a consideration for prophylaxis of onychomycosis.\(^8\) Ciclopirox nail lacquer 8% is a topical product that provides an active fungicidal agent in a delivery system capable of penetrating nails. Ciclopirox nail lacquer 8% was approved by the US FDA in December 1999.

The concentration of ciclopirox, after the evaporation of solvents from the ciclopirox 8% nail lacquer approaches 35%, providing a high concentration gradient for penetration into the nail.

**Topical Skin Treatments**
Topical skin treatments using protectives include the treatment of warts, corns, and callouses as well as for protection from the environment, abrasion, etc.

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**Stability**

*Note: Formulas containing alcohol, collodion, flexible collodion, acetone or compound benzoïn tincture are highly flammable. Take all necessary precautions when compounding these preparations.*

If no water is contained in these preparations that are compounded, a beyond use date of up to six months can be used. If water is present and there is no stability information available, a beyond use date of up to 30 days can be used for topicals.

**Quality Control**
Quality-control assessment can include weight/volume, pH, specific gravity, active drug assay, color, clarity, rheological properties/pourability, physical observation, physical stability (discoloration, foreign materials, gas formation, mold growth).\(^2\)

**Packaging**
Due to the volatile constituents in these preparations, they should be packaged in tight containers. Light-resistant containers would be required in circumstances where an light-sensitive ingredient was incorporated into the formula.

**Labeling**
Keep away from heat and open flame. Keep away from children. Use only as directed.

**Storage**
Store in a cool place, room temperature is fine. Keep away from excessive heat.

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**Formulas (Historical)**

**Dental Formulas (Historical)**

<table>
<thead>
<tr>
<th>Rx</th>
<th>Pulp Capping Varnish (Mastic Varnish)</th>
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<tbody>
<tr>
<td>Mastic</td>
<td>30 g</td>
</tr>
<tr>
<td>Peruvian Balsam</td>
<td>30 g</td>
</tr>
<tr>
<td>Chloroform</td>
<td>qs 100 mL</td>
</tr>
</tbody>
</table>

Dissolve the mastic and Peruvian balsam in about 50 mL of chloroform and add sufficient chloroform to make 100 mL of solution.

<table>
<thead>
<tr>
<th>Rx</th>
<th>Copal Varnish</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copal</td>
<td>5 g</td>
</tr>
<tr>
<td>Chloroform</td>
<td>100 mL</td>
</tr>
</tbody>
</table>

Powder the copal, mix with 5 g of dry washed sand, place in a flask, add the chloroform and shake occasionally during at least 24 hours, frequently breaking up the gummy mass to facilitate extraction. Filter, and add chloroform to make 100 mL. If necessary, add 5 g of purified talc and again filter.

Continued....
1. Lacquers and protectants, in general, can serve which of the following purposes?
   I. provide occlusive protection from the environment
   II. provide mechanical support
   III. serve as vehicles to carry medication
   a. I only
   b. III only
   c. I and II only
   d. II and III only
   e. I, II and III.

2. A lacquer can be defined as a:
   a. clear or colored synthetic organic coating that dries to form a film.
   b. gold-colored varnish, consisting chiefly of a solution of pale shellac in alcohol tinged with saffron, annatto, or other coloring materials.
   c. class of decorative articles made of wood coated with lacquer and often inlaid with various materials.
   d. type of resinous varnish capable of producing a hard polish.
   e. all the above.

3. Pyroxylin is derived from:
   a. tar
   b. pyrogallol
   c. cotton
   d. Sumatra benzoin
   e. Rhus verniciflua

4. Which ingredients make Flexible Collodion flexible and waterproof?
   I. camphor
   II. castor oil
   III. pyroxylin
   a. I only
   b. III only
   c. I and II only
   d. II and III only
   e. I, II and III.

5. Which of the following contain primary ingredients historically derived from plants or insects?
   a. shellac
   b. varnish
   c. benzoin
   d. collodion
   e. all the above

6. Dental varnishes have been used for:
   a. the application of fluoride
   b. the application of chlorhexidine
   c. the application of miconazole
   d. as a protectant in dental cavity preparations
   e. all the above

7. Antifungals that have been incorporated in nail lacquers include:
   a. amorolfine 5%
   b. ciclopirox 8%
   c. econazole 1%
   d. tioconazole 28%
   e. all the above

8. After the volatile solvent evaporates when ciclopirox nail lacquer topical solution is applied, what is the nominal concentration of the ciclopirox in the dried film?
   a. 8%
   b. 13%
   c. 26%
   d. 35%
   e. 47%

9. If one wants to prepare a flexible collodion preparation that will dry quicker, which of the following would be substituted for part of the alcohol?
   a. purified water
   b. glycerin
   c. propylene glycol
   d. acetone
   e. isopropyl myristate

10. Compound Benzoin Tincture is also known by which of the following names?
    a. Friar’s Balsam
    b. Wade’s Drops
    c. Turlington’s Balsam of Life
    d. Jerusalem Balsam
    e. all the above.

11. My practice setting is:
    a. Community-based
    b. Managed care-based
    c. Hospital-based
    d. Consultant and other
    e. all the above.

12. The quality of the information presented in this article was:
    a. Excellent
    b. Good
    c. Fair
    d. Poor

13. The test questions correspond well with the information presented.
    a. Yes
    b. No

14. Approximately how long did it take you to read the Secundum Artem article AND respond to the test questions?

15. What topics would you like to see in future issues of Secundum Artem?

ACPE No. 748-999-05-004-H04
To receive credit, send completed registration form and test answer sheet (original or a photocopy of the page), to: QUEST EDUCATIONAL SERVICES, INC., P.O. BOX 1092, GROTON, CT 06340. One contact hour (0.1 CEU) awarded for a passing grade of 70%. Please retain a copy for your records. Fee paid for by Paddock Laboratories, Inc. Participants will receive a statement of credit in the mail within 6-8 weeks upon the receipt of this quiz and evaluation.

*Please note that QUEST EDUCATIONAL SERVICES, INC. will only issue credit to quizzes completed in one’s own handwriting. No quizzes completed by others and duplicated for others will be graded.
**Rx Rosin Varnish I**
Rosin, fragments  7 g
Chloroform  100 mL

Make a solution.

**Rx Rosin Varnish II**
Rosin  6.7 g
Sodium carbonate, monohydrate  1.7 g
Acetone  100 mL

Mix. Do not filter.

**Nail Formulas (Current)**

**Rx Ciclopirox 8% Topical Nail Lacquer**
Ciclopirox  8 g
Ethyl acetate  33 mL
Butyl monoester of poly (methylvinyl ether/maleic acid) in isopropyl alcohol (50%)  30 mL
Isopropyl alcohol  qs  100 mL

Place isopropyl alcohol in a suitable vessel away from heat and flame in a well-ventilated room. Mix the ethyl acetate and the butyl monoester in isopropyl alcohol in a separate vessel and add to the isopropyl alcohol. Add the ciclopirox and mix well. Add sufficient isopropyl alcohol to volume and mix well. Package immediately.

Ciclopirox 8% topical solution (Penlac Nail Lacquer) contains 80 mg/mL ciclopirox in a solution base consisting of ethyl acetate, NF, isopropyl alcohol; and butyl monoester of poly(methylvinyl ether/maleic acid) in isopropyl alcohol. Ethyl acetate and isopropyl alcohol are solvents that vaporize after application.

**Protectants (Current)**

**Rx Collodion**
Pyroxylin  4 g
Ether  75 mL
Alcohol  25 mL

Add the alcohol and the ether to the pyroxylin in a suitable container and stopper the container well. Shake the mixture occasionally until the pyroxylin is dissolved.

**Rx Flexible Collodion**
Camphor  2 g
Castor Oil  3 g
Collodion  qs  100 g

Place in a stoppered bottle and shake occasionally until the camphor has dissolved.

**Protectants with Medications (Current)**

**Rx Trichloroacetic Acid 10% in Flexible Collodion**
Trichloroacetic acid  10 g
Flexible collodion  qs  100 mL

Add the trichloroacetic acid to sufficient flexible collodion to volume. Stir until dissolved.

**Rx Salicylic Acid 25% in Flexible Collodion**
Salicylic acid  25 g
Absolute alcohol  25 mL
Flexible collodion  qs  100 mL

Add the salicylic acid to the absolute alcohol. Add sufficient flexible collodion to volume and mix well.

Note: A thinner and faster drying preparation can be made by omitting the alcohol and substituting 25-50 mL of acetone.

**Rx Lactic Acid 10% and Salicylic Acid 25% in Flexible Collodion**
Lactic acid  85%  11.7 mL
Salicylic acid  25 g
Absolute alcohol  25 mL
Flexible collodion  qs  100 mL

Add the lactic acid and salicylic acid to the absolute alcohol. Add sufficient flexible collodion to volume and mix well.

**Rx Salicylic Acid 25% in Flexible Collodion Gel**
Salicylic acid  25 g
Hydroxypropyl cellulose  1.75 g
Flexible collodion  qs  100 mL

Add the salicylic acid to about 99 mL of flexible collodion in a sealed container and mix well until dissolved. Add the hydroxypropyl cellulose and mix well. Allow to stand until a clear gel is obtained.

**Rx Compound Benzoin Tincture**
Benzoin  100 g
Aloe  20 g
Storax  80 g
Tolu Balsam  40 g
Alcohol  qs  100 mL

Prepare a tincture by Process M (maceration- see Remington’s Pharmaceutical Sciences, 18th Edition), using alcohol as the menstruum. Compound Benzoin Tincture is best stored in tight, light-resistant containers. Exposure to direct sunlight or to excessive heat should be avoided.

**Protectants with Medications**

**Rx Podophyllum Resin 25% in Compound Tincture of Benzoin**
Podophyllum resin  25 g
Compound Tincture of Benzoin  qs  100 mL

Add the podophyllum resin to a calibrated container. Add sufficient compound tincture of benzoin to volume and periodically shake until dissolved.

**Rx Podophyllum Resin 10% and Salicylic Acid 25% in Flexible Collodion**
Podophyllum resin  10 g
Salicylic acid  25 g
Acetone  15 mL
Absolute alcohol  15 mL
Flexible collodion  qs  100 mL

In a calibrated bottle, add the acetone and absolute alcohol followed by the podophyllum resin and salicylic acid. Add sufficient flexible collodion to volume and seal. Periodically agitate until a uniform mixture is obtained.

**Rx Anesthetic and Anti-inflammatory Spray-Film**
Benzocaine  1 g
Dexamethasone  100 mg
Non-aromatic hair spray, pump style  qs  100 mL

Dissolve the benzocaine and dexamethasone in sufficient non-aromatic hair spray vehicle to volume.
REFERENCES


3. Albutt’s Systematic Medicine VIII, 1899, p 582.


Miscellaneous Formulas (Historical)

<table>
<thead>
<tr>
<th>Rx</th>
<th>Whitehead’s Varnish</th>
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<tbody>
<tr>
<td></td>
<td>Siam Benzoin, coarsely powdered</td>
</tr>
<tr>
<td></td>
<td>Storax</td>
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<tr>
<td></td>
<td>Tolu Balsam</td>
</tr>
<tr>
<td></td>
<td>Iodoform</td>
</tr>
<tr>
<td></td>
<td>Ethyl oxide, qs</td>
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</tbody>
</table>

Macerate the benzoin, storax and tolu balsam with 80 mL of ethyl oxide for 7 days, agitating frequently, filter, dissolve the iodoform in the filtrate and pass sufficient ethyl oxide through the filter to make the product measure 100 mL.

<table>
<thead>
<tr>
<th>Rx</th>
<th>Sandarac Varnish for Pills</th>
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<tbody>
<tr>
<td></td>
<td>Sandarac</td>
</tr>
<tr>
<td></td>
<td>Ethyl oxide</td>
</tr>
<tr>
<td></td>
<td>Dehydrated alcohol</td>
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Dissolve the sandarac in the ethyl oxide-alcohol mixture by shaking; pour off the supernatant liquid and filter if necessary.

<table>
<thead>
<tr>
<th>Rx</th>
<th>Salol Varnish for Pills</th>
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<tbody>
<tr>
<td></td>
<td>Phenyl salicylate</td>
</tr>
<tr>
<td></td>
<td>Amber shellac</td>
</tr>
<tr>
<td></td>
<td>Dehydrated alcohol</td>
</tr>
<tr>
<td></td>
<td>Ethyl oxide, qs</td>
</tr>
</tbody>
</table>

Dissolve the phenyl salicylate and shellac in a mixture of alcohol and ethyl alcohol.

<table>
<thead>
<tr>
<th>Rx</th>
<th>Gold Lacquer</th>
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<tbody>
<tr>
<td></td>
<td>Shellac</td>
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<tr>
<td></td>
<td>Dragon’s Blood</td>
</tr>
<tr>
<td></td>
<td>Turmeric</td>
</tr>
<tr>
<td></td>
<td>Denatured alcohol, qs</td>
</tr>
</tbody>
</table>

Mix and digest the mixture for a week at about 38°C, then filter.