a liquid fat solvent, e. g., C_6H_6, Me_2CO, benzine, trichloro-acetone, $C_6H_4Cl_2$, and also a-monohydric aliphatic alc. that liberates the vitamins contained in the unsaponifiable material. The treatment with alc., e. g., MeOH, EtOH, may be prior to or during the extn. of fat. (*C. A.* **30**, 4708.)

Waxy substances. I. G. Farbenind. A.-G. Fr. 792,589, Jan. 6, 1936. Amides or nitriles of fatty acids of relatively high mol. wt. are condensed with aldehydes or compds. yielding aldehydes, in the presence of substances having an acid reaction. Thus, palmitic amide is dissolved in AcOH, paraformaldehyde is added and concd. H_2SO_4. The mixt. is heated and on cooling a wax seps. which melts at 146-50°. Several examples are given. (*C. A.* **30**, 4347.)

Polymerized oils. Imperial Chemical Industries, Ltd., Eric W. Fawcett and Eric E. Walker. Brit. 442,000, Jan. 31, 1936. Addn. to 422,941. In the production of drying oils by polymerization, and removal of unpolymerized and unpolymerizable matter by evaporative or mol. distn. in a high vacuum as described in 422,941, fish oils with an I no. above 120 are treated. Menhaden, Japanese sardine, herring and Canadian pilchard are specified. (*C. A.* **30**, 4708.)

Drying-oil composition. Robert D. Bonney and Walter S. Egge (to Congoleum-Nairn, Inc.) U. S. 2,040,461, May 12. Material contg. a drying or semi-drying oil such as linseed or perilla oil is subjected to oxidizing treatment limited substantially to the formation of uncoagulated products of oxidation and is treated with a fatty acid contg. 14 to 22 C atoms such as linseed oil fatty acids and unoxidized oil constituents and non-hardening oil constituents are removed by a selective solvent such as gasoline. (*C. A.* **30**, 4702.)

ABSTRACTS

Soaps

***Edited by* M. L. SHEELY**

Dry-cleaning Soaps. C. A. Tyler, *Soap* **12**, (5), 13-3, 61 (1936). Basically, these products consist of a soap mixture in which the fat acid has been only partially saponified and dispersed in a volatile organic solvent. The actual soap content may range from 10 to 50% with 10 to 20% excess free fat acid, the balance being water and a mixture of organic solvents. A recent tendency is toward the use of vegetable fat acids because of less odor in the dry-cleaning system. K and NH_3 soaps are those most used. A common dry-cleaner's soap of the paste type has the following approximate composition; Ca soap 25, K soap 20, aqueous NH_3 2 (26° Be.), oleic acid 15, water 8, petroleum naphtha 30%. A study and rating of 46 commercial dry-cleaning soaps was made by the National Association Institute of Dyeing and Cleaning. The soaps were divided into 3 classes: pastes, soluble or liquid soaps and detergent soaps. Ten, all pastes, were given excellent ratings. The efficiency of the detergent soaps was rated low, and that of the soluble soaps in between the detergent soaps and the pastes. (*C. A.* **30**, 4346.)

Liquid Soap Clarification. Paul I. Smith, *American Perfumer and Essential Oil Review*, **33**, (1), 79 (1936). Pure caustic potash should be used if economically possible, at least the grade preferred should contain the minimum quantity of sodium salts. The use of distilled water is generally recommended.

To overcome the separation of free fatty acid, the presence of methyl, ethyl or propyl alcohol of glycerin tends to prevent hydrolysis. The addition of sulfated fatty alcohols, particularly lauryl sulfate, is advocated by some workers but it should be remembered that the presence of these organic compounds in the soap leads to considerable changes in the nature of the soap or shampoo.

Methyl cyclo-hexanol is sometimes added to commercial grades of liquid soaps where the camphor-like odor is not objectionable. The precipitation of insoluble lime soap is thereby prevented to a great extent.

The Determination of Free Alkali in (Medicinal) Soft Soap. Robert M. Lingle, *J. Am. Pharm. Assoc.* **25**, 286-8 (1936). Numerous references are cited to show that the present U. S. P. allows more free alkali in soft soap than is desirable in a medicinal soap. The literature is examined to study the various methods described for determining free alkalinity in soft soap. Objections were found to all of the available methods, though the U. S. P. method is more rapid, more convenient and gives results that are sufficiently accurate for the nature of the product. Experiments are being conducted to ascertain whether some of the free alkali is gradually neutralized by the fat acids in the soap. (*C. A.* **30**, 4244.)

Investigation of the Lime-Soap Dispersion Capacity of Textile Detergens. H. Kuckertz, *Angew. Chem.* **49**, 273-6 (1936). The experiments of Lindner with oleic soap were checked, and it was found that reproducible results could be obtained if the experiments were carried out within narrow, constant conditions, and that comparative values are obtainable only if the additions of dispersion agents are based upon a constant soap concentration. As comparison solution for the occurring turbidity, the solution of least turbidity in each test series was used. Results obtained in this manner showed good agreement in the interval of 40-68% light absorption. The tests showed that some fatty alcohol sulfonates possess only little dispersion action with lime soaps. The dispersion agents examined were Gardinol KD (fatty alcohol sulfonate), Igepon T. Plr. (fatty acid condensation product), Lamepon A (fatty lysalbic acid condensation product), and Peregal O (fat-containing product, without salt-forming groups.) Practically the same relative results could be obtained when the detergent concentration was determined in very hard water as the concentration which just prevented the precipitation of the lime soap. (*C. A.* **30**, 4234.)

Some Recent Developments in Waterproofing. C. H. S. Tupholme, *Am. Dyestuff Reptr.* **25**, 167-9, 196 (1936). Wool and other fibers are rendered highly water-repellent by treatment with water-soluble soaps after a thorough cleaning. The soap treatment is followed by a cold-water rinse. A solution of 1.0-4 g./1.

ABSTRACTS

Soaps

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is usually employed at a temperature of 25-30°, or 45-50° for thicker materials. The quantity of liquor used should be 10-20 time the weight of the material. Na_2CO_3 up to 2 g./1. can be used in the soap bath. This waterproofing treatment should obviously follow the last acid treatment, and fulling or bleaching, as well, should precede it. Mechanical finishing processes can follow it. A French patented process using Al powder is referred to, and a 3rd process involves the impregnation of unwoven textiles with vulcanized rubber latex. In the latter process the aqueous solution is forced under pressure into the material. Impregnating and vulcanizing methods are outlined, also forms of deterioration of the rubber-proofing and methods of preventing it. (*C. A.* **30**, 4013.)

Wood Tar. *Perfumery and Essential Oil Record* **27**, (5), 215 (May, 1936). In America a good deal of wood tar soap is manufactured by the cold process. The chief wood tars used are juniper tar and pine wood tar, which besides their disinfectant action on the normal skin, are particularly useful in cases of certain diseases, such as scabies or eczema. Birch tar is also used to a rather small extent. For a cold process wood tar soap, the ingredients that can be used are:

Tallow	280 lbs.
Coconut oil	270 lbs.
Soap scrap	180 lbs.
Caustic soda lye (36° Be.)	340 lbs.
Pine tar	75 lbs.
Sodium silicate	35 lbs.
Caustic potash lye (36° Be.)	10 lbs.

The tallow, oil and tar are heated to 180° F., the scrap soap added, and the whole melted completely. The mixed lye and sodium silicate are then run in, the soap is crutched for another five minutes, allowed to stand for an hour, and then crutched again for an hour until the reaction is complete. Finally, the soap is crutched until it is thick and smooth, and is finished off in the usual manner.

Soap Fillers in the Past and Today. G. Knigge, *Seifensieder-Ztg.* **62**, 982-4 (1935). A general discussion of the filling of soap is followed by a description of experiments proving the unusual value of "Calgon" as a filler for soap products. (*C. A.* **30**, 2415.)

Calculation of Glycerol Yields in the Making of Soap from Neutral Oils. M. Zaliope. *Masloboino Zhirvoe Delo* **11**, 605-7 (1935). A discussion with mathematical treatment is based on the work of Tyutyunnikov (Moyushchie sredstva 1 (1933); cf. C. A. 28, 5696. (*C. A.* **30**, 4025.)

Glycerine Used to Brighten Up Automobile Tires. *Chemical Industries* **38**, 625 (1936). Glycerine is finding many new uses in the specialty field. A thin solution of glycerine is suggested to brighten up the appearance of automobile tires. It will give them a new shiny look. A thin solution is suggested for use on door knobs and metal fixtures when painting is being done to protect the metal from paint spots. It wipes off easier than vaseline or other greases.

PATENTS

Soap. Belgian 411,861, November 30, 1935. P. Verbeeck. A small quantity of a mixture of saponified coconut and palm oils is added to a solution of ultramarine in NaOH. The resultant blue soap is added to a white soap mass. (*C. A.* **30**, 4030.)

Anticorrosion Composition for Use in the Cooling Systems of Internal-Combustion Engines. U. S. 2,038,988, April 28, 1936. Lloyd M. Burghart (to U. S. Industrial Alcohol Company). A strongly alcohol solution is used containing $NaNO_2$, kerosene and soap. (*C. A.* **30**, 4147.)

Process of Refining Fatty Acids. U. S. 2,038,617. Hans G. Vesterdal, Elizabeth, New Jersey, to Standard Oil Development Company, a corporation of Delaware. Process of refining fatty acids by contact with concentrated phosphoric acid. [*Chemical Industries* **38**, 601 (1936)].

Insecticidal Spray. U. S. 2,037,276, April 14, 1936. Carl Sgonina. Tobacco extract is treated with sufficient H_2SO_4 to convert its nicotine content to nicotine sulfate, the extract is concentrated to about 38° Be. and the concentrate is mixed with about one-sixth its weight of a *fatty acid*. The resulting mixture is diluted with water for spraying. (*C. A.* **30**, 3938.)

Separating Hydroxy Aliphatic Acids from Fatty Acids. U. S. 2,038,617, April 28, 1936. Hans G. Vesterdal (to Standard Oil Development Company). A mixture of acids such as those formed by oxidizing paraffin is brought into contact with concentrated H_3PO_4 in a volume substantially less than that of the mixture, the material is permitted to separate into layers, and a layer containing mainly H_3PO_4 and hydroxy aliphatic acids is separated from a layer containing fatty acids. (*C. A.* **30**, 3836.)

Distillation of Glycerol. Russian 40,346, December 31, 1934. S. N. Libinson and U. I. Kirzner. Through glycerol heated to above 180° an inert gas heated to the same temperature is conducted. The mixture of vapor and gas is cooled to a temperature exceeding 100° to condense the glycerol, and the gas is reheated and recirculated through a new portion of glycerol. (*C. A.* **30**, 4030.)

Soap from Waste Sulphite Lyes. British Patent Specification 442,046. Carl Leyst-Kauchenmeister. This specification provides for the saponification of excess sulphite lyes from the cellulose industry with the aid of fresh alkaline lyes. The prepared sulphite waste lye is first added to coconut oil and then fresh caustic soda lye is added. The soap which is obtained has medical and hygienic properties. [*Perfumery and Essential Oil Record* **27**, 5, 233 (1936)].