the action of Br_2 vapors, allow to stand in the air to remove excess Br_2 and note the phys. appearance of the film. Then place the slide horizontally on the edge of a small rectangular glass trough and cover with a mixt. of ether and petr. ether. Stir the film with a small glass rod and look for a white curdy ppt. From the amt. of ppt. (dilinolenic linolic bromoglyceride) an estimate of the quantity of linseed oil can be made.

W. T. H.

PATENTS

Oils and fats. "Elact" Ges. für elektrische Apparate G. m. b. H. Fr. 766,739, July 3, 1934. Oils and fats are stabilized by passing then in a continuous manner between electrodes.

Stabilizing fatty material against rancidity. Albert S. Richardson, Frank C. Vibrans and John T. R. Andrews (to Procter & Gamble Co.). U. S. 1,993,181, March 5. Materials such as lard, etc., are stabilized by addn. of a small proportion of H_2SO_4 or H_3PO_4 or their salts or esters having an acid reaction. Cf. *C. A.* 29, 1173[6].

Stabilizing fatty materials such as edible cottonseed oil (salad oil). Eddy W. Eckey (to Procter & Gamble Co.). U. S. 1,993,152, March 5. About 0.01% or less of H_3PO_4 or an acid deriv. such as Ca acid phosphate in equiv. proportion is added.

ABSTRACTS

Soaps

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

Drying Rosin Soap by Atomization. D. N. Smirnov, S. Ya Koruitov and A. S. Nemkin. *Lesokhimicheskaya Prom.* 3, No. 1-2, 24-6 (1934).—A powdered rosin soap was obtained from a viscous mass containing about 50% H_2O by atomizing this mass in a drying chamber constructed by Ivanchenko. The product was of a high commercial quality and did not adsorb moisture from the air. It contained H_2O 3, rosin 82, ether-insoluble substances 1.23, total alkali 12.08 and NaCl 0.4%. The apparatus and its operation are described in detail. (C. A. 29, 6, 2009, March 20, 1935.)

Causes of the Darkening of Rosin Soap and Data on the Characteristics of Individual Rosin Components. F. Solodkii. *Lesokhimicheskaya Prom.* 3, No. 7, 25-9 (1934).—Darkening of rosin soaps is due to the presence of unstable acids; these can be removed in part by salting out. Soaps prepared from gum rosin have a better color than those from wood rosin. These acids can also be removed by boiling the soap solution simultaneously blowing with air and then salting out. The experimental procedure is described and a literature review is appended. (C. A. 29, 6, 2009, March 20, 1935.)

Benzine Soaps. J. Grosser. *Ceskoslovensky mydlar a vonavkar* 11, 21, 35-6 (1933).—Soaps insoluble in H_2O and soluble in gasoline are added to gasoline to prevent the formation of explosive vapors and to assist in dry cleaning. Dried Marseilles soap and olein saponified by NH_3 are used, their action being enhanced by the addition of C_2HCl_3, C_2Cl_4 and similar substances. (C. A. 29, 6, 2008, March 20, 1935.)

Continuous Process of Soap Manufacture. *Perfumery and Essential Oil Record* 26, 4, 155 (April, 1935).—The attractiveness, and at the same time the difficulties, of such a process have already been pointed out in these notes, and various patents for the purpose have from time to time been described. One of the most notable of these was that of J. B. E. Johnson ("P. & E. O. R.," 1932, 125), in which a mixture of fat and alkali lye, in the right proportions to produce a neutral soap, is forced under a pressure of not less than 150 lbs. per square inch through an externally heated narrow reaction tube or pipe at a temperature of upwards of 180° C. Saponification takes place very rapidly and the resultant soap is projected at a high temperature into a receiver maintained at low pressure (10-20 mm. of mercury) so that most of the glycerin is vaporized and the substantially anhydrous soap deposited in powder form. In the original patent it is stated that the pipe may be heated by any suitable means, e.g., direct firing, by immersing it in a heated bath of any suitable liquid, or by arranging the pipe to constitute one part of a tubular heat exchanger, to which a suitable heating medium such as oil or superheated steam is supplied.

An improvement on this has now been patented by Johnson, in association with Garbinton, Ltd. (British Patent 423,188), by which the reaction tube is made of an electrically conducting material, preferably one with high electrical resistance, through which a current of electricity is passed, whereby the requisite temperature is attained. With 60 kw. for a batch of 600 lbs. the temperature is raised to 280-300° C. in 30 seconds.

The saponification during passage through such a tube is very rapid and complete.

Saponification and Salting Out. I. Davidsohn. *Seifensieder-Ztg.* 61, 939-41, 961-2 (1934).—The ability to attain complete saponification (e.g., with tallow) when soap is made from fats by the "cold" process and with excess caustic solutions too concentrated for successful use in the usual boiling process is explained as being due to the lower temperature, the stirring and the viscosity of the more concentrated caustic solutions acting to promote contact of fat and caustic. This favorable effect seems to be mainly due to decreased rate of salting out of small amounts of soap which exert an emulsifying action. (C. A. 29, 6, 2007, March 20, 1935.)

Incorporation of Synthetic Higher Fatty Alcohols in Soap. *Perfumery and Essential Oil Record* 26, 4, 157 (April, 1935).—British patent protection has been given E. I. Du Pont de Nemours and Company, Wilmington, Delaware, U. S., for an invention (Specification 424,283), an object of which is to improve upon

ABSTRACTS

Soaps

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(*Continued from Page* 127)

the quality of fine soaps and methods for their manufacture through the application of newly discovered processes for the preparation of fatty alcohols. A further object is to prepare a new type of superfatted soap wherein the superfatting agent is a fatty alcohol prepared from a fatty acid or its derivative by catalytic hydrogenation. A still further object is to combine advantageously and economically into unified process the necessary steps required for the preparation of soaps containing higher fatty alcohols as the superfatting agent.

The patentees have found that the non-cyclic or open-chain synthetic higher alcohols or mixtures of alcohols possessing from 8 to 20 carbon atoms derived from the naturally occurring fatty acids by direct catalytic hydrogenation at high temperatures and pressures are particularly well suited for use as agents for the superfatting of soap and soap products.

In accordance with their invention they produce a superfatted soap by taking a semi-finished or stock soap (preferably of neutral reaction and high quality) and adding thereto an appropriate amount of a fatty alcohol having from 8 to 20 (preferably 8 to 15) carbon atoms and separately prepared from a fatty acid or fat by catalytic hydrogenation. The mixture of soap and alcohol is then milled until uniform in appearance and texture and is moulded in the usual manner.

Sodium Sesquisilicate. *Perfumery and Essential Oil Record* Vol. 26, No. 3, page 114 (March, 1935).—It is only a year or two ago that a crystalline silicate of soda, the metasilicate, was first made commercially available for the soap industry, and this has already achieved considerable popularity, one of its advantages being its definite constitution, which ensures uniformity of composition of any products into which it is introduced. Now another crystalline silicate, containing rather more alkali, has been patented by G. W. Morey (U. S. 1,948,730), and is being marketed by the same American firm, under the name *sodium sesquisilicate*. Obtained by mixing together equal parts by weight of crystallized sodium metasilicate, caustic soda and water, and allowing to crystallize, this new silicate has a composition corresponding to formula $3Na_2O$, $2SiO_2$, $11H_2O$, hence the name sesquisilicate, though, on the other hand, it might equally well be written Na_3HSiO_4, $5H_2O$, but there is not at present sufficient evidence to show which is correct.

The sesquisilicate contains 8 per cent more sodium oxide, Na_2O, and 5 per cent less silica than the metasilicate, and has a slightly higher pH. A 0.1 per cent solution has the same pH value as a 0.2 per cent solution for metasilicate, or a 5 per cent solution of soda ash. It is recommended for use in laundries, and is said to be specially useful where the water contains much sodium bicarbonate.

Properties of soap solutions. VIII. Hydrolysis of soap in dilute aqueous solutions. B. Tyutyunnikov and N. Kas'yanova. *Allgem. Oel- u. Fett-Ztg.* 31, 276-9 (1934); cf. *C. A.* 28, 5695[4,6].—Measurements of p_H are given, showing that the OH-ion concn. of dil. soap solns. contg. added NaOH or Na_2CO_3 is less than that corresponding to the added alkali alone. It is concluded that both OH ions (derived by hydrolysis, or added as alkali) and fat-acid ions are adsorbed by certain constituents of the soap soln., so that a detn. of OH ion is not a true measure of the amt. of soap hydrolyzed, which is always more than that calcd. from the p_H of the soln. The adsorption of OH by a soap soln. of given concn. increases with the amt. of added alkali until a certain p_H is attained, after which it suddenly falls. The crit. p_H and the amt. of added alkali which is needed to produce it depend on the nature of the soap. B. C. A.

PATENTS

Suitable (means of) filling soap. C. Bergell. *Seifensieder-Ztg.* 62, 13-15 (1935).—The importance of the effect of various fillers and soap substitutes on the material being washed is discussed and the desirability of avoiding excessive removal, during laundering, of the small amt. of oil and fat usually present in textiles is emphasized. J. W. PERRY.

The production of smooth (transparent) soft soap from fat acids. R. Krings. *Seifensieder-Ztg.* 61, 982-5 (1934).—Practical hints on the prepn. of soft soap from tech. fat acids are given. J. W. PERRY.

Synthetic washing agents. Fritz Ohl. *Allgem. Oel- u. Fett-Ztg.* 32, 14-17 (1935).—A review of papers comparing the aliphatic alc. sulfonate type of detergent with soap. M. M. PISKUR.

Apparatus and Process for Distilling Fatty Acids, Fats, Vegetable Oils, etc. British 419,566, November 14, 1934. Clemens Bergell. The fats, etc., flow in films over a continuous upright surface so that the films are heated by radiation from a heated surface a short distance from and surrounding the surface of the film. (C. A. 29, 8, 2770, April 20, 1935.)

Bactericidal Preparations Suitable for Use in Aqueous Soap Solutions. U. S. 1,992,577, February 26, 1935. A hydroxybiphenyl such as chloro- or bromo-2-hydroxybiphenyl is used with water and with a salt of a hydroxybiphenyl such as the K salt (suitably also with EtOH and a soap). (C. A. 29, 8, 2666, April 20, 1935.)

Water-Soluble Compounds of Fluorine and Monoammonium Phosphate. U. S. 1,989,312. Arthur B. Gerber, Anniston, Alabama, to Swann Research, Inc., Birmingham, Alabama. Production laundry sour, comprising water-soluble compounds of fluorine and monoammonium phosphate. (*Chemical Industries* 36, 4, 348, April, 1935.)