ABSTRACTS

Soaps

Edited by M. L. SHEELY

Bleaching linseed soft soap. *Chemical Industries,* Vol. XXXIV, No. 1, page 40, January, 1934.—The color of this soap is of peculiar significance to the user. As the product sells at a low price and a light color is demanded, it is essential that an inexpensive bleaching process be used. First step is to treat the linseed oil so that its albuminous constituents are removed. Chemical methods must be used to precipitate the soluble albumens, which can be readily removed. The presence of soluble albumens in the oil must be determined before the treatment. These are present when a flocculent separation is obtained in a sample of the clear oil heated rapidly to about 270°C. The linseed oil should be heated for half an hour at 90°C. while being agitated, then filtered; this treatment effectively removing all the soluble albumens. When purified oil of this type is used in the manufacture of soft soap, the product can readily be bleached with inexpensive chlorine bleaching liquors.

Condensing fatty acids. *Soap,* Vol. X, No. 1, page 64, January, 1934.—Fatty substances are mixed with a decolorizing agent and subjected to a high enough temperature to distill over the fatty acids. The mixture is agitated by means of a current of inert gas during the distillation and the fatty acids are condensed. Filtrol Company of California, United States Patent Number 1,909,605, filed May 20, 1929.

Soap; waxes, resins. *The Oil and Colour Trades Journal,* Vol. LXXXV, No. 1838, page 30, January 5, 1934.—British Patent 392,342. Convention date August 26, 1931. Henkel et Cie Ges., 67, Heyestrasse, Holthausen, Dusseldorf, Germany.—The formation of lumps during swelling or solution of soap made by an atomization drying process, soap powders, soap substitutes, resins, gum resins, and waxes is prevented by retarding the rate of swelling or solution by aggregating the substance into a powder of porous particles having a larger grain size than the original material, if necessary after slightly moistening with a small proportion, for example ⅔ per cent of liquid. The aggregation may be effected by (1) treating the powders, moistened or not, between heated surfaces such as rollers and comminuting the resulting flakes; (2) slightly moistening the powder with liquids or emulsions in which the substances swell, for example, by spraying in a tower, excess liquid being removed, if necessary, by drying. There may be added to the treating liquids substances which reduce the rate of solution of the substance, such as aluminates, borates, citrates, and tannins, wetting agents such as alkali salts of alkylated naphthalene sulphonic acids, Turkey red oils, alkali salts of the sulphuric esters of fatty alcohols, alkali salts of the amino-ethane sulphonic acids substituted at the nitrogen by fatty acid residues, and adhesive substances such as solutions of glue and gelatine paste, gum arabic, or dextrin; (3) adding to those powders which swell or dissolve in water, finely divided hygroscopic substances and exposing the mixture to a moist atmosphere; (4) introducing the powder into the organic liquids such as xylol in which it is slightly soluble or insoluble, skimming off the porous masses, drying in a current of hot air, and comminuting; (5) introducing finely divided liquids into the heated powder, for example, in an atomizing apparatus.

Fatty acids. *Chemical Abstracts,* Vol. 27, No. 21, page 5564, November 10, 1934.—N. V. Maatschappij tot Exploitatie der Vereenigde Oliefabrieken "Zwijndrecht." British 391,825, April 28, 1933. Pale fatty acids are obtained by the distillation of cottonseed, black grease and other acid oils that have been obtained from vegetable or animal oils, the volatile constituents liable to cause discoloration of the fatty acids being first oxidized with air to produce lower-boiling substances which are separated from the acids. The air may be passed through the acid oil or through the vapors from the still. Catalysts, e. g., ferrous salts, may be present. Examples are given.

Composition of fatty acid mixtures. II. Twitchell mixed-melting-point method for the determination of individual saturated fatty acids. Robert N. Wenzel. *Ind. Eng. Chem., Anal. Ed.* 6, 1-7 (1934); cf. *C. A.* 28, 665^7.—A distinct improvement in the results by the mixed *m.-p.* method is obtainable by an improvement in the m.-p. detn. with Burk's app. and an extremely *slow rate* of heating in a closed m.-p. tube. There are 8 tables of results.

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Fatty acid recovery from soaps derived from asphaltic residuum of mineral oil stills. Gellert Alleman (to Sun Oil Co.). U. S. 1,931,855, Oct. 24. The soaps, in aq. soln., are acidified and xylene is added to the fatty acids and water; the xylene and water are then distd. off, leaving all the fatty acids in the residue, and they may then be extd. with anhyd. EtOH. App. is described.

Metallic soaps. Titanium Pigment Co., Inc. Brit. 395,406, July 17, 1933. Soaps of tetravalent elements of group IV A are obtained by adding a compd. of the element, *e.g.,* org. or inorg. salts of Ti, Zr and Th, to a soln. of a salt of a fatty or resin acid, the soln. being at 40-70° and being constantly agitated during the addn. Mixed soaps, *e. g.,* Ti Co linoleate tungstate or Pb Ti tungstate resinate, may also be obtained by co-pptn. or by mixing the separately prepd. soaps. The products may be used in *waterproofing, mordanting,* the *prepn. of emulsions, lubricants, floor waxes, polishing compds., in dry-cleaning* and *in the paint, varnish and lacquer industries.* Cf. *C. A.* 27, 1215.

The influence of package and storage upon tne quality of toilet soaps. F. W. F. Freise. *Seifensieder Ztg.* 60, 833-4 (1933). —Toilet soaps in colored wrappers lose aroma when exposed to direct sunlight for 4-6 weeks in the following color order: violet, blue, yellow, red; green and black protect the aroma well. A list of some 20 essential oils is given in the order of greatest permanence, headed by pine needle and cone oil and gaultheria. In cold-made soaps the addn. of lard or refined castor oil seems to destroy the original coconut oil aroma in sunlight as well as diffused daylight more quickly than addn. of olive oil, although chem. analysis shows no change in the soap. Very dry and very moist air are detrimental to aroma and surface appearance; 70-75% humidity at 23° is most favorable (in Brazil) for unwrapped cold-made soaps. Among the injurious gases are CO, SO_2, kettle vapors, CO_2, etc. P. ESCHER.

Testing the cleansing ability of soap solutions by means of washing tests. B. Tyutyunnikov and A. Soboli. *Seifenseider Ztg.* 60, 787-9, 808-9 (1933).—An elaborate washing test has been developed to imitate factory conditions: Standardized test pieces of fabrics are cleansed and their whiteness is detd. by a photometer; they are formed into sacks and filled with 15 g. of glass beads; they are soiled in 3 different standardized ways, washed in a rotating chambered drum at 20-40° and at 85° with soap solns. equal to 0.40% fatty acids at 60 revolutions per min. for 7½ min., then rinsed 3 times (the last rinsing with acidified H_2O), dried, ironed and tested again for whiteness; a soiled test piece washed only in distd. H_2O is used as a standard. The detergent power is expressed as the ratio of how much better than distd. H_2O the soap has removed the dirt. P. ESCHER.

Antibacterial properties of soaps. Emil Klarmann. *Soap* 9, No. 12, 23-7, 107-9, 111, 113, 115 (1933).—A survey of work on this subject to date is reported. There are many regularities to be found in the relationship between the chem. constitution and the antibacterial action of c. p. soaps. In the homologous class of soaps of satd. fatty acids the antibacterial action is a direct function of the length of the C chain, the position of the max. effect varying with regard to the different bacteria. The soaps of unsatd. fatty acids display an almost specific efficacy against pneumococci and certain streptococci while showing little action upon staphylococci or the organisms of the typhoid-colon group under conditions comparable to those in practical use. Among the several homologous series of substituted soaps studied that of the α-bromo soaps contains some compds. of a rather extraordinary bactericidal potency. A no. of investigations demonstrate conclusively that certain important pathogenic microörganisms are not likely to succumb to the action of the tech. soaps under the customary conditions of use. E. SCHERUBEL.

New kettle practice. Geo. S. Tate. *Soap* 9, No. 12, 59-60 (1933). —A method using lyes of unusually high concn. has been worked out as follows for tallow, coconut-oil soaps: Grain the nigre and at the same time add enough tallow more than to take up the free alkali. After settling, draw off the spent lye. Bring the mass to a boil and run in the coconut oil. Concurrently, in the proper sapong. proportions lye of 45-50° Bé. is run in with steam on. At the same time salt is added to the extent of 6-8%. After the coconut oil, run in the tallow and treat with alkali in the same manner and at the same time add enough 8° Bé. brine to keep the mass to 20-30% H_2O content. About 6% salt should always be present in the kettle contents. When the fat charge is all in, 98-9% of the NaOH should be in. By this method the kettle has the appearance of an opaque stiff paste and boils in a puffy manner. The advantage of this method is that the kettle is at all times under chem. control and no "middle soaps" are formed. Charging can also be done in one operation and larger charges made because the mass boils down instead of swelling up. A saving in steam consumption is also attained as much greater use is made of the heat of reaction. A distinctly better appearing and keeping product is also obtained.

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