ABSTRACTS

Oils and Fats

Edited by
W. F. BOLLENS nd M. M. PISKUR

once after sapon. Repeated detns. are likely to give progressively lower or higher values, depending on the kind of fat, and an exposure to air or moisture is very likely to affect the value markedly.
A. C. ZACHLIN.

The hexabromide numbers of linseed oils. L. Margaillan and M. Carrière. *14me Congr. chim. ind., Paris,* Oct., 1934, 2 pp.—In the detn. of the hexabromide no. of fats or oils, higher results are obtained when the hexabromides (either of the glycerides or of the free acids) are pptd. in the absence of AcOH than when they are pptd. in presence of AcOH. This may be explained by assuming that, in presence of AcOH, only the bromides of α- linolenic acid are pptd., while in absence of AcOH there are also pptd. the bromides of an isomer which may be called β-linolenic acid.
A. PAPINEAU-COUTURE.

Formation of olein. A. Bag. *Masloboino Zhirovoe Delo* 1935, 73-4.—Rapeseed oil, which is not easily hydrogenated, can be successfully utilized for production of olein and oleic acid. A procedure is described.
JULIAN F. SMITH.

PATENTS

Catalytic hydrogenation of fats and fatty oils. I. G. Farbenind. A.-G. (Mathias Pier and Friedrich Schiffmann, inventors). Ger. 615,148, June 28, 1935 (Cl. 23*d*. 2). A sulfide of a heavy metal, *e. g.,* W, Ni, or Co, is used as the catalyst. Precautions to avoid the poisoning of the catalyst are then unnecessary. The reaction may be effected at 20-300° and a pressure up to about 200 atm.

Defatting animal matter. Harburger Oelwerke Brinckman & Mergell. Ger. 612,716, May 3, 1935 (Cl. 23*a*. 2). Animal matter contg. water, such as flesh, is defatted by extn. with CH_2Cl_2.

Marine oils. Sigval Schmidt-Nielsen. Brit. 426,-752, Apr. 9, 1935. The oils, *e. g.,* cod-liver or whale, are rendered less liable to autoöxidation by heating, preferably under pressure, in closed containers without access of air, to 250° or higher for at least 48 hrs. The treatment may be in stages and the products may be used for soapmaking or, preferably after light hardening treatment, for *making edible fats.*

Courtesy "Chemical Abstracts"

ABSTRACTS

Soaps

Edited by M. L. SHEELY

Soap in Tubes. *Drug Trade News,* 10, 20, 2 (September 30, 1935. What is said to be the first departure from the ordinary cake of soap in 200 years is the package produced by Anderson & Gordon Laboratory Corporation, 27 West 15th Street, New York City. It is Dr. Haley's Personal Soap—packed in tubes.

Free Caustic Alkali in Soap. *Perfumery and Essential Oil Record,* 26, 9, 362 (September, 1935). In spite of the importance always attached to the presence of small amounts of free caustic alkali in soap, and the narrow limits within which, in specifications, it is usually required to fall, so far unfortunately no really accurate and reliable method for its determination has been evolved. In the Society of Public Analysts' Committee's Report on Determination of Unsaponified Fat in Soap, referred to in these columns last month, it is once again pointed out that during filtration, an alcoholic solution of soap rapidly absorbs carbon dioxide, so that the caustic alkali in such filtrate is lower than it should be, and Hetzer writing recently in the *Fettchem. Umschau* (1935, 35), shows that a further error may be introduced, not only in the alcohol method, but also in that using barium chloride, by the absorption of caustic alkali by saponified fat, which takes place fairly rapidly in alcoholic solution. He has measured the saponification taking place with various oils in contact with alcoholic alkali in 2.5 minutes and upwards, and finds that after five minutes, with the exception of palm kernel oil, at least 97 per cent saponification has taken place in all cases. It is evidently very necessary, therefore, in testing a soap for free fatty acid or free alkali, that it should be dissolved in the alcohol in the minimum of time possible.

Continuous Process of Soap Manufacture. *Perfumery and Essential Oil Record,* 26, 9, 361 (September, 1935). Considerable prominence has been given during the last few months, in the technical press both of this country and of America, to the subject of a continuous process of saponification. One of the most interesting of the methods yet proposed for the purpose is that described in the patents of J. B. E. Johnson (British Patents 367,513 and 423,188, "P. & E. O. R.," 1932, 125, and 1935, 153), in which a mixture of the fatty material and the requisite quantity of caustic soda lye for complete saponification, is forced under a pressure of not less than 150 lbs. per square inch, through a narrow reaction tube or pipe which is heated to a temperature of upwards of 180 degrees C., the heating being accomplished, according to the second patent, by the use of a tube made of electrically-conducting material, e.g., copper, or "staybrite" steel alloy, through which an electric current is passed.

What appears to be a very similar method of saponification has recently been patented in the United States

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Soaps

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(U. S. P., 1,968,526) by Clayton, Kerrick and Stadt. Here again the saponification takes place during the passage of the mixture of fat and alkaline lye under pressure through a long narrow tube, which is heated to a temperature rather below that at which the fat will decompose. Claim is also made in this patent for the production of a dry soap powder by allowing the soap to emerge into a chamber under reduced pressure, whereby water is evaporated.

Another continuous process of soap manufacture, using in this case putty, rosin or naphthenic acids, is described by Bogdanov (*Maslobojno Shirwojo Delo.*, 1935, 65). This provides for an output of one ton per hour by simultaneously spraying into a reaction chamber heated fatty or rosin acids and caustic soda solution. The soap thus formed, having a temperature of about 70-80 degrees C., is passed immediately over cooling rolls, milled to a thickness of 0.2-0.3 mm., and compressed into tablets.

The Disinfecting Action of Soap. Siegfried L. Magowan *Seifensieder-Zcg.*, 62, 567-8 (1935). Soap has a definite disinfecting action due apparently to the combined action of the various ions and to the undissociated soap molecules. Additions of phenol, etc., to soap do not cause as great an increase in disinfecting power as might be expected. (*Chemical Abstracts, 29,* power as might be expected. (Chemical Abstracts, 29, 19, 6783, October 10, 1935.)

Technical Possibility of Manufacture of "Leimfette." C. Stiepel, *Allgem, Oel-u. Fett-Ztg.*, 32, 157-9 (1935). More water glass may be taken up by a soap if the soap contains large amounts of "Leimfette" (i.e., coconut and palm-kernel). Stiepel discusses the merits of substitutes for these in filled soaps, as prepared by hydrolyzing sulfonated oils according to Aische (C. A. 18, 2820). (*Chemical Abstracts, 29,* 19, 6784, October 10, 1935.)

Greater Care Needed in the Buying of Fatty Raw Materials for Soap-Making Purposes. Welwart, *Seifensieder-Ztg.*, 62, 504-5 (1935). A discussion of difficulties encountered on attempting to prepare soap from a certain shipment of "technical soybean oil fat acids." (C. A. 29, 17, 6086, September 10, 1935.)

PATENTS

Production Substituted Glycerols. U. S. 2,009,988. George A. Emerson, San Francisco, California, to Eli Lilly & Company, Indianapolis, Indiana. Production Substituted Glycerols. (Chemical Industries, 37, 3, 262, September, 1935.)

Methods of Using Concentrated Soap-Oil in Soap Manufacture. United States Patent 2,007,974 has been recently granted to Charles E. Kaltenbach, Cranford, New Jersey; Herman Mulenbrock, Juanna C. Kaltenbach and Roger W. Aldrichm, executors of Charles E. Kaltenbach, deceased. In drawing up his specifications, Mr. Kaltenbach said:

"My invention relates particularly to improvements in the making of that class of soaps in which a solvent or oil is usually incorporated.

"As an example of my invention in its preferred form, I take one part water and two parts olive oil soap containing about 10% of water in the condition of flake or powder and when those are well blended, I stir in about one or two parts of pine oil. The vessel containing the mixture is placed in a kettle surrounded by glycerine and the temperature of the soap, water and oil is gradually raised to about 240° F. by heating the outer kettle. Steam is given off causing frothing of the soap with a great increase in volume of the mass. While some oils would ordinarily begin to volatilize below this temperature, the soap raises the boiling point and permits them to be completely merged and held. When the heat, frothing, and stirring have secured a uniform mixture, the mass is permitted to cool and solidify." (*Soap Gazette and Perfumer,* 37, 10, 5, October, 1935.)

Food Preparations. British 425,982, March 13, 1935. The Procter & Gamble Company. In producing chemically leavened sweet baked goods, e. g., cakes containing more sugar than flour, there is incorporated in the batter synthetic fat containing mono- and (or) diglycerides in amount sufficient to produce an excess of combined glycerol over that required for triglyceride formation equal to not less than 0.3% and not more than about 15%, preferably not more than 1.5%, of the weight of the total shortening in the batter. Small amounts of soap and (or) free fatty acid, as described in British 414,916 (C. A. 29, 851), may also be incorporated. (C. A. 29, 17, 5943, September 10, 1935.)

Soap. French 781,641, May 18, 1935. Viktor Dabsch and Robert Frankl. Soaps which contain fluid fatty oils of an I index of 70 or more are prevented from becoming rancid by adding glycerol or other appropriate alcohols and phosphoric salts soluble in water, particularly Na_3PO_4. (C. A. 29, 18, 6454, September 20, 1935.)

Fatty Acid Derivatives. German 611,373, March 26, 1935 (Cl. 12_o. 16) I. G. Farbening. A.-G. Wilhelm Neelmeier, Theodor Nocken and Hermann Friedrich, inventors. The insoluble condensation product of German 598,653 (C. A. 28, 5833) is treated with alkylating agents till they become soluble. Thus, the product from oleic acid and $(C_2H_4)_3N_4$ is mixed with C_2H_4O and left for some time at 80°. The excess of C_2H_4O is removed and the reaction product is soluble in water. The products are used as wetting or emulsifying agents. (C. A. 29, 18, 6332, September 20, 1935.)

Distillation Fatty Acids. U. S. 2,006,491. Lucius M. Tolman, Chicago, to Process Fat Refining Corporation, a corporation of Delaware. Distillation Fatty Acids. (*Chemical Industries,* 37, 3, 263, September, 1935.)

Waterproofing Concretes and Mortars. U. S. 2,003,613, June 4, 1935. Edward W. Scripture, Jr. (to Master Builders Company). An aqueous emulsion of a soap-forming fatty acid such as stearic acid is mixed and agitated with hydraulic cement, aggregate and tempering water until thoroughly disseminated throughout the mixture. (C. A. 29, 14, 4917, July 20, 1935.)