ABSTRACTS

Oils and Fats

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

produce lactic acid and alcohol fermentation, and after the fermentation the fermented liquid is separated from the materials under treatment.

Deacidifying Oils and Fats. G. Leot. Brit. 451,730, Aug. 11, 1936. Oils and fats are deacidified by alkali or alkaline earth coated heavy metal particles, by sprinkling the said particles uniformly on the surface of the body of oil or melted fat.

Stabilization of Animal and Vegetable Fats and Oils. J. K. Hunt and G. H. Lathan (to E. I. du Pont de Nemours). U. S. 2,063,602. Sugar amines or their salts are used as antioxidants.

Stabilizing Nondrying and Semidrying Oils. J. K. Hunt (E. I. du Pont de Nemours). U. S. 2,064,610. Ortho-alkoxy phenols in which at least one of the positions 4 and 5 is substituted by a CHO group are used as antioxidants.

Extraction of Vitaminiferous Oils. F. W. Nitardy and W. S. Jones (to E. R. Squibb & Sons). U. S. 2,067,279. The wt. ratio of water to dry liver of previously cooked livers is adjusted to between 2 and 4 and the material is solvent extd. with use of ethylene dichloride, trichloroethylene or dichloroethylether.

Castor Oil Product. K. T. Steik (to National Oil Products Co.). U. S. 2,068,088. The product claimed is produced by heating a mixt. of castor oil and naphthenic acid to temp. above 100°. This product is soluble in mineral oil and is a neutral mutual solvent for castor oil and mineral oil.

Dispersions of Fatty Acid Anhydrides. I. G. Farbenind. A.-G. Brit. 451,300. Fat acid anhydrides are heated, alkylolamines or other amines or ammonium bases are added and the product is dispersed in water. The product is used for waterproofing textiles, wood, etc.

Hydrogenation Catalyst and Its Preparation. E. C. Williams and S. H. McAllister (to Shell Development Co.). U. S. 2,067,368. A process for the production of an active finely divided catalyst comprises adding nickel formate to isododecane and heating the mixture under super atmospheric pressure to a temp. of 250-350° and using at least a part of the volatile liquid to sweep gaseous decompn. products from the system.

Polymerizing Drying Oils and Fatty Acids. E. W. Fawcett, R. O. Gibson, M. W. Perrin (to Imp. Chem. Indus.). Brit. 452,039. The drying oils or drying fat acids are subjected to heat and pressures from 500 to 3000 atmospheres. The product is used in paints, varnishes, printing inks and the like.

ABSTRACTS

Soaps

Edited by M. L. SHEELY

Errors in Toilet Soap Manufacture. *Soap, Perfumery and Cosmetics* **Jan. 1937**, 41. During air drying, an abnormally high proportion of carbon dioxide in the air may lead to neutralization of the important free alkali with consequent reduction in the storage stability of the soap. Non-uniformly dried soaps tend to lose their homogeneity after framing, especially when the soap shavings have not been passed over the milling rolls a sufficient number of times.

It should also be added that too much water in the soap not only increases the rate at which it is used up but also tends to develop cracks in the bars. If too dry, the soap likewise tends to crack in the finished bars but here the cracks are similar to those obtained with an excessive common salt content while the cracks in soaps containing excessive water are arranged rather in laminae.

On no account should the water content of an excessively dry soap be adjusted merely by adding water. Almost invariably this leads to serious loss of homogeneity. The correct procedure is to blend excessively dry and excessively moist soap shavings by repeated thorough mixing on the milling machine rollers.

The precaution should be taken of seeing that the perfume composition is not excessively acid. It is advisable to determine the acidity of the composition beforehand and to allow a correspondingly higher proportion of free alkali when the acid value is unduly high. When perfuming the soap it is also essential to effect uniform distribution of the perfume.

Analytical Methods Committee. Sub-committee on Methods of Soap Analysis. Report No. 3. The Determination of Free Alkali in Soaps. H. E. Cox and N. Evers. *Analyst* **62**, 36-41 (1937). Sodium soaps.—The best procedure is to determine (1) the total free alkali by adding excess of mineral acid and titrating back with standard alkali; (2) caustic alkali by one of the methods described above. "Carbonate" alkali (3) may be found by difference between (1) and (2) and may be checked by the detn. of alcohol-insoluble alkali or of carbon dioxide. Potassium soaps.—Direct detn. of the carbonate by a titration method is not practicable. The total free alkali (1) should be determined as in Na soaps, free caustic alkali (2) should be determined by the $BaCl_2$ method (which is recognized as giving slightly low results). The carbonate alkali (3) is given by difference or may be determined as CO_2.

ABSTRACTS

Soaps

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

Synthetic Detergent. T. P. Hilditch. *Chem. Age* **35,** 558 (1936). A new form of synthetic detergent, stable to hard water and stable in an acid medium has been patented by Lever Brothers, Ltd., Liverpool. The detergent is unique in containing no salt-forming group. It consists of monofatty acid esters of one or more polyglycerols. Solubility in water results from the accumulation of aliphatic hydroxyl groups in the condensed glycerol molecules. The long-chain acyl ester confers the lathering power and other physical properties which make the material a good detergent.

Soap Quality. A. H. Pettinger. *Am. Dyestuff Reptr.* **25,** 629-30 (1936). A brief consideration of specifications for castile, laundry and special soaps. (*Chem. Abs.*)

Dry Distillation of Cottonseed Oil Foot. Chang-Ming Tu and Fu-Yun Pan. *J. Chem. Eng. China* **3,** 231-9 (1936). Cottonseed oil foots is subjected to dry distn. either with or without the addn. of vapor-phase cracking unit. When distd. without vapor-phase cracking, the product consists of about 11% (by wt.) light oil, 17% middle oil and 10% heavy oil. The insertion of a vapor-phase cracking-unit increases slightly the production of light and middle oils at the expense of heavy oil and with the production of many more gaseous products.

Notes on Soap Flakes. *Soap, Perfumery and Cosmetics* **10,** No. 1, 63 (1937). It may be found advisable to replace part of the soda lye by potash lye but not to an excessive extent, owing to the greater hygroscopicity of the potash soaps. A ratio of 7 NaOH to 1 KOH should not be exceeded. In any case it is not retained in the finished soap because following salting out, the initially formed potash soap is partly tranformed into soda soap.

Soap flakes should not contain an excessive proportion of solid fats, as these would render the soap too brittle. Soft fats and oils should also be incorporated. Castor oil is a splendid agent for producing flexible soap and 2% of this inexpensive oil has an excellent influence in flakes.

A low salt content is particularly desirable in this type of soap. Not less than 0.2% free alkali should be present in the fresh soap base. This proportion will be reduced during drying owing to the carbon dioxide in the air. It has been demonstrated that the true alkalinity induced in an aqueous soap solution by hydrolysis is considerably higher than that which may result from the presence of a few tenths of 1% in the soap itself. If there are objections to retaining the necessary free alkali in the soap flake base, about 2% of pale rosin may be incorporated in the fat stock. The resulting rosin soap acts as an excellent protective colloid and prevents rancidity even in a soap which has already turned acid.

If the soap is still not sufficiently flexible to yield elastic flakes it may be advisable to superfat in the mixer before milling. Suitable superfatting agents are ceresin, lanolin, or petroleum hydrocarbons. An example of an agent that is capable of increasing the detergent and frothing power of a flake in which it partially replaces the fatty acid is Calgon.

Efforts have been made to stamp a special brand mark upon the individual flakes, as instanced by German patent 601,514, whereby a stamping roller is attached to the soap-flake-producing roller itself in order to imprint upon each flake a trade mark, letter, date or the like.

PATENTS

Soap Composition. John B. Lewis, Cranford, N. J., and John C. Bird (to Standard Oil Development Company). U. S. 2,066,208, Dec. 29, 1936. A solid soap composition comprising about 65%to 95% of an alkali metal soap of a fatty acid, 5% to 25% of a hydrocarbon liquid and 0.5% to 10% of sulfonic acid salts derived from mineral oil acid sludge. (*Soap,* **13,** No. 2.)

Degumming Raw Silk. Warren T. Reddish (to Emery Industries, Inc.). U. S. 2,060,529, Nov. 10. Raw silk to be degummed is treated in a hot aq. bath contg. mahogany sulfonates in admixt. with a water-sol. fatty acid soap and an alk. salt which is adapted when dissolved in water to yield a free alkali. (*Chem. Abs.*)

Soap. Deutsche Gold- und Silber-Scheidenstalt vormals Roessler (Wilhelm Schulenburg, inventor). Ger. 632,825, July 14, 1936 (Cl. 23e, 4). A disinfecting soap is made by adding insol. sub-halides or thiocyanates of Ag. such as AgCl. to the soap. O-yielding agents such as $Na_2O_2 + Na_4P_2O_7$ may be added. (*Chem. Abs.*)

Industrial Chemicals, Apparatus, Etc. William S. Calcott, Penns Grove, and Ira Williams, Woodstown, N. J., and Benton Dales, Wilmington, Del., to du Pont, Wilmington, Del. U. S. 2,064,728. Colloidal sulfur suspension in a medium containing water, an alkali and at least 40% glycerin. (*Chemical Industries* **40,** 53, 1937.)

Soap. Henkel & Cie, G.m.b.H. (Wolfgang Lubbert and Wilhelm J. Kaiser, inventors). Ger. 633,871, Aug. 10, 1936 (Cl. 23e, 2). Superfatted soaps, etc., are prepd. by heating soap masses, etc., and adding esters of lower aliphatic or hydroaromatic hydroxcarboxylic acids and higher aliphatic OH compds. not more than 14 C atoms. Thus, a washing compn. contg. soap 44, soda 22, Na perborate 10 and H_2O, 24% is heated and given a 3% addn. of the dodecyl ester of lactic acid. Other examples are given. (*Chem. Abs.*)

Splitting Oils and Fats. Metallgesellschaft A.-G. Fr. 799,274, June 10, 1936. The hydrolytic splitting of oils and fats under 25-50 atm. pressure is carried out in the presence of a certain amt. of a mixt. of split oil and glycerinated water, e.g., left from a previous operation, whereby the time required is shortened. (*Chem. Abs.*)

W. H. Dickhart Appointed Official Chemist, New York Mercantile Exchange

At a meeting held Wednesday, February 10, the executive committee of the New York Mercantile Exchange appointed Wallace H. Dickhart Official Chemist of the Exchange. He was for many years associated with the Bureau of Chemistry of the New York Produce Exchange, New York City.

Mr. Dickhart is also Official Chemist of the Olive Oil Association of America and is serving on the subcommittee for the revision of the United States Pharmacopoeia in connection with organic chemicals which includes oils and fats.

Elliott G. Johnson Rejoins Homestead Valve

Homestead Valve Manufacturing Company announces the return of Elliott G. Johnson to take over his old duties as Advertising Manager, after a four year leave of absence, during which, he was serving the Government as Ordnance Engineer with the Navy.

A background of Mechanical Engineering received at Carnegie Institute of Technology, and early training at Westinghouse Electric and Manufacturing Company, prepared Mr. Johnson for his work in the industrial advertising field. He previously served Homestead Valve Manufacturing Company as Advertising Manager for seven and one-half years, and is a Past President of the Industrial Advertising Council of Pittsburgh.

Two Chemists Join Staff of Soybean Laboratory

Wallace B. Van Arsdel and Dr. George H. Brother have been appointed to head the Meal and Development Sections, respectively, of the Regional Soybean Industrial Products Laboratory, which has been established at Urbana, Illinois, by the Bureau of Chemistry and Soils of the U. S. Department of Agriculture, under the provisions of the Bankhead-Jones Act of 1935.

Mr. Van Arsdel received his Chemical Engineering Degree from Purdue University. He has been engaged in research and development work for The Brown Company of Berlin, New Hampshire, since August, 1914. His new duties will be to keep in touch with the soybean industry as a whole and to direct development and pilot plant work.

Dr. Brother received his B.S. in chemistry from the University of Nebraska and his Ph.D. from the University of Toronto. About ten years ago he was responsible for the development of a new casein plastic, and has worked for several industrial concerns. He is the author of the chapter on "Casein Plastics" in the volume "Casein and Its Industrial Applications," of the Sutermeister ACS monograph series.

Dr. Brother's duties as head of the Meal Section of the Regional Soybean Industrial Products Laboratory will be to study the industrial utilization of soybean meal in the manufacture of adhesives, plastics, synthetic fibers, etc. This will involve a thorough fundamental study of the proteins of soybean meal, as well as their application for industrial purposes.

Addresses Oil Products Company Staff Meeting

Professor Paul M. Giesy of the Newark College of Engineering addressed the monthly staff meeting of the National Oil Products Company, of Harrison, N. J., on March 1, at Newark, N. J. The talk followed the regular dinner of the organization.

At the February dinner meeting, Dr. William G. Nash, of Newark, gave a lecture on "Allergy in Humans."

Fuller D. Baird, Director of the Nutritional Laboratory of the National Oil Products Company, is the chairman of the monthly staff meeting.

J. A. Scheick, optical technician of the Bausch & Lomb Optical Company of Rochester, N. Y., will speak at the company's meeting on April 5, on "The Application of Optical Instruments in Industry."