Abstracts

Oils and Fats

Edited by
M. M. PISKUR

2,181,563. A cooling step is interposed between the heating and separating step in a continuous refining process.

Alkyl 12-ketosterate. H. L. Cox (to Union Carbide & Carbon Corp.). *U.S. 2,180,730.* A 12-ketosterate acid ester of an aliphatic alc. The products are used as stabilizers and plasticizers in lacquer and plastic compns. formulated from natural and synthetic gums and resins.

Process for manufacturing sebacic acid. H. A. Bruson & L. W. Covert (to Röhm & Haas Co.). *U.S. 2,182,056.* A functional deriv. of ricinoleic acid is heated with NaOH in aq. soln. at a temp. between 250° and 300° C in a closed vessel to yield sebacic acid.

Treatment of glycerin lyes and of crude glycerin. R. H. Potts and E. W. Colt (to Armour & Co.). *U.S. 2,182,179.* Water insol. solvents which do not substantially dissolve glycerin are used to remove certain org. impurities from glycerin lyes before processing the lyes for glycerin. Water insol. fatty acids are used as solvents.

Process of refining animal & vegetable oils. B. Clayton, W. B. Kerrick, H. M. Stadt, and B. H. Thurman (to Refining, Inc.). *U.S. 2,182,755.* A continuous process for refining is characterized by the avoidance of any substantial period of contact of the refining reagent with the oil after the admixing thereof.

Abstracts

Soaps

Edited by M. L. SHEELY

Detergent value of triethanolamine soaps. George W. Fiero. *J. Amer. Pharm. Assn. 28,* 285 (1939). Using commercial fatty acids isolated from cocoanut oil, tallow, and ordinary red oil, the detergency of their triethanolamine soaps was as follows: Tallow fatty acids soap removed 23.4% of a total of 29.5% soil; cocoanut fatty acids soap removed 21.7% of a total of 30.0% soil; and red oil soap removed 21% of a total of 30.2%. The author concludes that none of the triethanolamine soaps has the detergent action possessed by ordinary soap. (*Amer. Perfumer*).

Steam distillation of glycerine under reduced pressure. S. Ueno and C. Yonese. *J. Soc. Chem. Ind. (Japan) 42,* 10, 342B (1939). The quantities of distilled glycerine obtained from soap-lye glycerin and recovered crude glycerine are respectively 81.8 and 62.5% of that from saponification crude glycerine. It is concluded that with the same plant and nearly equal conditions, the quality of crude glycerine seems to exert an influence upon the distillation efficiency. (*Chem. Abs.*).

The twitchell process. J. H. Wigner. *Soap, Perfumery and Cosmetics 12,* 979 (1939). The objection most often made to this process is that it produces soap of a bad color. This is no longer true when the new purified reagents are used, which are lighter in color and considerably more active, so that a much smaller quantity can be used. Discoloration owing to oxidation can be avoided by the exclusion of air, and neutralization with barium chloride of the small amount of mineral acid contained in the fatty acids. As to costs of the process, it may safely be asserted that in almost all cases the gains in glycerin and alkali yielded by this process outweigh the expenses, but it is impossible to give any figure to represent the profit which would apply to all works, as many variable factors have to be taken into consideration.

The saponifier acts as an emulsifier to bring about intimate contact between the fat and the water and as a catalyst to promote hydrolysis. The action begins at once and is relatively rapid at first, but the rate of transformation is very nearly proportional to the amount of glyceride present, which is constantly decreasing as the operation proceeds. The yield in the first 12 hours may be of the order of 65 to 85%, and in the first 24 hours, 85 to 90%, and in the next 24 hours, it may only amount to about 5 or 10%. Probably about 95% may be looked on as a practical limit. The time for the complete operation varies from about 44 to 48 hours. A detailed method of determining the split as the process continues, is given. Equipment is also described.

Sulphite cellulose lyes for soap making. Paul I. Smith. *Amer. Perfume 39,* [6], 37 (1939). The general experience of soapers who have experimented with lignin sulphonate is that it is an exceedingly difficult substance to use owing to the marked tendency of the soap preparation to discolor. This may be due to several reasons, particularly to the action of free moisture in the soap and the breakdown of the lignin molecule due to the free alkali used to build up the soap. There is also the risk of the newly formed alkali-lignin body to cause discoloration of the paper wrapper used for packaging the soap, or lining barrels or other containers. The present writer considers that it is unlikely, and there is no conclusive evidence to the contrary, that the addition of lignin sulphonate improves the detergent action in the same way as phosphate or silicate, and it can, therefore, only be regarded as a filler with rather doubtful potentialities.

Density and viscosity of glycerol solutions at low temperatures. Edmund Green and John P. Parke. *J. Soc. Chem. Ind. 58,* 319 (1939). To provide data required in connection with the use of glycerol

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solutions for refrigeration, the densities and viscosities of aqueous glycerol solutions containing 30-80% of glycerol were determined at temperatures between -5° and -40°. The viscosities obtained were found to be higher than published figures which were derived from data at temperatures above 0°, by extrapolation along straight lines plotted on logarithmic viscosity/temperature scales.

THE PREPARATION OF PURE STEARIC ACID. J. P. Kass and L. S. Keyser. *J. Am. Chem. Soc. 62,* 1, 230 (1940). The preparation of pure stearic acid is complicated by the difficulty of removing final traces of the contaminating palmitic acid, since the separation by physical means is tedious and never unquestionably complete. During the course of our investigations of the chemistry of the fatty acids, we have found it convenient to prepare pure stearic acid totally free from palmitic acid by the catalytic reduction of the readily purifiable octadecenoic acids. Elaidic acid, and especially the alpha or beta eleo-stearic acids, are easily available and may be brought to a high state of purity by a few recrystallizations of the free acids, while pure linoleic acid of theoretical iodine value may be obtained from the crystallizable alpha tetrabromostearic acid. Quantitative reduction was effected by shaking the acetic acid solutions of the unsaturated acids for three hours in an atmosphere of hydrogen at room temperature and 45 lb. (3 atm.) pressure in the presence of platinum oxide catalyst. One recrystallization of the product from acetic acid or 85% alcohol yielded a stearic acid melting in a capillary tube at 69.6-70.2° (corr.) and dissolving in concentrated sulfuric acid at 70° without discoloration.

THE TREND OF SOAP PROGRESS. H. L. Ramsey. *Soap 16,* [1], 30 (1940). Appreciable improvements have been made in the removal of impurities from soap by centrifugal machines and by straining and filtering. According to new methods, soap is cooled in bars, slabs or in thin films beautifully smoothed on both sides. String nets have been replaced with metal nets in mechanical drying. The new fans and baffles allow hot air to pass either across or through the soap with use of both forward and return travel of the conveyor band. Soap flakes with a thickness of 1/1000 to 1/500th inch may be made on the latest temperature-controlled chilled cast iron rolls with precision-ground surfaces.

PATENTS

TREATING GLYCERIDE OILS. George Barsky to Wecoline Products, Inc. *U. S. 2,182,332.* A method of treating glyceride oils having in combination lower and higher fatty acids of from 6 to 18 carbon atoms to alter the physical and chemical characteristics of said oils which comprises providing a mixture of said oil and a free fatty acid having at least 2 more carbon atoms than the lowest fatty acid to be displaced but not over 18 carbon atoms, and heating said mixture to a sufficiently high temperature whereby a reaction takes place freeing the lower fatty acids which are replaced by said added fatty acid and removing the fatty acids so freed.

DISTILLATION OF MIXTURES OF HIGH BOILING POINT LIQUIDS. Otto Bracke to American Lurgi Corporation. *U. S. 2,184,579.* A method for the continuous distillation of mixtures of a plurality of substances which have different boiling points, in at least two serially arranged vaporization stages, which comprises, in each stage, introducing steam into the liquid space of the distilling vessel, thereby forcing up steam and liquid into the vapour space thereof, constantly diverting a portion of the forced up liquid from the vapour space into a second chamber within the same distilling vessel where such diverted liquid is further heated, passing such further heated liquid to the next stage, separately condensing the distillate vapours obtained in each still and adjusting the vaporization stages to different values for the purpose of continuously extracting the distillates in two or more fractions.

MOTHPROOFING DETERGENT. Hermann Stötter, Leverkusen I. G. Werk, and Theodore Hermann to Winthrop Chemical Company. *U. S. 2,184,951.* A mothproofing detergent composition consisting essentially of the sodium salt of oleyl-hydroxethane sulfonic acid in preponderating proportion and dichlorosalicylic acid, said composition being at the most only slightly colored in the dry state, being soluble in water, and being adapted for simultaneously cleaning and rendering mothproof wool, feathers, hair and like materials.

SOAP CONTAINING ODOR-REMOVING INGREDIENTS. Helen M. Craner. *U. S. 2,177,055.* An object of the invention is to provide a soap or detergent composition which when employed in the usual manner neutralizes and removes odorous exudations without employing ingredients giving rise to offsetting odors.

It is found that if a relatively large quantity of bicarbonate of soda be added to and thoroughly admixed with a toilet soap, preferably a neutral soap, the resultant composition will be very effective in neutralizing odors of perspiration and even bromidrosis. It will also reduce or minimize acquired odors, such, for instance, as that imparted to the hands by smoking.

It is also found that this deodorizing property is possessed by acid carbonates or bicarbonates, as well as normal carbonates, of various alkali metals, including, in addition to sodium such other alkali metals as potassium, lithium, etc.; also acid and normal carbonates of other metals which are free from toxic or irritant effect on the human skin, such, for example, as the normal and acid carbonates of calcium, zinc, aluminum, bismuth and magnesium.