Abstracts

Oils and Fats

Edited by
M. M. PISKUR

PROCESS OF REFINING GLYCERIDE OILS. B. Clayton (to Refining, Inc.). *U. S. 2,190,590.* Agent for reducing sapon. of neutral fats and a de-emulsification agent are used in the continuous refining process.

ADSORBENT MATERIAL FOR TREATING OILS AND SLUDGES. H. R. Kraybill et al. *U. S. 2,174,177.* An adsorbent material for removing phosphatides, mucilages, sterols, pigments and associated substances from vegetable oils and vegetable oils sludges is obtained by mixing aq. Na silicate soln. with aq. soln. of acid Al salts to form gelatinous ppt., let stand, filtering excess water, and drying.

BODYING TUNG OIL. L. H. Hilles (to Vellumoid Co.). *U. S. 2,172,974.* The method comprises heating to approx. 540°F and before gelation occurs cooling the oil to below 350°F, the process being conducted in absence of resin.

POLYGLYCOL ESTERS OF FAT ACIDS. Lever Bros. *Ger. 679,971.* Aq. solns. of Na_2SO_4 are used to wash out the excess glycerin.

THE MANUFACTURE OF MODIFIED, HEAT-BODIED OIL PRODUCTS. L. Auer (to J. Randolph Newman). *U. S. 2,189,772.* Na oxalate is incorporated in the oil, it is heated to between 300 and 350°C until it thickens; then it is cooled.

THICKENING OF SOLUTIONS. M. B. Katzman and F. J. Cahn (to Emulsol Corp.). *U. S. 2,189,803.* Emulsifiers are thickened by addns. of inorganic salts of alkalo amines.

ANTIOXIDANT. D. Craig (to B. F. Goodrich Co.). *U. S. 2,189,417.* Deterioration of rubber and oxidation of fats and oils is retarded by treatment with metallic salts of aminophenols.

PRODUCTION OF GLYCERIN BY FERMENTATION. H. Haehn. *U. S. 2,189,793.* The fermentation mixt. is aerated to provide for energetic respiration of the yeast.

LUBRICANT. M. W. Freeman. *U. S. 2,189,788.* Fat acid amines of b.p. not less than 45.3°F are incorporated in lubricants to prevent corrosion.

GREASE AND METHOD OF MAKING THE SAME. S. E. Jolly and W. M. McKee (to Sun Oil Co.). *U. S. 2,188,863-4.* The greases contain fat acid soaps.

Abstracts

Soaps

Edited by M. L. SHEELY

TALL OIL SOAPS. *Soap 16,* No. 3, 59 (1940). In Finland, an important producer of tall oil, soap is prepared by saponification of the tall oil with caustic soda solution of 35° Be. Tall oil soap has good foaming action and excellent emulsifying power. Heavy soil containing mineral oil, tar and soot is readily removed with tall oil soap. It is therefore useful in garages, machine shops, printing shops, etc. for the cleaning of floors, since it has a more efficient cleansing action than the usual paste soaps. Potash soap made with 8 parts of caustic potash, 10 parts of water and 20 parts of tall oil, is particularly suitable for incorporation in polishing materials.

SOAP MICELLES. Joachim Stauff. *Kelloid Z. 89,* 224-33 (1939). A study of x-ray absorption of various soap solutions shows that at concentrations of 0.1 normal sodium tetradecyl sulfate solution, and 0.2-0.25 normal sodium laurate solution, large colloidal particles or large micelles correspond to that of liquid crystals, showing that the micelle consists of a system of soap-water. The water molecules are arranged between the polar groups of the soap molecules, as shown by x-ray investigations. These results bridge over the contradictions between the results and theories of Hartley on the one hand and McBain, Thiessen and others on the other hand. The formation of large micelles explains the minima in the conductivity curves of soap solutions, was well as their osmotic properties. (Soap)

ASBESTOS FLOATS FOR ABRASIVE SOAPS. *American Perfumer 40,* No. 2, 58 (1940). The use of asbestos "floats," 150-200 mesh, for special abrasive soaps intended for cleansing domestic utensils, appears to be worthy of some consideration. The asbestos has a smooth abrasive action and can be incorporated easily in the soap. It is said by one manufacturer to be used best in conjunction with feldspar. The only danger seems to lie in the fact that asbestos sometimes may contain traces of iron oxide which is liable to cause discoloration of the soap. Only chrysalite is suitable for use; the blue asbestos, besides causing the soap to be rather mottled, contains a relatively high percentage of iron.

A BRITISH SYNTHETIC DRYING OIL. *Oil and Trades 97,* 188 (1940). Under the name of "Doboline," Cray Valley Products, Ltd., St. Mary Cray, Orpington, Kent, are now offering a new synthetic drying oil.

In describing the oil they refer to the work of Schieber and others, and state that, accepting the arguments put forward as a foundation stone, after concentrated research, they have produced a fatty acid possessing the essential structure, namely, 9, 11-octadecadienoic acid. Esterifying this product with glycerol resulted in the formation of the drying oil, which they have called "Doboline."

The oil is said to equal tung oil in regard to resistance to water, alkali and acid. It retains its flexibility after prolonged exposure, and does not yellow. It may be blended with the usual varnish oils, resins, solvents and driers.

SILICATES IN DETERGENT PROCESSES. *Chemical Industries 46,* 2, 243 (1940). McBain and Woo published an article in Kolloid Zeitschrift on detergent action. The senior author has made many contributions to the understanding of soap systems as colloids but now he brings forward evidence that between colloid systems there are stable equilibria which may be reached from either direction. Starting with a

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colloid dispersion of an otherwise insoluble dyestuff in water and then placing over the water a layer of toluol, it was found that with gentle agitation a definite quantity of dye was transferred to the toluol layer, and conversely, beginning with dye dispersed in the toluol, the transition across the interface took place forming a colloidal solution in the water and the same equilibrium was eventually achieved. The connection between this and washing is that when soap is put into the water layer the equilibrium is shifted and the water layer becomes more capable of removing material from the oily layer. This property is expressed as a dye number. It has been learned that the presence of silicate in soap increases the dye number considerably and produces a greater effect than is possible with soap alone.

They show that the supporting action of silicates in detergent processes is not a simple function of alkalinity but silica supplements the effect of alkali in such a way that effects in the dispersion of solid matter with silicates extend far beyond what would be possible by the use of alkali and/or phosphates not associated with silica. Much smaller amounts of alkali may be used in the form of silicates than when the alkali is combined with other radicals or used in the form of caustic. Silica has also a specific effect in preventing the redeposition of dirt once suspended. All of these characteristics lead to the conclusion that silicates are important in the art of cleansing and that a knowledge of their use makes for better work and improved economy.

METHODS OF REMOVING SPECIAL STAINS IN THE POWER LAUNDRY. Polly Kessinger, J. Oesterling, M. Moore and P. Mack. *Starchroom Laundry J. 46,* 8, 32, 35-6; 9, 92, 94-6; 11, 38, 40, 42 (1939). Standard stain strips contg. 18 common stains were prepd. Data are given showing the reaction of these stains to 94 different laundry procedures done in the lab. A multiple suds and bleaching treatment removed all the stains, except nonwashable fountain-pen ink, India ink, dark-colored salve and iron rust. The first 3 of these can be removed by a boiling-out treatment with built soap and the iron rust can be removed by the addn. of an acid in one of the rinses. The standard stain strips were sent to 101 com. laundries and the results summarized. The recommendation is made that the bleach concn. should not be increased to obtain better stain removal, but that other parts of the washing formula be changed.

PHASE RULE BEHAVIOR OF SODIUM OLEATE. Robert D. Vold. *J. Phys. Chem. 43,* 1213 (1939). A partial study of the phase rule behavior of the system sodium oleate-water has been carried out using many independent methods, including visual observation of the temperatures of phase change, dilatometric experiments, isothermal vapor pressure determinations, phase separations and microscopic examination between crossed Nicols. It has been found that a much larger number of separate phases exist than had previously been recognized in systems of soap and water, although the data are not yet sufficient to define all the phase boundaries.

The successive phases of anhydrous or nearly anhydrous sodium oleate occurring with rising temperature may represent stepwise disintegration of the crystalline lattice, each phase being less regular than its predecessor. The separate aqueous liquid crystalline or anisotropic liquid phases, which may have no anhydrous counterparts, are all smetic in type, as shown by their characteristic optical properties.

PATENTS

SOAP. J. Egli. *Fr. 842,879.* A tablet of soap is obtained which, for use in washing dirty hands, possesses at the same time the advantages of a lathering soap and of a sanded soap or mineral soap, by uniting on one tablet two pieces, one formed by a lathering soap, the other by a mineral soap. A quantity of mineral soap is fitted into an almost equal mass of lathering soap in such a manner that the forms are surrounded laterally. This arrangement permits of the simultaneous use of the two soaps, or the utilization of the one or the other, and obviates sliding of the soap owing to the greater friction of the mineral soap.

TOILET SOAP. George Mangeot. *Brit. 513,696.* When the soap is intended for use as a toilet soap, there is added to the mixture to be saponified a small proportion of a protective colloid, neutral or acid, such as solubilized casein, the addition of which to ordinary soaps is already known. The combined actions, in this new compound of the myristate, of the oleate and finally of the protective colloid, such as solubilized casein, give rise to unexpected results, because, on the one hand, the addition of an acid colloid to an ordinary soap results only in a progressive neutralization of the acid colloid by the alkali arising from the hydrolysis, and because, on the other hand, a simple mixture of neutralized myristates and oleates which in known manner are capable of fixing a certain quantity of free fatty acids "acid soaps," possesses a higher surface tension than that of neutral salts, which diminishes its possibilities of utilization.

WASHING AND CLEANSING AGENT AND PROCESS OF MAKING SAME. *U. S. 2,190,769.* Karl Butz to American Hyalsol Corporation. The process of producing a washing and cleaning agent composed of a water soluble salt of a pyrophcaphoric acid ester of a higher molecular alcohol having at least eight carbon atoms and a portion of the unreacted alcohol which comprises mixing pyrophosphoric acid and a higher molecular alcohol having at least eight carbon atoms at a temperature of from about 85-115° C. until maximum esterification has taken place and thereafter neutralizing to form a water soluble salt of the pyrophosphoric acid ester of the higher molecular alcohol treated.

REMOVAL OF DIRT. *U. S. 2,188,353.* Harvey House to Engineering Incorporated. In the removal of dirt from a material, the steps including: impregnating the material with a solution of a detergent-forming substance, draining off excess solution by a partial vacuum maintained in the system, heating the material while under partial vacuum so as to evaporate the solvent of the solution from the material and leave the detergent-forming substance concentrated in the material, and treating the concentrated detergent-forming substance with an agent which reacts therewith to form a detergent.