PATENTS

UNSATURATED ACIDS. T. P. Hilditch and H. Plimmer (Imperial Chemical Industries, Ltd.). *Brit. 561,803.* When unsaturated higher acids containing 2 or more isolated ethylenic double bonds are heated under pressure in water with a considerable excess over the chemical equivalent of alkali, such as KOH, they are isomerized to a substantial extent into the conjugated form. The products thus obtained may be converted into glycerides for use as synthetic drying oils. (*Chem. Abs. 40,* 222.)

DRYING OILS. Distillation Products, Inc. *Brit. 561,840.* Unsaturated fish oils having an I value above 120 are distilled *in vacuo* under unobstructed path conditions until 40-50% or more is removed by distillation. The residue is used in a paint, lacquer or varnish. The distillate is worked up to obtain vitamins and other products (*Chem. Abs. 40,* 222.)

WRINKLE FINISH. W. A. Waldie (New Wrinkle, Inc.). *U. S. 2,392,346.* A wrinkle composition is produced by heating a noncongugated drying oil with an oil soluble resin such as natural resins, resin-modified alkyds, and phenolics, and then reacting with a polycarboxylic acid.

DRYING OIL COMPOSITIONS. Bakelite, Ltd. *Brit. 562,310.* A composition derived from a drying oil and an oil soluble resin such as a resin of the phenol-aldehyde type, is advanced in the presence of a control agent until it is more than 30% insoluble in acetone but is still capable of dispersion in a hydrocarbon thinner. This composition is then mixed with a cellulose ether or a polymerized vinyl compound. (*Chem. Abs. 40,* 477.)

DEACIDIFICATION OF STAND OIL, BALSAM, OR RESIN. L. P. Edel (Chemische Werke Albert). *Ger. 742,271.* The substance to be deacidified is placed in a closed heated vessel and the vapor of a mono- or polyhydric alcohol boiling below 300° is passed through it. Part of the acids carried away by the alcohol vapors are recovered and part are esterified. (*Chem. Abs. 40,* 478.)

SICCATIVE OILS. K. Vierling (I. G. Farbenind. A.-G.). *Ger. 742,665.* The fractions obtained by the reaction of anthracene with at least 2 moles of an olefin (having 3-10 C atoms) at 100-200° in the presence of a Friedel-Krafts catalyst are combined with a siccative and used as drying oils. (*Chem. Abs. 40,* 477.)

VARNISHES, AIR-DRYING LACQUERS, AND PAINTS. H. Rebs (K. Herberts and Co. vorm. O. L. Herberts). *Ger. 742,666.* Distillation residues of the oxidation product obtained when CO is hydrogenated by the Fischer-Tropsch method are mixed with siccatives and used in the production of varnishes, etc. (*Chem. Abs. 40,* 478.)

REMOVING PAINT AND VARNISH. R. Sadtler. *U. S. 2,392,699.* The removal of paint and varnish is accomplished by coating the surface with anacardic acid and cashew nut shell liquid and removing the film as soon as it is disintegrated.

COATING MATERIALS. H. L. Gerbart (Pittsburgh Plate Glass Co.). *U. S. 2,392,732.* A coating composition comprises a solution in an organic solvent of the polymerization product of cyclopentadiene and a fatty acid glyceride.

Abstracts

Soaps

Edited by
LENORE PETCHAFT

SPRAY PROCESS FOR SOAPS. Alan Porter Lee. *Soap 22,* No. 1, 29-31, 39 (1946). Factors involved in washing powder manufacture include strict adherence to formulation, maintenance of uniform pressure at the nozzles, prompt removal from the reaction zone of the latent heat released by air blasts, and suitable equipment for removal of the powder.

DIRECT VOLUMETRIC DETERMINATION OF THE ORGANIC SULFONATE CONTENT OF SYNTHETIC DETERGENTS. T. U. Marron and Joseph Schifferli. *Ind. & Eng. Chem. Anal. Ed. 18,* 49-50 (1946). This new method for determination of Na alkylbenzene sulfonates is applicable to commercial detergents containing alkyl or alkylaryl sulfonates. Under standardized conditions paratoluidine hydrochloride reacts with these organic sulfonates to give amine sulfonate salts which can be subjected to direct titration with standard alkali in the presence of a suitable indicator. The weakly basic amine does not interfere.

SOAP FILMS USEFUL IN LABORATORY STUDIES. Anon. *Chem. Industries 58,* 110 (1946). Soap films and soap bubbles are extensively employed in stress studies, in hydrocarbon explosions and flame spread investigations and in other research procedures. A standard soap solution for such film experiments consists of: pure castile soap—1 oz., distilled water—8 oz., and pure glycerine—4 oz. The soap, in thin shavings, is dissolved in the water and the glycerine added. After thorough mixing the solution is allowed to stand for a while, after which the clear fluid at the bottom may be siphoned off and used for experimental purposes. It is said to keep indefinitely.

NEW LUBRICANTS AID OILING AND WET FINISHING WOOLENS AND WORSTEDS. Wallace P. Heintz. *Textile World 95,* No. 7, 101, 176, 178, 180 (1945). A commercial product, "Avitone," is discussed. (*Chem. Abs. 39,* 5082.)

STABILIZATION OF OIL-IN-WATER EMULSIONS. W. G. Alsop and J. H. Percy. *Am. Perfumer 48,* No. 1, 71-7 (1946). A preliminary study is reported on stability of emulsions in the systems mineral oil-water-monoglyceride-soap and mineral oil-water-monoglyceride-synthetic detergent. Oil-in-water emulsions may show instability in two ways. The emulsion may break, that is, the dispersed droplets of oil may coalesce or the emulsion may cream, showing a clear or cloudy lower aqueous layer without any apparent coalescence. Increasing either monoglyceride, soap, or detergent concentration tended to reduce coalescence. The effect of concentration on creaming varied at different concentrations. However, in the region studied, both soap-monoglyceride and synthetic detergent-monoglyceride gave more stable emulsions than any amount of soap or synthetic detergent alone.

HYDROPHILIC LIPIDS AND THE PROPERTIES OF SOLUTION AND EMULSIONS. B. Ya. Golant and A. M. Egorova. *Pishchevaya Prom.*, No. 3/4, 57 (1943). Emulsifiers can be prepd. by passing air through unsatd. fats at a temp. of 200-230°. They compare favorably to polyglycols and sugar alcs. in their emulsifying properties. (*Chem. Abs. 40,* 224.)

POLYMORPHISM AND TRANSITIONS OF ANHYDROUS AND HYDROUS SODIUM STEARATE. R. D. Vold. *J. Phys. Chem. 49,* 315-28 (1945). Calorimetric and dilatometric methods were used along with microscopic examn. on soap contg. less than 2.5% H_2O. The following transitions were observed: alpha→beta at 52° and is sometimes reversed if the H_2O content is above 0.75%. Beta⇄lambda at 71° (a genotypic transition). Lambda→supercurd at 90° and is reversible if the H_2O content is below 1.5%. Gamma⇄supercurd at 90° and the temp. is independent of compn. up to 1.9% H_2O but the heat effect decreases. Cooling supercurd below 90° usually gives the gamma form, especially if the H_2O content is above 1.5%. Supercurd⇄subwaxy at about 115° and here both the temp. and heat effect of transition decrease with increasing H_2O content. Subwaxy⇄waxy at about 135° and the transition temp. is independent of increasing H_2O content but the heat effect increases markedly from 0.0 to 2% H_2O. Superwaxy⇄subneat at about 204° and subneat⇄neat at around 230°. The alpha form seems to be a hemihydrate while the beta form has a lower H_2O content but is not necessarily a hydrate. The H_2O content has a marked effect on several of the transitions. (*Chem. Abs. 40,* 225.)

THE HYDRATE NATURE OF SOAP. K. W. Gardiner, J. M. Buerger and L. B. Smith. *J. Phys. Chem. 49,* 417-28 (1945). A method combining the use of controlled dehydrations and x-ray diffraction analysis has been employed in studying the hydrate nature of several crystalline forms of soap. Ca palmitate, as prepared, is a mono-hydrate and loses moisture in one step with an accompanying change in powder pattern. The α form of 1:1 acid Na stearate, on the other hand, is shown to be a nonhydrated phase at room temperature and no change in the powder pattern occurs on heating the crystals at 105°. It is believed that all neutral Na soap phases occurring in the central areas of the phase maps of worked soap-water systems are definite hydrates.

THE MICELLAR STRUCTURE OF SOAP SOLUTIONS AND THE MECHANISM OF THE SOL-GEL AND GEL-COAGEL TRANSFORMATIONS. Dikran Dervichian. *Compt. rend. 217,* 299-301 (1943). In an effort to reconcile the points of view of McBain and Hartley, Stauff postulated 2 types of micelles in soap solns. D. shows that all the properties of these solns. can be accounted for on the basis of a single type of micelle. The results of x-ray analysis are interpreted by assuming that layers of water mols. are sandwiched between layers composed of elementary micelles of soap. These micelles can also form microcryst. fibers; in this form they constitute the coagulated gel (coagel) and account for the phenomenon observed below the Kraft point. The way in which layers, ribbons, and fibers can be produced by aggregation of the micelles is discussed. (*Chem. Abs. 39,* 5152).

PATENTS

DETERGENT BARS OR CAKES. **Emil E. Dreger and A. Carr Bell** (Colgate-Palmolive-Peet Company). *U. S. 2,385,614.* A detergent in bar form contains solid salts of the sulphuric acid ester of diglycerides of long chain fatty acids.

METHOD AND APPARATUS FOR PRODUCING LIGHT BULKY SOAP PARTICLES. **Alfred Vang** (Stevenson, Jordan & Harrison, Inc.). *U. S. 2,392,072.* Powdered soap particles may be produced and graded by flowing molten soap into a vibrating diaphragm where "bouncing" forms small hollow spheres which may be blown into sorting bins.

SULFATED AMIDE WETTING, DETERGENT AND SUDSING AGENTS. Heinrich Bertsch. *Can. 427,726.* Sulfated amides may be produced in quantitative yields by reaction of a fatty acid halide (C_8 and above) and a lower aliphatic hydroxy amine (or substituted) followed by sulfation (H_2SO_4) and neutralization (NaOH) to give water soluble salts having wetting, detergent and sudsing properties.

HARD WATER SOAP. Lawrence H. Flett (Allied Chemical & Dye Corp.). *U. S. 2,390,295.* Alkyl aromatic sulfonates used with soaps have detergent properties, prevent lime soap curds, and carry over their action to rinsing in hard, sea or acid waters.

IMPROVING APPEARANCE OF SOAP BARS. John W. Bodman (Lever Brothers Co.). *U. S. 2,392,831.* Treatment of soap bars with hot water, or water and a miscible organic solvent for soap, produces a glossy finish.

PRODUCTION OF SULFONATES FROM CASTOR OIL. Victor Wolf, Ltd. and Richard Rosenbusch. *Brit. 562,321.* Split castor oil is treated in the presence of gaseous HCl with a mono-hydric aliphatic alc. contg. not more than 5 C atoms and the esterified product is then sulfonated. (*Chem. Abs. 40,* 480).

SOFT SOAPLIKE PRODUCTS. Herbert Manneck (Kalle & Co., A.-G.). *Ger. 742,194.* Surface-active sulfonation products are mixed with a saponifying soln. contg. cellulose ether acids or their salts, and allowed to stand until salts of the sulfonation product salts are formed. (*Chem. Abs. 40,* 482.)

CAPILLARY-ACTIVE COMPOUNDS OF HIGH MOLECULAR WEIGHT. Henkel & Cie. G.m.b.H. *Ger. 741,305.* Such products are obtained from partly or totally hydrogenated org. hydroxy or amino compds. of at least 12 C atoms and contg. at least 2 C rings. The production of capillary-active compds. involves the substitution of at least one radical contg. at least one solubilizing group on either the hydroxy or amino radical of the parent compd. (*Chem. Abs. 40,* 481.)