

RECOVERY OF ORGANIC COMPOUNDS. H. Dreyfus (Cellanese Corporation of America) *U. S. 2,331,965*. Process for the recovery of a distillable fatty acid from a salt thereof comprises subjecting the salt to reaction with a normally solid inorganic acid selected from the group consisting of boric acid, hydrated alumina, and silicic acid so as to distill off from the reaction mixt. the free fatty acid.

LIQUID WAX POLISH. J. M. Olson (Minnesota Mining & Manufacturing Co.). *U. S. 2,331,925*. The polish contains wax, fat acids, rosin, NH_4OH and water.

EPINEPHRINE DERIVATIVE AND PREPARATION THEREOF. E. L. Gustus (Wilson & Company). *U. S. 2,332,075*. An epinephrine salt of a lauryl ester of a dicarboxylic acid.

PROCESS FOR THE PREPARATION OF HIGHER UNSATURATED ALIPHATIC ALCOHOLS. G. von Schueckmann (American Hyalsol Corporation). *U. S. 2,332,834*. A carrier supported hydrogenation catalyst for reducing unsatd. fatty acids to unsatd. alcs., essentially contains Cu and Cd., the latter being present in the ratio of 15 to 55% of the former.

SOFTENING AGENT FOR HIGH POLYMERIC SUBSTANCES. W. Gruber and H. Machemer (Alien Property Custodian). *U. S. 2,332,849*. The method of plasticizing

and thermally stabilizing polyvinyl chloride comprises incorporating therein an aliphatic ester of diacetoxystearic acid.

PROCESS FOR PREPARATION OF SULPHONAMIDE DERIVATIVES. Z. Földi, A. Gerces, I. Demjen, and R. König (Alien Property Custodian). *U. S. 2,332,906*.

LUBRICANT. L. L. Davis and B. H. Lincoln (Socony-Vacuum Oil Company). *U. S. 2,335,261*. A lubricant comprising in combination a hydrocarbon oil and 0.25-15% of a metal soap of an aliphatic substituted fatty acid.

LUBRICATING COMPOSITION AND POUR DEPRESSOR THEREFORE. E. Lieber and M. E. Thorner (Standard Oil Development Company). *U. S. 2,334,565*. Polymerized glycerol is used as a pour depressor for mineral oil lubricants.

STABILIZED GREASE COMPOSITION. R. S. Barnett and G. Kaufman (The Texas Company). *U. S. 2,334,239*. A stabilized grease compn., comprises a homogeneous mixt. of a mineral oil, an amt. of lime soap of high mol. wt. fat acids sufficient to impart to said mineral oil the consistency of a grease, and a minor proportion of a stabilizing mixt. consisting of castor oil and an ester of a higher fat acid and a polyhydric alc., said ester being of the group consisting of partial esters and esters contg. ether linkages.

Abstracts

Soaps

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WASHING COMPOUNDS AND DERMATITIS. *Perfumery and Essential Oil Record 34*, 262-3 (1943). The preparation contains approximately 75 per cent borax and 25 per cent dry soap, the borax being finely granulated and added because of its softness, solubility, detergent and water softening properties, and mild alkalinity. The resulting product is an efficient washing compound possessing desirable fungicidal properties, and, at the same time, is so mild in its action on the skin as to reduce any tendency to dermatitis.

NEW WAR-TIME ADDITIVES FOR SOAP MANUFACTURE. Paul I. Smith. *Am. Perfumer & Essential Oil Rev.* 45, No. 10, 61-3 (1943). Methyl cellulose, if incorporated into soap, aids its detergent action and produces a more lasting and satisfying lather. This cellulose material is odorless, tasteless, nontoxic, and colorless. It is soluble in cold water, but insoluble in hot water and in saturated salt solutions. It is stable to alkalis and to dilute acids over a pH range 2-12. Alkalies, including caustic soda, caustic potash, and lime water, act to increase the viscosity of methyl cellulose solutions but have no other effect on them. The advantages of methyl cellulose in soap manufacture are: increase in the hardness of the soap; improvement in the texture, sheen and general appearance; improvement in the lathering properties; and in the smoothness of the lather. Emulsifying and foaming compounds are discussed in relation to extending and improving lower grade soaps.

IMPROVEMENTS IN THE MANUFACTURE OF EXTRUDED SOAP. *Perfumery and Essential Oil Record 34*, 259-61 (1943). Milled soap containing high proportions of the β soap phase suds readily. A new process which yields soap of this type consists of mechanically agi-

tating or working soap of appropriate composition while it is being cooled from a fluid or molten state through varying degrees of plasticity causes the formation of the β soap phase, when, and only when, the final operation of the soap leaving the agitating operation is below a critical value which varies with the chemical composition of the real soap portion of the mass and with the moisture content; also, that when the temperature of the soap leaving this agitating operation is kept above a power limit at which the mass substantially loses its pasty cohesiveness, a product is formed which is softer and less tough and translucent than milled soap of like formula.

PROPERTIES OF DETERGENT SOLUTIONS. Thomas H. Vaughn and Anton Vittone, Jr. *Ind. & Eng. Chem.* 35, 1094-98 (1943). In washing tests made at 60° C. with artificially soiled muslin the effect of 0.05 per cent of various alkaline builders on the detergency of 0.1 per cent soap solutions is investigated. It is shown that high detergent action can be obtained with some builders having a low detergent rating by using the proper ratio of soap to builder. In tests of soil at 60° C. the whiteness retention property of the builders is investigated at a soap concentration of 0.1 per cent and a soap to builder ratio of 1 to 1. It is shown that the silicate and phosphates differ from other builders in their action on soap with respect to whiteness retention.

ESTIMATION OF FATTY ACIDS IN SOAP. *Ind. Chemist 19*, 580 (1943). It is well known that when coconut or palm oil is employed in the preparation of soap, estimations of fatty acids, carried out in the conventional manner usually give low results. This has been ascribed to the volatility of capric and caprylic acids. In the present work results have been obtained which

prove that the loss which occurs on evaporating solutions of the so-called volatile acids is negligible. Nevertheless, losses do occur in the determination of these "volatile" acids, and these have now been shown to be due to the hydrophilic nature of the acids. However, if the volume of the acidified solution is kept small the acids are "salted out," and by using a relatively large volume of organic solvent practically complete extraction is affected.

A RAPID METHOD FOR THE DETERMINATION OF FATTY ACIDS IN SOAPS AND DETERGENTS. Svend Schroder. *Kem. Maanedstidende* 21, 159-61 (1940). A method is reported with which it is possible to obtain sufficiently accurate values in 10-15 min. after the weighing out of the sample. A sample contg. about 1 g. of fatty acids is weighed and treated with a slight excess of 4N H₂SO₄ in a 50-c.c. beaker. After warming briefly over a low flame about 20 c.c. of alc. is added. The fatty acids are dissolved in the aq. alc. This soln. is titrated electrometrically against 0.5 N NaOH to a definite pH value, the buret is read and the titration is continued to a 2nd pH value, at which the buret is again read. The difference between values are previously established by titration of a known sample. The presence of Na₂SiO₃ or NaBO₃ does not essentially interfere with the detn. (*Chem. Abs.*)

"ACID-SOAPS" (CATION-ACTIVE WETTING AGENTS) OBTAINED FROM MINERAL-OIL FRACTIONS. Elmar Profft. *Fette u. Seifen*. 49, 868-71 (1942). Paraffin and petroleum oils were chlorinated and then treated with NH₃ or pyridine to obtain cation-active wetting agents. Best results were obtained with a compound prepd. by chlorinating under cooling 78 g. of (American) petroleum oil, until the increase in wt. was 20 g., corresponding to about 1 mol. Cl; washing the product with H₂O, dil. Na₂CO₃ soln. and again with H₂O. Eighty g. of the alc. soln. of NH₃, 140 g./l. Finally the product was heated on a water bath to remove excess NH₃ and alc. and the residue extd. with H₂O. The exts. were then concd. Wetting and sudsing tests were used to evaluate the products. (*Chem. Abs.*)

FOR CAUSTIC SODA BURNS. *Soap, Perfumery & Cosmetics* 16, 562 (1943). A 5 per cent ammonium chloride solution can be used now for treating caustic soda burns. This is claimed to be considerably more satisfactory than the application of sodium bicarbonate. Drenching or irrigation within 40 seconds of contact is claimed to prevent burning, while the severity of burning is greatly lessened by such treatment, even if some delay occurs. Irrigation in the latter case is carried out for 10 to 15 minutes, followed by normal saline of plain water for an hour.

THE OSMOTIC ACTIVITY OF COLLOIDAL ELECTROLYTES. J. W. McBain and A. P. Brady. *J. Am. Chem. Soc.* 65, 2072-77 (1943). The osmotic and conductivity data indicate the presence of a small proportion of highly conducting micelles in very dilute solutions, a conclusion which is supported by previously published migration data. The addition of potassium chloride or of potassium sulfate to very dilute solutions of potassium laurate promotes the formation of colloid, so that the result is distinctly less than additive; in higher concentrations, where the colloid is already fully formed, the effect on freezing point lowering is slightly more than additive. There is no marked indication of high ionic strength in solutions of colloidal electrolytes.

SYNTHETIC DETERGENTS. Foster D. Snell. *Soap* 19, No. 11, 31-3, 74 (1943). It will be seen that by properly balancing a hydrocarbon chain with one or more solubilizing groups, synthetic compounds can be prepared having surface-active, and in some cases, marked detergent properties. By avoiding the —COONa group, compounds more stable than soap in hard water and in acid solution are obtained. The number of possible solubilizing groups which may be used is much greater than given in lists. Vast numbers of surface-active compounds can therefore be formulated.

ACETONE IN SOAP ANTIOXIDANT. *Soap, Perfumery & Cosmetics* 16, 627 (1943). The addition to a soap composition of a small quantity of a product obtainable by the reaction of an aliphatic ketone compound, such as acetone, with ammonium thiocyanate, prevents or greatly reduces deterioration and oxidation of the soap. In tests the reaction product was mixed in the proportion of 0.1 per cent with a pure white toilet soap stock containing 0.07 per cent free sodium hydroxide and 12 per cent moisture. It is said that the antioxidant is neutral in reaction and does not interfere with the estimation of the proper end point of the reaction in the manufacture of the soap.

ROT-PROOFING TEXTILES. J. C. Towner. *Textile Colorist* 65, 415-17 (1943). Copper soaps have proved the most efficient agent for rot-proofing textiles. These fatty acid salts are of a waxy nature and are highly water-repellent when properly prepared. Copper soaps are readily available, and can be prepared in very large quantities from certain waste products. They can be applied to fabrics by a variety of processes which are chosen to suit the particular fabric being treated. The chief methods now employed are hot impregnation, copper soap emulsion, and mixtures of emulsions of copper soaps and suitable waxes. Directions are given for these procedures.

RANCIDITY AND DARKENING OF SOAPS. Mykola Zajcev. *Seifensieder-Ztg.* 67, No. 15, 142, No. 16, 152 (1940). Several soaps were analyzed fresh and after becoming rancid. Rancidification caused no significant change in the amt. of unsaponif. fat or amt. of unsaponifiable substances. A good soap boiled with 0.001% Fe₂O₃ or CuO became rancid within 4 weeks. Soaps prepd. from fat acids contg. 0.001-0.002% Fe darkened considerably. (*Chem. Abs.*)

A SOAP WHICH INDICATES THE PRESENCE OF MERCURY FULMINATE. Howard S. Mason and Isador Botvinick. *U. S. Public Health Repts.* 58, 1183-6 (1943). The active ingredients of this reagent soap are triethanolamine and diphenylthiocarbazon. To help reduce the incidence of Hg fulminate dermatitis in the explosive industry, this liquid soap was developed. The soap is orange in color and in the presence of traces of Hg salts it changes rapidly to a deep, easily recognized purple. Seven references. (*Chem. Abs.*)

SOFT SOAPS AND DETERGENT PASTES. Widaly. *Seifensieder-Ztg.* 69, 130-1 (1942). Pptd. gelatinous Al(OH)₃, water glass, alkali carbonates and foaming agents can be used in the manuf. of soft soaps. Recipes are given for the use of soaps (3% fatty acid) and tylose, and particularly the use of Mersolsulfonic acid or Mersolat in the manuf. of these products. (*Chem. Abs.*)

MERSOLAT WASHING POWDER. Widaly. *Seifensieder-Ztg.* 69, 106 (1942). The com. utilization of Mersolat is discussed. W. recommends that Mersolat washing

powder be manufd. in these 2 sep. charges in order to obtain a quickly drying powder that does not harden to a single mass after packaging. Charge 1: Mersolat, calcined soda and water glass; charge 2: soda, cellulose products and remaining salts. (*Chem. Abs.*)

PATENTS

DETERGENT PAPER TOWEL. M. T. Flaxman (Union Oil Company). *U. S. 2,333,919.*

PROCESS FOR DEDUSTING COMMINUTED SOAP. B. L. Maxwell and C. T. Atwood (Lever Brothers Company). *U. S. 2,328,568.* A method of treating soap product having particles of various sizes and including substantially in excess of 1% of particles passing a 140-mesh sieve comprises forming a plurality of falling curtains of said particles and passing a gaseous carrier medium through said curtains of particles at an angle to the vertically falling particles and at a velocity of not less than 500 feet per min. whereby objectionable fine particles are entrained in the moving gaseous medium and separated from the remaining falling soap particles.

DEDUSTING PROCESS AND THE PRODUCT THEREOF. J. W. Bodman (Lever Brothers Company). *U. S. 2,329,694.* A soap product comprises finely divided soap particles having on at least a part of their surfaces a superficial coating, only of a water-soluble, wax-like agent comprg. polymerized ethylene glycol.

SOAP PRODUCT AND PROCESS OF MAKING SAME. F. E. Joyce and E. J. Lindhart (National By-Products, Inc.). *U. S. 2,332,727.* The process of manufg. a finely divided powdered soap comprises providing a hot, uncrutched fluid to semi-fluid soap having a moisture content between about 6% and about 30% and a temp. between not substantially below 150° F. and up to about 260° F. introducing said soap into a vessel and rolling heavy rollers around on the material in the vessel while it cools, until the soap hardens and is broken up into particles.

DEVICE FOR PRODUCING HOMOGENEOUS MATERIAL (SOAP). F. F. Pease (Lever Brothers Company). *U. S. 2,335,306.* In a device for producing a compn. has agitating means and conveying members enclosed in a jacket, the combination of means for feeding said compn. at a constant pressure into said jacket comprising an impeller pump, a torque-responsive, variable speed transmission for actuating said pump and means for discharging said compn. under uniform pressure from said jacket.

MANUFACTURE OF SOAP. L. Sender (The Sharples Corporation). *U. S. 2,335,457.* The present invention relates to the art of soap making, and was conceived as an improvement in recently developed methods of making soap continuously with the aid of centrifugal separators.

REFINING OF FATTY ACID ESTERS AND FATTY ACIDS. W. N. Traylor (Hercules Powder Company). *U. S. 2,334,850.* The process of refining a material selected from the group consisting of fat acid esters and fat acids consists of treating said material under ionizing conditions with a metal above hydrogen in the electro-motive series and an acid salt.

CLEANSING PROCESS AND PRODUCT. J. Nüsslein and K. Pauser (Alien Property Custodian). *U. S. 2,335,194.* The washing agent contains cellulose, starch or other carbohydrates or esters of the same washing agents such as fat acid condensation products, sul-

furic esters of fat acls., sulfonated hydrocarbons or the like, and inorg. detergent salts.

DRY DETERGENT COMPOSITIONS OF INORGANIC ALKALI PHOSPHATES AND SILICATES. E. A. Robinson (Diamond Alkali Company). *U. S. 2,333,443-4.*

STABLE TALL OIL PRODUCT. T. Hasselstrom. *U. S. 2,334,762.* A new article of manuf. is heat treated sulfate tall oil stabilized to oxygen-containing gases, the resinic portion of said tall oil containing about 2% to about 35% dihydroabiatic acid, being substantially devoid of Steele's abietic acid and being stabilized to oxygen contg. gases.

HIGH MOLECULAR WEIGHT SURFACE ACTIVE AMINES. N. B. Tucker (The Procter and Gamble Company). *U. S. 2,334,517.*

MANUFACTURE OF SULPHONATED DETERGENTS. R. Riegler (Allied Chemical & Dye Corporation). *U. S. 2,330,922.*

PROCESS FOR IMPROVING THE STORAGE PROPERTIES OF ALKYL ARYL SULPHONATES. G. C. Toone (Allied Chemical & Dye Corporation). *U. S. 2,333,830.*

SOAP FROM MILK. John E. McCormick. *Can. 415,133.* A jelly-like soap based on at least 80 per cent of whole milk, contains the following ingredients: an amine soap of a fatty acid, a hydrogenated oil having a relatively high melting point—to stabilize the product over a wide temperature range—a preservative, and a sweet-cream butter-milk powder. The latter three ingredients are present in amounts less than that of the amine soap. (*Chem. Abs.*)

DETERGENT EVALUATION. Theodor Hesse. *Ger. 723,097.* Methods of evaluating washing agents include measurement of the foam number, the half-time value of foam breaking, the pH, and the surface tension of the solution. These are determined almost simultaneously in the same testing vessel at the time the solution is made. (*Chem. Abs.*)

CONDENSATION PRODUCTS OF AMIDINES WITH ALKYLENE OXIDES. Walter P. Erickes (American Cyanamid Co.). *U. S. 2,320,225.* By reaction of dicyanamides with ethylene oxide at a temp. of about 106° in a sealed pressure bomb, a viscous liquid is obtained suitable for use as an antioxidant in soaps. Similarly propylene and numerous other mentioned reactants may be used. (*Chem. Abs.*)

SOAP. Leopold Sender and James H. Wilson (Sharples Corporation) *U. S. 2,321,967.* A process is employed for the sepn. of insol. impurities from a soap nigre cont. free alkali, which involves adding a source of acid, such as coconut oil, to the nigre and treating the acid with the free alkali, of the nigre until the quantity of such free alkali is substantially reduced, then removing insol. impurities from the acid-treated nigre, as by centrifuging (the reaction between the acid and the nigre constituents being so effected as to avoid substantial splitting of the soap of the nigre). (*Chem. Abs.*)

WETTING AGENTS AND DETERGENTS. Emil E. Dreger and John Ross (Colgate-Palmolive-Peet). *U. S. 2,321,020.* Secondary alc. sulfates are prepd. preferably contg. at least 11 C atoms and suitable for use as emulsifying and deterging agents, such as Na pentadecyl-4, -6, or -8 sulfate, as by converting straight chain aliphatic acids contg. 6-11 C atoms into ketones, hydrogenating to form secondary acls., and sulfonating, and neutralizing with NH₃ or alkali metal hydroxides or carbonates. (*Chem. Abs.*)