seed and soybean oil foots there are the steps of completely saponifying the fats with caustic soda and at atm. press. graining the resulting soap with an aq. soln. of a substance of the class consisting of salts and alkalies, withdrawing said soln. recovering the settled soap and acidulating it to liberate the fatty acids, and distg. the fatty acids.

FRACTIONALLY DISTILLING FATTY ACID-CONTAINING STOCK. R. H. Potts (Armour & Co.). *U. S. 2,322,056.*

AMINO CARBOXYLIC ACID ESTERS. B. R. Harris. *U. S. 2,321,595.* Hydrochlorides of aliphatic primary aminocarboxylic acid esters of higher molecular weight fatty acid partial esters of sugar alcohols are prepd. for use as antiseptics and disinfectants.

AMINO CARBOXYLIC ACID ESTERS OF HIGHER MOLECULAR WEIGHT CARBOXYLIC MONOESTERS OF GLYCOLS. B. R. Harris. *U. S. 2,321,594.* H Cl salts of amino aliphatic acid monoester of lauric acid, monoesters of fat acid, monoester of glycol are used as antiseptic and disinfectants.

SOLUBLE CUTTING OIL. E. W. Carlson and E. B. Cyphers. *U. S. 2,320,263.* An improved alkaline-sol. oil compn. comprises a base oil, an emulsifying agent selected from the class of phenols which are characterized by having at least two alkyl groups attached directly to the phenolic ring.

FROTH FLOTATION OF ACIDIC MINERALS. L. J. Christmann, D. W. Jayne, Jr., and S. E. Erickson (American Cyanamid Company). *U. S. 2,321,186.* Froth flotation process of separating phosphate ore values from acidic siliceous gangue, a step comprises subjecting the ore to froth flotation in the presence of a reagent comprising the diacidyl reaction products of a polyalkylene polyamine with fatty acids.

WAX COMPOSITION. E. A. Nill (The H. A. Montgomery Co.). *U. S. 2,320,644-5.* A wax composition having improved properties comprises about 2% to about 10% of a higher fatty acid anilide, about 2% to about 10% of a water-insol. metallic fatty acid soap, and the balance mineral wax, said compn. being characterized by its fine grain, increased tensile strength, increased me. p. and high water-repellency.

INORGANIC PLASTIC PRODUCT AND PROCESS OF PREPARING THE SAME. A. W. Ralston and E. J. Hoffman (Armour and Company). *U. S. 2,320,009.* The process of improving the plasticity of aq. mixtures prepd. from clay which includes the step of incorporating therewith small amts. of a primary aliphatic amine compd. chosen from the group consisting of primary aliphatic amines and salts thereof having at least 10 carbon atoms in the alkyl radical.

LIME AND PLASTER PRODUCT AND PROCESS OF PREPARING THE SAME. A. W. Ralston and E. J. Hoffman (Armour and Company). *U. S. 2,320,010.* The process of improving the plascity of aq. mixtures prepd. from inorg. solids chosen from the group consisting of lime and plaster of Paris, and like cementitious materials includes the steps of incorporating therewith small amts. of a primary aliphatic amine compd. chosen from the group consisting of primary aliphatic amines and salts thereof having at least 10 carbon atoms in the alkyl radical.

PROCESS OF MAKING 12-KETOSTEARAMIDE. W. E. Hanford and R. H. Wiley (E. I. du Pont de Nemours & Company). *U. S. 2,320,232.* The process comprises bringing a compd. selected from the class consisting of the acid, the anhydride, the ester, and the halide of 12-ketostearic acid in admix. with a compd. selected from the group consisting of amonia and primary and secondary amines at a temp. between 30 and 160° C.

PROCESS FOR MAKING AN OIL MODIFIED ALKYD RESIN. W. A. Waldie (New Wrinkle, Inc.). *U. S. 2,319,022.*

Abstracts

Soaps

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SOAP FROM SOUTHERN PINES. Norman G. Farquhar. *Chem. & Met. Eng. 50,* No. 4, 108 (1943). In an effort to determine the true place of rosin in soap, the chemists of the Hercules Powder Co. conducted extensive tests on rosin soaps. The development of polymerized and hydrogenated rosin derivatives have further helped the use of rosin in soap manufacture. Various soaps were made using different percentages and grades of wood, and gum rosins and rosin derivatives in white stock (white tallow, 75%, and Cochin coconut oil, 25%) and brown stock (brown tallow plus coconut oil). Yields of rosin soaps were comparable to yields of fatty soaps. Bar soap containing up to 20% of Staybelite (Hercules hydrogenated rosin) showed little increase in color over soap made without rosin. All other rosins used caused an appreciable increase in the color of soaps made from white stock, but caused only slight darkening of soaps made from brown stock. Hardness of white base soap was not appreciably changed by addition of Staybelite up to 15%. Rosin was most effective in increasing the solubility of soaps made from low titer fats. Sudsing was either increased or unaffected by addition of rosin up to 30%. Based on results obtained thus far, it is recommended that rosin in soap be limited to 3 to 30% of the total soap stocks used, depending on the type of product desired.

ANALYSIS OF WAR SOAP. R. Lucentini and A. Picozzi. *Ann. chim. applicata 32,* 163-8 (1942). The proposed methods are for soaps contg. a large amt. of insol. mineral constituents. I. Detn. of moisture and fat acids: Dry 10 g. of diced soap on 20 g. medium-grained quartz for 6 hrs. at 105° for the moisture detn. Ext. the residue with alc. for 6 hrs. in a Soxhlet extractor. After evapg. the alc. add 150 cc. of water and 25 cc. of 20% HCl. With the use of a separatory funnel ext. fat and rosin acids with ether. II. Detn. of fat acids and the free and total alkali: Titrate an alc. ext. as prepd. above with 0.5 *N* HCl using phenolphthalein as the indicator to det. free alky. Evap. alc., add 40 cc. of 0.5 *N* HCl and filter. The residue after evapn. is the chloride salt of the bound alkali hydroxide. The fat and rosin acids are dissolved off the filter paper with a 1:1 soln. of ether and Et alc. III. Detn. of the fat acids and the degree of sulfonation in the soap prepd. from sulfonated fats: Dry an alc. ext. as prepd. under I and take up with 100 cc. of water. Reflux with 100 cc. of concd. HCl for 1 hr. to split

off sulfo groups. Ext. fat acids and weigh. Ppt. from the aq. soln. with $BaCl_2$ for detn. of sulfate. IV. Detn. of the ash: Dry the samples in crucibles with a small flame, ash with a blast flame and weigh. A correction is applied because the ash contains carbonates: Cc = c — [(106A/80) — A], where Cc = corrected ash, c = ash according to the weighed results and A= total alkali hydroxide calcd. as NaOH. *(Chem. Abs.)*

CURRENT METHODS OF MEASURING FOAM. Sydney Ross. *Ind. Eng. Chem. Anal. Ed. 15,* 329-34 (1943). The static and dynamic methods of measuring foaminess of liquids were examined to determine the factors involved. For a film of a given stability the average life of a bubble is greater the smaller the bubble, increasing at least in inverse proportion to the square of the diameter of the bubble.

THE SOLUTION OF SOAPS IN MIXED SOLVENTS. Santi Ranjan Palit. *J. Indian Chem. Soc. 19,* 271-85 (1942). The term mix-solvency is proposed to represent the enhanced soly. found in certain mixts. of solvents of poor individual solvent power; the term mix-solvents is used to designate such mixts. Soaps show pronounced mix-solvency in mixts. contg. a polyhydric alc., a monohydric alc. and (or) a hydrocarbon or chlorinated hydrocarbon. The soly. of Na stearate was detd. at 25° in the following mixts.: ethylene glycol with varying amts. of MeOH, EtOH, PrOH, iso-PrOH, BuOH, iso-BuOH or iso-AmOH; BuOH with diethylene glycol, propylene glycol, trimethylene glycol or glycerol; $CHCl_3$ with diethylene glycol or propylene glycol; acetone with ethylene glycol. A compilation of the solubilities of 10 soaps in various individual org. solvents is included. As a means of comparing the efficiencies of different mix-solvents the mix-solvency factor is evaluated; this factor is defined as the ratio of the total area under the curve of soly. vs. compn. of the mix-solvent to the area under the straight line joining the 2 points representing the solubilities in the pure individual solvents. On this basis a mixt. of 56% glycerol and 44% BuOH is the most effective solvent, with a factor of 20.3; this mixt. also has the highest soly. for Na stearate of all the mixts. tried (11.42 g./100 g. solvent). For the same glycol the mix-solvency effect increases with increase in the mol. wt. of the alc.; the primary alc. is far more powerful than the secondary and the straight-chain primary is more effective than the branched-chain. For the same glycol the percentage of different alcs. required to produce max. mix-solvency is between 40 and 45 by wt. in every case except for MeOH (60%); for the same alc. and different glycols the max. points do not crowd together so closely. There is no simple mol. ratio of the 2 solvents at the max. points. In order for a single solvent or mixt. to be a good solvent for a soap it must have 2 adjacent OH groups and a hydrocarbon-dissolving portion; hence in mixts. of alcs. (A), glycols (G) and hydrocarbons (H) the combinations A-G, G-A, and A-G-H will be active solvents but A-H mixts. will be poor. An explanation of mix-solvency, based on solvation of different parts of the solute mol. by van der Waals' forces and H-dridge formation, is proposed. *(Chem. Abs.)*

DEVELOPMENT OF CLEANING MATERIALS IN 1942. Robert Sizelove. *Monthly Rev. Am. Electroplaters' Soc. 30,* 54-6 (1943). A review.

BODY-CLEANSING AGENTS. I. Hermann Hebestreit. *Fette u. Seifen 48,* 491-4 (1941); *Chem. Zentr. 1942, I,* 435. Because of their alk. reaction soaps may have a tendency toward skin irritation. Synthetic products have a greater penetrability and increased affinity for keratin which gives them a tendency to remove fats and produce a raw skin. Addn. of fat to the synthetic product does not help. Therefore materials are added to the synthetic soaps which have a greater affinity for them than keratin; hence the keratin in the skin is not removed. The keratin affinity is dependent on pH. Several brands of cleansing agents are mentioned, together with their advantages. A large no. of cleansing agents depend upon a scouring action. The solids in such a compd. should not have a particle size of over 200 μ. *(Chem. Abs.)*

POTASSIUM OR SODIUM SOAP. Kurt Lindner. *Wäscherei-Ber. 9,* 197-200 (1941); *Chem. Zentr. 1942, I,* 2727. The K soaps, soft soaps, have better sudsing and cold washing capacity and are easier to rinse off than Na soaps. The inconvenience of portioning these soaps in the household is a disadvantage. Solid K soaps have the advantage over soft soaps, in having qual. better fat constituents and allow more suitable washing tech. The K soap solns. do not gel. K soap is more suitable for white, coarse and fine washing than Na soap.

INDUSTRIAL APPLICATIONS OF WETTING AGENTS. Clyde A. Sluhan. *J. Chem. Education 20,* 38-40 (1943). Industrial applications of wetting agents.

SELECTION OF DETERGENTS (FOR THE DAIRY INDUSTRY). L. H. Minor. *Southern Dairy Products J. 32,* No. 5, 22, 24 (1942). A suitable detergent for the dairy industry softens the water, prevents pptn. of water minerals, increases the wetting ability of water, dissolves or softens milk residues so that they can be removed quickly, does not corrode metallic surfaces of the equipment, does not attack the hands, is nontoxic, does not produce off-flavors in dairy products, rinses freshly and is economical. *(Chem. Abs.)*

PATENTS

EMULSIFYING AND CLEANING AGENT. L. H. Flett (Allied Chemical Dye Corporation). *U. S. 2,317,986.* A mixture of substituted mononuclear aryl sulfonates contain as nuclear substituents aliphatic and alicyclic hydrocarbon radicals derived from a liquid fraction of petroleum of which at least 80% boils within the range from 195 to 295° C. at 15 mm. pressure.

DETERGENT AND METHOD OF MAKING IT. E. E. Dreger and J. Ross (Colgate-Palmolive-Peet Company). *U. S. 2,321,020.* A process of preparing an alkali metal salt of a normal, secondary, pentadecyl sulphate comprises reacting a normal, secondary pentadecanol with chlorosulphonic acid in an inert, anhyd. org. solvent and neutralizing the sulphated pentadecanol with an alkali metal hydroxide.

FROTH FLOTATION OF ACIDIC MINERALS. Ludwig J. Christmann and D. Walker Jayne, Jr. and Stephen E. Erickson (American Cyanamid Co.). *U. S. 2,312,387.* Reaction products of polyalkylene polyamines with tall oil are used in the froth flotation process.

A WASHING AND CLEANSING AGENT. Anton Bolz and Rudolf Watzel (Chemische Fabrik Job. A. Benchiser G. m. b. H.). *Ger. 719,734.* A soap is made to which is added a compd. of H_3PO_4, contg. less water than orthophosphoric acid, and aliphatic amines or aliphatic amines substituted in the alkyl group.