ically hydrogenating a liquid mixt. composed of the corresponding fatty acid nitrile in the presence of an aq. soln. of an alk.-reacting material in sufficient quantity to maintain free OH ions in the mixt.

PROCESS OF SEPARATING LEAD AND ZINC SULPHIDES. A. W. Ralston and E. W. Segebrecht (Armour & Co.). *U. S. 2,287,274.* The process of sepg. ZnS from PbS in ores contg. the same comprises subjecting an aq. pulp of the ground ore to froth floation in the aq. pulp of the ground ore to froth flotation in the presence of a mixt. of unsubstituted primary aliphatic amines obtained by hydrogenating cocoanut oil fatty acid nitriles.

ART OF MANUFACTURING LUBRICATING OILS. E. Lieber (Standard Oil Development Co.). *U. S. 2,287,110.* A lubricant comprises a hydrocarbon lubricating oil and a condensation product of phenyl hepta-decyl ketone with ethylene dichloride.

PREPARATION OF POLYHYDRIC ALCOHOLS. D. J. Loder (du Pont). *U. S. 2,285,448,*

Abstracts

Soaps

Edited by
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NEUTRALIZATION OF ALKALI IN THE SKIN. M. Zingsheim. Dermatol. Wochschr. *110,* 258-62 (1940); *Chem. Zentr. 1940, I,* 2976. Injury of the skin by alkali frequently appears as eczema in structural workers (working with lime and cement), housewives, and those employed in laundries and in the soap industry. The method of Burkhard was used in studying the skin condition. It consists in applying blotting paper impregnated with NaOH and phenolphthalein (both 1:2000) to the skin of the patient and noting the time required for decolorization. The patients could be divided into 3 groups on the basis of this test: those in which neutralization was rapid (3.75 min.), a middle group (3.75-5.75 min.) and those showing slow neutralization (over 5.75 min.). The skin of artists and painters having psoriasis neutralized the alkali slowly. Patients having constitutional eczema neutralized the alkali rapidly, from which it follows that they are probably less sensitive to treatment with ointments and to external injury than persons with other types of eczema. Men who did not have and had not had eczema neutralized the alkali slowly; this was obviously due to an occupationally conditioned hypofunctioning of the skin. *(Chem. Abs.)*

METALLIC SOAPS. Stanley B. Elliott. *Soap Sanitary Chem. 18,* No. 7, 26-27, 73-4 (1942).

NEW OINTMENT BASES. H. Stanley Redgrove. *Manuf. Chemist, 13* 130-4 (1942).

DETERGENTS FROM PETROLEUM. Lawrence Flett. *Chem. & Eng. News, 20,* 844-8 (1942).

FOUR BASIC FACTORS IN DETERGENCY. Foster Dee Snell. *Food Industries 13,* No. 10, 48-50 (1941). The factors are (1) initial alky. of pH of the detergent soln., (2) total alky. or buffer value of the detergent soln., (3) effect of lowering of interfacial tension between the foreign matter and water, (4) deflocculating and emulsifying power. For the expts. of synthetic foreign matter was made up of 4 g. C black, 5 g. mineral oil and 0.3 g. of cottonseed oil contg. 0.38% free acidity as oleic. The use of certain "sequestering" agents such as Na hexametaphosphate and several org. compds. prevent the pptn. of Ca and Mg curds from hard waters. The use of such agents with soap is one of the greatest advances in detergency in the present century. *(Chem. Abs.)*

THE PHYSICAL AND CHEMICAL PROPERTIES OF AQUEOUS SOAP AND ALKALI SOLUTIONS AND THEIR RELATION TO PRACTICAL DETERGENCY TESTS. James F. Oesterling. *Univ. Microfilms.* (Ann Arbor, Mich.) Pub. No. *368,* 101 pp. (1941). *(Chem. Abs.)*

SOLUBILITY OF SODIUM PALMITATE IN ORGANIC LIQUIDS. C. W. Leggett, Jr., R. D. Vold and J. W. McBain. *J. Phys. Chem. 46,* 429-40 (1942). Soly. curves are given for Na palmitate in glycerol, diethylene glycol, palmitic acid, iso-propyl, ethyl, n-heptyl and n-cetyl alcs., o-, m-, and p-cresols, n-heptane, n-cetane and Nujol. The phys. appearance of the systems above and below the soly. curve is indicated in terms of gels, jellies and liquid-cryst. phases and curd. *(Chem. Abs.)*

WORLD-WIDE CHEMISTRY: FRANCE: SOAP MANUFACTURE AND CONSUMPTION RESTRICTED. *Ind. & Eng. News 20,* 733 (1942). The shortage of vegetable oils has necessitated reductions in the max. contents of fatty acids in soaps and soap powders. Toilet soaps must not contain more than 18% of fatty and resinous acids, household soap not more than 26.5%, and cleaning powders not more than 9%. Fatty substances will be allocated for soap manuf. only to firms which possess adequate facilities for the recovery of glycerol. The glycerol lyes must be concentrated to at least 80% glycerol contents. The soap ration for the general public has been fixed at 100 grams of household or 75 g. of toilet soap plus 75 g. of household soap or 250 g. of cleaning powders per month, but special allowances are made for certain classes of industrial workers, etc.

WAR TIME PROBLEMS OF THE SOAP MAKER. Alan Porter Lee. *Soap 18,* No. 6, 23-26, 73 (1942). As substitutes for coconut oil, rosin, looked upon as the next best detergent, leaves much to be desired; babassu oil is scarce; palm oil is competed for with other industries. For the immediate future, palm kernel oil seems most promising. Lower-grade tallow-rosin-palm kernel combinations, with possibly some babassu will provide a working substitute for previous high-grade tallow-coconut oil combinations. In solving problems of substitution, equipment for refining, bleaching and hydrolysis of oils and for fatty acid distn. is a great asset.

Tables I and III list comparative constants of coconut, babassu, palm and palm kernel oils.

FORMULA PROBLEMS OF THE POTASH SOAP MAKER. Anon. *Soap 18*, No. 6, 27-29 (1942). Fatty acids are being developed as substitutes for coconut and other high lauric acid oils. Myristic acid seems most promising. A recently dev. fatty acid blend gives lathering qualities 80 to 85% those of straight coconut oil soap.

Speed of saponification when fatty acids are used is much greater. On the other hand such soaps dry out because of absence of glycerine and discolor on standing. The price of the fatty acids is higher than that of the whole oil, but is somewhat offset by greater yield of soap and greater speed of manuf.

Mixts. of fatty acids with soy bean oil, castor oil and peanut oil are being tried. Such mixts. are, however, difficult to filter.

Lathering qualities can be improved in the absence of coconut oil and lauric acid by addn. of wetting agents, such as sulfonated oil. Decreased soly. of soaps other than those made from coconut oil or lauric acid necessitates making up more dil. soln. Addn. of soda to the potash lye used in saponification serves to increase the body of these solns.

SADDLE SOAPS. Paul I. Smith. *Soap 18*, No. 6, 30-31, 73 (1942). A review. Saddle soap must have (1) a mild, but effective scouring action; (2) a lubricating effect; (3) good keeping qualities. Various formulas, most of them having a palm oil base, are described. Triethanolamine is a valuable addn., but because of its cost is not used in most working formulas. Other addns. are discussed. A straight palm oil rosin soap contg. a little free alkali is generally useful.

FATTY ACIDS. Anon. *Soap 18*, No. 5, 19-22, 70 (1942). The most important advantages to the soap manufacturer in using fatty acids are: simplicity; more uniform product; saving time; greater ease in saponification; no shrinkage in amt.; use of milder alkalies permissible; economy; more readily obtained complete saponification, resulting in less possibility of turbid soaps; better control of finished product; no necessity of bleaching. A typical procedure using fatty acids involves gradual draining of drums into the calculated amt. of caustic soda soln.

On the market at present are not only fatty acids from the whole oil, as corn oil fatty acids, but these have been fractionated to give individual fatty acids, as lauric, myristic, capric, palmitic and others.

THE TREND IN SOAP BUYING HABITS. Anon. *Soap 18*, No. 5, 25-27 (1942). Results of a survey reaching 7,500 Milwaukee housewives are reported. Percentage of families reporting use, as well as popularity figures for the leading brands in each field are given for the following: granulated soap, package soap flakes, toilet soap for bath use, white laundry soap, brown laundry soap, scouring cleanser, liquid shampoo, water softeners, household disinfectants, toilet bowl cleansers, shaving creams, tooth pastes, tooth powders and wallpaper cleaners.

OBSERVATIONS ON SOAP COSTS. J. H. Wigner. *Soap, Perfumery and Cosmetics 15*, 269-72, 252 (1942). For crediting the soapery with glycerine, the best method he has found, says W., uses the assumption that the % profit on soap and on glycerine is the same. To account nigres, there is added to the cost of the original fat an amt. equal to the fraction of fats passed on to the proper soap as nigre, multiplied by the difference in price of the two fat charges.

Three and one-half % is added to the wt. of fatty acids used, to account for loss; costing is made on the average test of soap sent out, with excess wt. of soap per box counted as an increase in test. Caustic loss may be 7-10% and is readily detd. in soaperies which buy, and do not produce their caustic. Total silicate, etc., bleaching, perfume and color must be charged to amt. of soap actually packed. For carbolic soaps, retention of ⅓ the cresylic acid by the scrap can be allowed for. Costing of steam is perhaps accurate to ls per ton in large soaperies; average for last 12 lbs. per ton in large soaperies; average for last 12 complete mos. is used. For labor costs, McNicol's time card is suitable for large soaperies.

W. illustrates by making up a cost sheet. Component fats are not costed separately. Allocation of overhead costs is extremely complicated. One may speculate whether the tendency of some soapers to make good trade in some items, and poor trade in others may not be due to errors in dividing up overhead costs.

THE USE OF SULFITE WASTE LIQUOR AS AN ADMIXTURE FOR SOAPS, WASHING POWDERS AND DETERGENTS. J. Juschtin. *Papier, Pappe, Zellulose u. Holzstoff 50*, 5-6 (1941); Chem. Zentr. 1941, II, 681. "Sulfone raw materials" obtained from sulfite liquors can be used to save fats in the soap industry. *(Chem. Abs.)*

PATENTS

SOLID COMMINUTED SOAP. V. Mills (Procter & Gamble Co.). *U. S. 2,287,698.* Equipment for spray drying soap into a fluffy powder is described.

PROCESS FOR PURIFYING FATTY ACIDS. L. E. Pirkle (Jasco, Inc.). *U. S. 2,287,128.* A distn. method of purifying soaps prepd. from oxidized petrol. hydrocarbons is described.

TREATMENT OF BLACK LIQUOR SOAP AND THE LIKE. L. J. Christmann and A. G. Houpt (Am. Cyanamid Co.). *U. S. 2,285,902.* This invention relates to a solvent method for the sepn. of black liquor soap or the like into the constituent fatty acids, fatty acid soaps, rosin acids, unsaponifiable fats and the like.

SYSTEM FOR MANUFACTURING SULPHONIC ACIDS. R. L. Brandt (Colgate-Palmolive-Peet Co.). *U. S. 2,285,390.*

ROSIN-CONTAINING SOAPS. I. W. Humphrey (Hercules Powder Co.). *U. S. 2,285,333.* A soap comprising the Na salt of hydrogenated rosin is satd. with H_2 to an extent from about 60 to about 95% of the theoretical for 2 double bonds of its unsatd. rosin acid radicals and a sapond. fatty acid.

TEXTILE-TREATING CHEMICAL AND PROCESS OF MAKING SAME. J. B. Rust (Ellis-Foster Co.). *U. S. 2,285,948.* The process comprises heating formaldehyde, stearonitrile and hexadecanoyl chloride at an elevated temp. until reaction has occurred and thereafter heating said reaction product with a tertiary amine.