ABSTRACTS

Soaps

Edited by M. L. SHEELY

PHENOMENA IN THE CONE OF THE (SOAP) PLODDER. H. Gabler. *Seifens-Ztg. 65,* 144-146 (1938). A study of the flow of soap in the plodder is illustrated with photographs; the new type of perforated plate with tapering holes of hexagonal section, the holes near the edge of the plate being greater than those at the centre, afford a final bar of more even texture than is obtained with the ordinary type of a plate. (*Brit. Chem. Abs.*)

MANUFACTURE OF TOILET SOAP. Anon. *Allgem. Oel. u. Fett.-Ztg. 35,* 437-444 (1938). The val. of the determination of NaCl, free NaOH, and H_2O (conveniently by the xylene-distillation method) in the fitted soap as a means of controlling its conditions for subsequent processing is emphasized. (*Brit. Chem. Abs.*)

MECHANICS OF DETERGENT ACTION. E. Schmit. *Tientex 3,* 258-60 (1938). S. applies the theories of Hardy, Harkins and Langmuir to the removal of oil from fibers. Modern detergents are composed of paraffin chains of over 12C which ionize in water displaying dual affinity toward water and oil. The hydrophile end (carboxyl or sulfonated-alc. groups) of the detergent chains extends into the water phase of the oil-water interface while the paraffin end comes into contact with the oil phase. Surface tension is lowered thereby and slight agitation will immediately emulsify the oil. Electrolytes, alkalies or impurities also affect surface tension. Alkalies usually lower the surface tension and increase detergency. This alone cannot remove all oil. Emulsification is necessary to remove oil left in the interstices of fibers. Presence of an oil-sol. substance in the detergent will facilitate removal of oil. Control of pH is very important in the washing of amphoteric fibers such as wool or silk. (*Chem. Abs.*)

SOAPS, DETERGENTS AND THEIR SPECIFICATIONS. H. P. Trevithick. *Ind. Standardization* 10-12 (1939). Progress is reported by the committee prepg. standard specifications for soaps. A tentative specification for powd. soaps is given in detail. (ASTM D 498-39T). Proposal is made to divide soap and alkali mixts. into 4 general classes: built soap, contg. over 50% soaps; "break" soaps contg. 25-50 soap; soap powders, contg. 15-25 soap; soapy detergents, contg. 1-15% soap. (*Chem. Abs.*)

FAT SPLITTING AND GLYCEROL MANUFACTURE. R. Heublyum. *Mfg. Perfumer 3,* 214-17 (1938). An account of current practice outlining the features of each of the following processes: Twitchell, autoclave, Krebitz lime sapon., H_2SO_4 and fermentation. Practical experience with Twitchell splitting methods for simplifying the process, improving quality and increasing the yield of the split product are discussed. Seven References. (*Chem. Abs.*)

GERMICIDAL DETERGENTS. *U. S. 2,138,805.* Halvor O. Halvorson, Millward Bayliss and John L. Wilson to Economics Laboratory, Inc. Germicidal detergent compns. are prepd. in the form of a dry mixt. of buffer salts, soaps, and the Na salt of a phenylphenol, in such proportions that when a soln., adapted for use as a detergent soln. is made of the mixt. in such strength that the resulting pH will be from 7 to 11, the soap and phenolate will each be present in soln. and to the extent of only such a small fraction of 1% in the soln. (the proportion of phenolate being such that the solns. would not be germicidal in the absence of the soap). U. S. 2,138,806 (Halvor O. Halvorson, John L. Wilson and Erling J. Ordal, joint inventors; to same assignee) related to similarly proportioned mixts contg. buffer salts, soap and azochloramid.

DEGREASING LIQUID. Brit. 491,960. Bennett (Hyde) Ltd. A stable degreasing liquid is obtained by saponifying tall oil with excess alkali solution, adding a grease solvent and then mixing in phenol in a quantity sufficient at least to neutralize the excess of alkali. The tall oil may be replaced by an artificial mixture of 50-70 pounds of rosin acid with 40-20 pounds of fatty acids such as oleic acid or the liquid fatty acids derived from fish, corn or castor oils.

STABILIZATION OF FATTY ACID COMPOUNDS. *U. S. 2,154,341.* George D. Martin, assignor to Monsanto Chemical Company. A soap containing a small proportion of a stabilizer against deterioration and development of rancidity consisting of a substituted thiourea, the substituents of which are selected from the group of radicals consisting of non-substituted aryl, biaryl, haloaryl, alkaryl, alkoxyaryl, alkyl, aralky, hydroxyalkyl, alicyclic, acyl, aracyl, oxyalkyl and guanyl.

SAPONACEOUS DETERGENTS. Brit. 492,719. Richard Thomas and Henry B. Oakley to Lever Brothers and Unilever Ltd. (formerly Lever Brothers Ltd.) Soap products that may be used in hard water and are in the form of flakes, threads, parings, puffed granules, powder, etc., to insure rapid soln. are obtained by mixing Na soaps of fatty acids having 2 or more

ethylene groups with a proportion of alkali orthophosphate that, as anhyd. salt, is 0.1-0.25% of the fat acids. The soap acids may also be mixts. of the acids with monoethylenic acids to which relatively small proportions of std. fat acids and (or) rosin may be added. The products may also contain sodium chloride, sodium sulfate, sodium borate, neutral sodium silicate or other agents not adversely affecting their properties.

PATENTS

PROCESS AND APPARATUS FOR PRODUCING DRY SOAP AND GLYCEROL. Fr. 830,435. A current of superheated steam is passed through a retort in which there is constantly maintained a pressure less than atmospheric. The fat or oil and an alkali are injected separately into the current of steam in the retort, and the soap which is produced is removed from the retort by a mech. operation.

ALKYD RESINS. Israel Rosenblum. Fr. 832,126. In the production of oil modified alkyd resins, fatty acids obtained from oils are subjected by themselves to a heat-treatment before being brought into reaction with the polyhybrid alcs. and polybasic acids. Acids from linseed, cottonseed, soybean or tung oil may be used and they may be heated at a temp. of about 230° for several hrs.

LUBRICANT . Standard Oil Dev. Co. Fr. 831,749. A lubricant suitable for motor direction indicators is composed of a solid fat and a smaller proportion of soaps of A_1 and Ca and water to obtain a greasy structure. An example contains A_1 stearate 2.77, Ga soap 2.77, sulfonated lard oil 13.9, lubricating mineral oil 80.36 and water 0.2.

PULP FROM OLD PAPER. Chemische Fabrik Grunau A. G. Bernhard Schilling and Georg Wiegand. Ger. 667,722. Old printed paper is treated with the condensation products of high-mol. fatty or resin acids and polymerized amino carboxylic acids or derivs. at a high temp. to produce pulp for making new paper. Thus newspapers are soaked with 40 times their vol. of water and heated to 95-98° with the Na salt of oleyllysalbinic acid. The mass is then washed with water, pressed and made into paper, cardboard, etc. In another example, the old paper is heated with the condensation product of lysalbinic acid and tall oil fatty acid chloride.

EMULSIFYING-COMPOSITIONS. Soc. chemique et routiere de la gironde. Fr. 833,170. An emulsifying-composition for bituminous substances: comprises a mixt. of soaps of satd. and unsatd. fat acids and of resin acids of resin oils. It may be obtained by simultaneous saponification of stearin, animal tallow, and resin or resin oils.

THOROUGHLY SAPONIFIED SOAP. L. N. Cox to Helsbergand Co. Ges. Brit. 494,056. Thoroughly saponified soap is obtained from highly split distilled fatty acids and concentrated soda lye in an open boiler by first mixing salts of strong bases and weak acids, other than carbonates, with the fatty acids, and then slowly adding the lye. Silicates, phosphates, and borates are suitable salts. In an example, 100 kg. of fatty acids and 5 kg. of trisodium phosphate are stirred together and heated to 80° C.; the equivalent soda lye of 42° Be. is then slowly added.

PRODUCTION OF BITUMINOUS EMULSION. H. E. Potts. Brit. 495,229. The sensitivity towards CaO of bituminous emulsions made with neutralized fatty acid soap or other sol. emulsifiers and free from fillers or solid dispersing agents is considerably decreased by addition thereto of 0.6-1.0% (calc. on the emulsion) of the alkali salts of dicarboxylic acids $(C_{2-5})\ H_2C_2)_4$.

SPRAY DRIED SOAP PRODUCT. W. H. Burkhart and E. T. Marceau to Hecker Products Corporation. U. S. 2,152,788. A spray dried soap product comprising aggregates consisting of minute sprayed particles cohering together wth interstices there between and without external void-defining shells, said aggregates being formed of upon impingement while in suspension in a gaseous medium, said aggregates being subsequently dried while in suspension in a gaseous medium to reduce the plasticity thereof and present the adhesion of said medium, certain of said aggregates being of such size as to pass through a 60 mesh sieve and to others comprising accretions of particles sufficient in quantity to prevent passage through a 60 mesh sieve but capable of passing through a sieve of 40 mesh.

PROCESS FOR THE TREATMENT OF SULPHONATED FATTY ALCOHOLS AND THE PRODUCTS PRODUCED THEREBY. J. Hirschberger. U. S. 2,141,245. The Ca and Mg tolerance of sulphonated higher fatty alcs. is improved by warming them for a short time with 50% of their wt. of Et alc.

DETERGENT COMPOSITION. W. H. Hampton (to Standard Oil Co.). U. S. 2,143,066. A water sol. soap is improved by the addn. of a petroleum extract which is characterized as being soluble in liquid SO_2 and obtainable by selective solvent extn. of natural petroleums and their distillates.

SOAP. R. G. Gerber. Brit. 494,276. The fatty material is emulsified, an accelerator of the peroxide type is added, followed by the addn. of lye. The object of the invention is the rapid manuf. of soap without heating.

SAPONIFICATION METHOD. French No. 828,233. Heilsberg and Co. G.m.b.H. In order to carry saponification to completion in the manufacture of soap from distilled fatty acids dissociated at a high temperature and saponified with a concentrated caustic soda lye, an alkaline salt is added. Carbonates are excluded. Thus, a mixture of fatty acids is treated with five per cent. by weight of tri-sodium phosphate, heated to 80° C. and mixed with the equivalent amount of a caustic soda lye of 42° Be.