ABSTRACTS

Soaps

***Edited by* M. L. SHEELY**

Apparatus for the Twitchell Splitting Process. *Oil and Colour Trades Journal,* Vol. LXXXIII, No. 1795, Page 665, March 10, 1933.—Whilst pitch pine vats ordinarily used for the operation of splitting glycerides by means of the Twitchell method are convenient and cheap, they do not meet every demand made on them. Lead-lined wooden or iron containers are not entirely satisfactory owing, amongst other things, to the high temperature of the splitting process. Acid-resistant stoneware is not always free from troublesome disturbances. In order to consider the advisability of using copper vessels, the point was very carefully investigated by Heublem ("Fettchem. Umschau," 1933, p. 6) in the laboratory, and then a large-scale experiment was run. There has been considerable discussion as to the effect of copper on the efficiency and speed of the splitting reaction, and it is of interest to note that copper vessels have been in constant use as Twitchelling vats in Krasnodar since 1929, with no apparent lowering of the quality of the material made.

Boric Acid and Borates in Soap. *The Perfumery and Essential Record,* February, 1933.—The recently produced sodium metaborate, $NaBO_24H_2O$, is described as being stable in air, and evolving its available oxygen on being heated in aqueous or acid solution. The decomposition of perborate solutions is said to be hastened by the presence of borax, acids, sodium hydroxide, and a number of metals and metallic salts. When dissolved in soft water it is stated to give an alkaline solution which slowly dissociates to form caustic soda, borax, and hydrogen peroxide.

In spite of the above-mentioned effect of certain metallic salts in hastening the decomposition of sodium perborate, other salts are claimed to render it more stable. The addition of acid or neutral sodium pyrophosphate or ammonium phosphate for this purpose to soap powders containing sodium perborate has been patented (British Patent 273,414), and more recently (British Patent 378,973), Lever Bros., Ltd., C. W. Moore and H. Ballantyne have met with the same object patented the addition to soap powder of 0.6 to 1.8% of crystalline magnesium sulphate or equivalent proportions of other magnesium salts.

An interesting account of the composition and properties of sodium and potassium borates, including the uncommon pentaborates, was recently given by C. S. Gibson and R. N. Johnson in the *Journal of the Society of Chemical Industry* (1932, T. 399).

Liquid Soap That Won't Gel. *Scientific American,* Page 106, February, 1933.—Liquid soap manufacturers have discovered that the addition of an organic chemical, ammonium thiosulphate, prevents gelling. This chemical may be added either dry or in solution, or it may be formed right in the soap by the addition of suitable reacting chemicals. The soaps obtained do not gelatinize, are clear, very fluid, lather well, and are cheap. One example of this product may be obtained by using 500 parts by weight of coconut oil and 65 parts by weight of caustic alkali of 38 degrees, Be'. After saponification is complete a warm solution of 250 parts by weight of ammonium thiosulphate in 1750 parts by weight of water are stirred into the soap. The mass is then cooled and filtered to remove impurities. When the ammonium thiosulphate is made right in the soap mass, sodium sulphite and ammonium carbonate are added. This chemical takes the place of glycerine, alcohol, sugar, and potash solutions which are normally used in the preparation of liquid soaps and which increase the cost of manufacture considerably, the product obtained not always being suitable or convenient for use in soap dispensers.

A. E. B.

The Alkalinity of Dilute Aqueous Soap Solutions and the Effect of Free Alkalies. *Chemical Abstracts,* Vol. 27, No. 3, Page 618, February 10, 1933.—The differences in actual alkalinity of solutions of different soaps at the same temperature as well as the same soaps at different temperatures (20-90°) or concentrations are many times greater than the difference in alkalinity through the presence in the soap of a few tenths per cent of free alkali; thus the stringent technical requirements of minute amounts of free alkali in soaps appear unfounded; it would be better to fix the OH-ion concentration instead. P. ESCHER.

Wetting-Out Agents and Penetrants. *Chemical Abstracts,* Vol. 27, No. 4, Page 848, February 20, 1933.—Rowland H. Skinner *J. Tech. Assoc. Fur. Ind.,* **3,** 81-9 (1932).—A review. E. H.

PATENTS

Device for Taking Samples from Grease-Storage Tanks. *Chemical Abstracts,* Vol. 27, No. 4, Page 859, February 20, 1933.—Geo. F. Silknitter. U. S. 1,883,021, October 18.

Mill Grease. *Chemical Abstracts,* Vol. 27, No. 4, Page 836, February 20, 1933.—Maurice H. Arveson (to Standard Oil Company of Indiana). U. S. 1,882,721, October 18. A fatty acid is saponified with an excess of alkali and a rosin acid is subsequently added to neutralize the resulting alkalinity.

Buoyant Soaps. *Oil, Paint and Drug Reporter,* Vol. LXXXIII, No. 1792, Page 453, February 17, 1933.—British Patent Number 362,754. Convention date, February 6, 1930. K. Jungmann, 4, Gerbergasse, Aussig, Elbe, Czecho-Slovakia.—Buoyant soaps are made by generating hydrogen in the soap jelly, formed in the first stage of soap manufacture, and retaining the gas therein during the hardening stage. The hydrogen may be generated by adding small amounts of powdered metals or hydrides, such as aluminum bronze, magnesium, zinc, amalgams or iodized magnesium. The substances may be added as a suspension in an ingredient of the soap. The Specification as open to inspection under Section 91 (3) (a) comprises also the use of nitrides, borides, silicides, and carbides to generate gases in the soap. This subject-matter does not appeared in the Specification as accepted.

Removing Volatile Constituents from Saponification Products. *Chemical Abstracts,* Vol. 27, No. 4, Page 859, February 20, 1933.—I. G. Farbenind. A.-G. (Christoph Beck, Helmut Weissbach and Heinrich Diekmann, inventors). German 559,632, February 15, 1931. Water-containing saponification products of fatty acids are heated under pressure to temperatures at least equal to the m. p. of the anhydrous saponified products. The volatile constitutents are then removed by release of pressure or by introduction of steam or inert gases. Examples are given.

Screening Soap Base. *Soap,* Vol. IX, No. 3, Page 63, March, 1933.—In order to refine and homogenize a soap base, partly dried soap chips, containing 6 to 20% moisture, are passed through a series of chambers, which are provided with heating jackets. Each is also fitted with a perforated screen as outlet, through which the plasticized soap, with perfumes, fillers, etc., is forced under pressure by a feed screw. The orifices of the screens of each successive chamber are successively of smaller size, for example, 20, 30 and 40 mesh. Lever Brothers Company. British Patent Number 380,820.

Purifying Crude Glycerine. *Soap,* Vol. IX, No. 3, Page 61, March, 1933.—Crude glycerine is purified by treatment with gases or vapors or mixtures containing low boiling liquids in a very finely divided condition, the treatment taking place under reduced pressure. Thus crude glycerine, containing 82% glycerol, is treated with wet steam or carbon dioxide sprayed with benzene at a pressure of 20 to 30 mm. The product is 99% pure. I. G. preparation is used. The Manufacturing Chemist, 1933, German Patent No. 557,802, filed March 15, 1929.

Preventing Obscuring of Glass Windows by Raindrops. *Chemical Abstracts,* Vol. 27, No. 5, Page 1120, March 10, 1933.—Sigmund Selig and Isaac Schnerb. German 560,603, November 14, 1930. The glass is wiped with an agent consisting of 10 to 20% glycerol, at least 1% egg albumin and a preserving agent.

Glycerol. *Chemical Abstracts,* Vol. 27, No. 5, Page 915; March 10, 1933.—Siemens-Elektro-Osmose G. m. b. H. (Alexander Jenny, inventor). German 560,555, December 19, 1930. Chemically purified glycerol is further purified by electroosmosis in a three-cell arrangement, the glycerol being in the middle cell. The ions of the fatty acid and fatty acid salt impurities collect in the outer cells. Cf. *C. A.* **26,** 5106.

Glycerol Distillation. *Chemical Abstracts,* Vol. 27, No. 5, Page 915, March 10, 1933.—Oscar H. Wurster, U. S. 1,885,166, November 1. In the steam distillation of glycerol in vacuo, superheated steam is injected into the liquid to be distilled and the major part of the glycerol is condensed from the mixture of steam and vapor; remaining vapors are passed to a sweet-water condenser where they are condensed and the latter condensate is evaporated and the vapors thus derived are used to evaporate water in vacuo, the steam thus formed is preheated by vapors from the distilling liquid and the preheated steam is superheated by high-temperature steam above the temperature of the vapors from the distilling liquid for injection into the liquid undergoing distillation. The sweet water is evaporated by the high-temperature steam after it is used to superheat the preheated vapors. Apparatus is described.