ABSTRACTS

Soaps

Edited by M. L. SHEELY

Advertising on soap tablets. *Perfumery and Essential Oil Record* 25, 7, 232 (1934).—Dr. J. B. McDougall, M. D., F. R. C. P. (Ed.), F. R. S. E., of British Legion Village, Preston Hall, Aylesford, Kent, describes, in British Patent Specification No. 407,938, a method of applying advertising pictorial and other matter to soap tablets. It has already been proposed to apply labels to soap and to treat the labeled soap with molten paraffin wax; also to apply a label to a soap tablet, previously treated with alcohol at an elevated temperature, to dry the labeled soap tablet and finally to apply a coating of collodion wool or pyroxylin. According to the present invention, the soap tablet is superficially dried, for example, by the application of aqueous alcohol, a transparency is applied to the superficially dried area of the soap tablet, the soap is further dried, and then molten paraffin wax is applied to the soap in the region of the transparency. The transparency preferably consists of cellophane, although transparent gummed paper or parchment may be used. Where the color of the transparency is adversely affected by alkali, a coating of wax may be interposed between the transparency and the soap. When the transparency has been adjusted in situ the soap tablets, together with the transparency, are allowed to dry, and, if necessary, placed in a special gas-heated chamber to ensure the complete and thorough evaporation of moisture. Twelve hours are allowed to elapse before molten paraffin wax is applied by means of a brush or a spray to the surface of the soap tablet, covering at the same time the affixed transparency. To obviate irregularity in the surface of the solidified paraffin, the inventor uses a leveling solution of a wax solvent such as xylol. The waterproofed impression finally appears to be an integral part of the soap surface, so that it remains through the life of the soap tablet and is impervious to temperatures below the melting point of the paraffin used. The transparency may be situated in a recess in the soap.

Comparison of soap powders. *Seifensieder-Ztg.* 61, 309-11 (1934). Soap powders can be prepared as the usual yellow product, or as a clear white product. In preparing soap powder, 60 per cent of palm oil, tallow, etc., are combined with 40 per cent of coconut oil, palm kernel oil, etc. The fats are split by heating with sulfuric acid in the presence of a catalyst. Fats are usually hydrolyzed to 85-90 per cent of fatty acid, which gives a colored product due to the effect of the heat. These colored fatty acids are saponified first with an amount of soda ash equivalent to 5 per cent less than the amount of fatty acids present. The remaining fatty acid plus unhydrolyzed fat is saponified with caustic soda. The final powder is yellow.

If, instead of following the above procedure, the same fats are hydrolyzed beyond 85-90 per cent fatty acid, and subsequently distilled, the product will be white and will be 100 per cent fatty acid. Hydrolysis may be carried further, since colored products are left behind in the distillation process. Since the composition of the distillate is 100 per cent fatty acids, saponification can be carried out completely with the use of calcined soda ash. No caustic soda is necesesary. The product is ready for grinding in less than half the time required in the usual method. The cost of the white product made as described is 12 to 15 per cent higher than that of the yellow product having the same content and composition of fatty acids. However, the cost of a powder made from distilled fatty acids is less than that of a white soap powder obtained by repeated salting out and bleaching of dark-colored fatty acids. (Soap, X, 7, 32 (1934).

A new saponification process. R. Heublyum. Mat. grasses 25, 10019-20 (1933). The advantages and drawbacks of saponification under pressure are briefly reviewed. Saponification in covered kettles with suitable ventilation has been successfully introduced in the U. S. S. R. and has now been adopted in all the larger soap plants. Its advantages are briefly discussed. (*C. A.* 28, 12, 3925 (1934).

Composition and charge computing for soap. R. L. Datta. *Soap Trade Review* 6, 252-3, 288-9 (1933). The titer of the stock should be considered and can be dealt with in the form of a hardness Number (H), which is defined as "I. N. S." value + (F X titer), where F (= 3.7) is a "titer factor" obtained by dividing an "ideal" I. N. S. value (195) by the highest possible titer (52.7) of a soap stock. H is to be increased by an "allowance" of 1 unit per 1% of coconut oil in the stock. (*C. A.* 28, 12, 3925 (1934).

Tallow substitute from vegetable oils. M. S. Patel and B. S. Kanvinde, *Bombay Presidency Department Industries, Bull.* 8, 8pp. (1934). A substitute for tallow, suitable for sizing textiles, was prepared from a mixture of peanut oil 80, coconut oil 15 and castor oil 5%. The mixture was purified by removing the free fatty acids by neutralization and drying the alkali-free washed oil in vacuo. The purified mixture was hydrogenated, with finely divided Ni as catalyst, until the product had a melting point of about 50°. The characteristics of the material thus obtained were: I value 38.9, saponification value 195.7, melting point 49.5°, mixed fatty acids 91.7%, neutralization value of mixed fatty acids 198.9, melting point of mixed fatty acids 49.5°, and I value of mixed fatty acids 41.0; the product was white, homogeneous granular and odorless. The characteristics were very similar to those of animal tallow. Data are given on the compositions of various vegetable tallows marketed in India. (*C. A.* 28, 12, 3923 (1934).

Washing compounds and factors affecting their efficient use. Arnold H. Johnson, *Ann. Dept. New York State Assoc. of Dairy and Milk Inspectors* 6, 37-46 (1932). The mechanism of detergent action was considered from the viewpoints of wetting, deflocculating, emulsifying and dissolving power. Na metasilicate and alkali were superior in wetting and dissolving power, trisodium phosphate and Na metasilicate were superior in emulsifying power and Na metasilicate was superior in deflocculating power. Practical considerations involved in the use of the various alkalies as detergents were discussed. (*C. A.* 28, 13, 4259 (1934).

The relation between the state of dispersion and the concentration of fatty acids salts (soaps) in water solution. Gerhart Jander and Karl F. Weiter, *Angew. Chem.* 47, 197-200 (1934). Many determinations of the properties of soap gels and soap solutions were made. The colloidal structure consists of soap crystals of colloidal dimensions arranged in a definite manner. Formation of the soap particles of colloidal dimensions from inimolecularly distributed soaps is demonstrated. The concentration of the dissolved fatty acid salt is the determining factor for association or aggregation and the bimolecular aggregation state plays a particularly important role in the structure of the soaps of higher aggregation stages. Thirteen references. (*C. A.* 28, 13, 3964 (1934).

Hydrogenated stearic acid. Donald F. Cranor, *India Rubber World* 90, No. 2, 45 (1934). The differences in physical and chemical properties between commercial stearic acid made by the hydrogenation of fish oil and that made from tallow are described. Several reasons are given as evidence that the hydrogenated fish-oil product is preferable to the tallow product for use in rubber. (*C. A.* 28, 13, 4268 (1934).

Synthetic resinous product. Theodore F. Bradley (to Ellis-Foster Company). U. S. 1,956,559, May 1, 1934. An ethylene glycol derivative of phthalic acid and lactic acid which may be used for molding or coating is prepared by heating and vacuum treatment. *Glycerol*, propylene glycols, chlorohydrins, benzoic acid, tartaric acid, etc., also may be used as initial materials. (*C. A.* 28, 13, 4258 (1934).

"Anti-freeze" solution suitable for use in automobile radiators. Frank A. Howard (to Standard Oil Development Company). U. S. 1,955,296, April 17, 1934. A mixture of MeOH 35 and iso-PrOH 65% is added to water to duplicate substantially the specific gravity, volatility and freezing point of an aqueous solution containing the same percentage of EtOH. (*C. A.* 28, 12, 3852 (1934).

Sulfonated oils. Edward Pohl (to Selma Pohl). U. S. 1,955,766, April 24, 1934. A sulfonated product for the treatment of textile materials is prepared by treating a sulfonated vegetable or animal oil or fat such as one derived from castor or olive oil in the presence of free H_2SO_4 with a polyhydric alcohol such as glycerol or ethylene glycol in an amount at least sufficient to restore the percentage of combined polyhydric alcohol contained in the oil or fat before sulfonation. (*C. A.* 28, 13, 4261 (1934).

Soap compositions. Adolf Welter. German 589,080, April 6, 1934 (Cl. 23 e. 2). Refined fatty acids of low I number are mixed with an excess of substantially dry soda in the presence or absence of a fat solvent, and before the reaction product has solidified a per-salt is added to the mixture. The product is then powdered or worked up in known manner into flakes, filaments, etc. Specific compositions are described. (*C. A.* 28, 13, 4260 (1934).