ABSTRACTS

Soaps

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

Uses of wool fat. *Oil and Colour Trades Journal,* 85, 1859, 1731 (1934).—H. Berg, writing in the *"Seifensieder Zeitung"* (April 18, 1934), describes some of the principal modern uses of wool fat in the manufacture of lubricants, road-surfacing materials, in the sugar, leather, and electrical industries, and in other ways. In lubricants, he says, up to about 12 percent of neutral wool fat can be used with a fairly heavy mineral oil. Wool fat fatty acids or their soaps may also be used. It is suggested that varying percentages be tried with different grades of mineral oil with a view to obtaining a wide range of viscosities, etc. Russian mineral oils are probably better for the purpose than American. Means to avoid gelling may have to be employed and require careful study. Wool fat is now largely used in anti-rust preparations, in connection with which a few hints are given. The neutral fat is often dissolved in hexalin or tetralin with some petroleum or heavy benzine, chlorine solvents and turpentine being avoided. White or colored pigments may be incorporated. Wool fat is also useful in the preparation of emulsions. An interesting use, comparatively new, is in road-surfacing materials, to which the wool fat is added to prevent the tar drying too brittle and generally to improve texture and durability. Wool fat is finding increasing uses in leather-dressing, the electrical cable industry, for various purposes in sugar manufacture, *e.g.,* froth-prevention, and in other industries.

Sulphonated alcohols in admixture with soap. *Perfumery and Essential Oil Record,* 25, 6, 198 (1934).—The sulphonated alcohols still continue to attract a good deal of attention in the soap industry. Their excellent emulsifying and wetting out qualities have already rendered them valuable materials in the textile industries and there is no doubt that when they are associated with soap, the detergent value of the latter is increased. In a recent article in the *Seifen Zeit.* (1934, 61, 274-5), Welwart, however, criticizes the use of sulphonated alcohols in toilet and shaving soaps. Microscopic examination of soaps to which they have been added has shown clearly the presence of sodium sulphate crystals, and the use of toilet soaps containing this salt he considers bad for the skin. A further disadvantage he suggests is that when the sulphonated fatty alcohol solution is added to a potash soap, some of the potash soap is converted to soda soap, thereby reducing the quality of the soap.

Although the first British patent dealing with the sulphonated alcohols dates no further back than 1928, there is already an extensive patent literature on the subject, and a recent addition to this has been made by Dr. W. Normann, one of the pioneers of oil hydrogenation, who in his patent claims the production of higher alcohols from fatty acids by hydrogenation under considerable pressure, using a catalyst prepared by precipitating copper carbonate on kieselguhr and reducing this in a current of hydrogen at 190-200° C.

Disinfectant soaps. *Chemical Markets,* 34, 6, 515 (1934).—Silver-containing soaps which disinfect but do not discolor are made by mixing with soap metallic silver in the form of powder, foil, leaves, flakes or the like. The silver may be activated by superficial electrolytic oxidation or by treatment with hydrogen peroxide, permanganate, or other oxidizing agents. British Patent 395,570 lists several examples and also states that soluble or difficultly soluble silver compounds, and/or sodium perborate, sodium pyrophosphate peroxide, or other substances containing active oxygen may also be added. Use of soaps containing colloidal silver compounds, *e.g.,* silver potassium cyanide and $(AgNH_2)OH$ is referred to.

Spontaneous ignition of soap powder. *Chemical Markets,* 34, 6, 515 (1934).—Heretofore attributed to the presence of free, unsaturated fatty acids, the spontaneous ignition of soap powder is now claimed by an author in *Deutsche Parfumerie Zeitung* to follow intense evolution of heat as a result of water absorption by the originally water-poor powder.

Is the cracking in water of milled soaps a problem? J. Schaal. *Seifensieder Ztg.* 61, 290-2 (1934).—The storage temperature of milled soaps should be 10° or above; the milling and press-temperature should be 25-27° for proper plasticity during working. Colloidal swelling of the soap inside, caused by H_2O entering from surface, causes cracking. Frost will alter the smooth colloidal structure and convert it into a crystal brittle mass. (*C. A.* 28, 12, 3926, 1934.)

Soap powder and kettle charges of soft fats. C. Bergell. *Seifensieder Ztg.* 61, 289-90 (1934).—The use of soaps at temperatures of 60-70° in the commercial laundry requires soft fats for best lathering, but when used at 90-100°, as in households, the harder fats (stearin) produce more satisfactory suds. The correct H_2O content for dried soap flakes with hard fats corresponds to a 76-78% fatty acid content, while rosin soaps with soft fats must be dried to 80% fatty acids content for proper "feel." To adjust the H_2O content of the finished product correctly, a calculated amount of calcined soda is mixed with the crystal soda when making up the soap-filler. (*C. A.* 28, 12, 3926, 1934.)

The "fitting" of soaps and its influence upon stability during storage. C. Bergell. *Seifensieder Ztg.* 61, 143-5 (1934).—A cold-made neutral coconut-oil soap with 5% neutral fat may, after a few weeks, show 1-2% free fatty acids which would seriously interfere with its perfume. Cold-made soaps containing tallow or tallow-like fats do not keep well; it can be analytically proved that the unstable tallow acids are displaced by the stronger free coconut oil acids. If any stronger rosin soap is present, the rosin acids are liberated in place of the tallow acids, and they, being stable, will prevent rancidity. Stability in soaps is best secured by a gentle alkali reaction in the finished product.

Soap perfumery. *The Oil and Colour Trades Journal,* 85, 1859, 1532 (1934).—If soap is made in such a manner that free alkali at any time can react with, for example, a delicate ester, it is obvious that this ester will, to some extent, be decomposed and, to that extent, will be replaced by its constituent alcohol; that is, the odor of, say, linalyl acetate will be replaced by that of linalol to the extent of the decomposition. But the chief trouble the manufacturer of the perfume has to guard against is that his perfume shall have no effect on the soap, rather than that the soap shall have no effect on his perfume. So many synthetic perfumes are produced by way of chlorine compounds that traces of chlorine are to be found in the finished perfume unless removed by special processes. It is, of course, well known that benzaldehyde is sold as such, or as "chlorine free," the latter commanding a distinctly higher price. For handkerchief perfumes the trace of chlorine present in benzaldehyde is far less objectionable than it is in a soap perfume. It is equally true that traces of mineral acids which might be found in some synthetic perfumes are most objectionable from the soap-maker's point of view.

PATENTS

Stearin and olein. British Patent 391,306. E. A. Mauersberger, 20, Binnenweg, Maarssen, Holland.—Mixtures of fatty acids are resolved into olein and stearin by dissolving in oxygen-free solvents, incorporating water as a colloidal solution or emulsion, cooling to crystallize the solid acids, and filtering or otherwise separating. Solvents specified are benzine, benzene, toluene, chlorinated hydrocarbons, and mixtures thereof. The water may be added as water—diluted alcohols, ketones, aldehydes, or other substances dissolving wholly or partially in water and in the solvent or the fatty acids, or/and as a solution of an emulsifying agent. Emulsifying agents specified are sulphonated organic acids, sulphonated alcohols, sulphonated ketones, their salts and esters, and salts of fatty acids; the fatty acid salts are formed by stirring in aqueous solutions or suspensions of nitrogenous waxes, oxides, hydrates, or carbonates, of metals, unless the fatty acids already contain soap or other emulsifying agent. In examples: (1) 1,000 kg. of melted Twitchelled bone fatty acids are dissolved in a jacketed vessel in 700 kg. of petroleum spirit, boiling point 105-175° C., 50-70 kg. of 75% methyl alcohol are stirred in at 35° C., stirring continued until the temperature falls to 10-12° C., and the crystalline pulp is filter-pressed. The stearin cakes are melted, the separated dilute alcohol removed, and residual alcohol removed by distillation to 90° C.; the solvent is driven off by steam. Stearin of higher m.p. and lower iodine number may be obtained by first stirring the cakes from the filter press with 700 kg. of solvent at 10-12° C., and filter-pressing; the filtrate is used to treat a fresh charge. The filtrate solution of olein from the first pressing is cooled to 3° C. to separate residual stearin, and freed from methyl alcohol and solvent, leaving olein of m.p. 10-11° C., which may be further cooled and filtered. (2) 1,000 kg. of Twitchelled bone fatty acids are emulsified by reaction with 30 litres of 25% ammonia solution stirred at 35° C. with 800 litres of benzine boiling points 100-125° C., cooled with stirring to 10-12° C., and filter-pressed. Specification 156,259 (Class 91, Oils, etc.) is referred to. (*Oil and Colour Trades Journal,* 85, 1859, 1549, 1934.)