ABSTRACTS

Soaps

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Use of Bone Glue in Soap. *Industrial and Engineering Chemistry* 12, 20, 375 (1934) News Edition.—The International Association of Bone Glue Manufacturers, "Epidos," whose company headquarters are in Glaris, Switzerland, organized a conference at the end of 1933 to discover new, or to develop existing, uses of bone glue. One hundred and eighteen members from twenty-one countries took part in the conference. Among them were four Belgians, two of whom have had their papers published. We shall give a summary of the two printed Belgian reports:

"The Use of Bone Glue in Soap Manufacture," by V. Boulez, deals with the use of a product with a bone glue base in the manufacture of soap, not only for the purpose of facilitating soap manufacture, but with a view to improving the quality of the product. The addition of the bone glue product increases the detergent properties of soap; it has the further advantage of promoting the formation of suds, as does resin, and it also increases the persistence of the suds. Lastly, it gives the soap a better water content. The process consists of adding the mixture in the proportion of 1 to 2 per cent to the liquid soap paste before molding.

Even from the point of view of soap manufacture, the process presents numerous advantages. It greatly facilitates not only solidification but likewise pressing, and by its application continuous manufacture of soap not completely dried is achieved. The process has the additional advantage of giving a more homogeneous paste and of producing soaps with streaks.

If household soap is poured directly into chilled molds, the process permits lessening the refrigeration of the molds to a great extent and also facilitates stamping the soap. In short, household soap—that is, undried soap—can be made by the pressing method without drying the soap curds before the pressing operation, or at least the drying may be enormously restricted with resultant economy of steam, time and materials.

Properties of Solid Soaps. J. L. Bowen and R. Thomas. *The Industrial Chemist,* 117, X, 381 (1934).—The method or rate of cooling soaps has a marked influence on certain of their properties such as color and hardness. The authors' work on the hardness of soaps indicates that while soaps made from certain fat charges show appreciable differences in hardness when cooled slowly and quickly, others show little or no difference. The authors determined the contraction of soaps during slow and rapid cooling for two soaps (one containing a higher proportion of hard fats than the other but with almost equal titres, 30°C. and 29°C.). The initial solidification point of the soap containing more hard fats was distinctly higher than that of the other, in spite of the fact that there was little difference in the titres of the fat charges, and the initial solidification points of both soaps were considerably higher than the titres. This points to the relative amounts of solid and liquid fatty acids rather than to the titres of them as being the cause of a high or low initial solidification temperature. Figures obtained of the contraction coefficient of these two soaps indicate that, for practical purposes, it can be assumed that, for these soaps, the rate of cooling within the limits examined has no marked effect on the amount of contraction.

The authors have devised an interesting machine for estimating the hardness of soap, which is of direct importance to the manufacturer in connection with cutting, stamping, factory control, etc. The machine is designed to measure the resistance offered by a soap to a cutting wire. The authors have employed this machine to determine (1) the hardness of soaps in relation to the titre of their fat charge and (2) the effect of electrolytes on the hardness of soaps. Regarding the second, it is well known that salts have a considerable influence on the hardness of soap, but quantitative confirmation is lacking. It is interesting to note that for sodium chloride, sodium carbonate and sodium sulphate, increasing concentration results in the hardness falling to a minimum and then increasing. Some of the experiments showed that with certain salts the hardness increases to a maximum, and then falls once again. The authors exhibited some interesting microscopic sections of soap treated with varying quantities of salt. These showed the growth and disappearance of fibrous structure with increase of salt concentration. Finally, the migration of salts in solid soaps (this gives rise to "bloom") was discussed; indications were given that restraint of migration of sodium carbonate is effected by decrease of concentration of this salt, and increase of sodium chloride.

Cheap Soap Flakes Condemned. *American Perfumer and Essential Oil Review,* 29, 8, 395 (1934).—In the August, 1934, issue of *The Industrial Bulletin,* issued by the State Department of Labor at Albany, New York, Freda S. Miller, Director of the Division of Women in Industry, comments on occupational dermatitis and the compensation law.

It is of particular interest to the soap industry that out of 461 claims for skin diseases, resulting from occupational exposure, on the New York City occupational disease calendar during 1933, soap accounted for 101. It stood second on the list, the use of dyes being first. Female workers in the trade and domestic service groups, food industries and transportation industries were the ones largely disabled and the hands and arms were usually affected by the dermatitis. A great many of the cases reported a loss of at least two weeks. Under the Workmen's Compensation Law of New York State the dermatitis must be due to "contact with an acid, alkali or oil capable of causing it." The report goes on to state, "The constant immersion of the hands in water will cause an irritation of the skin in some people and when, in addition to being constantly wet, the skin comes in contact with alkali such as that present in chip soap and soap powders many workers are affected."

From the report it is very evident that the highly filled chip soaps and soap powders are the ones at fault. This is just another argument against overfilling soap, as the "kickback" eventually causes irreparable harm to soapmakers in general.

PATENTS

Process for Making Colloidal Solutions. U. S. 1,969,166. Carl Hermann von Roesse, Radebeul-Dresden, Germany to Chemische Fabrik von Heyden, A. G., Radebeul, near Dresden, Germany. Process for making colloidal solutions of metals and metallic compounds in polyalcohols, resulting in colloidal solution of metallic silver in glycerin. (*Chemical Industries,* 35, 4, 327, 1934.)

Fatty Acid Production by Hydrolysis. A process of hydrolyzing fat for the production of fatty acid or glycerol is given in U. S. P. 1,967,319. Fat is dissolved in a water miscible solvent of a group including acetone, methyl ethyl ketone, diethyl ketone, a mixture of acetone and isopropanol, ethylene glycol monoethyl ether, and ethylene glycol monobutyl ether, adding water and an acid catalyst to solution. Solution is then subjected to hydrolyzing temperature; the solvent distilled off; then by decantation separating the water, with the glycerol product of hydrolysis in solution, from the residue. (*Chemical Industries,* 35 4, 327, 1934.)

Noncorrosive Fluid Mixture Suitable for Use in Cooling Systems, Etc. Kenneth H. Hoover (to Association of American Soap & Glycerine Producers). U. S. 1,970,564, August 21, 1934. A mixture is used comprising glycerol, an oil such as a mineral oil in small proportion, an emulsifying agent such as a soap and mercaptobenzothiazole Na salt. (*C. A.,* 28, 19, 6258, 1934.)

Dry Powdered Soap Composition. Leonard H. Phillips. U. S. 1,972,458, September 4, 1934. A mixture adapted to form a homogeneous paste upon the addition of water contains a major proportion of powdered soap, sufficient sawdust to serve as an abrasive material, sufficient vegetable oil such as cotton-seed oil to coat the particles of sawdust so that they will remain dispersed throughout the paste on addition of water, an alkali as NaOH to "render the oil water-miscible" and a neutralizing agent such as powdered rosin to neutralize excess alkali dissolved in the paste. A mixture of this character is suitable for use by mechanics for cleansing the hands. (*C. A.,* 28, 20, 6586, 1934.)

Fats. Wilhelm Steinmann. Swiss 166,792, Apr. 16, 1934 (Cl. 38*a*). Industrially useful fats are obtained by heating and mechanically working animal materials and water into a paste, adding a fat emulsifier and sepg. the fatty emulsion in a centrifuge. The water may be removed prior to the addn. of the emulsified. Soap or resin may be used as the latter.

Clarifying "Dry-Cleaning" Solvents. Victor C. Norquist and Earl E. Treanor (to Butler Manufacturing Company). U. S. 1,947,873, February 20, 1934. Contaminated solvent withdrawn from a washing zone is mixed with a purifying chemical in a mixing zone and some of the same chemical is simultaneously introduced into a clarifying zone (of a described apparatus) and the mixture from the mixing zone is passed through the chemical in the clarifying zone. (C. A. 28, 9, 2924, 1934.)