ABSTRACTS

Soaps

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Soaps. *Soap Gazette and Perfumer*, Vol. 35, Nov. 11, page 15, November 1, 1933.—Hard soaps are made by saponifying fats, fatty oils or fatty acids at a temperature of 125-260° C. and under a pressure of about 2-6 atmospheres, with the required amount of caustic soda and caustic potash. Tallow, coconut oil, or caproic, caprylic, capric, lauric, myristic, palmitic, or stearic acids or the corresponding glycerides may be used. Salts such as sodium or potassium chloride, carbonate, borate, sulphate or phosphate, or sodium silicate or borax may be included in the saponification mixture, to lower the solidification temperature of the resulting soap. Large amounts of these salts, especially sodium carbonate, may be incorporated in the soap together with colloidal clay by using pressures up to 10 atmospheres. After saponification additional soft fat or oil may be added to form a soap containing 60-70 per cent fatty acids, suitable for milling, or making soap flakes or powder.—British Patent No. 379,769.

The saponification process. *Perfumery and Essential Oil Record*, Vol. 24, No. 9, page 127, September 26, 1933.—The view commonly accepted for many years past as to what happens during the process of saponification of oils by aqueous caustic soda or potash, has been that suggested by Lewkowitsch, viz., that reaction takes place at the surface of separation of the oil and the aqueous phase. This view has been supported by the researches of McBain and his colleagues, and more recently by Finch and Karim (*Journ. Soc. Chem. Ind.*, 1926, 361), but was challenged a short time ago by Lester Smith (*Journ. Soc. Chem. Ind.*, 1932, 337; "P. & E. O. R.," 1932, 362), who suggested that saponification takes place not at the interface of oil and lye, but in the soap phase, both oil and alkali being dissolved in the neat soap.

Accepting the older view, Speers, Yajnik, Goyle and Shafi publish in the *Journ. Chim. Phys.* (1933, 414) the results of a research on the rate of saponification of ground nut oil emulsified with caustic alkali, with and without the addition of neutral ground nut oil soap. Their conclusions are: (1) that the more finely the oil is subdivided, the greater the amount saponified; (2) the greater the volume of oil emulsified, the greater the amount saponified; (3) saponification proceeds more readily when the quantity of caustic alkali is only just sufficient to saponify the oil dispersed; (4) emulsification by means of soap promotes reaction by producing a finer suspension of the oil, and an increase in the amount of soap used for emulsification leads to the saponification of more oil; (5) the addition of an electrolyte, such as salt, injures the emulsion and so reduces the amount of saponification; (6) an increase of water retards saponification by dilution of the alkali, and by hydrolysis of soap already formed. Several of these conclusions correspond with everyday soap-making experience, and would appear to fit in as well with Lester Smith's theory as with the older view.

Sulphur soap emitting no disagreeable odor. *Perfumery and Essential Oil Record*, Vol. 24, No. 8, page 290, August, 1933.—Tomoichiro Tanaka, of Tokyo, describes in British Patent Specification (complete accepted), No. 392,042, an invention relating to a process of making sulphur-soap, and its object is to provide a soap which does not liberate hydrogen sulphide or a disagreeable odor when in use, while it is more effective than the usual sulphur-soap in cleaning and sterilizing the skin.

The invention consists essentially of a process of making sulphur-soap wherein a rosin soap mixed and melted with sulphur is added to a mixture of iodine-starch and petroleum jelly, wax, fats or the like, and further mixed with pure soda soap or potash soap and thoroughly kneaded so as to form a homogeneous mass.

In the use of sulphur-soap made according to this invention any hydrogen sulphide produced is immediately dispersed in soap bubbles and is oxidized at once in contact with minute particles of iodine-starch so as to liberate minute particles of sulphur. The hydrogen iodide thus formed is neutralized by the alkali present, whereby no disagreeable odor is produced, and cleaning and sterilizing action upon the skin occurs.

Silver and silver compounds in soap. *Perfumery and Essential Oil Record*, Vol. 24, No. 10, page 366, October 24, 1933.—British Patent Number 396,570 of the ***Deutsche Gold und Silber Scheideanstalt***, of Frankfort, relates to processes for the manufacture of silver-containing soaps having a disinfecting action. It has previously been proposed to manufacture soaps of this nature by incorporating silver compounds such as $(AgNH_2)OH$ or $Ag(CN)_2K$ in the body of the soap. A relatively weak disinfecting action and a brown coloration resulted, however, owing to large numbers of silver ions being set free. According to the present invention, metallic silver is incorporated in the soap mass in the form of metallic powder, foil plates, flakes, or the like.

It has been found that the disinfecting power of the silver particles can be increased by subjecting them to an activating treatment. This can be effected by the action of oxidizing agents such as hydrogen peroxide, permanganate and the like.

Purifying Fats by Esterification. *Soap.* Vol. IX, No. 11, page 63, November, 1933.—Fats or fatty oils are made neutral by a process which involves the removal of the fatty acids contained therein by distillation. These acids are then heated with a deficiency of glycerine or other polyhydric alcohol and the resulting esterified mixture is returned to the oil undergoing distillation. A suitable apparatus consists of a still in which a fatty oil such as peanut oil or sesame oil is treated with superheated steam. The still is connected through a pipe to a heated condenser through which the oil flows. The temperature in the condenser is 70° C. The fatty acids condense there and pass through a pipe to a vessel, and water vapor passes to an injector condenser. The apparatus is evacuated by a pump.

The fatty acids, if desired mixed with other fatty acids such as butyric or corn oil acids, are heated to 180 to 260° C. in the vessel and partially esterified with glycerine admitted from a vessel. Water vapor, which is formed during the reaction, passes through a reflux condenser to the condenser. The resulting esterified mixture containing about five per cent of free fatty acids passes through an overflow pipe into the still. The still may consist of a column containing baffle plates, or a series of walls, in which the oil is heated in a thin layer by steam which is admitted at the bottom of the column. Esterification may be effected in the presence of catalysts such as tin or magnesium. The neutralized oil may be further purified. British Patent 384,715.
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Perborate in Washing Compounds. *The Oil and Colour Trades Journal.* Vol. LXXXIV, No. 1829, page 1204, November 3, 1933.—As the direct titration of perborate in washing powder is unsatisfactory owing to the presence of soap, Ringbom (*"Zeit. Analy. Chem.,"* 1933, p. 95) proceeds as follows: 1 gm. of the washing powder is dissolved in about 150 c.c. water and 100 c.c. of a solution of iron sulphate and sulphuric acid. The ferric iron formed is then titrated in the usual way with titanous chloride solution, from which the oxygen value can be calculated.

Decrease of Alkali in a Soap Base During Drying With Reference to Keeping Quality. *Oculus. Seifensieder-Ztg.* 60, 473-4 (1933).—The keeping of a soap base with unusually high free NaOH (0.1%) before drying cannot be increased by finishing with a high free NaOH. A properly made soap base decreases its free NaOH in the drying chamber by 0.04-0.05%. A content of 0.08% NaOH may cause irritation in a sensitive skin. (C. A. 27, 22, 6000 (1933).

Preparation of Floating Soaps Through Chemical Reaction. —I. Davidsohn and E. J. Better. *Seifensieder Ztg.* 60, 663-4 (1933).— Floating soap, prepared by the action of NaOH on Al or Si with liberation of H, gave a satisfactory soap for Si, but with Al the soap developed yellow spots. (C. A. 27, 22, 6000 (1933).

Soap as Insecticide. N. S. Vuishelesskaya. *Bulletin Plant Protection* (U. S. S. R.) 3, No. 1, 175-82 (1931).—The toxicities of soaps as insecticides are in the following consecutively decreasing order: Seal-oil-, palm-, linseed-, cottonseed-, olein-, train-oil-, suet-, rosin- and castor-oil soap. Castor-oil soap is but little hydrolyzed. The toxicity depends on the degree of hydrolysis and on the structure of the acid. The toxicity of unsaturated and low-molecular acids is greater than that of saturated and higher-molecular acids. (C. A. 27, 22, 5876 (1933).

PATENTS

Sulfonic Acids of Aliphatic and Hydroaromatic Carboxylic Acids. *Chemical Abstracts*, Vol. 27, No. 22, page 6001, November 20, 1933.—Fritz Gunther and Josef Hetzer (to I. G. Farbenind. A.-G.). U. S. 1,926,442, September 12. Acids such as stearic, palmitic or oleic acid are treated with a sulfonating agent stronger than concentrated H_2SO_4, such as SO_3, oleum or chlorosulfonic acid at a temperature between room temperature and 100°, to form wetting and emulsifying agents stable to acids and hard water.