ABSTRACTS

Soaps

Edited by **M. L. SHEELY**

Patent System and Stimulation of Industries. *Second Report of the Science Advisory Board,* September 1, 1934, to August 31, 1935.—At the request of the Secretary of Commerce, the Science Advisory Board included a report and recommendations on our patent system in its Second Report to the President.

The Board finds three primary defects in the system. The first defect arises by reason of the issuance by the Patent Office of an enormous number of patents, many of which should never be issued, due primarily to an unduly low standard of invention. The second defect has to do with the excessive cost and delay in the litigation of patents by reason of the present system of appeals. The third results from the difficulty met by the courts in handling scientific or technical questions without competent non-partisan assistance.

The Board recommends (a) that when an application is ready for allowance, it be published in the Official Gazette, and the submission of pertinent facts by interested parties invited; (b) that there be established a single Court for Patent Appeals, in order to establish and maintain harmony and accuracy in judicial interpretation of patent questions, by confining the appellate jurisdiction in civil patent causes to one court, composed of permanent judges having the necessary scientific or technical background; (c) that there be provided scientific or technical advisors or juries to furnish adequate scientific or technical assistance to courts of first instance in equity patent causes, and (d) that no system of compulsory licensing be introduced at this time.

A Note on Iodine Soap. John Glenn, Jr. *Perfumery and Cosmetics,* 529, August, 1936.—Few, if any, of the numerous iodine soaps on the market contain any free iodine. In the amounts in which this substance is usually added, it is more than probable that there is sufficient free caustic in the soap base to combine with it:

$$6NaOH + 3I_2 = 5NaI + NaIO_3 + 3H_2O$$

In any case, free iodine in a solid soap would disappear in aqueous solution, owing to the liberations of caustic soda by hydrolysis, and it can easily be shown that the solution of a soap claimed to contain iodine has no action on starch reagent.

From the foregoing it seems that the claims made by the manufacturers of these soaps are rather far-fetched, and it is exceedingly doubtful whether iodine soap has any greater germicidal power than ordinary soap. The characteristic smell of iodine can be suggested, if not actually matched, by cresylic acid with perhaps a "top-note" formed by a trace of iodoform, and this appears to be the method adopted in at least one very popular brand.

Novel Applications of Metallic Soaps. H. Courtney Bryson. *Oil Colour Trades J.,* **89**, 1912-15; *Chem. Trade J.,* **98**, 445-6 (1936).—Applications of Pb, Sn, Ca, Ba, Al and Zn soaps and the naphthenates, among which are mentioned Na, Pb, Zn, Cu and Al, are indicated. (*Chem. Abs.*)

The Properties of Sodium Silicate. Albert Debecq. 15 *me Congr. chin. ind.* (Bruxelles, September, 1935). 1936, 45-9.—A review of the composition of commercial Na silicates and of the factors which can affect their viscosity. (*Chem. Abs.*)

A Laundryman's View on Filled Curd Soap. Edmund Walter. *Seifensieder-Ztg.* **63**, 312-13 (1936).—Difficulties experienced with soaps filled with either water glass or starch lead to the conclusion that neither of these substances really solves the soap-filler problem. (*Chem. Abs.*)

Theory for the Soap Maker. I. Davidsohn and A. Davidsohn. *Mat. grasses* **28**, 10810-12, 10832-5 (1936).—A brief explanation of some theoretical principles of colloid and physical chemistry of interest and use to the soap technologist. (*Chem. Abs.*)

The "Free Fatty Acids" and the "Soap-Formation Theory." C. P. van Hock. *Farben-Ztg.* **41**, 330-2 (1936).—A review of the literature (68 references) shows that only the lower fatty acids such as formic, AeOH and propionic and certain dibasic acids, e.g., azelaic, occur in appreciable amounts in linseed oil or films made therefrom. If soups are defined as metallic salts of higher fat acids of 8 or more C atoms, it is clear that the acids present may react with basic pigments (white lead is an exception) to form salts but not soaps. (*Chem. Abs.*)

Some Recent Improvements in Processes of Saponification of Neutral Fats and Distillation of Fatty Acids. E. Paul Zwicker. 15*me Congr. chin. ind.* (Bruxelles, September, 1935), 1936, 151-4.—A brief review. The principal improvements introduced in recent years have consisted in the construction of autoclaves capable of withstanding high pressures, the use of carefully purified materials and the use of low distillation temperatures with as small a difference as possible between the heating agent and the liquid acids in the still. (*Chem. Abs.*)

Notes on the Work of the International Committee for the Study of Fats. V. Vesely. 15 *me Congr. Chim. ind.* (Bruxelles, September, 1935), 1936, 1139-41.—A brief outline of some of the more important problems being studied by the International Committee on the unification of methods of fat analysis. (*Chem. Abs.*)

Lard Substitute from Cottonseed Oil. E. I. Ljubarskij. *Soap Perfumery and Cosmetics,* 560, August, 1936.—E. I. Ljubarskij has shown that alcohols mixed with fatty oils in the presence of suitable catalysts give up their hydrogen to the double bonds of the fatty acids. Oleic acid is first formed and then stearic acid, and the process has been called "coupled" hydrogenation; it is also selective and continuous and is said to resemble the Bolton-Lush method except that the working pressure is higher. More recently further tests have been made, using mixtures of ethyl or iso-anyl alcohol with cottonseed oil, and a stationary catalyst, consisting of an aluminum-nickel alloy. At a temperature of 190-200° C. the time required to convert cottonseed oil into a lard-like product is from 25-30 minutes. (Maslob. through *Seifens. Zeit.* 1936, 63, 3153.

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The Effect of Fatty Acids on Oil Paints. A. V. Blom. *Farben-Ztg.* **41**, 233-5 (1936).—Theoretical considerations and work reported in the literature indicated that free fatty acids exert their greatest effect on paints by influencing the interfacial forces operating at the pigment-vehicle surface. This was confirmed by experiments on the effect of various fatty acids on the sedimentation volume of pigments in drying oils and organic liquids. The sediment volume was increased more by the lower than by the higher fatty acids. (*Chem. Abs.*)

Behavior of Glycerin with Oxidizing Agents. *Soap Perfumery and Cosmetics* 560, August, 1936.—Welwart reports, as a result of recent experiments, that aqueous glycerin solutions in the presence of oxidizing agents, such as potassium permanganate, yield carbon dioxide and water if acid solution of permanganate is used; glycerin aldehyde if the solution is perfectly neutral; and glyceric acid, with slightly alkaline solution. With stronger alkaline solution, aldehydes and ketones are formed, also tartronic acid and mesoxalic acid; with still stronger alkalinity the glycerin is converted quantitatively into oxalic acid. This latter may be used as a quantitative test for glycerin by Benedikt's method. Similar results are obtained with other oxidizing agents such as potassium or sodium dichromate or chromic acid. (*Seifens. Zeit.* 1936, 372).

Recovery of Glycerol from Used Printing Blocks. J. Altenburg. *Chem.-Ztg.* **59**, 901-2 (1935).—Glycerol may be recovered from residues containing gelatin, glue and sugars by steam-distillation at 165-200° or by mixing the material with an equal weight of hot H_2O, adding CH_2O, heating for 3-4 hours at 100-5°, and extracting the comminuted mass counter-currently with hot H_2O. The residue from the latter process may be ground with peat for use as fertilizer. (*Chem. Abs.*)

PATENTS

Soap. French 795,466, March 14, 1936. Friedrich Werth. A soap suitable for removing oil from the hands contains dry soap powder, dry fibrous material such as sawdust, wood pulp and a binder. The binder may be the mucilaginous material in the wood pulp. (*Chem. Abs.*)

Soap Compositions. U. S. 2,048,797, July 28, 1936. Paul Küller. A detergent suitable for use on the skin comprises a mixture of soap with the product formed by decomposing raw silk with alkali. (*Chem. Abs.*)

Resin Soaps. French 795,765, March 21, 1936. Leon A. Barthelemy. A resin soap of maximum concentration but without free resin is made by passing a caustic alkali solution over resin at a temperature slightly below the melting point of the resin. (*Chem. Abs.*)

Antioxidants Retard Rancidity in Soaps, Butter and Oils. U. S. 1,993,771 issued to E. I. du Pont de Nemours and Company covers the use of such antioxidants as di-p-p'-hydroxy diphenyl in soaps, fats and oils.

The use of substituted phenols such as ortho-hydroxy diphenyl, beta-naphthyl-para-phenol, and other aromatic compounds has the advantage of retarding oxidation and the development of objectionable rancid odors and tastes in butter and lard, cocoanut oil, soaps, etc.

In one of the examples listed in the patent application it is stated that white olive castile soap treated with 0.1 per cent of para-hydroxy diphenyl required over 160 hours in an oxygen atmosphere at 60 deg. C. to absorb 2 per cent by weight of oxygen, whereas an untreated control sample absorbed 2 per cent of oxygen in 30 hours.

In addition to inhibiting deterioration in soaps and fats, the phenolic substances covered by the patent are light-stable and give rise to substantially no discoloration of white or light colored fat and soap stock. (*Drug Trade News* 11, 21, 44, October 12, 1936.)

Cholesterin Fats as Initial Material. Inzersderfer Chemische Industrie Gesellschaft mit beschränkter Haftung, of Oldenburggasse 8, Inzersdorf, near Vienna, Austria, in British Patent Specification No. 448,930, describe a process for making soaps and soap masses having a nonalkaline reaction which comprises effecting in apparatus of the character of an emulsifying device, homogenizing machine or the like, a reaction between fats or fatty oils, waxes or the like, and a quantity of alkali which is less than that necessary for complete saponification thereof, in the presence of insoluble metal soaps or metal oxides corresponding thereto preferably in a finely divided condition which promote homogenization of the mixture to be treated and cause a uniform reaction to take place at all individual points throughout the mixture, treatment in the apparatus being continued until substantially no more free alkali is detectable.

In carrying out the process according to this invention, the fats or fatty oils, and the like, such as more particularly fats of the glycerine or cholesterin series, for instance, wool fat, are mixed with preferably concentrated lyes such as, for example, soda lye of 35° Be., or more, and the mixture is treated in an emulsifying device, homogenizing machine, or the like, whereby owing to the intimate stirring of the mass a homogeneous mixture is produced. The temperature in this operation is maintained as low as possible, preferably, at least, until the time when the free alkali is already bound at least for the greater part. Usually it is not necessary to exceed a temperature of about 35 to 37° C. Towards the end of the mixing process, however, heat may be supplied to the mixture. (*Perfumery and Essential Oil Record* **27**, 9, 377.)