ABSTRACTS

Soaps

Edited by M. L. SHEELY

Paints in Soap Factories. Fr. Kirchmann. *Seifensieder-Ztg.* **63,** 330-1, 352 (1936).—Suitable paints for soap factories are discussed. (*Chem Abs.*)

Soap Sweating. J. Davidsohn and A. Davidsohn. *Soap, Perfumery & Cosmetics* **1936,** 704.5.—When an unduly large percentage of free alkali is present in soap, rancidity may develop. Soap is a colloidal system in which fatty acids, water and such electrolytes as salt, caustic soda, and soda ash, are present at a definite pressure and temperature. If the electrolyte content of the system is not kept down to a level corresponding to the prevailing conditions of room temperature and pressure, the system will not retain its homogeneity.

Migration of electrolytes will occur or water will be liberated, which will travel by capillary attraction to the surface of the soap. In so doing it carries with it the readily soluble soaps of unsaturated fatty acids, as well as unsaponified fat. An excess of alkali or other electrolytes thus gives rise to soap sweating. Since the fats carried to the surface are readily oxidized, rancidity inevitably develops at the sweating areas, and spreads through the whole mass. The sweating of soaps is thus not a symptom of rancidity, but inevitably leads to spoilage and in most cases to rancidity. These remarks also explain why a salt content exceeding 0.5 per cent endangers the stability of soap. Very great care is therefore necessary during the salting out process. (*Soap* **XII,** [12] 67.)

Influence of Technical Processes on the Structure of Nontransparent Soap. B. Tyutyunnikov and N. Kas'yanova. *Allgem. Oel-u. Fett-Ztg.* **33,** 323-9 (1936). —Soap was prepared from a hydrogenated sunflower-oil stock containing 10% tallow and a small amount of wax; each step following the solidification was followed by taking photomicrographs of samples. The milling as well as the plodding of soap tends to orient the fiber-like crystals of soap in positions parallel to the direction in which the soap is forced, i.e., parallel to the length of the strand or bar. Milling and plodding not only result in grinding the soap to a more homogeneous mass and distribute perfume and color, but they also orientate the structure aggregates. The greater plasticity of soap that has been milled and then plodded can be attributed to its oriented structure. Test in a special apparatus shows that milled soap washes away faster than unmilled soap made from the same raw products. (*Chem. Abs.*)

Aqueous Resin-Soap Solutions. Johannes Scheiber and Rudolf Sändig. *Kolloid-Z.* **74,** 343-53 (1936).—The viscosity (*n*) of aqueous alkali-colophony soaps increases greatly with concentration of resin; this behavior is not shown by shellac soaps. Shellac is peptized by aqueous borax; colophony is not peptized unless an OH-fatty acid is also present. "Schelloid" resin is peptized by aqueous borax, and forms a gel. Although glycerol raises the n of fatty-acid soap solutions, it lowers that of resin soap solutions. (*Chem. Abs.*)

Filled Soaps. Paul Brettschneider. *Seifensieder-Ztg.* **63,** 311-12 (1936).—Soaps filled with starch are preferred to soaps filled with water glass as they are less apt to cause damage to the fiber of the goods, although they may attack dyeings made with vat dyes. (*Chem. Abs.*)

Is Water Glass in Soaps Harmful? Wilhelm Schwiete. *Seifensieder-Ztg.* **63,** 391-2 (1936).—The advantages of water glass in soap are held to outweigh any disadvantages. (*Chem. Abs.*)

Filling Curd Soap. Karl Kiefer. *Seifensieder-Ztg.* **63,** 413-14 (1936).—Brettschneider's conclusion that water glass is not the best available soap filler (see reference above) is attacked on the ground that the experiments cited by Brettschneider were not carried out under the best conditions. Kiefer does not believe that the poor results sometimes obtained with filled soaps should be attributed to the presence of water glass. (*Chem. Abs.*)

Filled Curd Soap. K. L. Weber. *Seifensieder-Ztg.* **63,** 189-90, 209-10, 252-3 (1936).—Cf. following abstract. Filled soaps are apt to tend to sweat or form salt crusts on the surface of the cake. The relationships between such undesirable properties on the one hand and the salt content and climatic conditions on the other are discussed in detail. Water glass together with either potash or soda is the most suitable soap filler under German climatic conditions. Sugar, starch or tylose are of only minor value in increasing the stability of filled soaps. (*Chem. Abs.*)

More About Curd-Soap Fillers. Hans Nitschke. *Seifensieder-Ztg.* **63,** 497-8, 517-18, 536-7 (1936).—Cf. preceding abstract. The stability of filled soaps and their ability to withstand the unfavorable climatic conditions of Central America can be greatly improved by using 25-30% palm oil or coconut oil and approximately 10% rosin in making the soap. The use of Na_2SO_4 in connection with water glass as filler is also recommended and practical suggestions for incorporating this filler are given. (*Chem. Abs.*)

Liquid Soaps Are Clarified by Flocculation with Gel. *Oil, Paint and Drug Reporter* **130,** [20] 9 (1936).—Clarification of liquid soaps by means of freshly precipitated aluminum hydroxide is reported from abroad to effect considerable savings in time. The method is suggested as an alternative to the commoner operation of sedimentation by storage over long periods.

Preparation of Gel. Freshly precipitated aluminum hydroxide is prepared by treating a hot concentrated solution of aluminum sulphate with 10% ammonium hydroxide until a faint excess remains. Addition of ammonia should proceed slowly.

The gelatinous precipitate is washed several times in hot water by decantation and then transferred to a cloth where excess water is removed by pressure. One per cent of the aluminum hydroxide is added to the soap solution with stirring. Two days suffice for clarification according to the report.

Electrochemical Study of Water-Glycerol and Water-Ethylene Glycol Solutions. I. I. Zhukov and I. F. Karpova. *J. Gen. Chem.* (U. S. S. R.) **6,** 161-6 (1936).—In contrast to EtOH, the addition of glycerol or of ethylene glycol, even in large amounts, to aqueous

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acetate or phosphate buffered solutions or to dilute HCl and H_2SO_4 solutions affects but slightly the H-ion concentration as measured by means of an H electrode. Zhukov and Karpova assume that in the case of EtOH the reversible reaction EtOH + $(H_3O)^+$—$(EtOH_2)^+$ + H_2O proceeds in the direction of forming $(EtOH_2)^+$ ions, while in the case of glycol or glycerol, ions of this type are formed to such slight degree that the electrode potential remains practically unchanged. (*Chem. Abs.*)

PATENTS

Soap Containing Irradiated Sterols. A. J. Lorenz (to Lever Brothers Company) U. S. 2,060,228. Toilet soaps having properties said to be beneficial to the skin are prepd. by incorporating irradiated sterols and substances contg. sterols into the soap or the soap may be irradiated during the milling operation.

Soap Preparation. Walter Kling (to H. Th. Bohme Aktiengesellschaft). U. S. 2,061,468, Nov. 17, 1936. A bath soap composition adapted to produce a non-alkaline solution upon hydrolysis in water, which comprises an alkali metal salt of a sulphuric acid by weight of a superfatting agent selected from the group consisting of lanolin, wool fat and higher aliphatic alcohols having more than 8 carbon atoms.

Prevention of Rancidity in Soaps. Austrian Patent 145,654. Glycerin or other suitable alcohols, single or in admixture, or water-soluble phosphates, especially trisodium phosphate, are added to the soap whilst still in the liquid state. (*Soap Gazette and Perfumer* **38,** [9] 22.)

Process for Bar Soap. U. S. 2,057,192, Oct. 13, 1936. Willis A. Hutton, Seattle, Washington. An apparatus for making bar soap, a soap conditioning kettle, a low pressure pump, a conduit connecting the low pressure pump with the bottom of the soap conditioning kettle, a receptacle for material which is to be added to the soap connected with the conduit, a high pressure pump, a saponifying valve connected with the high pressure pump through which the soap from the high pressure pump must pass, a soap cooling device, a conduit connecting the soap cooling device with the valve, means for circulating temperature controlling agent through the soap cooling device, a soap extruding conduit and soap conduit means connecting the soap passageways of the soap cooling device with the soap extruding conduit. (*Soap* **XII,** [12] 75.)

Superfatted Soaps. British Patent 448,930. Non-alkaline superfatted soaps are made by homogenizing or emulsifying until free alkali cannot be detected, a mixture of fats, fatty oils, waxes, or the like and alkali insufficient for complete saponification, in presence of insoluble metal soap or the corresponding metal oxide. Solvents, e.g., benzine, other petroleum fractions, aromatic hydroaromatic hydrocarbons, nitrobenzine, trichloethylene, may be added during or after saponification, and at a temperature below or above the boiling of the solvent. In examples: (1) 0-2 per cent of titanium oxide finely ground in fatty acid glycerides is mixed with glycerides and churned with caustic soda solution at 25-30° C., for 1-2 hours; (2) 0-3 of sodium zincate is similarly used with caustic potash lye and glyceride; (3) wool-fat or a 1:2 mixture of wool fat and glyceride fat is saponified as in the above examples. (*Soap Gazette and Perfumer* **38,** [12] 14.)

Use of Rosin Soap in Sizing Composition. Max Engelmann (to Bayer-Semesan Company). U. S. 2,052,170. Sizing composition; being rosin soap forming composition comprising abietic acid and an alkaline material. (*Chemical Industries* **39,** 405.)

Detergent Production from Cereals Such as Corn. Axel. L. Sodergreen (to Herbert D. Pease). U. S. 2,049,476, Aug. 4, 1936. A cereal material such as corn flour is heated to about 120° or lower in the presence of moisture to depolymerize the protein and hydrolyze the starch; the depolymerized protein and hydrolyzed starch are made alkali (suitably with NaOH) and the imbedded fats and fatty acids are saponified with "nascent" caustic solution made by the moisture progressively released from the cereal, with sufficient heating under pressure to produce proper liberation of water vapor and thorough alkalization, and liberated gases are finally exhausted and any free caustic alkali is neutralized by use of CO_2 under pressure. (*Chem. Abs.*)

Wetting, Cleansing and Emulsifying Agents for Animal, Vegetable and Artificial Fibers. Heinz Hunsidiecker and Egon Vogt. U. S. 2,051,947. Production wetting, cleansing, and emulsifying agents for animal, vegetable, and artificial fibers. (*Chemical Industries* **39,** [4] 405.)

Washing Powder. C. Schou's Fabriker Aktieselskab. Danish 51,891, July 20, 1936. Soda, soap, and if desired alkali silicate, are mixed with warming, and after a partial slow cooling the mixture is converted to shavings with rapid cooling, e.g., by passing between cooled rollers, and dried. A perborate may then be incorporated in a mill. (*Chem. Abs.*)

Machine for Making Lather from Soap Cakes. Melvin Rolstad. U. S. 2,057,791. Machine for making lather from soap cakes. (*Chemical Industries* **34,** [5] 519.)

Composition Suitable for Use as a Shoe-Bottom Filler or Stiffener. James A. Muir (to Crown Cork & Seal Company). U. S. 2,052,579, Sept. 1, 1936. A mixture of comminuted cork 47 and cottonseed oil pits 53% is calendered, a fabric backing strip is applied to the mixture, the laminated material is allowed to set, and is coated with a prasticizer formed of water 60, a vegetable gum such as gum arabic 30 and glycerol 10%. (*Chem. Abs.*)

Composition for Cleaning Silver, Etc. Jean M. Schneider. French 798,532, May 19, 1936. A paste made from glycerol and $NaHCO_3$ is used. (*Chem. Abs.*)

Chamois for Cleaning Lenses. U. S. 2,053,475, Sept. 8, 1936. Chamois is treated with Cr oxide and a hygroscopic material such as glycerol. (*Chem. Abs.*)