

Abstracts

Soaps

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MODERN DETERGENTS AND THE SKIN. A. W. Matthews. *Perfumery & Essential Oil Rec.* 36, 251-3 (1945). The effects of soap solutions on the horny layer of the skin depend on the following properties: the quality of the soap as it is related to the absence of free alkali or alkaline salts; the particular mixture of fatty acids, and the conditions under which the soap is used. The alkalinizing action of soap depends on the amount of alkali present in the solution and this, in turn, depends on free alkali present, the alkali liberated by hydrolysis and alkali derived from builders, etc. These factors may tend to result in abnormal effects even on normal skins.

A major difference between soap and the new detergents is that the latter are more acid than soap and are less likely to disturb the normal acid mantle of the skin. The new detergents will certainly not irritate skin due to alkalinity, but they may cause irritation in other ways.

BENTONITE AS A DETERGENT. Milton A. Lesser. *Soap* 21, No. 10, 37-40 (1945). Bentonite has outstanding value as a detergent. Its dispersing, emulsifying and suspending properties are like those of soap, due to colloidal action. Its remarkable sorbent action, not displayed by soap, and the fact that its electrical polarity is the opposite of that of carbon, give bentonite the power of attracting and carrying away dirt. With this must be coupled its water-softening action by which it not only lessens waste but also helps to prevent the formation of soap rings and precipitates.

Bentonite may be used in the manufacture of soap cakes, flakes, powders, pastes, and liquids. Several methods may be employed for incorporating bentonite into soap. The soap may be made in the usual way and the bentonite crutched in later or the dry powdered material is added to the melted fats in the soap pan, prior to the alkali. Often the bentonite is dispersed in the water and the melted fats stirred into the resulting suspension and the alkali added last. In other cases, a bentonite paste or suspension is added to the soap. Examples of these various methods are listed.

WATER SOFTENERS. Milton Lesser. *Soap* 21, No. 11, 32, 38 (1945). Water softeners may be added to water to save soap, to improve washing results, and to counter-act changes in soap composition caused by fat and oil shortages. Among softeners which are surveyed are ammonia solutions, borax, sal soda, and modified sodas. Less well known materials include silicates, trisodium phosphate, and molecularly dehydrated phosphate such as sodium hexametaphosphate, tetrasodium pyrophosphate, and sodium tetrakisphosphate. It is common practice to combine various of these salts to obtain very effective mixtures. Bath salts, as a special kind of personalized water softener, were also reviewed.

THE CRYSTALLINE PHASES OF SOAP. M. J. Buerger, L. B. Smith, F. V. Ryer, and J. E. Spike, Jr. *Proc. Natl. Acad. Sci., U. S.* 31, 226-33 (1945). Phase distributions of soap-water systems govern phase mixtures found in the solid state and influence the properties of the soap. Phase maps in which descendent phases are substituted for phases stable in the regions where

developed, replace phase diagrams. A descendent phase is defined as one which is derived from a phase stable in the region where developed on change of conditions. Seven distinct phases were distinguished in the exam. of a series of pure Na salts of caproic, lauric, myristic, palmitic, stearic, and oleic acids. X-ray diffraction patterns are given for these. The phases ω and β were rejected as being resolvable into at least 2 of the above phases. The form of Na stearate obtained by heating above 117° is named. The extent of hydration of soap crystals is recognized as important in proper identification. A phase map for a com. soap is tentatively presented to dispel the idea that only 3 phases, β , ω , and δ exist as such. (*Chem. Abs.* 39, 5516.)

CATION-ACTIVE SOAPS—THEIR STRUCTURE, PROPERTIES AND APPLICATION. Jean Ripert. *Soap, Perfumery, & Cosmetics* 18, 885-8 (1945). Cation-active soaps, that is substances in which the ion carrying the fatty radical is negatively charged, include amine salts, the quaternary ammonium compounds, sulphonium, phosphonium, etc. These negatively charged ions group themselves together to form large colloidal micelles whose solutions have relatively the same properties as ordinary soaps. In addition to these, they have the power, without any pH variation of precipitating proteins such as albumen and gelatin.

These cation-active soaps have special interest as antiseptics. They exhibit special inhibiting properties on bacteria and have no destructive action on normal tissue. Greatest effect was obtained with chain length from C₆ to C₁₂ and bromides are more active than iodides. The position of substituted groups may also influence the antiseptic power.

SUBSTITUTES FOR FATS IN SOAP FACTORIES. K. P. Stetsenko. *Pishchevaya Prom.* 1, No. 3, 19-21 (1941). The possibility of using such substitutes for fats as alk. sulfite, salts of ligninsulfonic acids, fatty acids from the petroleum industry, and other by-products is discussed. (*Chem. Abs.* 39, 5516.)

PATENTS

SOAP COMPOSITION. Lawrence H. Flett (Allied Chemical and Dye Corp.). *U. S.* 2,390,295. A soap composition adapted for use in hard water, sea water, and acid aqueous solutions comprises a water-soluble soap and a mixture of alkyl derivatives of an aromatic sulfonate containing at most two benzene nuclei in the aromatic radical, of which the alkyl groups are derived from a polycomponent non-aromatic hydrocarbon mixture of which at least 80 per cent boils between 210° C. and 275° C. and over a maximum range of 55° C., said mixture of alkyl derivatives and soap being present in the composition in ratios varying from 5 to 100 parts of the mixture of alkyl derivatives per 100 parts by weight of soap.

CORRECTION

cf. OIL & SOAP 22, 315. The journal reference to QUATERNARY AMMONIUM SURFACE ACTIVE AGENTS should have been *Am. Perfumer and Essential Oil Rev.* 47, No. 9, 54-5 (1945).