ABSTRACTS

Soaps

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Recent Advances in Metal Cleaning Technology. *Metal Cleaning and Finishing*, Vol. 7, No. 2, page 65, February, 1935. Soap formed in situ on articles which are being cleansed, or nascent soap, has been used industrially for a long time in several ways. For instance, to remove particularly dirty marks and stains, it is common laundry practice to rub a litle oleic acid into the mark, and wash it out with alkali. The concentration of soap in the fibers naturally gives greater cleansing than by rubbing on the surface in the ordinary way.

An unexplained fact in connection with this is that while sodium oleate is a better detergent at lower temperatures than it is at boiling, in the case of nascent sodium oleate, the detergency appears to be much increased at boiling temperatures. For example, in the case of cotton goods, if after treatment with the emulsion, they are plunged into a boiling alkaline solution, the amount of difficultly removable dirt which is liberated is very much greater than if the operation is carried out with an alkaline solution at about 140° F.

Manufacture and Chemistry of Cold-Process Soaps. I. Davidsohn. *Seifensieder-Ztg.* 61, 325-8 (1934). Various tests indicate that the "unsaponified" fat, present in soaps made by the cold process using less than the theoretical amount of caustic necessary for complete saponification is probably not unchanged triglyceride but rather mono and di-glycerides. Because of the hydrophilic character of the latter, such soaps may often have emulsifying and foaming powers which compare favorably with that of completely saponified soaps, and can be worked up advantageously into toilet soaps. C. A. 29, 2008 (March 20, 1935).

Adjusting the Alkalinity and The Technical Drying of Grained Soap. C. Bergell. *Seifensieder-Ztg.* 61, 381-2 (1934). Tabulated data show that soap has a tendency to assume an "acid" reaction by virtue of the alkali therein being converted into carbonates, when dried in such a way as to bring it into extended contact with warm air (cf. C. A. 28, 2209, 7049). This tendency also increases with the extent of drying and of exposed soap surfaces. (C. A. 29, 2009 (March 20, 1935.)

Added Powder Causes Soap to Last Longer. *Drug Trade News*, 10, 5, 33 (March 4, 1935). Based upon the belief that toilet soaps, whether in cake or powder forms, are wasteful, much more soap being used than is necessary, the R. T. Vanderbilt Company, Inc., of New York City in a recent patent describes an invention which provides for an improved powdered soap product, which "enables soap to be much more effectively employed, reduces the loss and waste of the soap to a minimum and is otherwise free from the objection of the common powdered soaps."

The new powdered soap product contains finely powdered particles of soap which are so small that they dissolve quickly in water and these particles are coated or glazed with a non-saponaceous material which prevents the soap particles from sticking together before use, and when the product is used, the non-saponaceous material prevents the soap particles from adhering together to form an objectionable pasty mass which would become smeared on the hands.

Of the powdered soaps on the market, the inventor makes the criticism that they contain particles so large that they feel gritty and uncomfortable when used for washing the hands. This, the inventor states, is because the soap particles are not ground to a sufficient degree of fineness to dissolve quickly. To produce a soap product with particles so fine that they will not be liable to this objection, the addition of a non-saponaceous material as a "dusting powder" is contemplated by the invention.

The inventor found that it was possible to grind soap of any usual water content to particles of extreme fineness by grinding it in the presence of a sufficient amount of a suitable dusting material, such as pyrophyllite, talc, mica, starch, etc. Unless such a dusting material is added, the grinding mill would become warm through friction, the soap in passing through the mill would become soft and fill up the veins of grinding edges of the plates, smearing them over and lubricating these surfaces until all the grinding action ceased.

In general, the inventor found that by adding pyrophyllite, for example, in an amount equivalent to at least 30 per cent by weight of the soap to the mill, and by grinding a soap of any ordinary water content with this amount of dusting material, soap particles of the desired fineness could be obtained. Dusting material equivalent to forty or fifty per cent by weight of the soap could be used to advantage and even as much as seventy-five or even ninety per cent by weight of the dusting material can be employed.

According to the inventor, the new soap product has a wide range of usefulness, and is particularly designed for toilet purposes. Any perfume, disinfectant, coloring matter, etc., is preferably incorporated with the soap before grinding.

Among the sanitary advantages claimed for the new powdered toilet soap is that each user can sprinkle just the desired amount on his hands without the possibility of contamination which may result from using a cake of soap that has been used by others.

The Detergent Power of Soaps. *American Perfumer and Essential Oil Review*, Vol. 30, No. 1, page 25, March, 1935. Much of the credit for the improved methods of determining the detergent power of soap is due to the work of Rhodes and Brainard (*Journal of Industrial and Engineering Chemistry*, 1929, 30, 60) who have been followed by workers in Russia, Italy and Germany.

In their tests Rhodes and Brainard used pieces of cloth of exactly determined size, soiled with a mixture of grease, mineral oil and lamp black. These were washed in a rotating drum containing a known weight of glass balls. The whiteness of the fabric was measured after a certain time by means of a specially designed photometer.

In an Italian method recently described by L. Szego and G. Beretta (*Gior. di chim. Ind. ed. Applicata*, 1934, 16, 281-4), great care is taken in the preparation of the test piece in a glass drum. In order to obtain a standard degree of whiteness before hand, the material was soiled with an exactly proportionate mixture of petrolatum tallow, linseed oil, oleic acid, lamp black and either benzene or petroleum. Strips of the soiled fabric were washed in 500 cc. of the soap solution, rinsed and dried and their whiteness measured with the photometer.

The Italian workers found that there are two kinds of soap: those which in solution appear to reach their maximum activity in about ten minutes, and those which require about four hours to do so.

Waterglass as a Detergent. *The Oil and Colour Trades Journal*, 87, 1901, 851 (March 22, 1935). In view of the practical importance, economy and success in use of sodium silicate as a washing material it is surprising that there are comparatively few articles in the technical press dealing with its use. Although on the whole its use is viewed with favor, there are still users of washing materials who refuse waterglass. An enormous amount of research has been expended on the washing properties of silicates, and failures have almost without exception been due to incorrect procedures. With the exception of the case of the new fatty alcohol sulphonates, which are mainly of use in wool washing (being neutral in reaction) it is necessary to have some alkali present during the washing operations. The alkalis, trisodium phosphate, waterglass and sodium metasilicate, are all used in various ways in this connection, remarks A. Foulon (*Allg. Oel u. Fett Zt.*, 1934, p. 483). Sodium silicate represses the dissociation of soap and reduces the possibility of the formation of gelatinous precipitates. At the same time it has not the effect of excess of alkali, which reduces the dirt-absorbing properties of soap. Waterglass, provided that it is not used in excess of 10 per cent has a softening effect on the water used, and it also prevents the deposition of iron compounds on the fibres. It has a stabilizing effect on the modern oxygen-yielding detergent. Some manufacturers supply mixtures

PATENTS

Laundering. U. S. 1,989,312, January 29, 1935. Arthur B. Gerber (to Swann Research, Inc.). Fabrics are subjected to a soap bath and then to a bath containing $(NH_4)H_2PO_4$ and which also may contain NH_4 fluosilicate and NaCl which serves for scouring. (C. A. 29, 2000 (March 20, 1935.)

Soaps. Victor Boulez. Fr. 774,156, Dec. 3. 1934. Gelatins, glues of all kinds, gelose, lichens, gums, caseins, artificial resins, plastifiers, starches, sugars, cellulose, higher alcs., etc., are added to soaps to improve various phys. properties.