ABSTRACTS

Soaps

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Germicidal detergents. A. R. Cade, Ph.D. and H. O. Halvorson, Ph.D., Department of Bacteriology and Immunology University of Minnesota, Minneapolis.

It has been found that some of the unsaturated soaps, particularly sodium oleate and sodium resinate, enhance the bactericidal efficiency of alkalines such as trisodium phosphate. A 2 per cent solution of trisodium phosphate containing from 0.1 to 0.2 per cent sodium resinate sterilizes a 24 hour culture of Staphylococcus aureus in a 5 minute contact period at 37.5° C. The mixture is also germicidal toward other pathogenic organisms, and appears to have a decided toxic action on the acid-fast Mycobacteria.

A new procedure in the testing of germicides has been introduced, in which plate counts serve as the criterion of germicidal efficiency, rather than growth or no growth in broth cultures. This overcomes, to a large degree, the effect of the error of random sampling. (*Soap, X,* 9, 49 (1934).)

Superfatting Soap. *Soap, Perfumery and Cosmetics Trade Review* 7, No. 7, 17 (1934).—Use of a superfatting agent undoubtedly improves the texture of soap, making it more plastic and easily worked. It also tends to neutralize any alkali which might be present, and thus remove harshness which might irritate sensitive skins. A good mixture for this purpose consists of equal parts of stearine and white petroleum jelly, or 2 parts stearine, 1 part lanolin, and 1 part white petroleum jelly. These are melted, mixed, allowed to cool, and 1 to 1½ pound added per 100 pounds of chips added with the other ingredients at the mixing stage. H. P. MARTIN.

Non-alkaline rug cleaner. *Industrial and Engineering Chemistry* 12, 18 339 (1934).—The shampooing of rugs is commonly carried out with soap, usually with the addition of alkaline salts. This is objectionable mainly because of the deleterious effect of alkali and residual soap on the rugs. In a new rug cleaner about to be marketed, similar properties have been incorporated without necessitating the presence of free alkali. The non-alkali soap substitutes are used. Possible hardness of the water used has also been taken care of by a new non-alkaline water-softening agent.

The use of a rug cleaner of this type also permits the incorporation of moth-proofing agents, which are incompatible with soap or alkaline salts. The cleaned rug or upholstery is, therefore, protected against moths for a substantial period of time.

Using soap waste. *Soap, Perfumery and Cosmetics Trade Review,* 7, No. 7, 11 (1934).—Old and damaged cakes of soap and waste from the driers, should never be milled and mixed with fresh soap. It is safer to return waste of this kind to the soap pan and to re-boil it, even though this involves the loss of some of the ingredients. Color may give rise to trouble in toilet soap base. Where this is the case, the waste should be added to a soap of lower grade. Scrap from the plodder and from the cutting of the bars should be used immediately, but it is safer to mix it off gradually and send it through the mills again with subsequent batches of chips. (*Soap, X,* 9, 61 (1934).) H. P. MARTIN.

Schaal's rapid saponification process. *Soap Gazette and Perfumer,* 36, 9, 22 (1934).—The new rapid saponification process is based on the saponification of fats or oils with the exact quantities of caustic soda or potash needed for saponification, within as short a time as 30 minutes. In this process it is necessary to observe definite temperature degrees of the fat and oil mixtures, definite Beaume degrees of the alkali solutions, proper operation of the crutchers and the use of certain accelerators. The reaction heat increases within 10 minutes up to about 150° C., a temperature produced automatically without steam or firing. Equipment for about a 1,000 pound soap production in one charge is able to produce in about 8 hours 10,000 to 11,000 pounds of finished soap having about 78% fat content. According to this process the glycerine is retained in the soap.

Persulfate as a soap bleach. Cyril S. Kimball, Harry J. Hosking, and Foster Dee Snell, Foster D. Snell, Inc., Brooklyn, New York.

In bleaching palm oil soap, 0.5 per cent of potassium persulfate based on the anhydrous soap content gives over 90 per cent reduction of color at 20 per cent soap concentration, or 85 per cent reduction at 50 per cent concentration. The soap is bleached after saponification and salting out. Increase of persulfate concentration has little effect. There is but little temperature effect between 80° and 100° C. with a slight maximum indicated at 90°. Large amounts of excess alkali lower the effectiveness, but moderate excess has no effect. The rate of addition of the persulfate is of little importance. Catalysts known to influence the stability of hydrogen peroxide proved to have no beneficial effect and in some cases were detrimental. At the same concentration potassium persulfate is much more effective than hydrogen peroxide or sodium perborate.

The effectiveness of persulfate as a bleach for tallow is lower. The green color of olive-oil foot soap is altered too, or replaced by an orange color with relatively high concentration of persulfate. Soap from good quality olive oil is bleached. No important degree of bleaching of corn oil, cottonseed oil, or cocoanut oil soap is obtained. (*Industrial and Engineering Chemistry,* 26, 10, 1074 (1934).)

PATENTS

Irradiated soap. Anthony Joseph Lorenz and Mark H. Wodlinger. British 403,083, Dec. 11, 1933; cf. French 742,181 (*C. A.* 27, 3632).—Irradiated cholesterol, phytosterol, zymosterol, etc., may be used and irridation may be with X-rays, infra-red rays or cathode rays. (*C. A.* 28, 10, 3261, 1934.)

Sulfonated fatty acids. H. Th. Bohme A.-G. (Heinrich Bertsch, inventor.) German 593,709, March 10, 1934 (Cl. 120, 23.02).—The mixture of acids obtained from the fatty alcohol mixture of cacao and palm nut oils are sulfonated by treatment with H_2SO_4 to give products useful as emulsifying, cleaning and softening agents, and as protective colloids. (*C. A.* 28, 11, 3609, 1934.)

Soap purification. Martin H. Ittner. U. S. 1,951,511, March 20, 1934.—For purifying soap made from petroleum oxidation derivatives, a current of steam is blown up into the soap while contained in a closed vessel at a temperature above 250° and vapors are removed from the vessel rapidly enough to permit the soap to remain anhydrous even in the presence of steam; vapors are condensed and recovered, this effecting a removal of alcohol hydroxyl and effecting a separation of unsaponifiable volatile impurities. (*C. A.* 28, 11, 3610, 1934.)

Sulfo derivatives of higher fatty acids. Georg Kalischer and Karl Keller (to General Aniline Works). U. S. 1,949,837, March 6, 1934.—By methods similar to those used in accord with U. S. 1,851,102 (*C. A.* 26, 2989), sulfo derivatives are obtained by using as starting materials a water-soluble sulfite and a water-soluble salt of a halogen-containing conversion product having an unsaturated character formed by heating a halogenated fatty acid of the general formula $C_{17}H_{34-x}RHal_xCOOH$, where R means hydroxyl or H and x the number 4 or more with an alkali-acting agent, selected from the group consisting of hydroxides and carbonates of alkali and alkali earth metals with the addition of a diluent. The products may be used as protective colloids. (*C. A.* 28, 10, 3260, 1934.)

Soap. John Wearham. British 403,650, December 20, 1933. In the manufacture of irradiated soaps, ergosterol not previously irradiated is added to the soap or the fats to be saponified and the mixture irradiated artificially, *e.g.*, by means of a quartz Hg-vapor lamp or an electric arc light. (*C. A.* 28, 10, 3261, 1934.)

Antifreezing agents. *Chemical Abstracts,* Vol. 27, No. 21, page 5495, November 10, 1934.—Henkel & Cie G. m. b. H. British 392,876, May 25, 1933. Antifreezing agents for use in fire extinguishers comprise the lower mono-alkyl ethers of glycerol, e. g., the methyl, ethyl and isopropyl ethers, used alone, in aqueous solution or mixed with salts.

Wetting, etc., agents. I. G. Farbenind. A.-G. Fr. 41,541, Jan. 28, 1933. Addn. to 728,415 (*C. A.* 26, 5713). Wetting, cleansing and dispersing agents are prepd. by treating with sulfonating agents urethanes to the N atoms of which are fixed atoms of H or aliphatic, cycloaliphatic, aromatic or heterocyclic radicals, or the alc. radical of which contains one or more double or triple bonds or aromatic or heterocyclic rings.

Wetting, dispersing and softening agents, etc. Heinrich Ulrich and Paul Koerding (to I. G. Farbenind. A.-G.). U. S. 1,931,806, Oct. 24. Products suitable for use in the textile industries, etc., are obtained by the action of a sulfuric ester of a hydroxyalkyl amine contg. at least one H atom attached to a N atom (such as monoethanolamine sulfuric ester, *n*-butylaminoethanol sulfuric ester or secondary aminobutanol sulfuric ester) with an org. halogen compd. corresponding to the general formula R—COX in which X is a halogen atom and R represents alkyl, aryl, alkoxy,

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