ABSTRACTS

Soaps

Edited by **M. L. SHEELY**

Detergents for metal cleaning. M. B. PETERSON, *Metal Cleaning and Finishing*, 6, 127 (1934).—Among the detergents generally available for cleaning metallic surfaces there are: (1) neutral soaps, (2) built soaps, (3) alkalies, (4) hymolal salts.

Hymolal salts which, technically, are salts of high molecular weight alcohols are the latest development in the detergent field. The sodium salt is now marketed in the bulk trade under the name of "Orvus."

In removing grease or oil, the functions of the cleansing agent are: First, by its wetting power to form a layer between the surface of the metal and the grease, then to emulisfy the grease, and finally to peptize the grease or break it up into almost colloidal particles which will not fall back and adhere to the surface of the metal. Finally, the detergent must be of such a character as to rinse easily and freely from the metal without leaving streaks. While soap has been considered a satisfactory cleanser, it appears that hymolal salts have even more desirable characteristics for the job. In the first place, the wetting power of a solution of hymolal salts is greater than the wetting power of a similar soap solution. Then, too, the heavy metallic hymolal salts are soluble at the temperature at which most metal cleaning takes place, with the result that they do not readily precipitate in a cleaning process. This is especially true in using hymolal salts with the addition of some extra alkali since the additional alkali tends to dissolve some of the metal and to bring about the reaction between the metal and the hymolal salts. In the rinsing of the metal, the superior rinsing qualities of a solution of hymolal salts apparently give a smoother, more even rinse, thus eliminating streaks which must be avoided in many metallic processes such as electro-plating and enameling.

Vitamins in Soap. *Perfumery and Essential Oil Record*, 25, 99 (1934).—It is now some years ago since it was first suggested in France that vitamins could be usefully incorporated in soaps. This was followed a year or two later by the placing on the British market of toilet soap irradiated by ultra-violet light. Whilst the value of this treatment of an ordinary soap with ultra-violet light has been questioned, it is quite well established that when ergosterol, a substance largely obtained from yeast, is subjected to radiation by ultra-violet light, vitamin D is formed, and two patents have recently been granted for processes in which use is made of this fact.

In British Patent 403,083, Lorenz & Wodlinger claim the addition to soap of an antirachitic irradiated sterol (ergosterol, etc.), which has valuable dermatological qualities and in British Patent 403,650 J. Wearham adds ergosterol to soap, or the fat-alkali mixture before saponification, and irradiates the whole with ultra-violet light during or after saponification.

Cyclohexanol soaps. *Perfumery and Essential Oil Record*, 26, 100 (1934).—An exhibit at the British Industries Fair of interest to the soapmaker was a display of soaps containing methyl cyclohexanol. In view of its remarkable solvent, wetting out and emulsifying powers, and of the fact that it is non-toxic, non-explosive, non-inflammable, and does not attack metals, it is surprising that this substance is not more commonly used in the laundry and dry-cleaning industries, as well as in the scouring of silk and wool. The odor of the material, which resembles that of camphor or menthol, has been objected to, but this is entirely removed from goods of all types washed with soap containing it, after proper rinsing and drying.

A fairly large proportion of methyl cyclohexanol in a soap will prevent the precipitation of insoluble lime soap from a hard water, such soap being dispersed or dissolved by the solvent, and with lower proportions the precipitation of lime soap is lessened though not prevented. Another useful property of the cyclohexanol is that of retarding hydrolysis of soap, whilst it also has a marked disinfectant power, its Rideal-Walker coefficient being 1.5, so that soaps in which it is present possess distinct insecticidal and germicidal properties without being toxic.

Standard silk samples. Louis A. Olney, Lowell Textile Institute, Lowell, Mass. 23, 182 (1934) *American Dyestuff Reporter.*—There have been prepared, under the direction of the Sub-Committee on Fastness of Dyed Silk, standard dyed silk fabrics to represent four classes of fastness to washing—namely, Class I, Class II, Class III and Class IV. These standards have been carefully dyed with the dyestuffs and according to the dyeing methods recommended in the 1931 Year Book.

The A. A. T. C. C. is prepared to furnish sets of these washing standards for a nominal charge which will cover the cost of preparation. It will be possible to accurately grade the fastness by comparing it with the standards after subjection to the standard washing tests approved by this Association. All inquiries concerning these Silk Washing Standards may be addressed to the Chairman of the Research Committee.

Heat economy in the soap industry. H. GÄBLER. *Arch. Wärmewirt*, 15, 47-9 (1934).—A general discussion of heat and power requirements. ERNEST W. THIELE.

Lanolin in toilet soaps. G. KNIGGE. *Deut. Parfümerie-Ztg.* 19, 133-4 (1933); *Chimie & Industrie* 30, 900.—A study of the methods of detn. of lanolin in toilet soaps. Tests carried out on mixts. of ordinary soaps or Ca soaps, coconut fat and lanolin showed that detn. of the latter, particularly in the presence of unsapond. fats, by extn. of the Ca soaps by EtOAc does not give accurate results, the latter being always low. In order to obtain accurate results, the detn. should be based on the difference between the sapon. nos. of lanolin in alc. and in petr. ether solns.
A. PAPINEAU-COUTURE.

Changes in the properties of soap by adding lecithin. E. L. LEDERER. *Seifensieder-Ztg.* 60, 919-20 (1933).—Addn. of 5% or more of soy lecithin to soaps effects better cleansing by increasing the emulsifying and lathering power. Rancidity or formation of brown spots does not occur. P. ESCHER.

The active constituents of bile in bile soaps. WELWART. *Seifensieder-Ztg.* 60, 936-7 (1933).—The active constituent of bile in bile soaps is taurocholic acid, present in bile in relatively small amt. The related "Igepon T" of the German I. G. is the Na salt of a high-mol. fatty acid deriv. of taurine. P. ESCHER.

The influence of air when drying soap base. C. BERGELL. *Seifensieder-Ztg.* 61, 15-18 (1934).—Atm. CO_2 will decompose finely divided soap at the temp. of the drying chambers, producing free fatty acid, and will cause spoilage by the formation of brown spots; the soap may nevertheless show an alk. reaction because of surface formation of Na_2CO_3. An ether extn. is required to detect the free acids. P. ESCHER.

Determination of the cleansing power of washing agents. A. VAN DER WERTH. *Allgem. Oel-u. Fett-Ztg.* 30, 588-94 (1933).—A general review is given of prevailing ideas on the cleansing power of washing agents. Apparently there are 3 dominant factors which det. cleansing: absorption of dirt particles, emulsifying power and, to a lesser degree, wetting ability. In special cases of comparison measurements of single properties such as lathering power or surface tension may suffice. Washing tests are essential for evaluating washing agents, but present methods of soiling, type of test pieces, temp. and concn. of liquor, mode of judging cleansing power, etc., are too much at variance. Soap solns., when exactly neutralized by buffering, have no cleansing effect. Dirt particles have a pos. charge, soap particles a neg. charge, because of hydrolysis, thus permitting a union of dirt with soap. Adding neg. ions to a soap soln. increases its cleansing power. It is practically impossible to reproduce all com. conditions in single lab. tests, but in all tests it is desirable to measure those properties that produce a cleansing effect, *viz.*, (1) the 3-min. lathering no., (2) the surface tension (drop no.), and (3) the time required for the test piece to sink in the liquor (all 3 detns. to be made in the presence of oil and soot). P. ESCHER.

Heat requirements for fatty acid distillation. VICTOR MILLS and R. C. DANIELS. *Ind. Eng. Chem.* 26, 248-50 (1934).—After deducting the heat loss, the preheat required for raising the feed to distn. temp. and the heat absorbed by the agitation steam from the total heat supply, the latent heat of evaporation for recovered grease faty acids was found to be 108 B.t.u. per lb. and 124 B.t.u. per lb. for red oil. E. SCHERUBEL.

Hymolal salts. *Industrial and Engineering Chemistry*, News Edition, 12, 98 (1934).—Need has been felt for a simple and descriptive class name for the new wetting and cleansing agents which are derived from alcohols of molecular formula containing eight or more carbon atoms. The higher alcohols of greatest commercial importance at present are the C_{12} to C_{18} alcohols obtained by reduction of fatty acids or their esters, but the class name should take account of alcohols from other sources and of varying complexity—for example, dihydroxy alcohols.

The word "hymolal," coined out of "high molecular alcohol" and pronounced high'-mo-lal', has been proposed as an adjective to describe these alcohols. The wetting and cleansing agents, which are chiefly alkyl sulfates such as sodium lauryl sulfate, are thus designated as hymolal salts. The term has already been found to simplify business discussion and correspondence relating to these products, and "hymolal" is expected to find a permanent place in the literature.

President Signs Linseed Oil Code

A code of fair competition for the linseed oil manufacturing industry, for which flaxseed is the principal raw material, was signed by President Franklin D. Roosevelt to become effective April 30.

The code prohibits unfair competitive methods, provides for regulating mill capacity with expansion subject to the approval of the Secretary of Agriculture, provides for quarterly quotas on crushing, and gives the Secretary of Agriculture and the National Recovery Act Administrator the customary access to the books and records of members of the industry.

Administration of the code is to be by a committee of the industry. Supplementing this administrative committee will be an advisory committee, selected by the Secretary of Agriculture and representing the flaxseed producers in the principal growing regions.

Under one provision of the code, the members of the industry agree to buy flaxseed on the basis of grade, oil content, and similar factors, when the Secretary of Agriculture declares such factors are available and usable in commercial transactions.

Standard National Recovery Administration wage and hour schedules are contained in the code.

Unfair methods of competition listed in the code include: sale of linseed oil that is below approved standards; sale of linseed cake or meal below approved standards, misbranding, bribery, special concessions or rebates, granting delivery options beyond a specified period, changing contracts without making a charge therefor, guarantee of prices against decline, destructive price cutting, discriminations between customers, defamation of competitors, extending the standard free delivery period, sale on consignment, receiving back empty linseed oil containers from customers at more than a fair price.

In general, three groups have a direct interest in the code. These are the producers of flaxseed, the manufacturers of linseed oil, and the consumers. The provisions for buying flaxseed on standard grades along with the representation on the advisory committee, offer the principal benefit to producers. The elimination of unfair competitive methods aids the industry. The power of the Secretary to review all prices as well as the general administration of the code, gives protection to the consumer.