Abstracts

Oils and Fats

Edited by
M. M. PISKUR

fat diet may also contribute to the poor growth obtained.

ESSENTIAL FATTY ACIDS, VITAMIN B_6, AND OTHER FACTORS IN THE CURE OF RAT ACRODYNIA. H. Schneider, H. Steenbock, and B. R. Platz. *J. Biol. Chem. 132,* 539-551 (1940). Acrodynia can be cured by the so called "essential fatty acids." This action is independent of vitamin B_6, since "essential fatty acid" preparations have been shown not to contain any vitamin B_6 and to retain their activity after treatment with diazomethane. It can be cured by rice bran concentrate. This action is independent of fatty acids, but is dependent upon vitamin B_6 plus a second "accessory factor." This second factor has been shown to be included in the filtrate from the fullers' earth treatment of rice bran concentrate.

THE EFFECT OF SOME SATURATED FATTY ACIDS ON THE RESPIRATION OF BAKER'S YEAST. E. S. Cook and Sis. M. Norbert Morgan. The Biochem. *J. 34,* 15-20, (1940). The addition of non-toxic concentrations of satd. fatty acids to suspensions of baker's yeast causes an increase in O_2 uptake. The magnitude of the effect depends both upon the concentration of the acid and its mol. wt. Within limits (valeric to undecoic) the physical effects, as determined by toxicity and respiratory activity, generally appear to increase with lengthening of the carbon chain but a lowering of activity is evident with stearic acid.

PATENTS

EXTRACTING OIL. A. L. Davis and L. H. Bartlett. *U. S. 2,191,455.* Low boiling solvents are used so that the greater portion of the coloring matter is retained by the residue.

TREATMENT OF PAPER AND BOARD. S. Musher (Musher Foundation, Inc.). *U. S. 2,193,695.* Cacoa residue was used as an ingredient for coatings on package paper and board to supply a protective action to rancidifiable packaged goods.

WATER DISPERSIBLE LECITHIN. S. Jordan. *U. S. 2,193,873.* The lecithin is dissolved in ethyl lactate soln.

SOFT LECITHIN PREPARATION. G. A. Wiesehahn (Amer. Lecithin Co.). *U. S. 2,194,842.* Stearic acid or other fatty acid is added to soy bean phosphatide products to improve the consistency. The final product mixes better with oils.

RESINIFIED SOYA BEAN OIL PRODUCT AND PROCESS OF MAKING SAME. Carleton Ellis (Ellis-Foster Co.). *U. S. 2,194,894.* The resins are prepared by heating mixts. of glycerol, phthalic anhydride and soy bean oil fatty acids.

POLYMERIZABLE OILS. L. P. Hubbuch (du Pont de Nemours & Co.). *U. S. 2,190,789.* The compn. comprises a product obtained by reacting methacrylic anhydride with polyhydric alc. incompletely esterified with polycarboxylic acid and a fatty oil acid.

CATALYTIC FORMATION OF LONG-CHAIN ALDEHYDES. W. A. Lazier (du Pont de Nemours & Co.). *U. S.* reissue *21,373.* Dehydrogenation of fatty alcs. to the corresponding aldehyde is accomplished by treatment at 50 atms., at temps. 50-450° and in the presence of chromium sesqui-oxide.

MANUFACTURE AND TREATMENT OF TEXTILE MATERIALS. D. Finlayson and R. G. Perry. (Celanese Corp. of Am.). *U. S. 2,195,564.* A textile lubricant comprises of mixtures of pine oil, soap and an alkylolamine.

Abstracts

Soaps

Edited by M. L. SHEELY

SOAP CATALYST PATENT SETTLED. *Oil, Paint and Drug Reporter 137,* 16, 45 (1940). August Edeler and Albert S. Richardson have been awarded priority in an invention concerned with the catalytic action of soap by the United States Court of Customs and Patent Appeals. The court ruled that Edeler and Richardson had put their invention into practical use before Leo C. Brown, who had appealed the case after an adverse decision by the Board of Appeals of the Patent Office. The invention uses soap as a catalyst in the interaction of glycerin and triglycerides, included in a process for development of a substitute for cocoa butter.

THE DANGER FROM IRON IN TOILET SOAPS. *Perfumery and Essential Oil Record 31,* 73 (1940). Attention has frequently been drawn to the serious ill-effects of minute amounts of copper, iron, or other metals in soap, and the work of Hagen, Wittka, and others has shown the liability of such contaminants to act catalytically in the oxidation of the soap, with formation of dark spots and development of rancidity. Various precautions have been taken in recent years to avoid metallic contamination, including the introduction in American factories of nickel-lined pans. Obviously, however, it is of little use to ensure the freedom of the freshly boiled soap from the presence of metals if in its subsequent treatment this same freedom from impurity cannot be maintained, and it is unfortunately only too true that the modern methods of rapid drying of soap do involve much greater risk than the old method of drying in frames. The exposure of the soap on metal bands in a chamber where particles of metal may be caught up in the air currents and deposited on the soap is fraught with much danger unless the utmost care is taken. The travelling band should be made of non-corrodible metal, and, if possible, all other metal parts of the drying chamber also. In the case of toilet soaps there is also the further danger of contamination on the mill or in the plodder, and with these soaps, in addition to the bad effects of metal already referred to above, there is also the possibility of reaction taking place between the metal and the perfume or medicament added to the soap, as, for example, the char-

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acteristic colour reaction between iron and a phenol, whether such phenol is derived from an essential oil, e.g., eugenol, or from coal tar, e.g., cresylic acid.

THE USE OF TALL OIL FOR THE PREPARATION OF TEXTILE DETERGENTS. Hans Henk. *Seifensieder-Ztg. 67,* 22 (1940). Tall oil, a by-product of sulfite pulp manufacture, contains about 50% fat acids and 40% rosin acids. Where the odor of tall oil is permissible, soaps can be prepared without other fat acids. Such soap can be used to disperse petroleum, paraffin oil, vat dyestuffs, etc.

Tall oil soap can be used for the most varied textile requirements, including scouring raw wool, washing white woolens, washing cotton, dyeing, desizing, degumming of silk. Tall oil soap should not be present during Cl bleaching because it is easily oxidized and the odor is increased. In the peroxide bleach, also, tall oil soap increases the consumption of bleach by 50%. The soap is precipitated by hardness in water. (*Chem. Abs.*)

SOME PROPERTIES OF SODIUM PALMITATE CURD AS STUDIED IN THE CENTRIFUGE. James McBain and T. Foster Ford. *J. Am. Chem. Soc. 62,* 866 (1940). The behavoir of soap curd in the centrifuge is in accord with its brush heap structure with greater or less orientation depending upon previous history; the effective diameter of the interstices between the ultramicroscopic fibers being 10^{-4} cm., that of the fibers, or more probably fiber bundles, themselves 400 A; and the swelling pressure from a chiefly mechanical origin being 10^{5} dynes/sq. cm. for 0.05N Na palmitate curd. Glycerol softens the curd whereas sodium chloride makes it more rigid.

SOAP IN RUBBER MOULDING. T. L. Garner. *Chem. Age 42,* 111 (1940). An important use of ordinary sodium or potassium soaps in the rubber industry is as lubricants during the moulding of rubber articles. The soap must be fed at high pressure through pipelines to the moulding shop where each operator is supplied with a spray gun. Harder soaps are more effective than soft soaps. Strength usually used varies from 1.5 to 4%. Many soaps submitted as suitable lubricant types will get at these concentrations on standing overnight at 60-65° F. This tendency can be overcome by the use of cyclohexanol — 0.5% in 2.5% soap solutions. (*Soap*)

DEVELOPMENT OF RANCIDITY IN STODDARD DAY CLEANING SOLVENT. Adrian Smith, Charles Lowe and George Fulton. *Ind. and Eng. Chem. 32,* 454 (1940). The accumulation in Stoddard dry cleaning solvent of substances associated with rancidity was studied by chemical and physical methods. The increase in fatty acid content was found to be due largely to free fatty acids present in soap additions, rather than to fatty acids present in the soil from the garments, and could not be used as a criterion for rancidity without qualifications. The Kreis test, in a modified form, has been found useful in detecting incipient rancidity. Peroxides formed during the cleaning operations decomposed in the drying cabinet and gave rise to aldehydes and low-molecular-weight acids. Potentiometric titration curves on residues from used dry cleaning solvent indicate the buffering action of these decomposition products.

CHLORIDES IN TOILET SOAPS. *Perfumery and Essential Oil Record 31,* 106 (1940). The importance of ensuring that there shall be no excessive amount of chloride in a soap base intended for conversion into a milled toilet soap, is not pretty generally recognized. The maximum amount of chloride which may be regarded as safe, if danger of cracking and difficulty of compression are to be avoided, varies with the nature of the soap, but, generally speaking, it should not exceed 0.3-0.4%. Obviously, in determining such small amounts, which may be the subject of dispute between buyer and seller, it is important that the method of analysis should be reliable, and it is satisfactory to note that the International Commission for the Study of Fats, which concerns itself also with international methods of analysis of soaps, has now abandoned the method of ashing the soap and determination of chloride in the ash, in favour of some other method such as precipitating the soap by addition of calcium nitrate and determining the chloride in the supernatant liquid. In ashing the soap, there is always a danger of volatilization and loss of chloride, that low results may be obtained.

PATENTS

METHOD FOR MAKING AND PROCESSING SOAP. Benjamin Thurman (to Refining, Inc.). *U. S. 2,190,615.* A method of continuously making soap, which includes the steps of: continuously heating a mixture of a saponifiable material and a saponifying material to form reaction products including a soap and vapor; continuously introducing said reaction products into a separating chamber maintained under vacuum by impinging said reaction products against a wall of said chamber, the soap flowing down said wall and reaching the lower end of said chamber in substantially anhydrous molten, plastic, or semi-plastic condition; continuously removing vapor from said chamber; continuously moving a stream of the molten, plastic, substantially anhydrous soap from said chamber in such a manner as not to impair the vacuum therein; and cooling this stream of soap before exposure to the atmosphere to form friable soap which will substantially uniformly absorb water.

METHOD OF PROCESSING SOAP. Benjamin Clayton. *U. S. 2,190,591.* A method of continuously producing soap from a saponifiable material by reaction therewith of a saponifying material, which method includes the steps of: maintaining in the lower end of a chamber a soap mass having an upper surface between the uppermost and lowermost portions of said chamber; forming reaction products including soap and vaporizable material by heating a mixture of said saponifiable and saponifying materials; introducing said reaction products directly into said soap mass at a position below said upper surface thereof whereby the soap in said reaction products becomes associated with said soap mass and vapor is liberated from said upper surface; removing vapor from the upper end of said chamber; and removing soap from said soap mass from said chamber in such amount as to maintain said upper surface above the point of introduction of said products.