viscosities of the oils. The product of limiting rate of shear and viscosity was a constant for all the oils tested.

PATENTS

PROCESS OF DEEP FAT FRYING. H. C. Black (Industrial Patents Corporation). *U. S. 2,322,187.* In the process of deep fat frying, the steps comprise adding about 0.001% to 1% of a non-toxic org. sulphonate salt to fatty acid triglyceride and heating the triglyceride to a deep fat frying temperature for a substantial period.

OLEANINOUS PREPARATION. H. C. Black (Industrial Patents Corporation). *U. S. 2,322,186.* A process for improving the resistance to foaming of oleaginous materials comprises adding H_3FO_4 to a substantially dry oleaginous material in the presence of the nickel hydrogenation catalyst.

ADSORBENT AND TREATMENT OF OIL THEREWITH. C. C. Winding (Tide Water Associated Oil Co.). *U. S. 2,322,555.* A decolorizing agent for fats and oils is manufd. by calcinating $MgCO_3$ at 300-450 to yield an active MgO compn.

OIL EXTRACTION. (The Schwarz Engineering Company, Inc.) U. S. *2,325,327-8.*

APPARATUS FOR EXPRESSING OIL FROM OIL-BEARING MATERIALS. (The V. D. Anderson Company.) *U. S. 2,325,357.* This expeller press is designed so that express oil is used as a cooling medium for the pressing mechanism, thus preventing production of high colored oil due to overheating.

METHOD AND APPARATUS FOR OIL PURIFICATION. E. H. Carruthers (The Sharples Corporation). *U. S. 2,324,763.*

MANUFACTURE OF MARGARINE AND COOKING FATS. (Co-operative Wholesale Society Limited.) *U. S. 2,325,393.* A method of manufacturing margarine and cooking fats comprises providing a fat in the solid state and working the same, then addg. aq. liquid thereto and working said fat and liquid mechanically to form a plastic mass, said fats remaining in the solid state at the end of said working, then addg. to said mass a glyceride oil and continuing working said mixt. to form a homogeneous mass, and thereafter packaging the product.

MOLDING APPARATUS FOR INDIVIDUAL EDIBLE SPREADS. C. Doering and H. H. Doering. *U. S. 2,323,523.*

PROCESS OF PRODUCING FAT-SOLUBLE VITAMIN CONCENTRATES. L. O. Buxton (National Oil Products Co.). *U. S. 2,324,063.* A process of producing fat-soluble vitamin concentrates of high potency comprises admixing the unsapon. fraction of a fat-sol. vitamin-containing marine oil with a substantially completely deaerated mixt. of halogenated hydrocarbon solvent and a substantially anhyd. $Ca(OH)_2$ adsorbent, agitating the mass to accelerate adsorption of the vitamins, eluting the adsorbed vitamins by means of a mix. of non-polar and a polar organic solvent and distg. off the solvent from the concd. vitamin fraction.

PHYTOSTEROLS FROM TALL OIL BY EXTRACTION WITH SO_2. J. E. Mitchell (Colgate-Palmolive-Peet Company). *U. S. 2,324,012.*

UNSATURATED DEGRADATION PRODUCTS OF STEROLS AND A METHOD OF PRODUCING THE SAME. (Schering Corporation.) *U. S. 2,323,584.*

ISOLATION OF STEROLS FROM FATS AND OILS. L. Yoder (Iowa State College Research Foundation). *U. S. 2,322,906.* A process for the separation of cholesterol from the non-saponifiable fraction of oily or fatty substrates, comprises dissolving such substrate in a fat-dissolving non-alcoholic solvent, and treating such solution with a hydrogen halide to precipitate therefrom the acid addition product of cholesterol.

MANUFACTURE OF PAPER AND BOARD. S. Musher (Musher Foundation, Inc.). *U. S. 2,324,529.* A heat treated coating of a starch lecithin mixt. is applied to the cardboard for packaging products susceptible to oxidative rancidity.

LUBRICATING OIL, ETC. (The Standard Oil Co.). *U. S. 2,323,670.* A mineral oil containing a small amount of tetra methyl diamino diphenyl methane and sodium lauryl sulfate.

PROCESS AND PRODUCT. (E. I. du Pont de Nemours & Co.) *U. S. 2,323,111.* The esters of N-thiomethylanide or similar amides and fat acids are prepd. for use as pesticides, rubber chemical, etc.

OIL AND WATER EMULSION CONTAINING ELECTROLYTES. K. R. Brown (Atlas Powder Company). *U. S. 2,322,822.* An emulsion comprises an oil phase, a water phase, an electrolyte, and a mannide monoester of a fatty acid with at least 6 carbon atoms as an emulsifier.

PARTIAL ESTERS OF ETHERS OF POLY-HYDROXYLIC COMPOUNDS. (Atlas Powder Company.) *U. S. 2,322,821.* An emulsifier consisting essentially of a hexide monoester of a fatty acid having at least 6 carbon atoms.

MONOESTERS OF INNER ETHERS OF HEXAHYDRIC ALCOHOLS (SHORTENING EMULSIFIER).K. R. Brown (Atlas Powder Company). *U. S. 2,322,820.* A surface active ester product consisting essentially of a mixture of a hexitan fatty acid monoester, and a hexide fatty acid monoester, said fatty acid having at least 6 carbon atoms.

Abstracts

Soaps

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COOPERATIVE STUDIES ON A LABORATORY METHOD FOR EVALUATING SYNTHETIC DETERGENTS. J. B. Crowe. *Am. Dyestuff Reptr. 32,* 237-41 (1943).

SORPTION OF WATER VAPOR BY SOAP CURD. J. W. McBain and W. W. Lee. *Ind. & Eng. Chem. 35,* 784-7 (1943). Anhydrous soap, pure or commercial, takes up to 1 or 2% of water according to a sorption mechanism of physical type. Except for sodium oleate, the curd or supercurd then suddenly forms a hemihydrate, which again takes up water more rapidly (10 or 12%) according to a sorption law until another phase forms. At low temperatures these new phases are higher hydrates; that is, they are masses of crystalline fibers containing much larger amounts of water. The higher hydrates readily revert to hemihydrate when the relative humidity falls by

15% or less. The sorption curves, through a high value of 1/n exceeding unity, unmistakably show the presence of capillary liquid in pores and interstices of the fibrous mass.

INACTIVATION OF THE VIRUS OF "LYMPHOCYTIC CHORIOMENINGITIS" BY SOAPS. C. C. Chester Stock and T. Francis, Jr. *J. Exptl. Med. 77,* 323-36 (1943). The virus strain 3079, *Lymphocytic choriomeningitis* (I) was used in this study; 1% suspensions of the virus and a final soap concn. of 0.001 M were standard conditions. Aerosol OT, duponols PC and La, zephiran, chaulmoogric, linolenic, linoleic, myristic, oleic, and ricinoleic acids were effective against I and 0.001 M concn.; aerosol MA, laurylsulfuric, palmitic, and undecylenic acids were effective in a concn. of 0.01 M but not at 0.001 M. Other substances failing to mask the infectivity of I are capric, elaidic, lauric, and stearic acids. Although the evidence points to the presence of unsatd, linkages as the active agent, elaidic, β-eleostearic, and undecylenic acids are ineffective in 0.001 M concn. The most effective inactivating acids also produce mixts. of low surface tension, but there is no abs. correlation between the two. That oxidation is not a factor is shown by the fact that H_2O_2 is not active in 0.1% concn (1% is active). Antioxidants (resorcinol, aniline, and glycerol) failed to prevent the action of soaps. *(Chem. Abs.)*

TALL OIL IN SOAP. R. Hastings, A. Pollak, and J. M. Wafer. *Soap 19,* No. 5, 24-7 (1943). Tall oil consists of fatty acids, rosin acids, and nonacids. The variations of these components and analyses of crude and refined oil are shown in tables. The oil can be used in making liquid and paste soap, hard soap, and soap powders, having the advantage that it saponifies rapidly when alkalies are added, does not require boiling or salting out, and as glycerine does not form as a by-product, the entire fat content goes into the soap formation. Procedures are given for preparation of liquid and high concentration paste soaps. Hard soaps can be obtained by drying processes or adding soap builders. A typical illustration of hard soap is: hard fat, 50 parts; tall oil, 20 parts; coconut fatty acids, 20 parts; peanut oil fatty acids, 10 parts. Tall oil also finds use in soap specialties such as liquid, jelly, and pine oil scrub soap, garage floor cleaners, and dry cleaning and rug cleaning soaps.

OBSERVATIONS ON FATTY ACIDS. C. V. Carden. *Soap, Perfumery, & Cosmetics 16,* 272-4 (1943). The advantages to soap manufacturers in use of fatty acids instead of whole oils are: simplicity, more uniform product, time saving, easier saponification, no shrinkage, better choice of alkalies, economy, less possibility of turbid soaps, better control of finished soap, and bleaching not necessary. Formulas are given for typical procedures for soap manufacture, along with various saponification processes.

NON-IONIC SURFACE ACTIVE AGENTS. Henry A. Goldsmith. *Chem. Ind. 52,* 326-8 (1943). Though not new to chemical industry, surface active agents are constantly finding new applications and their usefulness is becoming increasingly apparent. Of the three general types—anionic, cationic, and non-ionic—the last has received least recognition despite greater versatility in some respects than the other two. Some of the characteristics and uses of this group are discussed.

WAR WIDENS SOAP USAGE IN TEXTILES. G. W. Lyfingwell. *Textile Colorist 65,* 83-4 (1943). Applications of soap in scouring, leveling in dye baths, wetting before dyeing or bleaching, and brightening of dyes are described. Twenty-one references. *(Chem Abs.)*

SALT WATER SOAP DETERGENT. *American Perfumer & Essential Oil Rev. 45,* No. 5, 47 (1943). The detergent, trade name Nacconol, lathers in salt water and cold water, and replaces the lathering properties of high lauric acid oils such as coconut and palm kernel.

SYNTHETIC DETERGENTS. Conrad J. Sunde. *Soap 19,* No. 7, 30-1 (1943). Lists the types and basic formulas of synthetic detergents.

PATENTS

DETERGENT AND STERILIZING COMPOSITION. Varton Mardiras Kalusdian (Mathieson Alkali). *U. S. 2,320,280.* A substantially dry stable mixture having improved detergent and sterilizing properties comprises a stable calcium hypochlorite containing upwards of 50 percent available chlorine and substantially free of calcium chloride, and a synthetic organic water soluble detergent salt which does not produce an insoluble precipitate in the presence of calcium ions.

AMINO ESTER DETERGENTS. D. W. Jayne and H. M. Day (American Cyanamid Co.). *U. S. 2,305,083.* Higher fatty-acid esters of para-toluenesulfonic acid salts, with amino alcohols containing at least one primary or secondary amino radical, such as monoethanolamine, are suitable for use as detergents or dispersing agents.

SURFACE-ACTIVE AMINE. R. S. Bley (North American Rayon Corporation). *Can. 411,642.* A surface-active agent is produced by heating a chlorinated, non-gaseous, aliphatic petroleum hydrocarbon with a tertiary amine below their boiling points under substantially anhydrous conditions.

SOAP REPLACEMENT. Max Dittmer (Wollner-W.). *Ger. 719,308.* A preparation for cleansing the skin is made from water-insoluble hydrated silicates made into a paste with substances swelling in water such as starch, its derivatives, or cellulose derivatives.

UTILIZATION OF CURD-SOAP WASTE. Franz Scherl. *Ger. 709,611.* The waste is melted in liquid curd soap and during this operation it is passed between heated cylinders installed in the kettle.

SOAP STABILIZATION. George D. Martin (Monsanto Chemicals Co.). *U. S. 2,293,350.* Stabilization of a soap against deterioration and rancidity development is effected by the incorporation of 0.011 per cent of an alkali, metal, ammonium, mercury, alkyl or guanidine thiocyanate, or an aryl mustard oil.

SOAP WITH A STRONGLY REDUCED HYDROLYSIS. Carl Stiepel. *Ger. 708,437.* Liquid, unsaturated fat acids are converted to chloro or chlorohydroxy derivatives with an I No. of 5 or less. The product is then saponified until total or partial splitting of the Cl occurs.