ABSTRACTS

R.A. REINERS, Editor. Abstractors: N.E. Bednarcyk, J.E. Covey, J.C. Harris, S.F. Herb, F.A. Kummerow, Biserka Matijasevic, E.G. Perkins, and R.W. Walker

• Fats and Oils

STABILIZED EDIBLE OIL AND FAT COMPOSITIONS CONTAINING OIL OF TEMPEH. P. Gyorgy. *U.S. 3,762,933.* Tempeh and components thereof, such as oil of tempeh, an extract of tempeh, are useful as stabilizers for food compositions, particularly edible fats and oils. The fat or oil containing the tempeh exhibits improved anti-oxidative properties and stability.

METHOD FOR TREATING BEEF SUET TO PRODUCE PARTIALLY DEFATTED TISSUE HAVING A RELATIVELY LOW BACTERIAL COUNT USEFUL FOR HUMAN CONSUMPTION. W.J. Poplack, E.W. McMullen and H. Basu (Unisource Foods Corp.). *U.S. 3,764,713.* Beef suet is first tested by a rapid means. It is then ground and introduced into a melt tank. Thereafter the material is further disintegrated whereby a lighter phase and a heavier phase are produced. The lighter phase is a tallow which is refined. The heavier phase is a useful partially defatted tissue.

PEANUT BUTTER STABILIZER. C.M. Gooding, W. Parker and D. Melnick (CPC International Inc.). *U.S. 3,766,226.* The stabilizer comprises 0.5–2.3% of a symmetrical monounsaturated disaturated glyceride, 0.35–1.3% of a trisaturated glyceride, and no more than about 2% total of a diunsaturated monosaturated glyceride. The stabilized peanut butter has improved mouth feel, low temperature spreadability and reduced tendency for oil separation at temperatures up to 100C.

• Fatty Acid Derivatives

ADDITION OF FATTY ACIDS TO GLYCIDOL. II. STUDY OF REACTION IN SOLVENTS. R.M. Utrilla and A.O. Villen (Inst. de Productos Lacteos y Derivados Grasos, Madrid, Spain). *Grasas y Aceites* 24, 71–8 (1973). A kinetic study on the opening of the epoxy group of glycidol (2,3-epoxy propanol) by palmitic acid was carried out in xylene, dioxane and dimethyl sulfoxide. Benzyl trimethyl ammonium chloride was used as a catalyst. The temperature range was 81 to 100.5C. Under the conditions used, the data are in accord with a second order reaction and dependent on the glycidol and catalyst concentrations. It showed no dependence on fatty acid concentration. The activation energy, entropy and enthalpy are calculated for the reactions in xylene and dioxane.

BAKERY PRODUCTS CONTAINING EMULSIFICATION AND IMPROVING AGENTS. B.D. Buddemeyer and J.R. Moneymaker (The Paniplus Co.). *U.S. 3,762,932.* The emulsification agent consists of (1) a non-toxic mono aliphatic ester of a dicarboxylic acid, and (2) a composition comprising a member selected from the group consisting of mono-fatty acid esters of aliphatic polyhydric alcohols, di-fatty acid esters of aliphatic polyhydric alcohols, and fatty acid esters of citric and lactic acids, or mixtures of these compounds.

SPERM OIL SUBSTITUTE. J.G. Papalos and C.E. Retzsch (Diamond Shamrock Corp.). *U.S. 3,764,358.* The substitute consists of a blend of esters with unsaturated oils which may then be sulfated. The sulfated blend has utility in leather treatment.

HYDROLYSIS-RESISTANT ACETOGLYCERIDES. H. Bunger and G. Renckhoff (Dynamit Nobel AG.). *U.S. 3,766,227.* Odorless acetoglycerides, solid at room temperature and having increased resistance to hydrolysis, are prepared by acetylating partial glycerides of C_{16}-C_{18} fatty acids. The partial glycerides have an I.V. of less than 5 and a monoglyceride content of more than 70%. The reaction proceeds to a hydroxyl number of no more than 30. Then the acetic acid and excess acetic anhydride are distilled off as completely as possible and the reaction mixture is deodorized at greater than 170C under vacuum with an inert gas or vapor being passed there through.

COMPOSITIONS USEFUL FOR IMPARTING A DEEP FAT FRIED AROMA

Call for Nominations: Award of Merit

The Society Award of Merit is to be presented to qualified Society members at the 65th Annual Spring Meeting, Mexico City, Mexico, April 27-May 2, 1974.

The Award is given to recognize current and past achievements in serving the Society:

(a) Active productive service to AOCS committee work.
(b) Marked leadership in technical, administrative, or special committee or Society activities.
(c) Outstanding activity or service that has particularly advanced the Society's prestige, standing, or interest.
(d) Any distinguished service to the Society not herein otherwise specifically provided for.

Nominations shall cite the record of the nominee which qualifies him for the Award. Two copies of the nomination shall be submitted to: Joseph A. Fioriti, Research Specialist, Technical Center, General Foods Corp., 250 North Street, White Plains, N.Y. 10625 before February 2, 1974. ■

AND FLAVOR TO FOODS. S.S. Chang and W.A. May. *U.S. 3,767,427.* Unsaturated gamma lactones having 7–10 carbon atoms and a double bond at either the 2 or 3 position impart a deep fat fried aroma and flavor to foods when incorporated in them in trace amounts (0.5–10 ppm). Particularly useful are 4-hydroxy-2-nonenoic acid lactone and 4-hydroxy-3-nonenoic acid lactone which show a strong, sweet coconut and fried food odor, respectively. Mixtures of these lactones alone or with other compounds such as 2,4-decadienal and unsaturated delta lactones also impart a deep fat fried aroma and flavor to foods. These compounds can be added to foods, including fat free foods as well as edible oils and margarine.

DOUGH CONDITIONER FOR BAKERY PRODUCTS. A.G. Oszlanyi, R.J. Zielinski and T.J. Kozak (SCM Corp.). *U.S. 3,767,822.* Yeast raised bakery products having improved properties are produced by including a polyoxyalkylene derivative of a higher fatty acid ester of propylene glycol as a portion of the dough conditioner.

• Biochemistry and Nutrition

DETERMINATION OF TRIGLYCERIDES AND FREE FATTY ACIDS IN BLOOD BY THIN-LAYER CHROMATOGRAPHY. E. Vioque, M.P. Maza, and H. Murillo (Inst. de la Grass y sus Derivados, Dept. de Analisis y Catedra de Farmacologia y Terapeutica General, Facultad de Medicina, Sevilla, Spain). *Grasas y Aceites* 24, 94–8 (1973). Simultaneous determination is made of triglycerides and free fatty acids in a small sample of blood. The method consists of extraction of the total lipids of blood, methylation with diazomethane and separation of lipid components by thin-layer chromatography. After removal from the plate, reaction of the components with sodium hydroxide, hydroxylamine hydrochloride and ferric perchlorate was carried out in centrifuge tubes. The method has been applied to the analysis of blends of triglycerides and free fatty acids with satisfactory results. Recovery assays were carried out with pig serum plus added lipids.

INFLUENCE OF INGESTED FAT ON THE FATTY ACID COMPOSITION OF LIPIDS OF RAT TISSUE. V.L. Frampton, J.C. Kunk, W. Landmann, A.N. Booth and D.J. Robbins (SRRL, USDA, New Orleans, La. & WRRL, USDA, Albany, Calif.). *Grasas y Aceites* 24, 85–93 (1973). Experiments were carried out with rats to assess the effects of the Halphen positive constituent and the nonsaponifiable fraction of cottonseed oil on body weight, relative weights or organs and on fatty acid components of some tissue lipids. Both ration and sex effects were observed in fatty acid components of lipids of brain, liver, heart and adipose tissue and on the relative weights of brain, adrenals, testes, heart, spleen and thyroids. No effects were observed for relative kidney weights. Differences in concentration of the Halphen positive constituents in the rations were not reflected in the properties studied, while the nonsaponifiable fraction of cottonseed oil was observed to have some effects. The ratio of stearic to oleic acid in liver lipids was observed to be influenced by the concentration of choline in the rations.

METHOD OF TREATING OBESITY. J.M. Lowenstein (Hoffmann-LaRoche, Inc.). *U.S. 3,764,692.* The inhibition of fatty acid synthesis is obtained in biological systems by utilizing a specific stereoisomer of hydroxycitric acid, its derivatives such as esters or lactones and the nontoxic salts of these compounds. It is believed that these compounds act by inhibiting citrate cleavage enzyme.

• Edible Proteins

METHOD OF MAKING A SOY PROTEIN CONCENTRATE. D.F. DeLapp (American Cyanamid Co.). *U.S. 3,762,929.* Soybean flakes are contacted with a polysaccharide selected from the group consisting of carboxymethylcellulose, guar gum, sodium alginate, carrageenans, gum karaya, alginic acid and agar and excess water at a pH of 4.2–4.6. The resultant insoluble protein fraction is recovered.

METHOD OF PREPARING SOY AND MISO-PASTE. T. Aonuma, A. Yasuda, T. Yuasa, A. Arai, K. Mogi, and T. Yokotsuka (Kikkoman Shoyu Co.). *U.S. 3,764,708.* The method of preparing soy and miso-paste of superior flavor and taste and of high quality comprises treating soy beans and/or carbohydrates with a current of superheated steam at a gauge pressure of 4–8 kg/cm^2 and a temperature of 200–280C for up to 15 seconds. The treated soybeans are quickly exhausted to atmospheric pressure.

ACYLATED PROTEIN FOR COFFEE WHITENER FORMULATIONS. P. Meinychyn and R.B. Stapley (Carnation Co.). *U.S. 3,764,711.* A modified, edible protein suitable for use in human foods is provided by contacting an unhydrolyzed protein dispersed in an aqueous alkaline medium with a reagent capable of acylating the functional groups which are electronegative in character and have replaceable hydrogen atoms. The reaction is carried on for a period of time sufficient to provide an essentially unhydrolyzed modified protein having at least 30 acyl groups per 10^5 grams of protein. The modified protein may be used in a variety of food products and is particularly well suited for use in coffee whitener formulations.

• Detergents

INNOVATIVE SCANNING ELECTRON MICROSCOPIC TECHNIQUES FOR EVALUATING HAIR CARE PRODUCTS. S.P. DiBianca (Mennen Co., Morristown, NJ 07960). *J. Soc. Cosmet. Chem.* 24(10), 609–22 (1973). Reasons for selecting the scanning electron microscope (SEM) over the transmission electron microscope and the optical microscope discussed. Use of the SEM in evaluating hair care products is described. A new technique employing a rotating hair stage, specially designed and fabricated for this

study is presented. The procedure devised allows one to view hair in the SEM while still attached to the panelist's head. The technique is nondestructive to the hair, permitting the study of sequential treatments on the same hair. The evaluation of a shampoo on the hair after 0, 5, 10 and 20 treatments is possible. The hair is removable from the SEM as many times as required for treatment without the necessity of cutting the hair from the scalp. Additionally the apparatus allows for complete axial rotation of the hair in the SEM. The functionality of two hair care products, a shampoo and a conditioner, is demonstrated. Micrographs of hair damages before and after treatment are categorized and numerically rated. The difference ratio was devised as an index to measure the degree of improvement of damaged sites.

THE RELATIONSHIP BETWEEN AEROSOL EMULSIONS AND FOAMS. II. AQUEOUS TRIETHANOLAMINE MYRISTATE/MINERAL OIL/FREON PROPELLANT SYSTEMS. P.A. Sanders ("Freon" Products Lab. E. I. du Pont de Nemours & Co., Inc., Wilmington, Del. 19898). *J. Soc. Cosmet. Chem.* 24(10), 623–37 (1973). Aerosols were prepared from emulsion concentrates, and foams obtained from the aerosols. Two emulsion concentrates were prepared by 14 methods. Emulsion quality was judged by photomicrographs and phase separation times. Aerosols were prepared from the best and poorest emulsions from each of the two concentrates by adding propellant. Concentrates with the smallest droplet size and the longest separation times produced the least drainage and the smallest range of bubble sizes. Best emulsion concentrates were obtained by adding aqueous triethanolamine at room temperature to the myristic acid-mineral oil solution at 54.4 C. A theory to account for the efficiency of this procedure is proposed which involves the formation of a triethanolamine myristate/myristic acid complex during the initial addition of the aqueous phase.

IN-LINE, CONTINUOUS MIXING AND PROCESSING OF COSMETIC PRODUCTS. S.J. Chen (Kenics Corp., Danvers, Mass. 01923). *J. Soc. Cosmet. Chem.* 24(10), 639-53 (1973). Controllable and predictable mixing can be achieved in the in-line, no-moving-part device. Main mixing mechanisms in the device are flow division and radial mixing. Energy consumption is small for both laminar and turbulent flow processing. A very narrow drop size distribution was obtained using the device for dispersion applications. The drop size can be controlled by changing the flow rate in the device. Seventy per cent of the dispersion is within ±20% of the mean drop size.

DEPENDENCE OF HYDROPHILE-LIPOPHILE BALANCE OF NONIONIC SURFACTANTS ON THE SIZE OF THE MOLECULE. L. Marszall (Pharmacy 62, Nowek/Swiecia, Poland). *Koll.-Z. u. Z. Polymere* 251(7), 609–10 (1973). On the basis of two simplifying assumptions the dependence of HLB_D of nonionic surfactants on the size of their molecule may be evaluated in an approximate fashion for surfactants of different polyoxyethylene chain lengths attached to the same hydrocarbon chain and for surfactants of different hydrocarbon chain lengths attached to the same polyoxyethylene chain.

THERMODYNAMIC PROPERTIES OF LIQUIDS, INCLUDING SOLUTIONS. XI. POLYMERIC MONOLAYERS ON LIQUID SURFACES. M.L. Huggins (Arcadia Inst. for Sci. Res., Woodside, Calif). *Koll.-Z. u. Z. Polymere* 251(7), 449–55 (1973). A new theoretical treatment of the dependence of surface pressure on the concentration of linear polymer molecules in a monolayer is presented. The development follows closely that in the author's new theory of the thermodynamic properties of three-dimensional solutions.

SPECTROSCOPIC STUDY IN THE NEAR INFRA-RED OF THE STRUCTURE OF WATER IN MICELLAR AND MESOMORPHIC GELS IN THE SYSTEM POTASSIUM LAURATE-WATER. J. Francois (C.N.R.S.-Center of Res. about Macromolecules, Strasbourg, France). *Koll.-Z. u. Z. Polymere* 251(7), 594–9 (1973). The organization of soap molecules have a great influence on the structure of water. A model explaining the variation of soap structure as it changes with concentration is proposed.

BASE MATERIALS FOR CARPET SHAMPOOS WITH REGARD TO AEROSOL PRODUCTS. J.K. Smid (Chem-Y, Fabriek van Chem.

Call for Nominations Award in Lipid Chemistry

Sponsored by Applied Science Laboratories

In April 1964 the Governing Board of the American Oil Chemists' Society established an Award in Lipid Chemistry under the sponsorship of the Applied Science Laboratories Inc., State College, Pa. Previous awards were presented as follows: Erich Baer, August 1964; Ernest Klenk, October 1965; H.E. Carter, October 1966; Sune Bergstrom, October 1967; Daniel Swern, October 1968; H.J. Dutton, October 1969; E.P. Kennedy, September 1970; E.S. Lutton, October 1971; A.T. James, September 1972; and F.D. Gunstone, September 1973.

The award consists of $2500 accompanied by an appropriate certificate. It is now planned that the 11th award will be presented at the AOCS Fall Meeting in Philadelphia, September 29-October 3, 1974.

Canvassing Committee Appointees

Policies and procedures governing the selection of award winners have been set by the AOCS Governing Board. An Award Nomination Canvassing Committee has been appointed. Members are: C.D. Evans, Chairman; C.W. Williams; D.L. Berner; G. Fuller; and R.J. Buswell. The function of this committee is to solicit nominations for the 11th award. Selection of the award winner will be made by the Award Committee whose membership will remain anonymous.

Rules

The rules prescribe that nominees shall have been responsible for the accomplishment of original research in lipid chemistry and must have presented the results thereof through publication of technical papers of high quality. Preference will be given to individuals who are actively associated with research in lipid chemistry and who have made fundamental discoveries that affect a large segment of the lipid field. For award purposes, the term "lipid chemistry" is considered to embrace all aspects of the chemistry and biochemistry of fatty acids, of naturally occurring and synthetic compounds and derivatives of fatty acids, and of compounds that are related to fatty acids metabolically, or occur naturally in close association with fatty acids or derivatives thereof. The award will be made without regard for national origin, race, color, creed or sex.

Letters of nomination together with supporting documents must be submitted in octuplicate to C.D. Evans, Northern Regional Research Center, 1815 N. University, Peoria, Ill. 61604 before the deadline of April 1, 1974. The supporting documents shall consist of professional biographical data, including a summary of the nominee's research accomplishments, a list of his publications, the degrees he holds, together with the names of the granting institutions, and the positions held during his professional career. There is no requirement that either the nominator or the nominee be a member of the American Oil Chemists' Society. In addition, letters from at least three other scientists supporting the nomination must be submitted in octuplicate.

Remember the DEADLINE, April 1, 1974

Producten B.V. Bodegraven, Holland). *Seifen-Öle-Fette-Wachse* 99(19), 511–4 (1973). Main components of a carpet cleaner are described and reference made to new raw materials and additives. Specific additives for such shampoos are propellants and corrosion inhibitors.

MODERN CONCEPTS OF COSMETIC PRESERVATION. W.E. Rosen and P.A. Berke (Sutton Labs. Inc., Roselle, NJ 07203). *J. Soc. Cosmet. Chem.* 24(10), 663–75 (1973). The major variables associated with control of microbial growth and antimicrobial action in cosmetics are considered. Some factors of special importance for preservative effectiveness are pH, solubility of the preservative in the aqueous phase and its partition between water and oil phases, interference with antimicrobial action by other components of the formulation, and enhancement and synergism. The advantages and disadvantages of approximately a dozen preservatives generally accepted for use in cosmetic preparations are briefly reviewed.

WHITENER, FABRIC SOFTNER, AND DETERGENT COMPOSITION. H.E. Wixon and R.H. Trimmer (Colgate-Palmolive Co.). *U.S. 3,762,859.* The apparent whiteness of fabrics is enhanced by a method of treating the fabrics with an effective amount of an alkali and heat stable water soluble diazo dyestuff using a sulfonated diazo dyestuff of the diphenyl, dinaphthyl type. A fabric softening and laundry detergent composition are disclosed therefore.

DETERGENT COMPOSITIONS. R.R. Fairs (Procter & Gamble). *U.S. 3,763,047.* A granular detergent composition contains (a) a blend of mono- and diglycerides of fatty acids with a melting point of not less than 54C with a polyoxyethylene derivative of a higher fatty acid sorbitan ester; and (b) a compound selected from the group consisting of an inorganic water soluble alkaline detergent salt, an inorganic alkaline sequestering agent, an organic alkaline sequestering agent and mixtures of these compounds. The compositions may contain an oxidizing agent of the oxygen releasing type or the halogen releasing type. These formulations are useful for washing hard surfaces and are especially suitable for dishwashing machines.

DETERGENT BUILDER COMPOSITION. H.A. Bruson and H. Gould (Milchem Inc.). *U.S. 3,763,231.* The composition has the formula $R_2C–CO–CR_2Y$ where R is $–CH_2–CH_2–COOX$, X is hydrogen, alkali metals, ammonium or substituted ammonium and Y is hydrogen or $–CH_2–CH_2–COOX$, X being defined as before.

ANTIMICROBIAL AND LAUNDRY SOFTENING COMPOSITIONS. H.-W. Eckert, A. Heins and H. Bellinger (Henkel & Cie). *U.S. 3,764,531.* The composition for laundry use comprises a water soluble, heavy metal-free, non-oxidizing antimicrobial agent and a glycamide.

DETERGENT INTERMEDIATE. T.M. Kaneko (BASF Wyandotte Corp.). *U.S. 3,764,541.* An intermediate for use in phosphate-free detergent formulations is provided by absorbing a liquid surfactant onto a coarse light soda ash utilizing a pan pelletizer to bring about the absorption.

ENZYME GRANULATION PROCESS. R. Natali and G. Giombini (Colgate-Palmolive Co.). *U.S. 3,764,542.* The process for producing a granular product containing enzyme and builder salt, such as sodium tripolyphosphate, comprises granulating an enzyme preparation and hydratable builder salt in the presence of ice particles at temperatures below 30C. In the granule produced, the builder salt is completely hydrated and thermal degradation of the enzyme is minimized.

DETERGENT COMPOSITIONS. W.G. Mizuno, T.E. Brunelle, L.M. Rue, and S.B. Crecelius (Economics Laboratory, Inc.). *U.S. 3,764,559.* The compositions contain maleic anhydride polymers.

UNSATURATED ZWITTERIONIC SURFACE ACTIVE COMPOSITIONS. M.A. Barbera (Procter & Gamble). *U.S. 3,764,568.* The compounds have the following formula: $R_1R_2R_3Z^+–CH_2–CH=CH–CH_2SO_3^-$. R_1 represents an unsaturated or saturated aliphatic group having 6–24 carbon atoms, R_2 and R_3 each represent an alkyl group having 1–6 carbon atoms, and Z represents nitrogen or phosphorus. These compounds have valuable surface

active properties which make them especially useful as detergent compounds.

DETERGENT COMPOSITION. W.R. Ali and W.R. Bryan (Texaco Trinidad, Inc.). *U.S. 3,764,569.* Primary and secondary alkylsulfonates with carbon numbers lower than those which afford optimum detergency are used as hydrotropes in detergent formulations. These alkylsulfonates are linear, and have a carbon content ranging from C_7 to C_8 inclusive.

POLYELECTROLYTE BUILDER AND DETERGENT COMPOSITIONS. C.J. Lancelot and D.G. MacKellar. *U.S. 3,764,586.* A class of polyeletrolytes having the form of poly-β-ketoacids and their salts is described, as is the use of these compounds as builders in detergent formulations.

BACTERIOCIDAL, BIODEGRADABLE COMPOSITION. D. Schuster. *U.S. 3,764,593.* A boron and nitrogen containing reaction product is obtained by reacting boric acid, a secondary amino-alcohol and a carboxylic acid, under specified conditions. Products are bacteriocidal, noncorrosive, and biodegradable, and can be dissolved, dispersed or emulsified in water.

FABRIC SOFTENING COMPOSITIONS. H.E. Wixon (Colgate-Palmolive). *U.S. 3,766,062.* The fabric softening detergent composition comprises a higher 1,2-alkanediol and conventional detergent additives. The composition may also comprise a synergistic combination of the alkanediol with a linear alkyl benzene sulfonate and a higher alkylol sulfate. This combination results in superior fabric softening.

DETERGENT (SOAP) COMPOSITIONS. P.F. Rosmarin. *U.S. 3,766,097.* The composition comprises 5–15% beeswax, 5–15% of a polyhydric alcohol, such as propylene glycol or glycerine and 30–50% of a poloxalene having an average molecular weight of about 11,500. Poloxalene is a polyoxyethylene-polyoxypropylene-polyoxyethylene polymer. The remaining 30–50% of the composition comprises a fatty alkyl ester isethionate.

PHOSPHATE-FREE DETERGENT ACTIVES. S.H. Sharman and M. Danzik (Chevron Research Co.). *U.S. 3,766,254.* Detergent active materials capable of heavy duty washing performance in the absence of phosphate builders are provided. The materials comprise ring polysulfonated alkylphenols in which the alkyl groups are linear with 16–22 carbon atoms and not more than 25 mol percent of the active materials having the alkyl group attached to a position para to the phenolic hydroxyl.

LIME SOAP DISPERSANTS. D.G.S. Hirst (Procter & Gamble). *U.S. 3,767,584.* Alkylbenzyl di-lower alkylammonio alkane-1 sulfonates have excellent scum dispersant properties and are effective in solid, granular, bar or liquid soap compositions to reduce lime-scum formation. Compositions comprising higher fatty acid soaps and the present compounds are described. Desirable results are obtained when the ratio of soap to zwitterionic is from 3:1 to 100:1.

STABLE AQUEOUS DISPERSIONS OF OPTICAL BRIGHTENING AGENTS. U. Claussen and W. von Bonin (Bayer AG.). *U.S. 3,767,587.* A process for the production of stable aqueous dispersions of sparingly water soluble optical brightening agents is described. Association complexes of these brightening agents and low molecular weight complex formers are introduced into aqueous solutions of polymeric compounds, which may also contain surface active agents.

DETERGENT BUILDER. H.A. Bruson and H. Gould (Milchem, Inc.). *U.S. 3,767,598.* The builder has the following formula: $R_3C\text{-}CO\text{-}C(R)_2\text{-}CH_3$ where R is $-CH_2\text{-}CH_2\text{-}COOX$, and X is selected from the group consisting of hydrogen, alkali metals, ammonium and substituted ammonium.

FREE FLOWING NONIONIC SURFACTANTS. J.A. Yurko, P. Ramachandran, B.-d. Cheng and R.E. Dickson (Colgate-Palmolive). *U.S. 3,769,222.* A method for converting liquid nonionic surfactants to a dry free flowing form is disclosed. The method comprises mixing the liquid nonionic material with specific particulate carrier materials in amounts varying from 30 to 85%. Suitable carrier materials include compounds having functional properties in detergent formulations. The free flowing surfactant premix is suitable for addition to spray dried detergent formulations in order to increase their content of nonionic surfactant.

DETERGENT FORMULATIONS. T.H. Pearson and G.E. Nelson (Ethyl Corp.). *U.S. 3,769,223.* To obviate eutrophication of water, nonphosphorus detergent builders and sequestering agents are provided. These are either (a) a 1-oxacyclopropane-2,3-dicarboxylic acid, (b) a water soluble salt of a 1-oxacyclopropane-2,3-dicarboxylic acid, or a mixture of (a) and (b). Conventional detergent additives may be used with these builders.

EFFERVESCENT GRANULES. J.T. Inamorato (Colgate-Palmolive). *U.S. 3,769,224.* A granular detergent composition comprises (a) primary granules of one compositions (e.g., spray dried built detergent) and (b) effervescent granules, of a different composition, containing a binder, an acid, a carbonate reactive with the acid, and an "effect material."

PROCESS FOR MAKING MARBLEIZED SOAP. R.G. Matthaei (Lever Bros.). *U.S. 3,769,225.* A marbleized mass of soap in the form of a log is produced by introducing a soap additive, e.g., a dye, onto a moving bed of milled soap chips entering the upper barrel of a soap plodder and extruding the admixture.

MILDNESS ADDITIVE. R. Kelly and E.J. Ritter. *U.S. 3,769,242.* The degree of skin irritation of detergent compositions is reduced by adding small amounts of compounds having at least two polar groups, e.g., hydroxyl, carboxyl, ester, amino and amido groups separated by an organic radical of at least 15 carbon atoms which contains a cyclic group. In particular, various aliphatic, aromatic, and heterocyclic amino, amido and ester derivatives of polymerized fatty acids are disclosed.

METHOD FOR PRODUCING LAUNDRY PRODUCTS. D.E. Marshall. *U.S. 3,761,549.* The products comprise spherical beads formed from soap, synthetic detergent or the like. The particles are formed into an annular fluidized bed of particles and gas in a rotatable chamber as a result of relative high speed rotation of the chamber and continuous introduction of gas. Periodically the particles are tumbled by abruptly reducing the rotational speed of the chamber. Fluids may be introduced onto the particles, which are relatively dense and have a low moisture content. Although the particles may be layered with various types of materials, all of them have the same composition.

DETERGENT COMPOSITIONS CONTAINING PARTICLE DEPOSITION ENHANCING AGENTS. J.J. Parran, Jr. (Procter & Gamble). *U.S. 3,761,417* and *3,761,418.* There are disclosed detergent compositions containing water insoluble particles, such as antimicrobial agents, and certain cationic polymers which serve to enhance the deposition and retention of the particles on surfaces washed with the detergent.

LINEAR ALKYLBENZENE SULFONATE DETERGENT COMPOSITIONS. A.E. Straus (Chevron Res. Co.). *U.S. 3,769,243.* Sulfonated derivatives of detergent alkylate compositions exhibiting superior synergistic detergent characteristics comprise mixtures of secondary C_{11} and C_{15} sulfonated phenyl-n-alkanes in a ratio of 1:10 to 4:1, respectively.

PREPARATION OF OLEFIN SULFONATES. M. Nagayama and H. Okada (Lion Fat and Oil Co.). *U.S. 3,769,332.* A method for preparing a detergent composition consisting essentially of alkenesulfonates containing Δ'-alkenesulfonates in an amount not exceeding 8% of the total weight of alkenesulfonates comprises (1) contacting α-olefins in the form of a thin film with sulfur trioxide, (2) neutralizing, and (3) hydrolyzing the resultant alkenesulfonates. The improvement comprises varying the contact temperature, the neutralizing condition, the hydrolyzing condition and other parameters. ■