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DIRECT MOLECULAR ASSOCIATIONS BETWEEN DETERGENT AND HYDROPHILIC SOLUTE IN NON-AQUEOUS SOLVENT. M. Loncin, R. Tutundjian and D. Jacqmain (CERIA, Brusseles, Belg.). *Rev. Franc. Corps Gras* 12, 23–27 (1965). It has been shown that in a perchlorethylene-surfactant-water system, the dissolution of hydrophilic materials does not always occur through the medium of the micellar water. Direct molecular association between the surfactant and the hydrophilic material often play the principal role.

DETERGENT COMPOSITIONS AND PREPARATION THEREOF. B. B. Dugan (Colgate-Palmolive Co.). *U.S. 3,177,147.* Described is a process for the preparation of a bleached particulate detergent composition having an apparent density of less than 0.45 g/cc. From 2–65% by weight of a water-soluble foaming synthetic organic detergent selected from the group consisting of anionic and nonionic synthetic organic detergents, 10–75% of an alkaline hydratable inorganic sodium phosphate salt which forms a stable hydrate at room temperature, 2–10% of a hydrotrope such as sodium toluene or xylene sulfonate, 15–40% of water, and 0.25–1% of H_2O_2 are mixed to form a paste capable of retaining small oxygen bubbles without substantial coalescence at a temperature of 35–60C. Mixing of the paste is stopped prior to any substantial loss of oxygen generated subsequent to the addition of the H_2O_2 to the mixture. Oxygen is liberated from the H_2O_2 into the paste in an amount sufficient to bleach and to expand the paste to a final volume at least 2.5 times the initial volume by the generation of small oxygen bubbles in dispersed form. The expanded paste is set under quiescent conditions to a friable mass, and the mass is granulated to form particles of a bleached detergent composition containing from 15–35% moisture.

LAUNDERING COMPOSITION. D. C. Wood and R. C. Davis (Whirlpool Corp.). *U.S. 3,177,149.* A laundering composition particularly adapted for laundering woolens consists essentially of: from 5–20 parts of a cleansing detergent reaction product of between 2–20 mols of a member of the class consisting of ethylene and propylene oxide per mol of a mixture of ethylhexyl, tridecyl and isohexadecyl alcohols; from 2–30 parts of an amine member of the class consisting of monoethanol-, diethanol-, triethanol-, N-methyl ethanol-, N,N-diethyl ethanol-, dimethyl ethanol-, N-butyl ethanol-, N,N-dibutyl ethanol-, N,N-diisopropyl ethanol-, N-aminoethyl ethanol-, and N-ethyl diethanolamine; benzyl dimethyl-, dimethyl-, phenyl ethanol-, monopropanol-, diisopropanol-, mixed isopropanol-, and dibutyl isopropanolamine; morpholine, N-methyl-, N-(2-hydroxyethyl)-, 2,6-dimethyl-, and N-ethyl-morpholine; and from 0.7–20 parts of a wool lubricant.

LIQUID DETERGENT COMPOSITIONS. L. H. Smithson, Jr. and O. K. Moore (California Research Corp.). *U.S. 3,175,977.* Described is a liquid detergent concentrate adapted upon dilution with water to give an aqueous liquid detergent solution having a low cloud point. The concentrate consists essentially of, by weight, 25–50% of a mixture of sodium and ammonium sulfonates of alkylbenzenes having a molecular weight between 215 and 250, 2–30% urea, and the remainder water. The weight ratio of the sodium alkylbenzene sulfonate to the ammonium alkylbenzene sulfonate ranges from 60:40 to 90:10.

AQUEOUS SHAMPOO COMPOSITIONS. F. W. Olson, Jr. (Colgate-Palmolive Co.). *U.S. 3,179,595.* An aqueous liquid shampoo composition protected against freezing at temperatures above 25F consists of: an aqueous preparation of 25–85% water and 5–55% of a water soluble organic anionic detergent salt selected from the group consisting of higher fatty acid soaps containing 10–18 carbons, higher alkyl sulfate salts containing 10–18 carbons, and higher alkyl substituted benzene sulfonate salts in which the alkyl constituent contains 10–18 carbons. The antifreeze agent is a mixture of glycerine and sorbitol at a concentration of 5–20%. The glycerine and sorbitol are present in a ratio of 1:1 to 13:1 respectively. The viscosity of the composition is substantially the same as that exhibited by a similar composition in which the glycerine and sorbitol are replaced by an equal weight of water.

LIGHT DUTY LIQUID DETERGENT. L. H. Smithson, Jr. (California Research Corp.). *U.S. 3,175,978.* A detergent solution having a clear point below about 40F consists essentially of by weight, based on the solution, of the following ingredients in the indicated proportions, sufficient water being present to give 100%: (a) 15–20% of a mixture of sodium and ammonium sulfonates of alkyl benzenes having an average molecular weight between 250–300, the weight ratio of the sodium to ammonium alkyl benzene sulfonate ranging from 25:75 to 75:25; (b) 5–10% of the ammonium salt of the sulfate ester of alkyl phenoxy polyoxyethylene ethanol having 8 to 18 carbon atoms in the alkyl group and 4 to 20 oxyethylene groups; (c) 1.2 to 3% of inorganic sulfate selected from the group consisting of sodium and ammonium sulfate; (d) 0 to 3% of an alkylolamide foam-improving agent (lauric diethanolamide or lauric isopropanolamide); (e) 15–16% of low-molecular weight alcohol; (f) 2–4% of urea.

HYDRATION OF SODIUM TRIPOLYPHOSPHATE. C. Y. Shen (Monsanto Co.). *U.S. 3,174,934.* A process for the preparation of a detergent composition containing hydrated sodium tripolyphosphate comprises the following steps: slurrying sodium tripolyphosphate into an aqueous medium containing an amount of water equal to at least ½ of the weight of the sodium tripolyphosphate to give a pH of at least 11.5; maintaining the pH of the slurry between 11.5 and 12.5 until at least 50% of the sodium tripolyphosphate has been converted to the hexahydrate; and then reducing the pH of the resulting slurry to below about 10.5.

MILLED DETERGENT BAR. R. H. Okenfuss (Procter & Gamble Co.). *U.S. 3,178,370.* A homogeneous synthetic, mechanically worked, milled detergent consists of: (a) 12–30% by weight sodium alkyl benzene sulfonate in which the alkyl group contains from 9–15 carbons; (b) 10–25% sodium tripolyphosphate; (c) 25–55% sodium bicarbonate; (d) 2–15% trisodium orthophosphate; (e) 0–5% of an amide selected from ammonia amides, monoethanol amides, and diethanol amides of fatty acids having an acyl chain of from 8–18 carbon atoms; (f) 0–5% silicate solids with an $Na_2O:SiO_2$ ratio of from 1.0:0.90 to 1.0:3.25; and (g) 5–25% water. The total of (a), (b), (c) and (d) is from 85–92% by weight.

SOAP BAR FOR DRY SKIN. R. E. Farrar and A. L. Schulerud (Colgate-Palmolive Co.). *U.S. 3,179,596.* A milled and plodded toilet soap bar particularly suitable for cleansing dry skin and depositing oleaginous soap bar constituent on the skin comprises 70–80% soap substantially free of inorganic salts, unreacted fats and oils and glycerol. About 10–25% of the soap is of saturated fatty acids of 8–14 carbon atoms and 90–75% of 16–20 carbon atoms. It is derived from an oil charge of 10–25% coconut oil and 90–75% tallow, 4–7% petrolatum, 30–70% of the petrolatum of glycerol, 1–2.5% lanolin and 10–16% water.

DETERGENT COMPOSITION. N. R. Smith (Procter & Gamble Co.). *U.S. 3,179,598.* An unbuilt, high-sudsing, light-duty liquid detergent composition having a pH of from 6.5 to 9.0 and having special utility for washing under acidic conditions consists of: (1) 20–40% by weight of a sulfate detergent having the formula $R(C_2H_4O)_x—SO_4—Me$ in which R is a straight chain alkyl group having from 10–14 carbon atoms with at least 50% of the alkyl groups having 12 carbon atoms; x is a number from zero to 4; and Me is selected from the group consisting of monoethanolamine, diethanolamine, triethanolamine, ammonium, sodium, and potassium cations; (2) a trialkyl amine oxide having one straight chain alkyl group having from 10–14 carbons, with at least 50% of the alkyl groups having 12 carbons, and 2 short chain alkyl groups having 1–2 carbons, in an amount sufficient to give a weight ratio of sulfate detergent to amine oxide of from 3/1 to 7/1; (3) at least 5% but not more than 40% of the composition of a solubilizing agent selected from the group consisting of methyl, ethyl, n-propyl alcohols, and mixtures thereof, the agent being sufficient to provide a pourable homogeneous composition; and (4) the balance water.

DETERGENT COMPOSITION. S. L. Eaton and E. F. Gebbhardt (Procter & Gamble Co.). *U.S. 3,179,599.* The same composition as above except that it contains 2–10% of an alkyl glyceryl ether sulfonate having a straight chain alkyl group having 10–14 carbons with 50% having 12 carbons, the cation of the sulfonate being selected from the group consisting of monoethanolamine, diethanolamine, triethanolamine, ammonium, sodium, and potassium cations and mixtures thereof, the amount of the sulfonate being at least 20% of the amount of the amine oxide.

• *Referee Application*

SECOND NOTICE: Charles R. Norris of Barrow-Agee Laboratories, Inc.; P.O. Box 858, Shreveport, Louisiana, 71102 has applied for a Referee Certificate on Cottonseed, Oil Cake and Meal, Protein Concentrates, Cottonseed Oil and Soybean Oil. Interested parties wishing to comment on this certification should communicate with the Chairman of the Examination Board. Please write to R. T. Doughtie, Jr., Chairman of the Examination Board, P.O. Box 17469, Memphis, Tennessee 38117.