

PROCESS OF TREATING BUILDING MATERIALS. A. W. Ralston and R. J. Vander Wal (Armour and Company). *U. S. 2,317,301*. The process of rendering cast concrete structures water-repellent comprises treating the concrete structure with an amino compd. chosen from the group consisting of aliphatic amines contg. at least 8 carbon atoms in an alkyl group thereof, and salts thereof.

LIQUID PHASE EXTRACTION OF GLYCERIDE OILS AND ACIDS. S. E. Freeman (Pittsburgh Plate Glass Company). *U. S. 2,316,512*. Fats are fractionated into satd. and unsatd. constituents with solvents contg. polar nitro group in a process which takes advantage of the relatively low miscibility of the satd. constituents at low temps.

PROCESS OF TREATING EDIBLE OILS OR FATS. H. O. Renner (J. R. Short Milling Co.). *U. S. 2,316,621*. A process comprises subjecting an edible peroxidized fat having an undesirable odor or flavor to the action of the freed cell contents of yeast to counteract the organoleptic effect of substances in the fat causing the undesirable odor or flavor.

TREATMENT OF FAT CONTAINING MATERIALS AND PRODUCT. W. R. Johnston (Standard Brands, Incorporated). *U. S. 2,314,988*. A method for inhibiting deleterious changes in fatty materials comprises incorporating the unsaponifiable portion of coffee oil with a fatty substance.

PROCESS FOR ACTIVATING CATALYTIC SURFACES. M. H. Gwynn. *U. S. 2,319,453*. A process for preparing a highly active catalytic surface useful in hydrofining comprises activating a surface whose metal component is selected from the class which consists of nickel, cobalt, and a ferromagnetic and readily reducible alloy, with an aq. halite soln.

CLAY ACTIVATION. J. A. Crowley (Socony-Vacuum Oil Co.). *U. S. 2,319,185*. Roasted absorbent clay

that has been regenerated is rehydrated by treatment with water under press. and a temp. of 275-650°F.

PROCESS FOR MAKING AN OIL MODIFIED ALKYL RESIN. W. A. Waldie (New Wrinkle, Inc.). *U. S. 2,319,022*.

SEBACIC OR HYDROXYDECANOIC ACIDS FROM RICINOLEIC ACID COMPOUNDS. G. D. Davis, B. A. Dombrow (National Oil Products Company). *U. S. 2,318,762*. The products are prepd. by heating ricinoleic acid with alkali in a high boiling point inert hydrocarbon oil.

METHOD OF PURIFYING FATTY ACIDS. Waldo L. Semon (B. F. Goodrich Co.). *U. S. 2,315,664*. The method of sepg. a fatty acid contg. between 12 and 18 carbon atoms from a diarylamine comprises forming a lower-boiling alkyl ester of the fatty acid and sepg. the ester and the diarylamine by fractional distn.

VITAMIN D DISTILLATION PROCESS AND PRODUCT. Kenneth C. D. Hickman and Edward Le B. Gray (Distillation Products, Inc.). *U. S. 2,316,068*. The oil is saponified, nonsaponifiable is removed and fractionally distd. with collection of fractions of diff. vitamin D potency.

PROCESS OF TREATING WATER. Anderson W. Ralston and William O. Pool (Armour & Co.). *U. S. 2,315,734*. Surface active amine derivatives of fat acids are used to clarify turbid waters.

POLYMERIZATION OF OITICICA OIL. Malcolm F. Pratt and Henry G. Berger (Socony Vacuum Oil Co.). *U. S. 2,316,187*. The process of polymerizing oiticica oil to produce a non-frosting, quick drying product, comprises cooking the oil at a temp. above 300°F. in the presence of a small amt. of  $\text{BF}_3$  as a polymerization catalyst.

PROCESS OF CONCENTRATING NON-METALLIFEROUS ORES. A. W. Ralston and E. W. Segebrecht (Armour & Co.). *U. S. 2,313,360*. Special amine derivs. of fat acids are used in the process.

## Abstracts

### Soaps

Edited by  
ARMOUR AUXILIARIES LIBRARY

FDA OFFICIALS REVIEW RAW MATERIAL PROBLEMS OF POTASH SOAP INDUSTRY AT INFORMAL CONFERENCE IN WASHINGTON, MAY 7. EARLY RELIEF EXPECTED. A. P. Federline. *Soap* 19, No. 6, 34-5, 133 (1943).

FREEZING POINTS OF SOLUTIONS OF TYPICAL COLLOIDAL ELECTROLYTES, SOAPS, SULFONATES, SULFATES, AND BILE SALT. S. A. Johnston and J. W. McBain. *Proc. Roy. Soc. (London)* A181, 119-33 (1942). Cond. alone is shown to be an untrustworthy guide as to whether or not a soln. contains a colloidal electrolyte. The most conclusive evidence comes from direct comparison of thermodynamic with elec. data. F.—. studies are reported for a no. of colloidal electrolytes. Different groups exhibit various types of behavior. All have in common the replacement of ions by colloidal particles as the concn. increase. In the bile salts as well as some wetting agents the cond. approaches very nearly the behavior of an ordinary electrolyte, whereas the lowering of f.p. falls off rather abruptly. Data are reported for f.p. lowerings of dil. aq. solns. of K oleate contg. 4 equivs. % excess of KOH. Measurements were made down to solns. as dil. as 0.00043 molal K oleate (0.000172 *m* KOH) at which the depression is only 0.00157°. Measure-

ments are reported for Na oleate. These show that this is as osmotically active as K oleate. The mechanism of the action of detergents in aq. soln. and nonaq. soln. in solubilizing otherwise insol. substances is discussed. In this connection measurements are reported for aq. K oleate with isoöctane solubilized therein. It is established that the solubilized mols. do not exist as such, but are wholly taken up in colloidal form, chiefly in or on existing soap micelles. The effect of the addn. of the isoöctane is negligible. If in true soln. the isoöctane in the strongest solns. observed would have produced 5 times the observed lowering. Results are given for Na decyl sulfonate. In very dil. solns. the observed values almost coincide with the Debye-Hückel values (agreeing at very dil. soln. to within 0.1%). Data are given for Na decyl sulfate. The osmotic coeff. falls rapidly above 0.026 *m*. Observations on a Na dodecyl sulfate show that the osmotic coeff. begins to leave the Debye-Hückel slope well before its rapid descent at 0.005 *m*. Measurements are reported for the bile salt Na deoxycholate  $\text{C}_{23}\text{H}_{37}(\text{OH})_2\text{COONa}$ . Both f.p. and cond. data are given. With increasing concn. the cond. quite unlike that of a higher soap or the higher sulfonates or sul-

fates merely falls steadily over the whole range of concn. This is in striking contrast to the behavior of the osmotic coeff. which is like that of soaps, etc. The crit. concn. for the completion of the formation of micelles is often 10 or more times greater than the "critical concn. for the imitation of micelle formation." This term is oversimplified or is a misconception. (*Chem. Abs.*).

SPONTANEOUSLY FORMING EMULSIONS. MECHANISM OF FORMATION OF SOLUBLE OILS. ADSORPTION LAYERS IN DISPERSE SYSTEMS. K. Pospelova and P. Rehlinger. *Acta Physicochim. U.R.S.S.* 16, 71-87 (1942) (in English). Phase diagrams are detd. for the systems hydrocarbon oil-soap of sulfonated castor oil-Na oleate or soap naphthenic acid. The line sep. the region of sol. oils from that of emulsions is located. The dispersity and stability of emulsions are measured as a function of the compn. of the emulsion-forming oil and the soaps present. The phase inversion of soap in oil on the addn. of H<sub>2</sub>O or alc. is discussed. The amt. of H<sub>2</sub>O required depends on the degree of sapon. of the acids in the system. The discontinuous inversion can be followed by measuring the elec. cond. of the mixt. (*Chem. Abs.*).

THE SURFACE TENSION OF SOLUTIONS OF CERTAIN SODIUM SOAPS. Raymond Cavier. *Compt. rend.* 212, 1146-8 (1941); *Chem. Zentr.* 1942 I, 1112-12. Solns. of the Na soaps of 0.1 M concn. were prepd. by adding the soap to a mixt. of 1 part buffer soln. of pH 9 and 4 parts of 0.8% NaCl soln. This soap soln. was then dild. with the NaCl soln. to make solns. for measurement over the range in concn. from 10<sup>-2</sup> to 10<sup>-5</sup> M. Measurements were made at 20°. The soaps studied were the Na salts of oleic (I), linoleic (II), linolenic (III), ricinoleic (IV), dibromoricinoleic (V), lauric (VI),  $\alpha$ -bromolauric (VII), hydroxystearic (VIII), hydnocarpic (IX), and chaulmoogra (X) acids. Surface tension was measured by the stalagmometer method (A) and the tensiometer method (B). Method A gave higher values than B. Soaps of unsatd. acids increase in "tension-activity" (TA) in the order I, II, III. The reduction in surface tension is greater the more double bonds in the mol. of acid. The TA of IV is greater at the higher concns. and less at the lower concns. than that of I to III. The TA fades out below concns. of  $2 \times 10^{-5}$  M, where the values for I to III are no longer observable. Replacement of the double bonds in IV by the triple bonds in VIII decreases the TA. On the other hand, the addn. of Br at the double bond of IV, giving V, increases the TA. Substitution of Br in the position (VI and VII) increases the TA as long as the solns. are very dil. The activity of IX is greater than that of X but the TA is not comparable with those of the other soaps. (*Chem. Abs.*).

CALCIUM COMPLEXES OF SODIUM HEXAMETAPHOSPHATE AND TRIPOLYPHOSPHATE. H. Rudy. *Angew. Chem.* 54, 447-9 (1941). The solvent power of Na hexametaphosphate (Na<sub>6</sub>P<sub>6</sub>O<sub>18</sub>) (I) and of Na tripolyphosphate (Na<sub>3</sub>P<sub>3</sub>O<sub>10</sub>) (II) for lime soap was investigated at high temps. in various pH ranges. Twenty cc. of 0.007 N CaCl<sub>2</sub> soln. was treated with 1.5 cc. of a 4% clear soln. of Marseille soap and 3 drops of 0.5 N NaOH. The soln. was heated to 60° and kept there for 5 min. The turbidity was measured in the Pulfrich app. according to Zeiss. Then the phosphate soln. was added and the decrease in pH

was compensated for with NaOH. In expts. at pH 12.3-12.7 and at 95° the addn. of 0.5 cc. of a 5% soln. of I gave a relative turbidity of 300-450 and 1.0 cc. cleared to a relative turbidity of 20. With II values of the same magnitude were obtained with addns. of 1.0 and 1.5 cc. resp. Similar behavior of relative turbidity was found in pH ranges 9.2-9.5 and 10.9-11.2. Effectiveness of I was infl. less by pH and temp. while the effectiveness of II is greatly dependent upon the exptl. conditions and shows the existence of an optimum temp. range. The amt. of II necessary to dissolve 10.76 g. of Ca oleate in 100 l. of H<sub>2</sub>O is at a min. of 13.6 g. at 90° and pH 12.3-12.7. Other min. amts. are 24.8 g. at pH 10.9-11.2 and 80°, and 22.2 g. at pH 9.2-9.5 and 70°. (*Chem. Abs.*).

## PATENTS

POWDERED WASHING AIDS. Hans Tampke, Franz Patat, and Karl Winnacker (I. G. Farbenindustrie A.-G.). *Ger.* 720,776. Inorg. alkali salts contg. water of crystn. are heated to a temp. above their transition point. The melt is intimately mixed with oily org. soap substitutes and the mixt. is solidified by spraying or intense agitation. (*Chem. Abs.*).

POWDERED SOAP DISPENSER. C. W. Wehe. *U. S.* 2,314,959.

ABRASIVE DETERGENT. R. F. Ruthruff. *U. S.* 2,318,555. A cleansing agent in the form of individual particles, each consists of a silica core covered with an autogenous layer of sodium silicates, the silica to Na<sub>2</sub>O ratio of said individual particles falling in the approx. range 3.5 to 1 to 10.0 to 1.

SOAPMAKING. R. F. Heald and A. L. Schulerud (Colgate-Palmolive-Peet Co.): *U. S.* 2,316,689. The process of making bars and cakes of soap comprises mixing soap with borax in such proportion that borax is present in an amt. at least 25% of total borax and anhydrous soap in the mixt. milling the mixt. and forming bars and cakes therefrom.

WASHING AND DELIMING COMPOSITION FOR LIMED HIDES. H. Bertsch and F. Schmitt (American Hyalcol Corporation). *U. S.* 2,318,454.

MANUFACTURE OF FERMENTATION GLYCERIN FROM MOLASSES. F. M. Hildebrandt (U. S. Industrial Alcohol Co.). *U. S.* 2,315,422.

MANUFACTURE OF GREASES. M. H. Ittner (Colgate-Palmolive-Peet Co.). *U. S.* 2,319,405. The process of making lubricating greases comprises intimately mixing in the substantial absence of air a fused anhydrous soap made from coconut oil and substantially free from glycerine with a high-boiling mineral lubricating oil.

GREASE MANUFACTURE. A. E. Calkins (Standard Oil Development Co.). *U. S.* 2,318,668. A soap stock contg. 10-86% oil and 15-75% lime soap is used in the process.

PREPARATION OF SURFACE-ACTIVE SULFONATES FROM HYDROCARBONS. J. H. Werntz (E. I. du Pont de Nemours & Company). *U. S.* 2,318,036.

QUATERNARY AMMONIUM COMPOUNDS. F. Leuchs (Winthrop Chemical Co., Inc.). *U. S.* 2,317,999.

PROCESS OF REMOVING IMPURITIES FROM WASHED TEXTILES. E. Wolter (Proctor and Gamble Co.). *U. S.* 2,316,379. The method of removing deleterious deposits from a textile material washed in hard water comprises rinsing said material in an aqueous rinsing bath acidulated with approximately .5% sulfaminic acid.