Abstracts

Drying Oils

Edited by
HOWARD M. TEETER

MONOLAYERS OF OXIDIZED AND HEAT-BODIED LINSEED OIL. D. C. Lichtenwalner, H. E. Adams, and P. O. Powers. *J. Phys. Chem. 49,* 511-519 (1945). Monolayers of linseed oil which had been oxidized or heat-polymerized for various periods of time were examined with a hydrophil balance. Polymerization does not introduce any new polar groups into the molecule; hence the main effects noted were (1) the force-area curves extrapolate to increasingly larger limiting areas as the molecular weight increases; (2) slightly smaller forces are required to change the film into the condensed state; (3) all films apparently are compressed to the same area at high pressures, irrespective of the molecular weight. Oxidation introduces new polar groups, resulting in the requirement of progressively higher pressures to put the film in the condensed state. The limiting area increases with addition of oxygen because of the greater attraction of oxygen for water and the resultant flattening of the film. When three atoms of oxygen per glyceride molecule have been added, a limiting area of 167 sq. Å is reached, and further addition of oxygen does not increase this area or cause the force-area curves to change appreciably. Apparently one oxygen per fatty acid chain is, on the average, sufficient to develop the maximum area and maximum force of attraction between oil and water. The minor effects produced by polymerization as contrasted with oxidation make it impossible to study the polymerization reaction which occurs during the oxidation of monolayers of linseed oil.

PATENTS

DRYING OIL SUBSTITUTE. C. H. Bibb and R. C. Palmer (Newport Industries). *U. S. 2,388,947.* Terpene hydrocarbons are thermally decomposed with an incandescent element immersed in the hydrocarbon until a substantial proportion of the polymer has been formed. The product is steam distilled at 150-170°C. to remove volatile fractions and the residue is useful as a drying oil.

RUBBER SUBSTITUTE. J. H. Elder. *U. S. 2,390,829.* A rubber substitute prepared from 24 parts of linseed oil, 6 parts of pine tar, 5 parts of carbon black, 14 parts of carbon disulfide, 1 part of gum rubber, and 2 parts of hexamethylene tetramine and phenol.

POLYMERIZED RUBBER PRODUCT. D. Sanderson and H. Poff. *U. S. 2,390,961.* Mixtures of cottonseed and linseed oil are heated, then treated with asphalt and a small percentage of cyclized rubber, compounded with zinc oxide, sulfur, litharge and carbon black and cured at 380°F.

EMULSION COATING COMPOSITION. A. R. Trist. *U. S. 2,389,011.* A stable water in oil emulsion is prepared by colloidally milling a petroleum solution of highly polymerized linseed oil of high acid content with an aqueous solution of aluminum, calcium, magnesium or of zinc salt.

PRODUCTION OF WATER DISPERSIONS OF DRYING OILS, VARNISHES, AND LACQUERS. P. Stamberger. *U. S. 2,391,041.* An oxidized drying oil is emulsified in the presence of a stabilizing agent which maintains stability below pH of 7 during oxidation of the drying oil emulsion.

PROCESS FOR PRODUCTION OF THICKENED MASSES FROM ESTERS OF UNSATURATED FATTY ACIDS. P. Stamberger. *U. S. 2,391,042.* Process of producing stable aqueous emulsion of thickened polyhydric alcohol ester of a poly unsaturated long chain fatty acid by subjecting the emulsion to oxidation with H_2O_2 in presence of an oxidation promoting catalyst and stabilizing agents which maintain the pH between 4-10.

Abstracts

Soaps

Edited by
LENORE PETCHAFT

EXPERIMENTS WITH A CATIONIC WETTING AGENT. A. Steigmann. *J. Soc. Chem. Ind. 64,* 88 (1945). S. reports expts. with trimethyl-β-oleamidoethylammonium sulfate (Sapamine) in analytical chemistry. It ppts. anionic colloid electrolytes, acid dyes, salts of org. acids or org. compds. with acidic groups (SH, NO_2), polysulfides and polyiodides, nitroprussides, ferrocyanides, and thiocyanates. Techniques for impregnating filter papers for use in spot tests are described. (*Chem. Abs. 39,* 3491.)

SOAP PLANT LAYOUT. E. G. Thomssen. *Soap 21,* No. 11, 29-31, 71 (1945). The planning of a small soap plant is described. Building requirements, placing of equipment, handling of raw materials, glycerine recovery and storage of finished soap are all reviewed.

SURFACE-ACTIVE COMPOUNDS. XI. DERIVATIVES OF C-ALKYLANILINES. B. D. Tilak and K. Venkataraman. *J. Sci. Ind. Research* (India) *3,* 290-8 (1945). The compd. $MeC_6H_3(2\text{-}SO_3Na)(4\text{-}NHCOC_{11}H_{23})$ (I) has been previously found to have outstanding wetting agent properties, and related compds. were therefore prepd. by condensing aromatic amino sulfonic acids with fat acid chlorides. The compds. were examined by the Herbig No., the Draves test, Ca soap dispersing power by the titration and the optical method, Congo Rubin No., and stability to NaOH, H_2SO_4, and $CaCl_2$. In general the compds. derived from lauric acid were better wetting agents than those from oleic acid by both Herbig No. and flotation tests and were also more efficient in Ca soap dispersing power and protective colloidal action. In the majority of cases metaorientation between —NHCOR and SO_3Na in the lauric acid series gave better wetting agents than ortho, and the reverse was true in the oleic acid series. (*Chem. Abs. 39,* 5103.)

CHEMICAL TREATMENT OF SOAPY WASTE WATER. Harry W. Gehm. *Water Works & Sewerage 92,* 255-7