AOCS Short Course

(Continued from page 296A)

of Lipid Mixtures on Liquid-Solid Chromatographic Columns—Gary Nelson

1) Structure Determination of Unsaturated Acids by Ozonolysis. 2) Quantitative Thin-Layer Chromatography of Lipids—Orville S. Privett

Analytical Fractionation of Complex Lipid Mixtures (Column Chromatography, Thin-Layer Chromatography and Associated Techniques)—George Rouser

Mass Spectrometry Directly Coupled to Gas Chromatography. Demonstration of Techniques—A. Struck

1) Analysis of Steroids by Thin-Layer and Gas Chromatography. 2) Membrane Systems and the Use of Molecular Models—F. A. Vandenheuvel

Plant Inositol Lipids. Importance and Alteration of Salt Forms—Evelyn Weber

For further information contact the Director, C. Freeman Allen, Department of Chemistry, Pomona College, Claremont, California.

Rensselaer Polytechnic Plans June Short Course in Color Technology

Through the Department of Chemistry, Rensselaer Polytechnic Institute will offer for the first time, a special comprehensive short course in The Principles of Color Technology, from June 21–25, 1965. This course is intended to provide both theory and practice in the description, specification and measurement of color. It will be of particular interest to industrial personnel responsible for color matching and color control.

Address application for admission to Prof. A. A. K. Booth, Director, Division of Special Programs, Rensselaer Polytechnic Institute, Troy, New York 12181.

• *Obituaries*

H. E. Moore (1934), of New Orleans, Louisiana, died recently, it was learned at the AOCS headquarters in Chicago.

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tetrapropylene benzene sulfonate and fatty alcohol sulfates are far less toxic. Bacteria and other microorganisms in water seem to be able to survive rather high surfactant concentrations. Concentrations above 5 ppm in irrigation water may affect plant growth, especially when the organic matter content of the soil is low. Mice, rats, rabbits and dogs consumed between 50 and 30,000 ppm surfactants in their daily diet for up to two years without any discernible effects on their health. Men have consumed water with 100 ppm surfactants for several weeks without any sign of chronic harm to their health. There is at present very little chance that the surfactant concentration in the diet of man will exceed 2 ppm.

THE DIRECT CONDENSATION OF FATTY ACIDS AND TAURINE. E. Elbel (Farbwerke Hoechst A.G., Frankfurt/Main, Germany). *Tenside* 1, 26–28 (1964). The condensation of fatty acid chlorides with N-methyl taurine in the presence of NaOH leaves considerable amounts of NaCl in the end product. Attempts to avoid this by using a direct condensation reaction with fatty acids in the past were only partly successful, mainly because of side reactions leading to the formation of very hygroscopic by-products, such as the monosodium salt of N-methyl ditaurine. This difficulty can be overcome by the use of salts of volatile fatty acids as neutralization media in the direct condensation process. Sodium formate and acetate have both been successfully used in the preparation of detergents of the Hostapon T type, the resulting acid being then driven off by distillation. The end product of this process exhibits very little hygroscopicity.

MEASUREMENT OF THE SURFACE TENSION OF AQUEOUS SURFACTANT SOLUTIONS. G. Schwen (Ludwigshafen/Rhein, Germany). *Tenside* 1, 46–50 (1964). The surface tension of aqueous solutions of surface active agents depends not only on chemical composition, concentration, electrolyte level and temperature, but also on time. Experimental methods are therefore required to take the time variable also into consideration. A new quasistatic method for measuring surface tension, called the capillary pressure method, is described. The results of three series of experiments are reported, in which surface tension was measured for four different surfactants, varying concentrations of a non-ionic surfactant and varying amounts of electrolyte. The time dependency of surface tension was followed up to 25 min., at which time it had generally reached a constant, minimum value.

SURFACTANTS IN TEXTILE INDUSTRY EFFLUENTS. M. Kehren (Holzschlag, Germany). *Tenside* 1, 109–11 (1964). The situation of the textile industry in Germany is reviewed with respect to the German law on detergent biodegradability.

THE ADVENT OF SURFACTANTS. A. Chwala (Vienna, Austria). *Tenside* 1, 41–45 (1964). A historical review of the development of surface active agents.

THE ANALYSIS OF SURFACTANTS, I. D. Hummel (Univ. of Cologne, Germany). *Tenside* 1, 50–9 (1964). This paper gives a comprehensive survey on qualitative and quantitative methods of surfactant analysis, with special reference to spectroscopic and ion exchange methods. Besides extensive literature survey there are reported experimental results on the identification of surfactants which have not so far been published. In Part 1 of this paper the author deals with qualitative methods for testing surface activity and the charge of surface active ions as well as analytical methods for anionic and cationic surfactants.

III. *Ibid.*, 116–25. The third part of this paper deals with methods for the quantitative analysis of surfactants. These include gravimetric, volumetric, colorimetric and absorption-spectroscopic methods as well as special methods for the quantitative analysis of mixtures. More recently developed methods, such as I.R. and U.V. spectroscopy, ion exchange, as well as new titrimetric methods are given special attention. It is the object of these critical discussions to make the choice of a suitable analytical method easier.

AMINE OXIDE SURFACTANTS. H. Lindner (Berlin-Lichterfelde, Germany). *Tenside* 1, 112–5 (1964). The reaction of tertiary fatty amines (e.g. lauryl dimethyl amine) with hydrogen peroxide solutions is discussed. This is a reversible reaction, which can also cause the decomposition of the amine oxide under some conditions, e.g. at elevated temperatures. Different views on the molecular structure of these compounds are discussed, as well as the surface active properties of their aqueous solutions. The excellent cleaning and foaming properties of amine oxides, especially at low temperatures, make them well suited for use in detergents, dishwashing liquids, hair shampoos and textile finishing.

THE NATURE OF HYDROTROPY AND ITS SIGNIFICANCE IN INDUSTRIAL CHEMISTRY. H. Ratts (Inst. für Textilchemie, Stuttgart, Germany). *Tenside* 2, 1–6 (1965). Examples of the various branches of industrial chemistry in which hydrotropic substances can be used are given from the fields of organic technology, dyestuff synthesis, dyeing and printing, pharmaceuticals and cosmetics, cellulose production, tanning, prevention of calcium soap formation and swelling of high molecular weight substances. The nature of hydrotropy consists in the formation of adducts between the materials to be dissolved and the hydrotropic substance. The tendency to adduct formation and the property of the adduct to dissolve in water are closely dependent on the chemical constitution of the hydrotropic agent. This connection is illustrated by numerous examples.

ATTEMPTS AT SEPARATING SUCROSE MONOESTERS BY TLC AND DETERMINATION OF CAPILLARY PROPERTIES OF POSITIONAL ISOMERS. W. Wachs and K. Gerhardt (Univ. of Berlin/Charlottenburg, Germany). *Tenside* 2, 6–10 (1965). With the aid of thin layer chromatography, industrial sucrose-fatty acid esters were separated into their mono-, di- and triesters. It was also possible to separate the fraction of sucrose monoesters obtained into three groups (altogether seven individual compounds) of positional isomers. The various industrial com-