

Report of the AOCS Industrial Oils and Derivatives Committee

All of the Subcommittees of the Industrial Oils and Derivatives Committee met during the fall session of the AOCS in Cincinnati to review work that had been accomplished during the past six months and lay plans for future work. The following is a brief summary of the work being done in each of these Subcommittees, as submitted by K. E. Holt, Chairman.

Epoxidized Oils Subcommittee, R. J. Gall, Chairman

A proposed method for hydroxyl value of epoxidized oils was submitted by letter ballot to the Industrial Oils and Derivatives Committee on July 15. There were a few questions raised and constructive suggestions given by members of the Committee. These have now been resolved and the method will be submitted to the Uniform Methods Committee with the recommendation that it be adopted as a tentative official method of the AOCS.

The Subcommittee began a collaborative study on the "Jay Method" for per cent oxirane using tetraethylammonium bromide and perchloric acid. This method is based on an original paper by Jay [Analyt. Chem. 36, 667 (1964)]. The Subcommittee members found several areas where clarification of the method was needed and the collaborative study was discontinued until the method could be studied more completely and necessary modifications made in the method. This has been accomplished and a collaborative study will be completed prior to the Los Angeles meeting.

Dibasic Acids Subcommittee, D. F. Roblin, Chairman

The Dibasic Acids Subcommittee is cooperating with an ASTM group on Polybasic Acids. The ASTM group is working on the basic methods of analysis and the Subcommittee will review the proposed ASTM methods to determine if they satisfy AOCS method requirements. The Subcommittee will write a recommended practices method and the test methods for polybasic acids (other than polymerized acids) which depend on fatty materials as a raw material, in particular azelaic and sebacic acids.

Since ASTM is working on methods which have a broad scope, the AOCS Subcommittee will concentrate on methods which are more narrow in their application such as heat stability and composition by GLC.

Commercial Fatty Acids Subcommittee, R. O. Walker, Chairman

The Subcommittee is in agreement that AOCS Method Td-3a-64, Color Stability of Fatty Acids, is not good enough to separate different grades of unsaturated fatty acids and is ineffective in separating the saturated acids. Two alternative methods for improving the Color Stability Method have been proposed and will be checked against the present method in a collaborative study. These are; 1) using the present equipment with the bath temperature increased to 240C and the nitrogen flow regulated. 2) Using the present tubes but replacing the nitrogen flushing tubes with 30 in. air condensers and raising the bath temperature to 240C.

Drying Oils Subcommittee, D. S. Bolley, Chairman

The Industrial Oils & Derivatives Committee gave letter ballot approval on a number of proposed changes in AOCS Method To-1b-64, Specific Gravity. The changes will now be recommended to the Uniform Methods Committee for their approval. There is no precision data on the Specific Gravity Method and it is planned to develop this data by collaborative study before submitting the revised method to the Uniform Methods Committee.

The results of the collaborative study on haze or clarity of drying oils by comparison was reviewed by the Subcommittee. It is obvious that the most consistent results on haze can be obtained when a comparison is made against

haze standards. A review will be made of haze standards now used in other industries to determine whether these standards would be suitable for drying oils.

Fatty Nitrogen Products, N. O. V. Sonntag, Chairman

Five laboratories have agreed to participate in a "round robin" on primary fatty amine using the GLC. Three samples including a coco, tallow and a synthetic blend will be used in this study. The work is scheduled to be completed before the spring AOCS meeting.

Polymerized Acids Subcommittee, H. Fisher, Chairman

The methods for sampling, acid value, saponification value, saponifiable matter, Karl Fisher and color will be rewritten to include polymerized fatty acids in their scopes. Methods for unsaturation and composition are needed; however, the available methods are not satisfactory and collaborative work will be held up until more suitable methods have been developed.

Hydrogenated Oils, R. O. Walker, Chairman

This Subcommittee is planning to review approximately 25 existing AOCS analytical methods to determine which methods require modification to make them applicable to hydrogenated products. Subcommittee members are, also, requested to submit other methods used by their laboratories for control or evaluation of hydrogenated oils.

K. E. HOLT, CHAIRMAN

• *New Product*

WATERS ASSOCIATES, INC., Framingham, Mass., has introduced the Ana-Prep Gel Permeation Chromatography Assembly, a combination unit which can be used for both analytical determinations of molecular weight distribution of rubbers and fractionation of rubber samples to obtain gram quantities of narrow molecular weight fractions.

• *Literature Review . . .*

(Continued from page 706A)

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- Hilditch, T. P., and P. N. Williams, "The Chemical Constitution of Natural Fats," 4th Edition, John Wiley and Sons, Inc., 745 pp., 1964.
- Swern, D., Ed., "Bailey's Industrial Oil and Fat Products," 3rd Edition, Interscience Publishers, 1103 pp., 1964.
- Markley, K. S., Ed., "Fatty Acids: Their Chemistry, Properties, Production and Uses," Second edition, Part 3, Interscience Publishers, 992 pp., 1964.
- Asselineau, T., "Les Lipides Bacteriens, Isolement-Composition-Proprietes" (Actualites Scientifiques et Industrielles No. 1297, Hermann, Paris, 350 pp., 1962.
- Folch-Pi, T., and H. Bauer, Editors, "Brain Lipids and Lipoproteins and the Leucodystrophies," Proceedings of the symposium held in Rome in 1961, Elsevier Publishing Co., 213 pp., 1963.
- Rodahl, K., and B. Issekutz Jr., "Fat as a Tissue," McGraw-Hill Book Co., 428 pp., 1964.
- Meng, H. C., T. G. Coniglio, V. S. Le Quire, G. V. Mann and J. M. Merrill, Editors, "Lipid Transport," International Symposium, Charles C Thomas, 336 pp., 1964.
- Dawson, R. M. C., and D. N. Rhodes, Editors, "Metabolism and Physiological Significance of Lipids," John Wiley and Sons Ltd., 657 pp., 1964.
- Altschull, R., Ed., "Niacin in Vascular Disorders and Hyperlipemias", Charles C Thomas, 320 pp., 1964.
- Holman, R. T., Ed., "Progress in the Chemistry of Fats and Other Lipids," Vol. 7, Pergamon Press, 308 pp., 1964.
- Paoletti, R., and D. Kritchevsky, Editors, "Advances in Lipid Research," Vol. 2, Academic Press, 499 pp., 1964.