## Acids, in thousand pounds

Month: October 1979
Issued: Dec. 17, 1979
No. of manufacturers reporting: 16

| | Finished goods, inventories on | Production | Receipts | Captive consumption | Disposition: Domestic shipments | Disposition: Intracompany shipments | Disposition: Shipment for export | Disposition: Total | Finished goods, inventories on |
|---|---|---|---|---|---|---|---|---|---|
| **SATURATED** | | | | | | | | | |
| Stearic acid 140-50% stearic content | 8,221 | 14,325 | 1,492 | 6,222 | SP 635<br>DP 3,647<br>TP 3,886 | 71 | 85 | 14,546 | 9,492 |
| Hydrogenated animal and vegetable oils | | | | | | | | | |
| 60 C max. titer & min. I.V. 5 | 6,539 | 9,566 | --- | 37 | 8,116 | --- | 294 | 8,447 | 7,658 |
| 57 C min. titer & max. I.V. <5 | 4,572 | 12,283 | 2,728 | 7,205 | 8,161 | --- | 3 | 15,369 | 4,214 |
| Min. stearic content of 70% | 1,948 | 2,475 | --- | 938 | 1,646 | 6 | 40 | 2,630 | 1,793 |
| High palmitic (over 60% palmitic, I.V. max. 12) | 954 | 617 | --- | 324 | 643 | 57 | 35 | 1,059 | 512 |
| Hydrogenated fish & marine mammal fatty acids | 429 | 471 | --- | --- | 329 | --- | --- | 329 | 571 |
| Lauric-type acids (I.V. min. 5, Sapon val. min. 245, inc. coconut, palm kernel, babassu | 4,672 | 7,195 | 72 | 2,556 | 3,863 | 1,317 | --- | 7,736 | 4,203 |
| Fractionated fatty acids C12 or lower, inc. capric | 817 | 3,264 | --- | 4 | 1,950 | 75 | 1,084 | 3,113 | 968 |
| Lauric and/or myristic content of 55% or more | 2,434 | 1,344 | 44 | 439 | 648 | 310 | 1 | 1,398 | 2,424 |
| Total – saturated fatty acids | 30,586 | 51,540 | 4,336 | 17,725 | 33,924 | 1,836 | 1,542 | 54,827 | 31,835 |
| **UNSATURATED** | | | | | | | | | |
| Oleic acid (red oil) | 13,704 | 15,722 | 333 | 7,096 | ND 300<br>SD 4,843<br>MD 2,446 | 462 | 924 | 16,071 | 13,688 |
| Animal fatty acids other than oleic (I.V. 36 to 80 | 4,019 | 16,649 | --- | 2,260 | 8,436 | 679 | 4,409 | 15,784 | 4,884 |
| Vegetable or marine fatty acids (I.V. max. 115) | --- | 29 | 25 | --- | 28 | --- | --- | 28 | 26 |
| Unsaturated fatty acids (I.V. 116 to 130) | 4,462 | 3,812 | 13 | 497 | 3,218 | --- | 1,350 | 5,065 | 3,222 |
| Unsaturated fatty acids (I.V. over 130) | 2,132 | 2,362 | 78 | 78 | 1,773 | 25 | 278 | 2,154 | 2,418 |
| Total unsaturated fatty acids | 24,317 | 38,574 | 449 | 9,931 | 21,044 | 1,166 | 6,961 | 39,102 | 24,238 |
| TOTAL all fatty acids, saturated & unsaturated | 54,903 | 90,114 | 4,785 | 27,656 | 54,568 | 3,002 | 8,503 | 93,729 | 56,073 |

SP – single pressed; DP – double pressed; TP – triple pressed
ND – not distilled; SD – single distilled; MD – multiple distilled

## New olefin manufacturing process announced

A new olefin manufacturing process, Thermal Regenerative Cracking (TRC), has been announced by Gulf Oil Chemicals Co., Gulf Canada Ltd. and Stone & Webster Engineering Corp. A $15 million pilot demonstration plant has been built in Baytown, Texas. The new process reduced ethylene production cost by up to 20%, the firms said. □

## Tall oil fatty acids & statistics, in thousand pounds

| Month: | 2% & OVER ROSIN CONTENT | | LESS THAN 2% ROSIN CONTENT | |
|---|---|---|---|---|
| | OCTOBER | Percent change from SEPT 1979 | OCTOBER | Percent change from SEPT 1979 |
| Stock on hand OCTOBER 1, 1979 | 13,150 | – 4.7 | 10,638 | + 68.2 |
| Production | 21,550 | + 45.9 | 17,285 | – 1.7 |
| Purchases & receipts | 423 | + 185.8 | 0 | 0 |
| Disposition | | | | |
| Domestic | 18,100 | + 36.0 | 13,499 | + 10.6 |
| Export | 1,682 | – 25.5 | 3,631 | + 241.9 |
| Total disposition | 19,782 | + 27.1 | 17,130 | + 29.1 |
| Net disposition* | 19,359 | + 25.5 | 17,130 | + 29.1 |
| Total stock OCTOBER 31, 1979 | 15,341 | + 16.7 | 10,793 | + 1.5 |

*Net – Less purchases & receipts.
Definition: Fatty acids fractionated from crude tall oil having a minimum of 90% fatty acids, not including rosin acids. Primary fractions containing less than 90% fatty acids are classified as distilled tall oils.

## Margarine microcomputer developed

A microcomputer to specify use of fats and oils in margarine based on desired consistency and raw material prices has been developed by the Swedish Institute of Surface Chemistry and C.E. Basts Ltd. of Denmark.

Vagn Jespersen, director of research for the Danish firm, said the computer will determine appropriate mixtures of fats to meet product quality standards, taking into account daily price changes of various oils and fats.

Phil Cand and Inga Wilton directed work at the Swedish Institute. □

## New Ross Chem plant completed

Ross Chem Inc. has announced completion of new manufacturing and laboratory facilities in Mountain Inn, South Carolina, to produce antifoams/defoamers for use in food contact products, some edible foods and pharmaceuticals. □

# Publications

## Book reviews

*Techniques for the Retrieval of Chemical Information,* edited by A.K. Keng, (Pergammon Press, 1978, 121 p., $18.75).

This book represents the proceedings of the IUPAC symposium on Techniques for the Retrieval of Chemical Information, held in London in November 1976. The main lectures were apparently published in "Pure and Appl. Chem." Vol. *49* 1977, before being reprinted in the present volume.

In this age of computers, it is nice to contemplate their use to lighten the burden of chemical searches. The literature of chemistry has become so complex and cumbersome that this task is very time consuming and sometimes less than rewarding. Even though this book is now out of date, it contains useful information concerning the various data bases.

A listing of the chapters would not be informative in this review, but several chapters are noteworthy: those which discuss the Index Chemicus registry, retrieval and storage of mass spectral information, and a system for retrieval of infrared spectral data were particularly interesting to this reviewer. This was an informative little book; I look forward to the day when there is an affordable system terminal at my desk, as suggested by E. Garfield. This is feasible and hopefully on its way to the scientist.

E.G. PERKINS
Department of Food Science
University of Illinois
Urbana, IL 61801

*Topics in Automatic Chemical Analysis,* J.K. Foreman and P.B. Stockwell, (John Wiley & Sons Inc., New York, NY, 1979, 313 p. $52.50).

This is a new series which surveys the recent developments in automatic chemical analysis. During these days of increased sample analysis to be accomplished with more limited budgets, the feasibility of automatic analyses is being closely examined by many laboratories. The appearance of this book is therefore timely. The volume is divided into eight chapters, each authored by an expert in the area. These are: Philosophy and Practice of Automatic Analysis; In-House Design and Construction of Automatic Analyses for Laboratory Use; Automatic Individual Analysis in Wet Chemistry Laboratories; Automa-

ted Reaction Rate Methods of Analysis; Applications of Technicon Auto-Analyzer II to the Analysis of Water-Soluble Vitamins in Foodsstuffs; Application of Imaging Detector for Analytical Spectroscopy; A Critique of Automated Methods of Clinical Analysis; Application of Automation to Quantitative Gas Chromatography in Petrochemical Analysis; and Automating Large-Scale Routine Analysis of Cigarette Smoke.

This is an interesting book; it gives an overview of what is happening on a wide front of analytical automation. Numerous drawings and photographs add to the clarity of each chapter. This book will be useful to the chemist contemplating getting involved in laboratory automation. Its circulation will probably be restricted to the larger libraries due to its very high price.

E.G. PERKINS
Department of Food Science
University of Illinois
Urbana, IL 61801

*Encyclopedia of Electrochemistry of the Elements: Organic Section.* Edited by Allen J. Band and Henning Lund. (Marcel Dekker Inc., New York, NY, 1978; subscription price $63.75 per volume, or $75.00 each.

Volume 11 (349 p.) initiates the organic section of the encyclopedia and deals with hydrocarbons and hydroxy compounds. Volume 12 (512 p.) deals with all types of carbonyl compounds, carboxylic acids, esters and anhydrides as well as organic sulphur compounds. Volume 13 deals with organometallic compounds, azo, azoxy and diazocompounds, compounds with three or more nitrogen atoms in a chain, and derivatives of hydroxylamine and hydrazine.

These volumes were designed to provide a critical review and comprehensive coverage of the electrochemical information scattered through the literature. Organic lipid chemists usually remember the Kolbe reaction, used in the synthesis of fatty acids. Other examples applicable to lipid chemistry are found in these volumes. They should be of interest to graduate students and researchers who may wish to apply electrochemical techniques to their problems involving organic synthesis.

E.G. PERKINS
Department of Food Science
University of Illinois
Urbana, IL 61801

*Polynuclear Aromatic Hydrocarbons: Third International Symposium on Chemistry and Biology – Carcinogenesis and Mutagenesis,* Edited by P.W. Jones and P. Leber, (Ann Arbor Science Publishing Inc., Ann Arbor, MI 48106, 1979, 892 p., $49.95).

This book represents an up-to-date view of current research in polynuclear aromatic hydrocarbon (PAH) chemistry and biology. The book contains 56 "chapters" detailing this research, contributed by over 175 authors. It is not possible to review such a book in great detail because of its wide range. However, a majority of the papers seem to use a great variety of analytical technique; of particular interest to this reviewer were articles concerned with the gas chromatographic and high performance liquid chromatography analysis of PAH. These papers utilized the latest in analytical methodology. The index seemed fairly comprehensive, allowing access to the key words used in the paper. The text was clearly printed and the many figures reproduced well. In view of the current emphasis on carcinogenesis – dietary, chemical and environmental, this book is a good addition to a technical laboratory.

E.G. PERKINS
Department of Food Science
University of Illinois
Urbana, IL 61801

*Chemistry Careers,* by L.B. Taylor, Jr., (Franklin Watts, New York, NY. 62 p., 1978, $4.90).

This slim volume is one of a series of concise career guides which describe job requirements, opportunities, salary ranges, necessary personal qualities and education required. It would be most useful in high school libraries, rather than industry. Together with the additional reading material list this book is a fine starting point for students interested in finding out more about chemical careers.

E.G. PERKINS
Department of Food Science
University of Illinois
Urbana, IL 61801

*9th Scandinavian Symposium on Lipids – Proceedings,* Edited by Reinhard Marcuse, (Lipidforum, c/o Swedish Food Institute, Fack, S-400 23 Göteberg, Sweden 397 p. 1977).

This symposium, comprising 74 papers, was divided into 13 sections. Included are possible future production of oilseeds in Scandinavia, modern lipid analysis, polyunsaturated and isomeric fatty acids, membrane lipids, sterol metabolism, technical processes, serum lipoproteins, plant lipids: composition and biosynthesis, lipolytic enzymes, surface active lipids in foods, optically active triglycerides, lipid oxidation and the function of adipose tissue. Surprisingly, this small, 5½" x 8" paperback, produced from camera-ready copy, is in English. The range of topics is unusually broad and varied, ranging from processing to biomedical subjects.

A volume of this type has a brief transitory value as the record of a meeting and serves as a source of data in the case of those papers which have not been previously published or are in the process of being published elsewhere. This is, however, a particularly nice collection of short reports.

LLOYD A. WITTING
Supelco, Inc.
Bellefonte, PA 68123

*Aromatic and Heteroaromatic Chemistry, Vol. 7,* by Senior Reporters H. Suschitzky and O. Meth-Cohn, (The Chemical Society, 1979, 368 p., $72.50).

Volume 7 of this literature survey series is based essentially on volumes 87 and 88 of Chemical Abstracts. The aim of the series, as expressed in an earlier volume, is to provide systematic and comprehensive review coverage of the prog-

ress in major areas of chemistry under consideration. The individual reviewers have again been asked to comment on highlights in their subject, a highly commendable and worthwhile objective; many of the salient and significant research contributions in the individual chapters are listed in the introduction to the volume.

The current book contains surveys of the following subjects (reporters' names in parentheses): Three- and Four-membered Ring Systems (R.C. Storr); Five-membered Ring Systems (G.V. Boyd); Six-membered Homocyclic Compounds (A.W. Somerville); Six-membered Heterocyclic Systems (R.K. Smalley); Seven-membered Ring Systems G.R. Proctor); Medium-sized Rings and Macrocycles (O. Meth-Cohn); Electrophilic Substitution (D.J. Chadwick); Nucleophilic Substitution Reactions (G.M. Brooke); Aromatic Substitution by Free Radicals, Carbenes, and Nitrenes (R.S. Atkinson); and Porphyrins and Related Compounds (A.H. Jackson). The coverage in all of these areas is excellent.

Although references to aliphatic and lipid chemistry are relatively sparse, there is so much good chemistry reviewed that the book is recommended highly for all organizations conducting modern organic chemical reactions. The volume is replete with equations, reaction mechanisms, and a huge list of references. As usual, the price will discourage individual purchases, but all technical libraries should acquire a copy.

DANIEL SWERN
Professor of Chemistry
Temple University
Philadelphia, PA 19122

## New Publications Received

*Trace Organic Analysis: A New Frontier in Analytical Chemistry,* U.S. Department of Commerce/National Bureau of Standards, Edited by H.S. Hertz and S.N. Chesler, 817 p., 1979. *Mass Spectrometry in Biochemistry and Medicine,* Vol. 2, Edited by A.Frigerio, (Plenum Publishing Inc., 492 p. 1979, $45). *Carotenoids-5,* (IUPAC Symposium), Edited by T.W. Goodwin, (Pergamon Press, 886 p., 1979, $36). *Chemistry Reviews,* Vol. 1, Soviet Scientific Reviews, Section B, Edited by M.E. Vol'pin, (Harwood Academic Publishers, 277 p., 1979, $46). *Metal Vapour Synthesis in Organometallic Chemistry,* Edited by J.R. Blackborow and D. Young, (Springer-Verlag New York, 202 p., 1979, $53.90). *Flow-Induced Crystallization in Polymer Systems,* Edited by R.L. Miller, Midland Molecular Monographs, Vol. 6, (Gordon and Breach Science Publishers, Inc., 370 p., 1979, $42.50). *Organics Analysis Using Gas Chromatography Mass Spectrometry,* Technicques and Procedures Manual, by W.L. Budde and J.W. Eichelberger, (Ann Arbor Science Publishers, Inc. 235 p., 1979). *Report of the High Density Lipoprotein Methodology Workshop,* Edited by Kenneth Lippel, (U.S. Department of Health, Education and Welfare, [NIH 79-1661], 399 p., 1979). *Radiation Protection,* by Commission of the European Communities, (Harwood Academic Publishers, 854 p., 1979, $68.50). *Ion Chromatographic Analysis of Environmental Pollutants,* Vol. 2, Edited by J.D. Mulik and E. Sawicki, (Ann Arbor Science Publishers, Inc., 435 p., 1979). □

# Lipids

## JANUARY 1980

Specificity of Rice Germ Lipoxygenase
Interaction of Porcine Pancreatic Colipase with Triton X-100
Lipofuscin in Vitamin E Deficiency and the Role of Retinol
Phosphoinositides in Subfractions of Myelin
Partial Synthesis of [1-$^{14}$C] Phytanic Acid
24(*E*)-Ethylidene Sterols in Higher Plants
Phosphatidic Acid Phosphohydrolase of Mammary Tissue
Origin of Carotene in Bovine Milk Fat Globules
Mononuclear Cell Cholesteryl Ester Hydrolase Activity
Lipoxygenase-Linoleate Decomposition Products
Nystatin and Amphotericin B Resistant Tobacco Callus
Reduction of EFA Deficiency by Feeding a Low Iron Fat Free Diet
Separation of Phospholipids in Thin Layer Chromatography
Desaturation of Isomeric *cis* 18:1 Acids
$^{1}$H-NMR Identification of Chondrillasterol in Higher Plants
220 MHz $^{1}$H NMR of C-24 Epimeric Scallop Sterols

## FEBRUARY 1980

Intestinal Metabolism of Differently Saturated Plasma FFA
Phospholipid and Fatty Acid Turnover in Coho Salmon
Interaction of $HDL_2$ with Saturated Phosphatidylcholines
HPLC of Oxidized and Unoxidized Molecular Species of Soy PC
Liver and Serum Lipids and Lipoproteins of Rats Fed 5% L-Lys
Inhibition of Desaturases by *trans* Acids
Hepatic Lipogenesis in Nephrotic Rat
On the Role of 24-Hydroxylation in Cholic Acid Formation
10α-Cucurbita-5,24-dien-3β-ol from Gourd Seed Oil
The Quantitative Estimation of Cholesterol α-oxide in Eggs
Neutral Lipids in the Tissues of the Oyster
Cholesterol Absorption
Analysis of Alpha Tocopherol in Red Blood Cells by GLC