

# Publications

## Book Reviews

**Compendium of Safety Data Sheets for Research and Industrial Chemicals**, edited by L.H. Keith and D.B. Walters (VCH Publishers, 303 NW 12th Ave., Deerfield Beach, FL 33442-1705, 1985, three vols., 1862 pp., \$265).

There has been a growing awareness of the need to communicate the hazards associated with chemicals in the workplace. This is reflected in the OSHA Standard (29CFR1910.1200) to be implemented in November 1985 and numerous state laws enacted within the last few years. One way in which this hazard communication will take place is through the distribution by chemical manufacturers of material safety data sheets which must include a variety of specified types of information. In general, such information is fairly readily amassed by computer search and retrieval from available data bases. It is not surprising, therefore, that several compilations of information on hazardous chemicals, such as this compendium, have appeared recently as multi-volume books or in loose-leaf binder format. One of the authors, Douglas B. Walters, is head of the Chemical Health and Safety Section of the National Toxicology Program, National Institute of Environmental Health Sciences. It is stated in the preface that the majority of the 867 listed compounds are drawn from a list of chemicals selected for study by the National Toxicology Program. One tends to think of lipids as relatively innocuous materials, but this list and these volumes include such chemicals as lauric acid, oleic acid and methyl oleate. Similarly sucrose with an ACGIH published threshold limit value (TLV) is specifically included in OSHA's definition of hazardous chemicals.

The safety data sheets each are divided into six sections: (a) identity, which includes name, synonyms, formula, molecular weight, CAS number and NIOSH registry number; (b) physical properties including flash point and reactivity; (c) shipping; (d) health hazards, which include acute hazards, symptoms and exposure limits; (e) first aid, and (f) additional information which includes storage, spills and leakage, suggested gloves, uses and additional reference sources. These three volumes contain an enormous amount of information of varying quality and accuracy. The first aid section is boiler plate reproduced identically for each compound. One wonders if the same response is really indicated for skin contact with phenol and methyl oleate, for ingestion of parathion and methyl oleate, for eye contact with formaldehyde and methyl oleate or for inhalation of beta-propiolactone and lauric acid. The potential reader is also particularly cautioned with regard to omission of data on carcinogenicity. The OSHA standard specifically requires inclusion of this information, whereas this compendium includes this information in only a very few cases. In the case of beta-propiolactone, this compound is listed (29CFR1910.1013) as a cancer suspect agent which is to be handled only in regulated areas registered with OSHA. It should be noted that "cancer suspect agent" is the strongest term used in this section of the OSHA Standard and the 16 chemicals included individually by names are, in fact, the really nasty, highly regulated materials for which very positive evidence of carcinogenicity is available. The present compendium notes without further comment that

CGIH lists this compound as a suspected carcinogen. Anyone preparing a material safety data sheet according to the OSHA Standard is required to consult the U.N. International Agency for Research on Cancer (IARC) monographs. The compendium was cross-checked for compounds for which these monographs list positive reports of carcinogenicity. Either these monographs were not part of the literature searched or the authors decided not to routinely include this category of information.

Obviously a compendium, no matter how massive, cannot include all the information desired by all possible users. On the basis of the title, one is led to hope for a series of model material safety data sheets complying with the OSHA standards. As long as one clearly understands that this is apparently not the purpose and content of this compendium, it may be appreciated as a worthy compilation of a massive amount of useful, timely information and some possibly, but not always, appropriate boiler plate.

Lloyd A. Witting

**Oxygen Radicals in Chemistry and Biology**, edited by Wolf Bors, Manfred Saran and David Tait (Walter de Gruyter & Co., Genthinerstrasse 13, D-1000 Berlin 30, West Germany, 1984, 1029 pp., US \$114, DM 250).

This volume is the proceedings of the Third International Conference held in Neuherberg July 10-15, 1983. The proceedings of a competing series of meetings were reviewed in this column in October 1984 (*Oxygen Radicals and Their Scavenger Systems, Vol. I: Molecular Aspects*, and *Vol. II, Cellular and Medical Aspects*, edited by Cohen and Greenwald, Elsevier Science Publishing Co., New York, NY). The volume is divided into 11 sections: physicochemical and chemical properties of oxygen radicals; generation and reactions of inorganic and organic radicals; activated oxygen species in fatty acid and lipid peroxidation; oxygen activation by metal complexes and metalloenzymes; photooxidation and singlet oxygen; oxygen radicals in radiation biology; oxygen toxicity and detoxifying systems; superoxide dismutases; physiological aspects of oxygen radicals; medical aspects of oxygen radicals, and forum discussion. These proceedings enlarge upon a practice seen more frequently nowadays in symposium volumes, that of completely integrating poster papers into the volume. Furthermore, the original invited papers are rearranged in sequence to better accommodate the poster papers and maintain a systematic flow of topics.

Presumably the poster papers may be distinguished from the plenary papers by the lack of appended discussion. Portions of the discussion might be euphemistically described as free-wheeling or disputative, but rude would be a better word. With about 140 papers it is not possible to comment in detail on individual papers. The long section on lipid peroxidation chaired by Aust (Michigan State) may be of special interest to oil chemists. The presence of six papers on medical aspects, however, is particularly noteworthy. Topics in this latter section include pulmonary vascular injury, rheumatoid arthritis, ankylosing spondylitis, systemic lupus erythematosus, insulin dependent diabetes and

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inflammation. The 11 sections contain something for almost everyone. Those who find the model system work a bit abstract may delight in some of the fine points of enzyme characterization or vice versa. Singlet oxygen continues to find proponents and detractors. In a volume of this size, any reader will find a few negative points. The numerous authors still equating lipid peroxidation and malonaldehyde formation are this reviewer's pet peeve. Then there are those who point out the phospholipid hydroperoxides are not substrates for selenium-dependent glutathione peroxidase a decade after Paul McCay showed the oxygenated fatty acids were rapidly cleaved from the phospholipids.

Overall, the reports of the solid incremental progress (plenary papers) of newcomers. It is to be hoped that this better balanced approach may eventually result in an upgrading of symposium volumes in general. This appears to be a very reasonable, if expensive, volume produced relatively rapidly after the symposium from which it derives. It can be recommended to all potential readers interested in the biochemical and medical aspects of lipid peroxidation.

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**Advances in Chromatography, Vol. 24**, edited by J.C. Giddings, E. Grushka, J. Cazes and Phyllis R. Brown (Marcel Dekker Inc., 270 Madison Ave., New York, NY 10016, 1984, 335 pp., \$65 US and Canada, \$78 elsewhere).

This continuing series of volumes presents current reviews of specialized topics in chromatography. The current volume contains chapters dealing with basic statistical methods for chromatographic data, multifactor optimization of HPLC conditions, statistical and graphical methods of isocratic solvent selection for optimal separation in liquid chromatography, electrochemical detectors for liquid chromatography, reversed-flow gas chromatography applied to physicochemical measurements, development of high speed counter-current chromatography, determination of the solubility of gases in liquids by gas liquid chromatography, and multiple detectors in gas chromatography. Both a subject and author index are included. Each chapter has a detailed outline as part of its table of contents entry. The chapters on solvent optimization methodology should be of interest to all workers in the area of HPLC, while other chapters are aimed at those with more specific interests. This volume is a good addition to the chromatographic library.

E.G. Perkins

**The Practice of Frying**, by Kurt Berger (PORIM Technology No. 9, May 1984, 34 pp., Malaysian \$2.50), and **Citric Acid in the Processing of Oils and Fats**, by K.S. Law and Kurt Berger (PORIM Technology No. 11, July 1984, 32 pp., Malaysian \$2.50), Palm Oil Research Institute of Malaysia, PO Box 10620, Kuala Lumpur, Malaysia.

The booklet on frying deals with the technology of fry-

ing and is intended to be a modern technological guide to frying practices as well as presenting pertinent summaries of chemical and nutritional information. The "citric acid" booklet deals with technology involving the use of citric acid in fat and oil processing as well as its related chemistry. Both of these booklets are filled with useful information, well put together and easy to read. They provide a less technical presentation of these important topics and would be useful reading for persons involved in the production and use of edible fats and oils.

E.G. Perkins

**Rice Bran Oil Industry**, by Abhay Sah and U.K. Srivastava (Concept Publishing Co., New Delhi, India, 1985, 219 pp., \$30).

The book provides background for those interested in the technologies of extraction and refining of rice bran oil. It is designed to guide those involved in either setting up or operating existing operations. Topics dealt with are as follows: rice bran oil-potential, rice bran, extraction technology, operational aspects—managerial issues, and appendices. The appendices contain lists of solvent extraction plants, plants and equipment for extraction, lending institutions, and a list of solvent extraction plant manufacturers (virtually all in India). This book is printed on poor quality paper; however, the tables and figures appear adequate. There is a short citation section at the end of chapters, and a larger, selected bibliography at the end of the book.

E.G. Perkins

**Hydrogenation of Soybean Oil, Proceedings of the Third ASA Symposium of Soybean Processing—Hydrogenation of Soy Oil** (American Soybean Association, West Europe office, Centre International Rogier, Box 521, Brussels, Belgium, 1984, 140 pp., free).

The proceedings of this symposium reflect papers presented June 7-9, 1983, in Antwerp, Belgium. Thirteen papers are published in the booklet as are the roundtable discussions. The papers deal with analytical control, catalysis, margarine production, crystallization and tempering of margarine, formulation of margarine and shortening from soybean oil, and the nutritional aspects of products derived from soybean oil by hydrogenation. Each presentation is completed with a list of citations. The booklet is not indexed, and there is no indication of its editorial status, or whether the papers were subjected to peer review prior to publication. However, this booklet is a valuable addition to the more practical literature and will provide interesting and enlightening reading for those persons involved in the edible oil production industry.

E.G. Perkins

**Rodd's Chemistry of Carbon Compounds, Supplements to the 2nd Edition**, edited by M.F. Ansell. **Supplement to Volume I, Aliphatic Compounds, Part FG**, 1983, 404 pp., US \$119.25; **Supplement to Volume III, Aromatic Compounds, Part A**, 1983, 438 pp., US \$119.25; **Supplement to Volume IV, Heterocyclic Compounds, Part A**, 1984, 540 pp., \$140.75 (Elsevier Science Publishing

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Co., PO Box 1663, Grand Central Station, New York, NY 10163, or Elsevier Science Publishers, PO Box 211, 1000 AE Amsterdam, The Netherlands).

This continuing series of reference works in the field of organic chemistry needs no introduction. Its value lies in its broad coverage of the field, wherein an expert in one field can readily access recent developments in another. The format involves a brief discussion of the compound, its synthesis and/or reactions. Literature citations are included within the discussion. A detailed keyword type index is also included.

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## New Publications

**Insect Management for Food Storage and Processing**, edited by Fred J. Bauer, American Association of Cereal Chemists, 3340 Pilot Knob Rd., St. Paul, MN 55121, 1984, 384 pp., \$45 AACC members, \$65.

**Handling of Food Without Change of Quality—Dream or Reality?**, edited by J.C. Somogyi, S. Karger AG, Basel, PO Box CH-4009, Basel, Switzerland, 1985, 109 pp., US \$58.75, DM 117, S Fr. 98. In English and German, based on a symposium held by the International Foundation for the Promotion of Nutrition Research and Nutrition Education.

**Fugitive Emissions of Vapours from Process Equipment**, British Occupational Hygiene Society Technology Committee, Science Reviews Ltd. in association with H&H Scientific Consultants Ltd.,

28 High Ash Dr., Leeds LS17 8RA, England, 1984, 67 pp., US \$22 plus postage.

**Surowce tłuszczowe ("Fat Raw Materials")**, by Prof. dr. inż. Henryk Niewiadomski, Wydawnictwa Naukowo-Techniczne, Warsaw, Poland, 1984, 343 pp., Polish Zloty 260 (in Polish).

**Awareness of Information Sources for Chemical Engineers**, edited by Theodore B. Selover Jr. and Max Klein, AIChE Symposium Series Vol. 80, No. 237, American Institute of Chemical Engineers, Publication Sales Department, 345 E. 47th St., New York, NY 10017, 1984, 132 pp., AIChE members \$15; nonmembers \$30.

## New coconut publication

The Asian and Pacific Coconut Community (APCC) has issued a new publication, *CORD* (coconut research and development), to promote coordination of research in coconut producing countries. The first issue of the biannual publication was to be released at the end of July. Price, including postage, is US \$10 for those in Asia and Pacific countries, US \$12.50 for readers in the U.S. and Europe. For copies or more information, contact APCC Secretariat, PO Box 343, Jakarta Pusat, Indonesia.

## Errata

On page 508 of the March 1985 issue of *JAACS*, the correct citation should have been *Oilseeds: Oils and Fats, Vol. 1—Raw Materials*, by E. Bernardini, translated by V. Colucci and P. Martinelli, 642 pp., and *Vol. 2—Oils and Fats Processing*, by E. Bernardini, translated by P. Martinelli, 616 pp. (B.E. Oil Publishing House, via G. Falla, 6300128, Rome, Italy, 1984, \$130 set).

# Polyunsaturated Fatty Acids

A monograph edited by Wolf-H. Kunau and Ralph T. Holman, 258 p. Hardbound—\$20 for AOCS members and students, \$30 for nonmembers.

This monograph records the contributions of twenty noted researchers who contributed to the 1975 AOCS symposium on unsaturated fatty acids. The symposium was premised on the increasing need to combine separate disciplines in lipid research. Speakers thus were invited who specialized in chemical, physical and biochemical properties of lipids. Topics included biosynthesis, oxidation and regulation of metabolism, analysis, chemistry/physicochemistry, and experimental and clinical data. Illustrations and references enhance this collection.

Please send me \_\_\_\_\_ copy/copies of Polyunsaturated Fatty Acids.

Mail this coupon to: **American Oil Chemists' Society,  
508 S. Sixth Street  
Champaign, IL 61820**

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