Abstracts

• Fats and Oils

DECOMPOSITION OF DILUTE SOLUTIONS OF POTASSIUM PERMANGANATE IN THE PRESENCE OF SALTS OF FATTY ACIDS AS CATALYSTS: PART-II. P.D. Jadhav, L. Pardeshi, A. Rasheed and R.A. Bhobe, *J. Indian Chem. Soc.* 55, 650 (1978). The catalytic properties of some of the salts of fatty acids were known for a long time and this prompted the present authors to undertake the kinetic study of decomposition of potassium permanganate, at temperatures 30°, 40°, 50° and 60° by conventional procedure. Exhaustive readings were taken for a set of dilute $KMnO_4$ solutions in the presence of salts of fatty acids, and another set using potassium nitrate as an added electrolyte. The depletion of $KMnO_4$ was recorded by titration with oxalic acid and from these the authors have calculated the order of reaction employing first and second order expressions. Energy of acitivation is obtained for the potassium nitrate, from the plot of lnK vs 1/T.

THERMAL DECOMPOSITION OF MAGNESIUM SOAPS. R.P. Varma and K. Kumar, *J. Indian Chem. Soc.* 55, 675 (1978). Thermal characteristics of magnesium soaps have been studied on an automatic recording thermobalance at a heating rate of 250°/hr. under an ordinary air atmosphere. I.R. spectra and chemical analysis have revealed that the soap molecule is free from water of crystallization. The thermogravimetric analysis has suggested the probable mechanism of decomposition of magnesium soaps.

POTENTIAL ANTITUBERCULAR DRUGS. PART I. SYNTHESIS OF DERIVATIVES OF MYRISTIC AND STEARIC ACIDS. K. Prasad and M.M. Thakur, *J. Indian Chem. Soc.* 55, 722 (1978). The preparation and characterisation of few α-aryloxy, α-thioaryloxy and α-arylsulphonyl derivatives of myristic and stearic acids are described. Their antitubercular activity are also reported.

THE LIPID COMPOSITION OF A BARLEY MUTANT LACKING CHLOROPHYLL B. P. Bolton, J. Wharfe and J.L. Harwood, *Biochem. J.* 174, 67–72 (1978). The acyl-lipid composition of a barley mutant that contained no detectable chlorophyll *b* was studied. This mutant contained chloroplasts that were much less organized than chloroplasts of normal barley. The mutant contained all the normal acyl lipids, with small increases in the relative concentration of phosphatidylglycerol and diacylsulphoquinovosylglycerol compared with other acyl lipids.

DERIVATIVES SUITABLE FOR GC-MS. C.J.W. Brooks, C.G. Edmonds, S.J. Gaskell and A.G. Smith, *Chem. Phys. Lipids* 21, 403–16 (1978). The preparation of derivatives is often advantageous or necessary for GC-MS, for a variety of reasons. In respect of GC, these include the need for conferring volatility or stability; the improvement of chromatographic behaviour or separation; information on functional groups; and provision for selective detection. In MS, derivatives are important for producing characteristic mass shifts and for directing particular modes of fragmentation under electron impact or chemical ionisation. Recent developments in instrumentation and in the use of computer data systems are outlined.

THE APPLICATION OF MASS SPECTROMETRY IN THE STRUCTURAL ELUCIDATION OF GLYCOSPHINGOLIPIDS. H. Egge, *Chem. Phys. Lipids* 21, 349–60 (1978). Mass spectrometry has been successfully applied to the analysis of permethylated glycosphingolipids, with and without reduction, as well as of permethylated gangliosides after reduction and silylation. The results obtained by several groups of workers are reviewed. From the data available it can be stated that, with the aid of mass spectrometry, conclusive evidence may be obtained concerning the carbohydrate sequence as far as the type of sugar is concerned such as hexose, deoxyhexose, hexosamine, and neuraminic acid residues.

DIENOIC ACIDS, SYNTHESIS AND ^{13}C NMR SPECTRAL ANALYSIS. N. Frighetto, C.L.P. Silveira, F. de A.M. Reis, E.G. Magalhaes and E.A. Ruveda, *Chem. Phys. Lipids* 22, 115–20 (1978). A preparation of E,E-2,4-dienoic acids, together with the assignments of their ^{13}C NMR signals and the shifts observed after transformation into their sodium salts, is described. The stereochemistry of the double bonds of 3,5-dienoic esters, obtained from 2,4-dienoic acids, on the basis of ^{13}C NMR data, is also presented.

SOFT IONIZATION MASS SPECTRAL METHODS FOR LIPID ANALYSIS. D.E. Games, *Chem. Phys. Lipids* 21, 389–402 (1978). Chemical ionization (CI), field ionization (FI) and field desorption (FD) are sometimes preferable to electron impact (EI) mass spectrometry as methods for obtaining abundant high-mass ions from lipids. FD often provides mass spectral information which is unobtainable by other methods, and is the best method for obtaining molecular weight information. Fragment ions are observed in the spectra from all the ionization methods, which provide structural information complementing that obtainable from an EI spectrum. Using CI, high-mass ions carrying a large proportion of the total ionization current can be monitored by selected ion monitoring, resulting in enhanced sensitivity for quantitative studies in some cases.

PLASMALOGENS IN THE YEAST PULLULARIA PULLULANS. F.M. Goni, J.B. Dominguez and F. Uruburu, *Chem. Phys. Lipids* 22, 79–81 (1978). Choline and ethanolamine phosphoglycerides have been found in plasmalogen form in *P. pullulans*. Plasmalogens had not been described in yeasts up to now.

SEPARATION OF SULFATED BILE ACIDS BY HIGH-PERFORMANCE LIQUID CHROMATOGRAPHY. J. Goto, H. Kato and T. Nambara, *Lipids* 13, 908–9 (1978). In order to establish a new method for simultaneous determination of sulfated bile acids without deconjugation, separation of 3-sulfates of unconjugated, glyco- and tauroconjugated bile acids by high-performance liquid chromatography has been undertaken. The preliminary experiment indicated that reversed phase chromatography on an ODS SC-02 column using ammonium carbonate aqueous solution/acetonitrile as a mobile phase would be promising. The use of 0.5% ammonium carbonate/acetonitrile (26:8 and 20:8, v/v) was found to be suitable for complete resolution of sulfated cholate, chenodeoxycholate, deoxycholate, lithocholate and their glyco- and tauroconjugates.

THE OCCURRENCE OF A FURANOID FATTY ACID IN HEVEA BRASILIENSIS LATEX. H. Hasma and A. Subramaniam, *Lipids* 13, 905–7 (1978). Methyl esters from the triglyceride fraction of the neutral lipids of natural rubber latex were found by gas liquid chromatography to contain about 90% of a furanoid acid. Spectroscopic analysis identified the acid as 10,13-epoxy-11-methyloctadeca-10,12-dienoic acid.

CHARACTERIZATION OF AMINOALKYLPHOSPHONYL CEREBROSIDES IN MUSCLE TISSUE OF TURBO CORNUTUS. A. Hayashi and F. Matsuura, *Chem. Phys. Lipids* 22, 9–23 (1978). From muscle tissues of the marine snail *(Turbo cornutus)* aminoalkylphosphonyl cerebrosides, which had been shown to be present in visceral parts, were isolated. Their structure was determined by degradative methods and by characterization of components by gas chromatography-mass spectrometry. The fatty acids of the fraction were mainly palmitic (53.3%) and 2-hydroxy palmitic acid (14.6%). The long chain bases were mainly dihydroxy $C_{22:2}$ (36.6%), $C_{18:1}$ (14.6%) and $C_{18:2}$ (11.3%), and trihydroxy bases were also found as minor components.

THE REACTION STOICHIOMETRY BETWEEN OZONE AND UNSATURATED FATTY ACIDS IN AN AQUEOUS ENVIRONMENT. R.L. Heath, *Chem. Phys. Lipids* 22, 25–37 (1978). The light absorption of ozone in an air stream allowed the monitoring of reactions of ozone with unsaturated fatty acids in solution. The kinetics for the reaction of ozone with linolenic acid was found to be of a pseudo-first-order after the first few minutes and did not vary with the concentration of ozone