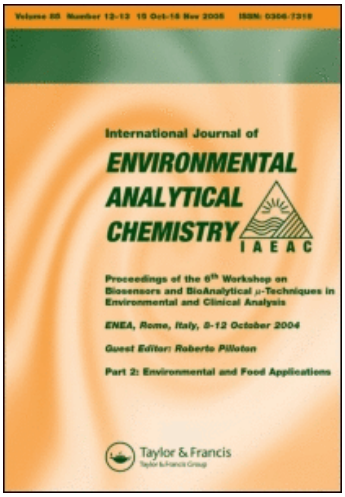

International Journal of Environmental Analytical Chemistry
Publication details, including instructions for authors and subscription information:
http://www.informaworld.com/smpp/title~content=t713640455

Abstracts to Forthcoming Papers

To cite this Article (1972) 'Abstracts to Forthcoming Papers', International Journal of Environmental Analytical Chemistry, 2: 2, 179 — 181
To link to this Article: DOI: 10.1080/03067317208073257
URL: http://dx.doi.org/10.1080/03067317208073257

Intern. J. Environ. Anal. Chem. 1972, Vol. 2, pp. 179–181

Printed in Great Britain

Abstracts to Forthcoming Papers

DIE BESTIMMUNG VON MET-HÄMOGLOBIN IM MENSCHLICHEN BLUT

W. Pilz, I. Johann, und A. T. Boo, *Aus dem Institut für Klinische Chemie und Analytische, Chemie der Arztlichen Abteilung der Farbenfabriken, Bayer AG, Leverkusen-Bayerwerk, Deutschland.*

The cyanide and carbon monoxide methods for the quantitative determination of Methemoglobin in human blood are evaluated critically and assessed as to their suitability for routine analysis.

The CO method is cumbersome and requires about 120 min for one analysis, with an error up to ±7·5%. The cyanide method requires about 30 min and can yield an accuracy of ±2·0% under routine analysis conditions. This method as modified by the authors is capable of an accuracy of ±0·3%, with an analysis time of 30 min.

Zur quantitativen Bestimmung der Konzentration von Met-Hb im menschlichen Blut werden die Cyanidmethode und die Kohlenmonoxydmethode experimentell nachgeprüft, die Ergebnisse verglichen und auf ihre Verwendbarkeit als Routinemethode in der klinischen Chemie untersucht.

Die Kohlenmonoxydmethode ist umständlich (Herstellung von reinem CO!) und benötigt einen Zeitaufwand von ca. 120 Min. Im Routinebetrieb fanden wir Fehler bis zu ±7,5% Met-Hb.

Die Cyanidmethode benötigt einen Zeitaufwand von ca. 30 Min. und erreicht unter Bedingungen des Routinebetriebes eine Genauigkeit von ±2,0% Met-Hb. Diese Methode wurde von uns modifiziert und erreicht jetzt bei einem Zeitaufwand von ca. 30 Min. eine Genauigkeit von max. ±0,3%. Sie wird daher als Standardmethode für die klinische Chemie empfohlen.

THE ORION WATER-HARDNESS ELECTRODE: AN UNEXPECTED RESPONSE TO MAGNESIUM ION

M. E. Thompson, *Canada Centre for Inland Waters, Burlington, Ontario, Canada.*

The Orion water-hardness electrode, while being used to measure magnesium ion activity in a series of calcium-free solutions, displayed some unanticipated changes in potential. As the overall potential change observed for one solution was 183 mV (equivalent to more than six orders of magnitude changes in magnesium-ion activity), several precautions are suggested which should be observed when using this electrode for specific purposes. In particular, it is recommended that the exchanger be pre-equilibrated with an appropriate solution if the electrode is to be used in restricted systems of known chemical composition.

SPECTROPHOTOMETRIC DETERMINATION OF ATMOSPHERIC SULFUR DIOXIDE WITH 4(4-AMINOPHENYLAZO)-1-NAPHTHYLAMINE

G. E. Baiulescu, *Department of Analytical Chemistry, University of Bucharest, Bucharest, Romania* and

P. C. Marcuta and D. M. Marinescu, *Institute of Meteorology and Hydrology, Bucharest, Romania*

The use of a *p*-aminophenylazoicdye, *viz.* 4-(4-aminophenylazo)-1-naphthylamine, is proposed as a spectrophotometric reagent for the determination of atmospheric sulfur dioxide absorbed in sodium tetrachloromercurate solutions. Determinations are made in ethanol-dye-formaldehyde systems displaying a red color at a pH value of 1.3. In the presence of sulfur dioxide solutions the red color turns to a blue one, which has a maximum absorption between 600 and 640 nm. The color development is instantaneous and is sufficiently stable to permit absorbance measurements. The reaction is subjected to interferences of nitrogen dioxide but this can be avoided by the use of an appropriate masking agent. The method allows between 0.07 and 2.4 mcg/ml of sulfur dioxide to be determined. The ratio of sulfur dioxide to ligand in the compound was found to be 1:1. The average of the instability constant was calculated to be 2.5×10^{-5}.

DETERMINATION OF PHTHALATES IN BIOLOGICAL SAMPLES

V. Zitko, *Environment Canada, Fisheries Research Board, Biological Station, St. Andrews, New Brunswick, Canada.*

A cleanup of biological samples is described for the determination of phthalates. It can be incorporated into a cleanup-chromatography procedure used for the determination of chlorinated hydrocarbons. Phthalates, extracted from biological samples with hexane, are partially separated from lipids by chromatography on alumina to yield fractions in which the common phthalate plasticizers can be quantitated by gas chromatography. An additional cleanup is achieved by the extraction of phthalates from hexane into dimethyl formamide. Phthalates can then be confirmed by measurement of fluorescence in concentrated sulfuric acid. Analyses of spiked samples are reported. Dibutyl phthalate was detected in eggs of double-crested cormorants (*Phalacrocorax auritus*) and herring gulls (*Larus argentatus*) in levels from 11 to 19 mcg/g lipid. Di-2-ethylhexyl phthalate was detected in hatchery-reared juvenile Atlantic salmon (*Salmo salar*) at 13–16 mcg/g lipid, and in the blubber of a common seal pup (*Phoca vitulina*) at 11 mcg/g lipid.

THE PHOTODECOMPOSITION OF ZECTRAN: 4-DIMETHYLAMINO-3,5-XYLYL-N-METHYL CARBAMATE

P. J. Silk and I. Unger, *Department of Chemistry, University of New Brunswick, Fredericton, New Brunswick, Canada.*

The photodecomposition of 4-dimethylamino-3,5-xylyl-N-methyl carbamate (Zectran) in aerated and degassed solution has been carried out. Three major photoproducts were detected and characterized to be: 4-dimethylamino-3,5-dimethyl phenol, 4-hydroxy-2,6-dimethyl-N-methyl benzamide and 4-monomethylamino-3,5-xylyl-N-methyl carbamate. The phenol and benzamide products suggest that one of the pathways of photodecomposition of Zectran is via a photo-Fries rearrangement. The ortho-benzamide (5-dimethylamino-4,6-dimethyl-2-hydroxy-N-methyl benzamide) which could also be expected to occur in a photo-Fries reaction, was not observed. The excitation wavelength was > 296.7 nm, i.e. radiation available in the solar spectrum. Thus the products observed in this study would also be expected to occur in the environment as a result of the action of sunlight on Zectran.