Study of Electron Capture Behavior of Substituted Aromatics by Plasma Chromatography

Waterloo Univ (Ontario) Dept of Chemistry (407896)
AUTHOR: Karasek, Francis W., Tatone, Oswald S., Kane, David M.
C1U64C2 FLD: 7D, 59G, 59A USGRDR7324
30 Jan 73 6p
MONITOR: 18
Revision of report dated 31 Oct 72.
Availability: Pub. in Analytical Chemistry, v45 n7 p1210-1214 Jun 73.

ABSTRACT: The plasma chromatograph can observe experimentally the positive and negative charged species present in the electron capture detector and measure their response and mobility under changing parameters. Experimental evidence of dissociative electron capture is shown for halogenated aromatics with formation of a halogen ion. Aromatics with two different halogen atoms dissociate only the most reactive halogen ion in the order I Br Cl. Simple electron attachment with formation of a negative molecular ion occurs for nitrobenzene. Chloronitrobenzene and decachlorobiphenyl undergo both associative and dissociative electron capture. (Author)

DESCRIPTORS: (*Aromatic compounds, *Electron capture), (*Chromatographic analysis, *Plasma medium), (*Halogenated hydrocarbons, Electron capture), (*Dissociation, Electron capture), Diffusion, Benzenes, Toluenes, Ionization, Chlorine compounds, Fluorine compounds, Bromine compounds, Iodine compounds, Canada

IDENTIFIERS: *Plasma chromatography, Biphenyl, SD

AD-769 011/8 NTIS Price: Not available NTIS

MONS 054381

The Use and Effect of Mixed Standards on the Quantitation of Polychlorinated Biphenyls

National Marine Fisheries Service, Seattle, Wash. Pacific Fishery Products Technology Center.
AUTHOR: Beezhold, F. Lee, Stout, Virginia F.
C1792H1 FLD: 7C, 59A, 99A, 86Q USGRDR7323
1973 7p
MONITOR: NOAA-73080101
Pub. in Bull. of Environmental Contamination and Toxicology, v10 n1 p10-15 1973.

ABSTRACT: A study was made of the problems encountered when the chromatogram of a sample being analyzed for polychlorinated biphenyls via GLC cannot readily be compared to a particular Aroclor standard. The use of mixed Arolclor standards was proposed and a study made of the effect of mixed standards on the analytical results. It was found that the choice of a standard could alter the values by more than a factor of 2. In addition, the particular mixture used as a standard should be reported along with resulting values. (Author)

DESCRIPTORS: (*Chlorine aromatic compounds, *Gas chromatography), Quantitative analysis, Chromatographic analysis, Standardization

IDENTIFIERS: *Biphenyl/chloro, NOAA

COM-73-11574/3 NTIS Prices: Reprint

MONS 054382

DDT, DDE, and Polychlorinated Biphenyls in Biota from the Gulf of Mexico and Caribbean Sea--1971

Texas A and M Univ., College Station. (347 350)
AUTHOR: Giam, C. S., Hanks, A. R., Richardson, R. L., Sackett, W. M., Wong, M. K.
C1652J1 FLD: 6F, 57H, 52G USGRDR7321
1972 6p
MONITOR: NSF/IDOE-73-25
Pub. in Pesticides Monitoring Jnl., v6 n3 p139-143 Dec 72.

ABSTRACT: Residue levels of DDT, DDE, and PCB's (polychlorinated biphenyls) were determined in various species of fish, shrimp, crabs, and other biota from the Gulf of Mexico and Caribbean Sea. Samples were collected from the Gulf during two Gulf-wide cruises in May and October 1971 and from part of the Caribbean Sea during the October cruise. DDT, DDE, and PCB's were found widely distributed in all biota; however, samples from coastal areas generally had higher levels than samples from the open waters. (Author)

DESCRIPTORS: (*DDT, Aquatic animals), (*Pesticides, *Aquatic animals), Residues, Marine fishes, Crabs, Shrimps, Squids, Crustacea, Gas chromatography, Sharks, Tunas, Chemical analysis

IDENTIFIERS: *Pesticide residues, Biphenyl/chloro, DDE pesticide, Caribbean Sea, Mexico Gulf, IDOE

PB-223 205/6 NTIS Prices: Not available NTIS

MONS 054383

Chlorinated Hydrocarbons in Open-Ocean Atlantic Organisms

Woods Hole Oceanographic Institutiton, Mass. (381 000)
AUTHOR: Harvey, George R., Bowen, Vaughan T., Backus, Richard H., Grice, George D.
C16 5214 FLD: 8A, 13B, 78A USGRDR7321
1972 12p
REPT NO: WHOI-Contrib-2786
GRANT: NSF-GX-28334
MONITOR: NSF/IDOE-73-23
Report on International Decade of Ocean Exploration.
Pub. in Nobel Symposium 20, The Changing Chemistry of the Oceans, p177-186 1972.

ABSTRACT: PCB has been readily demonstrable in all, and DDT in most of a series of organisms collected from the open North Atlantic Ocean. No strong evidence was obtained of an east-west gradient in concentration between the Cape Verde Islands and Bermuda. The data are compatible with a systematic increase in concentration along food chains, although details of the patterns suggest that the mechanisms of uptake may be different for PCB than for DDT. A group of fish and crustacea which feed near the sea surface at night but migrate to considerable depths during the day show DDT and PCB concentrations not greatly different from those of predaceous organisms whose lives are spent mostly in the upper layers. We believe this shows that biological removal processes may help to control chlorinated hydrocarbon concentrations in the open ocean.

DESCRIPTORS: (*Water pollution, *Atlantic Ocean), Food chains, Absorption(Biology), Chlorine organic compounds, DDT, Collecting methods, Sampling, Concentration(Composition)

IDENTIFIERS: Path of pollutants, Biphenyl/chloro, IDOE

PB-223 204/9 NTIS Prices: Not available NTIS.

MONS 054384

Environmental Applications of Advanced Instrumental Analyses: Assistance Projects, FY 69-71

Environmental Protection Agency, Athens, Ga. Southeast Environmental Research Lab.

Environmental protection technology series
AUTHOR: Keith, Lawrence H., Hercules, Shirley H.
C1644J2 FLD: 7C, 13B, 59A, 99A, 68D USGRDR7321
May 73 92p
PROJECT: EPA-16020-GHZ
MONITOR: EPA-R2-73-155
Paper copy available from GPO $1.25 as stock no. EPI.23/2:73-155.

ABSTRACT: A multitude of analyses using gas chromatography-mass spectrometry (GC-MS), nuclear magnetic resonance (NMR), infrared, and fluorescence spectroscopy to identify and measure organic pollutants in water are discussed under eleven project categories. In most cases these analyses have helped to solve, or at least understand more clearly, the related pollution incident and in some cases provided for enforcement of regulatory legislation. Projects included indentification of pesticides and PCB's (polychlorinated biphenyls) from natural waters, organics from industrial wastewaters and landfill runoffs, organics from paper mill wastewaters and foam, and analyses of oils from oil spills and suspect sources.

DESCRIPTORS: (*Gas chromatography, Water analysis), (*Mass spectra, Water analysis), (*Nuclear magnetic resonance, *Water analysis), (*Infrared spectra, Water analysis), (*Emission spectra, Water analysis), (*Water pollution, Identifying), Pesticides, Chlorine organic compounds, Oils, Industrial wastes, Paper industry, Organic compounds, Earth fills, Fluorescence, Odors, Rubber industry, Petroleum refining, Chemical industry

IDENTIFIERS: Oil pollution, Biphenyl/chloro, Oil spills, Oil pollution detection, Fishkill, Petrochemical industry, ORM

PB-222 938/3 NTIS Prices: PC-GPO/MF$1.45

MONS 054385

Rule Making on Polychlorinated Biphenyls

Food and Drug Administration, Washington, D.C. (140 700)

Final environmental impact statement.
C0195B4 FLD: 13B, 68 USGRDR7303
18 Dec 72 31p*
MONITOR: ELR-5804
Supersedes report dated 8 May 72, PB-208 960-D.

ABSTRACT: The statement discusses the effects of comprehensive regulations designed to limit human exposure to polychlorinated biphenyls (PCB's) from dietary sources by dealing with known sources and causes of PCB contamination of food. Specifically, the action involves establishments involved in the handling and processing of animal feeds, food, and food-packaging materials; and those reclaiming pulp fiber for food-packaging use. No adverse effects are foreseen except to industries using PCB's and having no immediate substitute or to those whose product (such as recycled wood pulp) is contaminated and cannot be purified.

DESCRIPTORS: (*Environmental surveys, *Chlorine aromatic compounds), (*Government policies, Chlorine aromatic compounds), Food processing, Food packaging, Packaging materials, Biphenyl, Regulations, National government, Public health, Waste paper

IDENTIFIERS: *Environmental impact statements, *Biphenyl/chloro, Recycled paper

FIS-AA-72-5804-F NTIS Prices: PC$3.75/MF$0.95

MONS 054386

Rule Making on Polychlorinated Biphenyls

Food and Drug Administration, Washington, D.C. (140 700)

Supplement to final environmental impact statement.
C1331J2 FLD: 13B, 68H* USGRDR7317
Jul 73 41p*
MONITOR: ELR-73-1141-F-S
See also report dated 18 Dec 72, EIS-AA-72-5804-F.

ABSTRACT: The statement discusses the effects of comprehensive regulations designed to limit human exposure to polychlorinated biphenyls (PCB's) from dietary sources by dealing with known sources and causes of PCB contamination of food. Specifically, the action involves establishments involved in the handling and processing of animal feeds, food, and food-packaging materials; and those reclaiming pulp fiber for food-packaging use. No adverse effects are foreseen except to industries using PCB's and having no immediate substitute or to those whose product (such as recycled wood pulp) is contaminated and cannot be purified.

DESCRIPTORS: (*Environmental impact statements, *Chlorine aromatic compounds), (*Government policies, Chlorine aromatic compounds), (*Food contamination, Government policies), Legislation, Biphenyl, Toxicity, Food packaging, Contamination, Waste paper, Public health, Regulations, Tolerances(Physiology)

IDENTIFIERS: Recycled paper, *Biphenyl/chloro, EIS

EIS-AA-73-1141-F-S NTIS Prices: PC$3.75/MF$1.45

Analysis of Chlorinated Aromatic Hydrocarbons by Exhaustive Chlorination: Qualitative and Structural Aspects of the Perchloro-Derivatives of Biphenyl, Naphthalene, Terphenyl, Dibenzofuran, Dibenzodioxin and DDE

National Research Council of Canada Halifax (Nova Scotia) Atlantic Regional Lab (045500)
AUTHOR: Hutzinger, O., Safe, S., Zitko, V.
C0742J2 FLD: 7C, 59D, 59A USGRDR7311
17 Apr 72 12p
MONITOR: NRC-12731
Availability: Pub. in Intern. J. Environ. Anal. Chem., v2 p95-106 1972.

ABSTRACT: A number of reagents for the exhaustive chlorination of aromatic compounds were investigated. Antimony pentachloride-iodine and the BMC reagent (sulfuryl chloride-aluminum chloride-disulfur dichloride) were found to be the most effective and convenient reagents. They are liquids which can be used without special precautions to prepare the perchloro-derivatives of biphenyl, terphenyl, naphthalene, dibenzofuran, dibenzodioxin and DDE. The structures, mass spectra and GLC properties of these compounds are discussed. (Author)

DESCRIPTORS: (*Aromatic compounds, *Chlorination), (*Insecticides, Chemical analysis), Synthesis(Chemistry), Chlorides, Antimony compounds, Iodine, Aluminum compounds, Sulfur compounds, Molecular structure, Mass spectrum, Gas chromatography, Canada

IDENTIFIERS: *Chlorine organic compounds, SD

AD-758 539 NTIS Price: Not available NTIS

PCB (Polychlorinated Biphenyls) in Water: A Bibliography

Office of Water Resources Research, Washington, D.C. Water Resources Scientific Information Center.
C0721D4 FLD: 6F, 13B, 68D*, 57H USGRDR7310
Mar 73 150p*
REPT NO: WRSIC-73-201
MONITOR: W73-06501
Supersedes report dated Jan 72, PB-206 534.

ABSTRACT: This bibliography of 88 abstracts on polychlorinated biphenyls is another in a series of planned bibliographies in water resources produced from the information base comprising Selected Water Resources Abstracts (SWRA). At the time of search for this bibliography, the data base had 50,631 abstracts covering SWRA through December 15, 1972. Separate subject and author indexes are provided.

DESCRIPTORS: (*Water pollution, *Chlorine organic compounds), (*Bibliographies, Water pollution), (*Pesticides, Water pollution), Biphenyl, Chlorine aromatic compounds, Plasticizers, Insecticides, Aquatic biology, Water analysis, Oceans, Industrial wastes, Toxicity, Residues, Biodeterioration, DDT, Dieldrin, Ecology, Accumulation

IDENTIFIERS: *Biphenyl/chloro, *Water pollution effects(Animals), Water pollution detection, OWRR

PB-217 859/8 NTIS Prices: PC$3.00/MF$0.95

MONS 054389

CIESM and Marine Pollution

Office of Naval Research London (England) (265000)

Conference rept.
AUTHOR: Leonard, John M.
C0673L1 FLD: 13B, 68D USGRDR7310
5 Feb 73 14p
REPT NO: ONRL-C-5-73
MONITOR: 18

ABSTRACT: A two-day session on Marine Pollution preceded the Plenary Congress of CIESM, held in Athens in November 1972. About 40 papers dealing with various aspects of pollution in the Mediterranean were given. In this report the writer lists presentations, discusses briefly those which seemed particularly interesting, and gives a mildly optimistic prognosis for pollution research in the Mediterranean. (Author)

DESCRIPTORS: (*Mediterranean Sea, *Water pollution), (*Symposia, Water pollution), Aerial photography, Bacteria, Wastes(Industrial), Wastes(Sanitary engineering), Disposal, Viruses, Metals, Toxicity

IDENTIFIERS: Oil pollution, Water pollution detection, Biphenyl/chloro , N

AD-757 988 NTIS Prices: PC$3.00/MF$0.95

Uptake of Toxic Water Pollutants (PCB) by Lake Trout

Northern Michigan Univ., Marquette. Dept. of Biology.
AUTHOR: Parejko, Ronald, Johnston, Raymond
C0485H1 FLD: 6F, 57H, 68D, 68E USGRDR7307
Jan 73 19p
CONTRACT: DI-14-01-0001-3522
PROJECT: OWRR-A-061-MICH
MONITOR: OWRR-A-061-MICH(1)

ABSTRACT: Lake trout taken from North America's largest oligotrophic lake, Lake Superior, were analyzed to determine the content of polychlorinated biphenyls (PCBs) in their tissue. These fish are used for human consumption and the potential contamination of humans with PCBs would exist if fish that contained these compounds would be consumed. Results from analysis of fish oil extracted from lake trout have demonstrated that these fish possess low but detectable concentrations of PCBs in their tissue. Some of the lake trout analyzed also contained significant concentrations of chlorinated pesticides such as DDT and/or its analogs. Statistical determinations made between mean PCB concentration and fish age, sex and geographical location of removal from Lake Superior.

DESCRIPTORS: (*Chlorine organic compounds, *Residues), (*Lake Superior, Water pollution), (*Trout, Risidues), (*Water pollution, Chlorine organic compounds), Accumulation, Fresh water fish, Concentration(Composition), DDT, Gas chromatography

IDENTIFIERS: *Biphenyl/chloro

PB-214 768/4 NTIS Prices: PC$3.00/MF$0.95

MONS 054391