

ACS SYMPOSIUM SERIES 773

Persistent, Bioaccumulative, and Toxic Chemicals II

Assessment and New Chemicals



EDITED BY

**Robert L. Lipnick, Bo Jansson,
Donald Mackay, and Myrto Petreas**

Contents

Preface	xi
1. Identification of Persistent, Bioaccumulative, and Toxic Substances.....	1
Bo Jansson, Robert L. Lipnick, Donald Mackay, and Myrto Petreas	
Persistence and Modeling	
2. Defining the Bioaccumulation, Persistence, and Transport Attributes of Priority Chemicals	14
Donald Mackay, Eva Webster, Andreas Beyer, Michael Matthies, and Frank Wania	
3. CART Screening Level Analysis of Persistence: A Case Study	29
Deborah H. Bennett, Thomas E. McKone, and W. E. Kastenber	
4. Environmental Categorization and Screening of the Canadian Domestic Substances List	42
Roger Breton and Robert Chénier	
5. Relationship between Persistence and Spatial Range of Environmental Chemicals	52
Martin Scheringer, Deborah H. Bennett, Thomas E. McKone, and Konrad Hungerbühler	
6. Application of Negligible Depletion Solid-Phase Extraction (nd-SPE) for Estimating Bioavailability and Bioaccumulation of Individual Chemicals and Mixtures	64
Joop L. M. Hermens, Andreas P. Freidig, Enaut Urrestarazu Ramos, Wouter H. J. Vaes, Willem M. G. M. van Loon, Eric M. J. Verbruggen, and Henk J. M. Verhaar	
7. Modeling Historical Emissions and Environmental Fate of PCBs in the United Kingdom	75
Andrew J. Sweetman and Kevin C. Jones	

8. **Estimating Accumulation and Baseline Toxicity of Complex Mixtures of Organic Chemicals to Aquatic Organisms: The Use of Hydrophobicity Dependent Analytical Methods** 89
Eric M. J. Verbruggen and Joop L. M. Hermens

9. **Selection and Evaluation of Persistent, Bioaccumulative, and Toxic Criteria for Hazard Assessment** 100
Han Blok, Froukje Balk, Peter Okkerman, and Dick Sijm

10. **An Environmental Protection Agency Multimedia Strategy for Priority Persistent, Bioaccumulative, and Toxic Pollutants** 114
Sam Sasnett, Thomas Murray, Sheila Canavan, John Alter, Kathy Davey, and Paul Matthai

11. **Dioxin Pollution Prevention Inventory for the San Francisco Bay** 124
Greg Karras

12. **U.S. Environmental Protection Agency New Chemicals Program PBT Chemical Category: Screening and Risk Management of New PBT Chemical Substances** 138
Kenneth T. Moss, Robert S. Boethling, J. Vincent Nabholz, and Charles M. Auer

13. **The U.S. Environmental Protection Agency Minimization Prioritization Tool: Computerized System for Prioritizing Chemicals Based on PBT Characteristics** 151
Mark D. Ralston, Daniel L. Fort, Jay H. Jon, and James K. Kwiat

New Chemicals

14. **Short Chain Chlorinated Paraffins: Are They Persistent and Bioaccumulative?** 184
Derek Muir, Don Bennie, Camilla Teixeira, Aaron Fisk, Gregg Tomy, Gary Stern, and Mike Whittle

15. **Polycyclic Musk Fragrances in the Aquatic Environment** 203
Hermann Fromme, Thomas Otto, and Konstanze Pilz

16. **Polychlorinated Naphthalenes in the Atmosphere** 223
Tom Harner, Terry F. Bidleman, Robert G. M. Lee, and Kevin C. Jones

17. Polybrominated Diphenyl Ethers (PBDEs) in Human Milk from Sweden	235
S. Atuma, M. Aune, P. O. Darnerud, S. Cnattingius, M. L. Wernroth, and A. Wicklund-Glynn	
18. Characterization of Q1, an Unknown Major Organochlorine Contaminant in the Blubber of Marine Mammals from Africa, the Antarctic, and Other Regions	243
W. Vetter	
Author Index	260
Subject Index	261