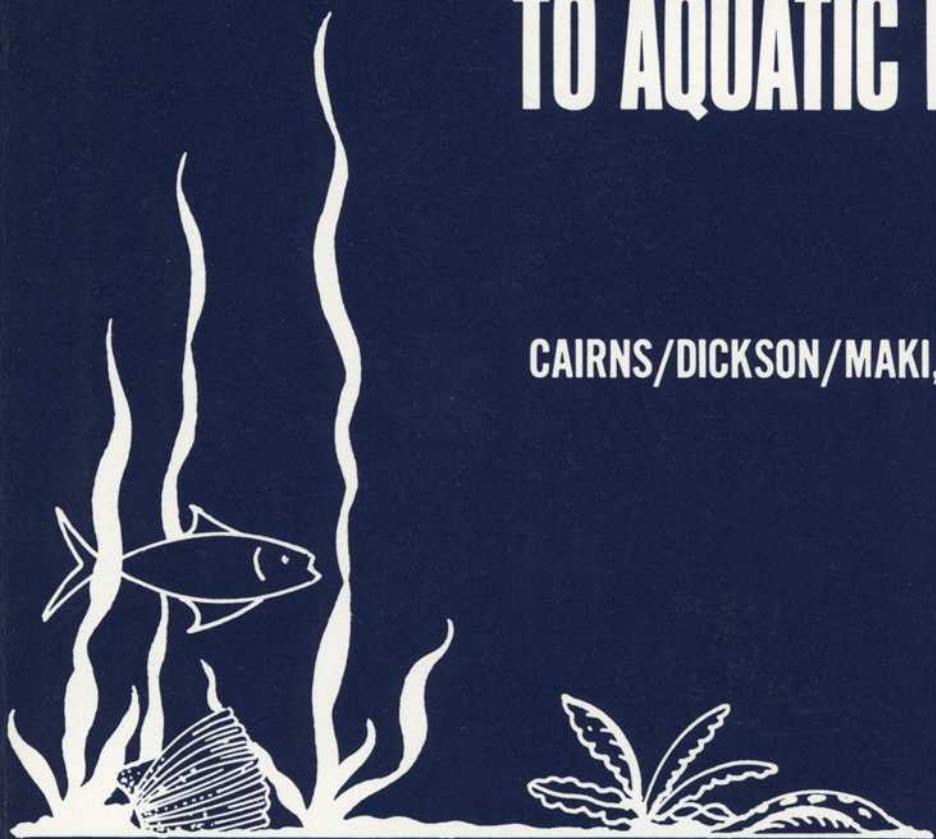


# ESTIMATING THE HAZARD OF CHEMICAL SUBSTANCES TO AQUATIC LIFE

CAIRNS/DICKSON/MAKI, *editors*



AMERICAN SOCIETY FOR TESTING AND MATERIALS

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# ESTIMATING THE HAZARD OF CHEMICAL SUBSTANCES TO AQUATIC LIFE

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and State University,  
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and State University, and  
A. W. Maki, Procter & Gamble Co.,  
editors

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*ASTM Committee on Publications*

## **Related ASTM Publications**

**Biological Methods for the Assessment of Water Quality, STP 528 (1973),  
\$16.25, 04-528000-16**

**Water Quality Parameters, STP 573 (1975), \$29.50, 04-573000-16**

**Water Pollution Assessment: Automatic Sampling and Measurement, STP  
582 (1975), 04-582000-16**

**Aquatic Toxicology and Hazard Evaluation, STP 634 (1977), \$30.75,  
04-634000-16**

# Contents

<b>Preface</b>	vii
<b>CHAPTER 1—INTRODUCTION</b>	
<b>Introduction—JOHN CAIRNS, JR., K. L. DICKSON, AND A. W. MAKI</b>	3
<b>CHAPTER 2—TOXICOLOGICAL EFFECTS</b>	
<b>Introduction to a Discussion of the Use of Aquatic Toxicity Tests for Evaluation of the Effects of Toxic Substances—W. A. BRUNGS AND D. I. MOUNT</b>	15
<b>Discussion Session Synopsis</b>	27
<b>CHAPTER 3—ENVIRONMENTAL CONCENTRATION AND FATE</b>	
<b>Prediction of Environmental Pollutant Concentration—G. L. BAUGHMAN AND R. R. LASSITER</b>	35
<b>Predicting the Fate of Chemicals in the Aquatic Environment from Laboratory Data—D. R. BRANSON</b>	55
<b>Discussion Session Synopsis</b>	71
<b>CHAPTER 4—HAZARD ASSESSMENT</b>	
<b>Hazard Assessment of Toxic Substances: Environmental Fate Testing of Organic Chemicals and Ecological Effects Testing—A. M. STERN AND C. R. WALKER</b>	81
<b>Environmental Safety Assessment of New Materials—R. A. KIMERLE, W. E. GLEDHILL, AND G. J. LEVINSKAS</b>	132
<b>Discussion Session Synopsis</b>	147
<b>CHAPTER 5—PROCEDURES FOR ESTIMATING HAZARDS TO AQUATIC LIFE</b>	
<b>Summary of Proposed Procedures for the Evaluation of Aquatic Hazard—A. W. MAKI AND J. R. DUTHIE</b>	153
<b>Discussion Session Synopsis</b>	164
<b>CHAPTER 6—SUMMARY AND CONCLUSIONS</b>	
<b>Summary and Conclusions—JOHN CAIRNS, JR., K. L. DICKSON, AND A. W. MAKI</b>	191

RELATED DOCUMENTS

<b>Proposed Working Document for the Development of an ASTM Draft Standard on Standard Practice for a Laboratory Testing Scheme to Evaluate Hazard to Non-Target Aquatic Organisms</b> —ASTM SUBCOMMITTEE E35.21 ON SAFETY TO MAN AND ENVIRONMENT	201
<b>Criteria and Rationale for Decision Making in Aquatic Hazard Evaluation (Third Draft)—AQUATIC HAZARDS OF PESTICIDES</b> TASK GROUP OF THE AMERICAN INSTITUTE OF BIOLOGICAL SCIENCES	241
<b>Index</b>	275

# Preface

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As methods for evaluating toxicity proliferate, the differences in complexity, type of information generated, cost, skill of personnel to execute methods, and time required will vary enormously. Even now it is not possible or desirable to run all tests in every situation. As a consequence, one must have an orderly process that will ensure that the necessary information is available to make sound judgments regarding risks to aquatic organisms associated with the introduction of chemical substances into the environment. This process necessarily requires an appropriate mixture of chemical-physical-biological information. We emphasize that this mixture will vary substantially depending on the circumstances discussed in this book, but, more importantly, the overall process of determining whether the necessary information can be standardized to an acceptable degree.

With the signing of the Toxic Substances Control Act by President Ford on 11 Oct. 1976, provisions were created for the U.S. Environmental Protection Agency to require from the manufacturer premarket notification and safety testing for a new chemical substance. This law has served to underline the immediate need for the development of relevant testing methodology and integrated testing programs for effectively and efficiently assessing the potential hazard to aquatic life associated with the use of a new chemical substance. In response to this recognized need, this workshop was assembled with major authorities from the several disciplines of aquatic environmental sciences whose specific objective was to assess the current state of the art of aquatic toxicology.

In a letter dated 29 Nov. 1976, Dr. A. W. Maki of the Environmental Safety Department, the Procter & Gamble Company, Ivorydale Technical Center, Cincinnati, Ohio 45217, requested that a planning committee meet in Washington, D.C., on 9 Dec. 1976, to discuss the possibility of convening a Workshop on the Application of Aquatic Toxicity Methodology. If the reaction proved to be favorable, the organization, suggested participants, tentative program outline, and expected workshop goals would be outlined by this *ad hoc* committee.

The names and affiliations of the planning committee are as follows:

Dr. John Cairns, Jr.  
Virginia Polytechnic Institute and State University  
Blacksburg, Va.

Dr. H. E. Johnson  
Michigan State University  
East Lansing, Mich.

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Environmental Safety Department  
The Procter & Gamble Company  
Cincinnati, Ohio

Dr. C. E. Johnson  
Environmental Safety Department  
The Procter & Gamble Company  
Cincinnati, Ohio

Following the planning session, suggestions regarding content, participants' goals and outlines, and so on were further detailed by all of the planning committee individually after returning to their respective institutions. This information was collected and summarized by Dr. Maki. Dr. Cairns was selected by the planning committee as the workshop chairman and senior editor, and he requested that Dr. Maki and Dr. K. L. Dickson (Center for Environmental Studies, Virginia Polytechnic Institute and State University, Blacksburg, Va.) join as co-editors. Both had been named previously by the planning committee to participate in the workshop in associated roles. The *ad hoc* planning committee agreed that the primary responsibility for the preparation of this report covering the workshop proceedings would rest with this editorial committee. However, we emphasize that it was the workshop participants who made the most significant contribution to the workshop.

In order that the workshop discussion sessions be recorded accurately,

Northern Court Reporters, Alpena and Petoskey, Mich., were employed to record and transcribe the verbatim discussion, including the names of the participants. Transcripts of these discussion sessions were made available to all participants the following day to aid in the preparation of session conclusions. Thanks are due to the following for their expeditious preparation of these transcripts: Mr. M. R. Harris, C.S.R.; Ms. Louise Leathers, C.S.R.; Mrs. B. A. Harris; and Mrs. T. M. Moulton.

We are also indebted to the staff, particularly Mr. M. W. Paddock, Ms. M. A. Gockel, and Ms. M. L. Roark, of the University of Michigan's Biological Station, and Dr. D. M. Gates, Director, for coordinating the logistics and accommodations for the workshop. The financial support of The Procter & Gamble Company via a grant-in-aid to Virginia Polytechnic Institute and State University made the workshop possible and is appreciated. The editors want to acknowledge with sincere appreciation the capable assistance of two individuals, Ms. Darla Donald who helped with the organizational and editorial aspects of the workshop and Ms. Margie Fieler who completed the typing and collation of these proceedings.

