Pollution Evaluation: The Quantitative Aspects


This book attempts to provide the chemical principles embodied in analytical procedures used for evaluating environmental pollution. Following an introduction discussing the legal aspects and validity of chemical data, a general treatment is presented on statistics and techniques of sampling and analysis. The importance of sample preservation is discussed.

The remaining six chapters are equally divided between discussions of analytical principles and application of these techniques to pollutants in the atmosphere (Chapter 3), water (Chapter 5), and soils, plants, and food (Chapter 7). Procedures are described for the major air pollutants including particulates, CO, SO₂, and NOₓ. The parameters discussed in water quality monitoring are O₂, organic C, P, and N. The chapter on soils, plants, and food is very general and contains a discussion of dissolution techniques (e.g., dry ashing, wet ashing) and of procedures for determining Cu and Zn in soil, Pb in leaves, Cd in food, and Hg in fish.

The chapters on analytical principles discuss gravimetric, titrimetric, and absorption methods (Chapter 4); emission spectroscopy, gas chromatography, mass spectrophotometry, and neutron activation (Chapter 6); and preconcentration, masking, and method selection (Chapter 8). All chapters contain schematic diagrams that show the major components of each instrumental method. The appropriate mathematical relationships are presented for procedures based on solubility, acid-base, redox, or light absorption. In some cases, duplication of material occurs where a specific method is discussed in both an application chapter and in another chapter on chemical principles.

The basic goal of this book is to present introductory material on analytical procedures for evaluating pollution. The majority of the figures are well drawn and pertinent to the discussion. The text is well written but its organization may suggest that some procedures are used in only one area. For example, nonaqueous extraction procedures in conjunction with atomic absorption spectrophotometry are discussed in relation to soils, while this technique may also be employed in water analysis. The book does not contain sufficient information to enable the reader to go into a laboratory and perform chemical analysis. The text should be useful as background information for students not having strong chemistry training but desiring a general knowledge of analytical chemistry for environmental studies.

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Ecology of Pesticides


This book is essentially an update of "Ecological Effects of Pesticides on Non-Target Species" published in 1971 by the Executive Office of the President of the United States, and, hence, focuses on the side-effects of pesticides. Of the 16 chapters contained in this book, the first is introductory, nine deal with insecticides, four with herbicides, and two with fungicides. Each chapter is prefaced with a complete outline and followed by cited references ranging in number from 56 to 227. References, happily, are cited in the long form, and a complete author and subject index is provided.

In the preface and introductory chapter, the author plainly states that the primary focus of this treatise is effects of pesticides on non-target species rather than chemistry and mode of action per se, and he lists reference texts that fill voids in these areas. In the chapters devoted to insecticides, the relationship of these chemicals to arthropods...