1. Record Nr. UNINA9910143297203321

Titolo	Environmental toxicity testing [[electronic resource] /] / edited by K. Clive Thompson, Kirit Wadhia, Andreas Loibner
Pubbl/distr/stampa	Oxford, : Blackwell Publishing, c2005
ISBN	1-280-19725-0 9786610197255 1-4443-0553-0 1-4051-4470-X
Descrizione fisica	1 online resource (408 p.)
Collana	Sheffield Analytical Chemistry Series
Altri autori (Persone)	ThompsonK. C <1944-> (Kenneth Clive) WadhiaKirit LoibnerAndreas P
Disciplina	363.7364 615.902 615.9'02
Soggetti	Environmental toxicology Environmental monitoring
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Environmental Toxicity Testing; Contents; Preface; Contributors; 1 Historical perspective and overview; 1.1 Introduction; 1.2 Man and his environment - a growing dependency on chemicals; 1.2.1 Early times; 1.2.2 Chemicals development and environmental impact; 1.2.3 The chemical industry today; 1.3 Ecotoxicity testing and its role in decision-making; 1.3.1 The development of test methods; 1.3.2 The use of bioassays in the management and control; 1.4 Chemical legislation and drivers for change; 1.5 Change and challenges ahead; 1.5.1 Developments in the legislation concerning 1.5.2 Developments in the legislation concerning the1.5.3 Some of the challenges ahead; References; 2 Effective monitoring of the environment for toxicity; 2.1 Introduction; 2.2 Design of monitoring programmes; 2.2.1 Introduction; 2.2.2 Setting of information goals; 2.2.3 Selection of indicators of environmental quality; 2.2.4 Location and frequency of samples, and data analysis; 2.2.4.1 Comparison of

ambient samples; 2.2.4.2 Trend analysis; 2.2.4.3 Breach of regulatory limits/compliance; 2.2.4.4 Assessment of environmental impact; 2.3 Quality issues in the use of bioassays
2.3.1 Sample collection, handling and pretreatment2.3.1.1 Sample collection and handling; 2.3.1.2 Sample pretreatment; 2.3.2 Test standardisation; 2.3.3 Variability in bioassay data; 2.3.3.1 How does variability arise?; 2.3.3.2 Why does variability matter?; 2.3.3.3 How much variability is there?; 2.3.3.4 Sources of variability; 2.3.3.5 How much variability is acceptable?; 2.3.3.6 How can variability be controlled?; 2.3.3.7 Defining limits for accuracy; 2.3.3.8 Defining limits for precision; 2.3.3.9 Test method development and the derivation; 2.4 Summary; References
3 The nature and chemistry of toxicants3.1 Introduction; 3.1.1 History; 3.1.2 Properties; 3.1.3 Exposure; 3.1.4 Bioavailability; 3.1.5 Bioaccumulation; 3.1.6 Biomagnification; 3.1.7 Metabolism; 3.1.8 Effects of environmental toxicants; 3.1.9 Interactions between envirotoxicants; 3.2 Toxic metals; 3.2.1 Introduction; 3.2.2 Cadmium; 3.2.3 Mercury; 3.2.4 Lead; 3.2.5 Copper; 3.2.6 Tin; 3.3 Halogenated hydrocarbons; 3.3.1 Introduction; 3.3.2 Polychlorinated biphenyls (PCBs); 3.3.3 Polychlorinated dibenzodioxins (PCDDs); 3.3.4 Polybrominated flame retardants (PBFRs)
3.3.5 Chlorinated pesticides/insecticides3.3.6 Other halogenated organic compounds of; 3.3.6.1 Chlorophenols; 3.3.6.2 Chlorinated paraffins; 3.4 Polycyclic aromatic hydrocarbons (PAHs); 3.5 Medical and veterinary drugs; 3.6 Acid rain and acidification of the environment; References; 4 Frameworks for the application of toxicity data; 4.1 Introduction; 4.1.1 Background and objectives; 4.2 The purpose of bioassays; 4.2.1 Toxicity tests within a triad of techniques; 4.2.2 Advantages and disadvantages of toxicity testing; 4.3 Interpretation of toxicological data; 4.3.1 Field validation
4.3.2 Application factors

Sommario/riassunto

As an integral component of environmental policy, it has become essential to regulate and monitor toxic substances. Past emphasis has been primarily on analytical approaches to the detection of specific, targeted contaminants, thus allowing chemical characterisation. However, toxicity testing or biological assessment is necessary for ecotoxicological evaluation, and this offers marked benefits and advantages that complement chemical analysis. Key issues to be addressed include identification of pertinent tests, reproducibility and robustness of these tests, and cost considerations.This b