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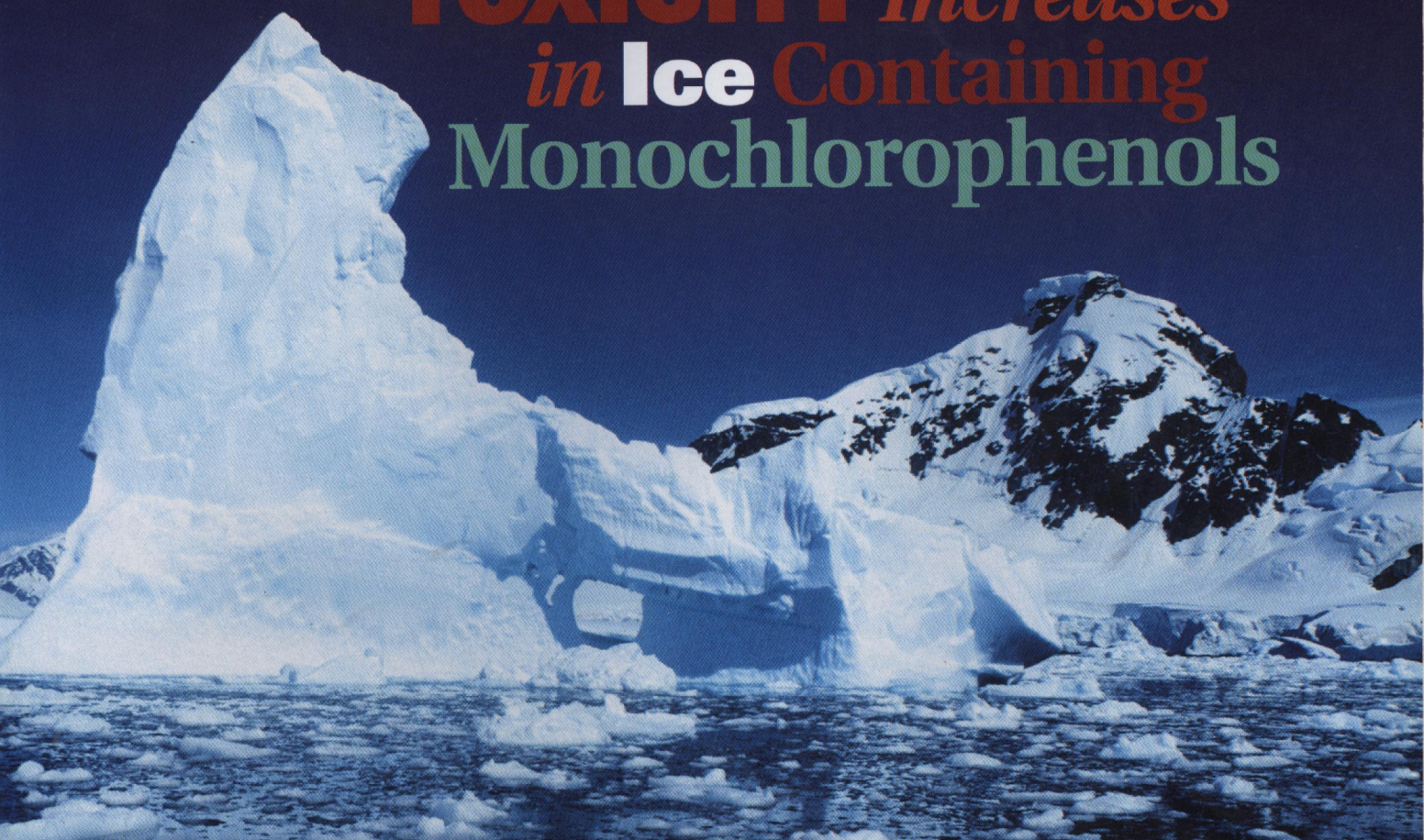
TOXICITY *Increases in* Ice Containing Monochlorophenols



EPA's First Science Advisor Focuses on the Basics

Fluorotelomer Alcohol Biodegradation

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Research

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Environmental Processes

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2849

Surface Photochemistry of Pesticides: An Approach Using Diffuse Reflectance and Chromatography Techniques

José P. Da Silva and Luis F. Vieira Ferreira

The main photodegradation processes of triadimefon at the solid/gas interface involve the α-cleavage while triadimenol undergoes dechlorination.

2857

Fluorotelomer Alcohol Biodegradation Yields Poly- and Perfluorinated Acids

Mary Joyce A. Dinglasan, Yun Ye, Elizabeth A. Edwards, and Scott A. Mabury

Aerobic biodegradation of the 8:2 telomer alcohol produced the 8:2 telomer unsaturated acid as the major metabolite and PFOA as a minor metabolite, evidence for β-oxidation mechanism.

■ **2865**

Influence of Natural Organic Matter Source on Copper Speciation As Demonstrated by Cu Binding to Fish Gills, by Ion Selective Electrode, and by DGT Gel Sampler

Chad D. Luider, John Crusius, Richard C. Playle, and P. Jeff Curtis

All three methods show that Cu binding by natural organic matter in water increases with its increasing allochthonous character, measured as specific absorbance.

2873

Toxicity Increases in Ice Containing Monochlorophenols upon Photolysis: Environmental Consequences

Luděk Bláha, Jana Klénové, Petr Klán, Jaroslav Janošek, Michal Škarek, and Radovan Růžička

Phototransformations of chloroorganic compounds in ice and snow represent a potential secondary source of toxic contaminants as demonstrated with a monochlorophenol model.

2879

Competition for Sorption and Degradation of Chlorinated Ethenes in Batch Zero-Valent Iron Systems

Jan Dries, Leen Bastiaens, Dirk Springael, Spiros N. Agathos, and Ludo Diels

Organic compounds common to contaminated groundwater impact the sorption and degradation of chlorinated ethenes in batch zero-valent iron systems by competition for reaction or sorption sites.

Environmental Modeling

2885

Pesticide Volatilization from Plants: Improvement of the PEC Model PELMO Based on a Boundary-Layer Concept

André Wolters, Minze Leistra, Volker Linnemann, Michael Klein, Andreas Schäffer, and Harry Vereecken

A boundary-layer approach included in PELMO enables the simultaneous calculation of pesticide volatilization from soil and plants and the consideration of competing processes.

2894

Simultaneous Modeling of Multiple End Points in Life-Cycle Toxicity Tests

Tjalling Jager, Trudie Crommentuijn, Cornelis A. M. van Gestel, and Sebastiaan A. L. M. Kooijman

A process-based model describes life-cycle toxicity data for cadmium and triphenyltin in *Folsomia candida* with few physiologically relevant parameters and is used to explore population consequences.

■ **2901**

Modeling of Simultaneous Exchange of Colloids and Sorbing Contaminants between Streams and Streambeds

Jianhong Ren and Aaron I. Packman

A new process-based model is presented that predicts the role of colloids in mediating advective contaminant exchange between streams and streambeds.

Environmental Measurements Methods

■ **2912**

Integrated Methodology for Forensic Oil Spill Identification

Jan H. Christensen, Asger B. Hansen, Giorgio Tomasi, John Mortensen, and Ole Andersen

Analytical and statistical procedures are integrated into a fast and objective forensic oil spill identification methodology.

2919

Preservation of As(III) and As(V) in Drinking Water Supply Samples from Across the United States Using EDTA and Acetic Acid as a Means of Minimizing Iron–Arsenic Coprecipitation

Patricia A. Gallagher, Carol A. Schwegel, Amy Parks, Bryan M. Gamble, Larry Wymer, and John T. Creed

As(III) and As(V) can be preserved in drinking waters during transport by adding EDTA and acetic acid.

Remediation and Control Technologies

2928

Effects of TiO_2 Surface Modifications on Photocatalytic Oxidation of Arsenite: The Role of Superoxides

Jungho Ryu and Wonyong Choi

This study demonstrates that superoxides are mainly responsible for the photocatalytic oxidation of As(III) by investigating the kinetics in pure and surface-modified TiO_2 suspensions.

2934

Identification of Inhibitory Substances Affecting Bioleaching of Heavy Metals from Anaerobically Digested Sewage Sludge

Xiangyang Gu and Jonathan W. C. Wong

Acetic and propionic acids are identified as the substances responsible for the inhibition of iron oxidation and metal solubilization during the bioleaching of anaerobically digested sewage sludge.

2940

Acoustically Enhanced Multicomponent NAPL Ganglia Dissolution in Water Saturated Packed Columns

Constantinos V. Chrysikopoulos and Eric T. Vogler

This study examines the impact of acoustic pressure waves on multicomponent nonaqueous-phase liquid ganglia dissolution in water-saturated columns packed with glass beads.

2946

Radioactively Contaminated Electric Arc Furnace Dust as an Addition to the Immobilization Mortar in Low- and Medium-Activity Repositories

Marta Castellote, Esperanza Menéndez, Carmen Andrade, Pablo Zuloaga, Mariano Navarro, and Manuel Ordóñez

This paper undertakes a durability study of radioactive contaminated EAFD as an addition in the immobilizing mortar of low- and medium-activity repositories.