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Proceedings and Summary Report

Workshop on Mercury in Products, Processes, Waste and the Environment: Eliminating, Reducing and Managing Risks from Non-Combustion Sources

March 22-23, 2000
Baltimore, MD

National Risk Management and Research Laboratory
Office of Research and Development
U.S. Environmental Protection Agency
Cincinnati, Ohio 45268

Notice

The United States Environmental Protection Agency (EPA), through its Office of Research and Development, funded and managed the research described here under Contract 68-C7-0011 to Science Applications International Corporation (SAIC). It has been subjected to the Agency's peer administrative review and has been approved for publication as an EPA document. Statements captured in the panel discussion summary in Appendix C are those of the participants, not necessarily reflective of
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Foreword

The U.S. Environmental Protection Agency is charged by Congress with protecting the Nation's land, air, and water resources. Under a mandate of national environmental laws, the Agency strives to formulate and implement actions leading to a compatible balance between human activities and the ability of natural systems to support and nurture life. To meet this mandate, EPA's research program is providing data and technical support for solving environmental problems today and building a science knowledge base necessary to manage our ecological resources wisely, understand how pollutants affect our health, and prevent or reduce environmental risks in the future.

The National Risk Management Research Laboratory (NRMRL) is the Agency's center for investigation of technological and management approaches for preventing and reducing risks from pollution that threaten human health and the environment. The focus of the Laboratory's research program is on methods and their cost-effectiveness for prevention and control of pollution to air, land, water, and subsurface resources; protection of water quality in public water systems; remediation of contaminated sites, sediments and ground water; prevention and control of indoor air pollution; and restoration of ecosystems. NRMRL collaborates with both public and private sector partners to foster technologies that reduce the cost of compliance and to anticipate emerging problems. NRMRL's research provides solutions to environmental problems by: developing and promoting technologies that protect and improve the environment; advancing scientific and engineering information to support regulatory and policy decisions; and providing the technical support and information transfer to ensure implementation of environmental regulations and strategies at the national, state, and community levels.

This publication has been produced as part of the Laboratory's strategic long-term research plan. It is published and made available by EPA's Office of Research and Development to assist the user community and to link researchers with their clients.

E. Timothy Oppelt, Director
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Abstract

Mercury contamination, both nationally and internationally, has long been recognized as a growing problem for humans and ecosystems, since mercury does not degrade to simpler compounds. Once it is released to the environment, it will always be present in one form or another. Mercury is released to the environment from a variety of human (anthropogenic) sources including plant effluent discharge, fossil-fuel combustors, incinerators, chlor-alkali plants, mining and landfills. Other sources of anthropogenic mercury release include industrial processes and the disposal of products containing mercury. Anthropogenic sources of mercury emissions to the atmosphere include fossil fuel combustion (containing trace amounts of mercury), municipal incineration, medical waste incineration, chlor-alkali plants, and landfills. These emission sources represent a significant contribution to the total mercury released (including natural and re-emitted) in the United States.

A workshop titled, Mercury in Products, Processes, Waste and the Environment: Eliminating, Reducing and Managing Risks from Non-combustion Sources, was held on March 22 - 23, 2000, in Baltimore, Maryland. To facilitate discussions of these issues, the workshop combined a series of presentations at plenary sessions, moderated technical sessions and panel discussions. The topics of these presentations focused on treatment and disposal technologies, stockpile management, and prevention, collection and elimination programs. Presenters were from U.S. Environmental Protection Agency (USEPA), Department of Energy (DOE), state agencies, industry, academia, technology developers, equipment manufacturers, consulting firms, international representatives. The presentations were followed by two panel discussions: the first addressed treatment and disposal of mercury-contaminated wastes and the second addressed prevention, collection, and elimination issues. This report provides a discussion of the overarching issues in mercury treatment, disposal, prevention, collection, and elimination, and a summary of the panel discussions that took place at the close of the workshop.

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Appendices

List of Acronyms

ANPRM	Advance Notice of Potential Rulemaking
BDAT	Best Demonstrated Available Technology
DLA	Defense Logistics Agency
DOD	Department of Defense
DOE	Department of Energy
EPA	Environmental Protection Agency
FR	Federal Register
GAC	Granular Activated Carbon
Hg	Mercury
HW	Hazardous Waste
LDR	Land Disposal Restrictions
MSW	Municipal Solid Waste
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NGO	Non Government Organization
NRC	Nuclear Regulatory Commission
NRMRL	National Risk Management Research Laboratory
P2	Pollution Prevention
PBT	Persistent, Bioaccumulative, and Toxic
RCRA	Resource Conservation and Recovery Act
SAMMS	Self-Assembled Mercaptans on Mesoporous Silica
TCLP	Toxicity Characteristic Leaching Procedure

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