

**SEMI-ANNUAL LIST OF REPORTS  
PREPARED FOR OR BY THE  
OFFICE OF TOXIC SUBSTANCES**



**APRIL 1976**

**OFFICE OF TOXIC SUBSTANCES  
U.S. ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460**

SEMI-ANNUAL LIST OF REPORTS PREPARED FOR OR BY  
THE OFFICE OF TOXIC SUBSTANCES

This list covers Office of Toxic Substances reports published by NTIS from October 1975 through March 15, 1976. For reports published prior to that date, see the Semi-Annual List dated October 1975

April 1976

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WASHINGTON, D. C. 20460

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NTIS ACCESSION NUMBER	TITLE	PRICE
(1) PB 244-625/AS	<b><i>Technical and Microeconomic Analysis of Cadmium and Its Compounds</i></b>	\$7.25

*Abstract*

The role of cadmium (and its compounds) in the environment and in the economy of the United States was studied, to evaluate the need for and the projected effect of controlling its production, use and dissipation. Technologically and economically feasible control alternatives were developed from (1) A systematic documentation of cadmium production, uses, prevalence, and sources of pollution, and (2) An evaluation of the present and projected health hazards. Available information was then used to directly compare and optimize the various alternatives.

The results led to two sets of recommended controls. The first aimed at preventing increases in the present cadmium health hazards, consists of continued air and water pollution abatement, environmentally-sound land disposal of industrial wastes and residuals, and regulation of application rates to agricultural lands of cadmium-bearing materials. The second set of controls exhibits a more aggressive posture towards limiting cadmium dissipation, which could be implemented in the future should a more precise definition of the health hazard justify such a posture. This second set of controls includes limitation of the cadmium impurities in products of the zinc industry, reduction in the demand for cadmium by voluntary action of several key industries and government, and the restriction or abolition of cadmium imports.

(2) PB 245-984/AS	<b><i>Preliminary Investigation of Effects on the Environment of Boron, Indium, Nickel, Selenium, Tin, Vanadium and Their Compounds. Volume I: Boron</i></b>	\$5.25
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*Abstract*

A comprehensive review of published literature was conducted to prepare this preliminary investigation report on the physical and chemical properties of boron, on the environmental exposure factors related to its consumption and use, on the health and environmental effects resulting from exposure to this substance, and on any applicable regulations and standards governing its use.

(3) PB 245-985/AS	<b><i>Preliminary Investigation of Effects on the Environment of Boron, Indium, Nickel, Selenium, Tin, Vanadium and Their Compounds. Volume II: Indium</i></b>	\$3.75
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*Abstract*

Same as above, except literature search was conducted for indium.

(4) PB 245-986/AS	<b><i>Preliminary Investigation of Effects on the Environment of Boron, Indium, Nickel, Selenium, Tin, Vanadium and Their Compounds. Volume III: Nickel</i></b>	\$4.75
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*Abstract*

Same as above, except literature search was conducted for nickel.

(5) PB 245-987/AS	<b><i>Preliminary Investigation of Effects on the Environment of Boron, Indium, Nickel, Selenium, Tin, Vanadium and Their Compounds. Volume IV: Selenium</i></b>	\$5.25
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*Abstract*

Same as above, except literature search was conducted for selenium.

NTIS ACCESSION NUMBER	TITLE	PRICE
(6) PB 245-988/AS	<i>Preliminary Investigation of Effects on the Environment of Boron, Indium, Nickel, Selenium, Tin, Vanadium and Their Compounds. Volume V: Tin</i>	\$5 25
	<i>Abstract</i>	
	Same as above except literature search was conducted for tin	
(7) PB 245-989 AS	<i>Preliminary Investigation of Effects on the Environment of Boron, Indium, Nickel, Selenium, Tin, Vanadium and Their Compounds. Volume VI: Vanadium</i>	\$4 75
	<i>Abstract</i>	
	Same as above, except literature search was conducted for vanadium	
(8) PB 246-213/AS	<i>Sampling and Analysis of Selected Toxic Substances, Task II—Ethylene Dibromide</i>	\$3 75
	<i>Abstract</i>	
	Ethylene dibromide has recently been reported by the NCI to be a potential carcinogen. Its commercial use is predominately as a scavenging agent for lead in gasoline. A minor usage is as a pesticide fumigant. A protocol was developed for the sampling and analysis of ethylene dibromide in ambient air and surface water. The range in concentration of ethylene dibromide in the air and the site where it was collected are as follows: manufacturing sites, 4.2 to 115 µg/M; oil refinery, 0.23-1.65 µg/M; urban locations near retail gasoline stations and with heavy vehicular traffic, 0.069 to 0.11 µg/M. Two water samples collected from streams near an oil refinery and a manufacturing site were found to contain 1.13 and 1.05 ppb ethylene dibromide, respectively. Further work to clarify ambient air levels and to assess whether they may represent a health risk is anticipated, but the very low levels detected to date are not thought to present a significant risk to health.	
(9) PB 246-356 AS	<i>Investigation of Selected Potential Environmental Contaminants: Haloethers</i>	\$7 50
	<i>Abstract</i>	
	This report reviews the potential environmental hazard from the commercial use of haloether compounds. The fluorinated anesthetic ethers, methoxyflurane (2,2-dichloro-1,1-difluoroethyl methyl ether) and fluoroene (2,2,2-trifluoroethyl vinyl ether), are only peripherally treated. Major focus is on the $\alpha$ -chloroethers, bis(chloromethyl)ether and chloromethyl methyl ether, and the $\beta$ -chloroethers, bis(2-chloroisopropoxy)ether, bis(2-chloroethyl)ether, and bis(2-chloroethoxy)methane. The $\alpha$ -chloroethers are used as chemical intermediates for production of ion exchange resins while the $\beta$ -chloroethers are used mostly for solvents but have some chemical intermediate uses. Information on physical and chemical properties, production methods and quantities, commercial uses and factors affecting environmental contamination, as well as information related to health and biological effects, are reviewed.	
(10) PB 246-419/AS	<i>Environmental Hazard Assessment of One and Two Carbon Fluorocarbons</i>	\$9 00
	<i>Abstract</i>	
	This report reviews the potential environmental hazard from the commercial use of large quantities of saturated, one and two carbon fluorocarbon compounds which are used for the most part as aerosol propellants, refrigerants, solvents, foaming agents, and fire	

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extinguishing agents. The following seven compounds were of major interest: trichlorofluoromethane, dichlorodifluoromethane, chlorodifluoromethane, trichlorotrifluoroethane, dichlorotetrafluoroethane, chloropentafluoroethane, and bromotrifluoromethane. Information on physical and chemical properties, production methods and quantities, commercial uses and factors affecting environmental contamination as well as information related to health and biological effects, are reviewed.

- (11) PB 246-947/AS ***Environmental Aspects of Chemical Use in Various Industrial Operations. Environmental Aspects of Chemical Use in Well-Drilling Operations, Conference Report*** \$13 75

*Abstract*

This conference was the second in a series of three on the environmental impact of chemicals in various industrial operations.

The objective of this conference was to cover and discuss current chemical use, functions of chemicals in the operations, byproducts likely to be introduced, known health or environmental effects from chemicals used, and measures used or available for use to control environmental contamination. More specifically, papers were presented and discussions held that covered industrial emissions and effluent surveys, chemicals and their effects, reclamation and disposal, and academic programs.

- (12) PB 247-000/AS ***Materials Balance and Technology Assessment of Mercury and Its Compounds on National and Regional Bases*** \$11 75

*Abstract*

The role of mercury and its compounds in the environment and the economy of the United States was studied. A detailed material balance for mercury and its compounds was developed on a national basis and for selected geographical regions, including estimates of the environmental fate of all emissions.

Current and projected process technologies for mercury products were examined, and estimates of environmental losses for 1973 and 1983 were presented. A set of regulatory alternatives was developed for each of the major technologies involving substantial losses of mercury to the environment, and the economic impact of these alternatives was examined.

- (13) PB 247-778/AS ***Environmental Hazard Assessment of Liquid Siloxanes (Silicones)*** \$5 50

*Abstract*

This report reviews the potential environmental hazard from the commercial use of large quantities of liquid siloxanes which are used for the most part in waxes, polishes, cosmetics, and in the foaming of polyurethane, and as lubricants, antifoaming agents, release agents, and protective coatings for textiles, glass and leather. Polydimethylsiloxane and polymethylphenylsiloxane were of major interest as commercial products, although low molecular weight siloxanes were also reviewed. Information is presented on the chemical properties, production methods, quantities produced and released, commercial uses, and factors affecting environmental contamination as well as data on health and biological effects.

NTIS ACCESSION NUMBER	TITLE	PRICE
(14) PB 247-946/AS	<i>A Review of Concentration Techniques for Trace Chemicals in the Environment</i>	\$12.50

*Abstract*

This report contains a discussion of the techniques which are currently available for the concentration of trace pollutants prior to their analysis. Methods for the accumulation of metals and organic compounds from air, water, and solids are covered as well as a review of recent literature on bioaccumulation. Each section includes tables in which concentration methods, and the accumulated materials are listed along with the pertinent literature references.

(15) PB 248-198/AS	<i>Test Methods for Assessing the Effects of Chemicals on Plants</i>	\$8.00
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*Abstract*

This report is the result of a survey undertaken to develop a series of acceptable test protocols for assessing the effects of chemicals on plants. Plant exposure to air, soil, and water contaminants were considered. Test species were selected on the basis of physiology, anatomy, importance as crops, and their susceptibility to chemicals. Bioassay methods were chosen because they are most representative of natural conditions. The recommended sequence of test procedures includes growth chamber or laboratory testing, greenhouse testing, field plot testing, progeny testing, and finally population studies in the ecosystem. It is suggested that the extent of testing should depend upon the quantity of the chemical to be manufactured and its potential hazard to the environment.

(16) PB 248-426/AS	<i>Epidemiology Studies Task III: Vinyl Chloride</i>	\$5.50
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*Abstract*

Using data from the 1970 Census of Population, estimates of the number of people living within a 5 mile radius of industrial plants producing vinyl chloride and vinyl chloride resins were prepared. Findings were:

0-½ miles	37,000
½- 1 miles	197,000
1- 3 miles	1,506,000
3- 5 miles	2,749,000
	<hr/> 4,489,000

The sex and age characteristics are also provided.

(17) PB 248-634/AS	<i>Investigation of Selected Potential Environmental Contaminants: Chlorinated Paraffins</i>	\$5.50
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*Abstract*

This report reviews the potential environmental hazard from the commercial use of chlorinated paraffins. Chlorinated paraffins, in most cases, contain 10 to 30 carbon atoms and a chlorine content of 40-70%. They are used as lubricating oil additives, secondary plasticizers, and flame retardants. Information on physical and chemical properties, production methods and quantities, commercial uses, and factors affecting environmental contamination, as well as information related to health and biological effects, are reviewed.

NTIS ACCESSION NUMBER	TITLE	PRICE
(18) PB 248-660/AS	<i>Compilation of State Data for Eight Selected Toxic Substances—Vol. I</i>	\$6 75

In June 1974, the Office of Toxic Substances, EPA, contracted with MITRE to collect and analyze toxic substances data in the U S In the following 14 months, MITRE contacted agencies in 20 key states and collected and analyzed their monitoring data This report describes that effort and discusses the amount, type and usefulness of the data and the toxic substances monitoring capabilities of the state agencies contacted Data collected and analyzed were for the following chemicals arsenic, beryllium, cadmium, cyanide, lead, mercury, PCB's

(19) PB 248-661/AS	<i>Compilation of State Data for Eight Selected Toxic Substances—Vol. II</i>	\$4 00
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*Abstract*

This appendix is a listing of key points-of-contact, phone numbers, agencies, and addresses, for each agency in the 20 states contacted which monitored toxic substances (See PB 248-660/AS)

(20) PB 248-662/AS	<i>Compilation of State Data for Eight Selected Toxic Substances—Vol. III</i>	\$4.00
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*Abstract*

This appendix is a cross-reference bibliography by state and by substance of every body of data and reports collected from the state agencies in the course of the project (See PB 248-660/AS)

(21) PB 248-663/AS	<i>Compilation of State Data for Eight Selected Toxic Substances—Vol. IV</i>	\$16.25
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*Abstract*

This appendix contains all the summaries and analyses of state agency data that were presented in the four quarterly reports during the course of the project (See PB 248-660/AS)

(22) PB 248-664/AS	<i>Compilation of State Data for Eight Selected Toxic Substances—Vol. V</i>	\$9 75
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*Abstract*

This appendix comprises 160 charts which summarize state agency toxic substances monitoring capabilities by state, substance, and agency for 25 monitoring program descriptors (See PB 248-660/AS)

(23) PB 248-834/AS	<i>Environmental Hazard Assessment Report Chlorinated Naphthalenes</i>	\$4 00
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*Abstract*

This report is an analysis of available information on chlorinated naphthalenes pertinent to an assessment of the potential environmental hazard posed by these compounds Aspects discussed are environmental exposure factors, biological effects, general information on uses, production, and chemical properties, as well as associated handling practices, and applicable standards and regulations Conclusions as to current hazard potential are presented, and recommendations for further study made



NTIS ACCESSION NUMBER	TITLE	PRICE
(24) PB 248-835/AS	<i>Environmental Hazard Assessment Report Higher Benzenepolycarboxylates</i>	\$3 50

*Abstract*

This report is an analysis of available information on the higher benzenepolycarboxylates (i.e., benzenecarboxylates through benzenhexacarboxylate) pertinent to an assessment of the potential environmental hazard posed by these compounds. Aspects discussed are production and uses of the subject compounds, environmental aspects and biological aspects. The study concludes that current uses of these compounds do not present an environmental hazard, but makes recommendations for additional studies to be undertaken prior to initiation of new and potentially dispersive uses.

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