

NIH POLICY MANUAL

3033-PROCUREMENT, USE AND DISPOSAL OF MERCURY AND ITS COMPOUNDS

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1. Explanation of Material Transmitted:

This new chapter establishes NIH policy and management controls on procurement, use and disposal of items and materials containing elemental mercury and mercury compounds.

2. Filing Instructions:

Remove: N/A

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PLEASE NOTE: For information on:

- Content of this chapter, contact the issuing office listed above
- NIH Manual System, contact the Office of Management Assessment, OM, at (301) 496-4606.
- Online information, enter this URL: <http://www1.od.nih.gov/oma/manualchapters/>

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Procurement, Use and Disposal of Mercury and Associated Compounds

A. PURPOSE:

This chapter establishes the policies and controls on procurement and use of items and materials containing elemental mercury and mercury compounds. The policy restricts the procurement of mercury added products with NIH appropriated funds; prohibits the use of mercury and its compounds on all facilities owned, operated or leased by the NIH where an acceptable substitute is available; requires the elimination of existing mercury containing devices in use on NIH facilities; and provides exceptions and procedures for obtaining variances for necessary scientific and medical uses of mercury.

B. BACKGROUND:

Mercury and its compounds are neurotoxic, bioaccumulative and persistent in the environment and subject to increasingly stringent regulations governing their use and disposal. Recent studies suggest that exposure to mercury contaminants may also alter the immune response to pathogens, contribute to the development of cardiovascular disease, and favor the growth of populations of multiple antibiotic resistant bacteria.

Mercury and its compounds are common contaminants in older biomedical facilities as a consequence of uses in building components, spills and biogenic accumulation of mercury, which is present in low concentrations in a wide variety of cleaning chemicals and other commercial products that may be discharged in waste water. Disturbance of contaminated areas and plumbing during construction and demolition activities increases the potential for human exposure and releases to the environment in waste water and construction debris.

Since the early 1970s, the NIH has had specific requirements governing disposal of mercury and its compounds. These were found in a previous version of this chapter updated on January 24, 1972 and subsequently rescinded on February 6, 1986 when mercury was included in policies for management of hazardous chemical waste. In 2001 the NIH initiated an agency-wide campaign to encourage the voluntary elimination of uses of mercury in its facilities for which there were acceptable, mercury free or low mercury alternatives. While this pollution prevention initiative has resulted in the elimination of most of the mercury in use at these facilities, some use is continuing and spills of mercury, primarily from broken thermometers, are still occurring. Spills increase the potential for exposure and environmental releases and may result in extremely high clean up costs and liability. Continuing unnecessary uses of mercury poses unacceptable and avoidable risks. Several federal and state regulations and Executive Order 13423 also require reductions in the use and disposal of toxic chemicals.

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These circumstances and the wide availability of alternatives to mercury thermometers and nearly all other uses of mercury and its compounds in the mission activities of the NIH dictate the need for mandatory restrictions on procurement, use and disposal of mercury established in this policy.

C. POLICY:

It is the policy of the NIH to prohibit all unnecessary acquisition of mercury, mercury added products and uses of mercury and mercury compounds on its facilities and to ensure that all mercury containing equipment and waste is managed and disposed in a manner that is safe, protective of the environment and compliant with all applicable regulations.

D. REFERENCES:

This policy was developed in accordance with the following statutes, regulations, Executive Orders, policies and plans, and amendments:

1. Resource Conservation and Recovery Act of 1976 Available online at http://www.access.gpo.gov/uscode/title42/chapter82_.html
2. Comprehensive Environmental Response Compensation and Liability Act of 1980 Available online at http://www.access.gpo.gov/uscode/title42/chapter103_.html
3. Clean Water Act of 1972 Available online at http://www.access.gpo.gov/uscode/title33/chapter26_.html
4. Hazardous Materials Transportation Act of 1975 Available online at http://www.access.gpo.gov/uscode/title49/subtitleiii_chapter51_.html
5. Interstate Mercury Education & Reduction Clearinghouse (IMERC) Mercury-Added Products Database, Northeast Waste Management Officials' Association. Available online at <http://www.newmoa.org/prevention/mercury/>
6. Annotated Code of Maryland, Environmental Article, Title 6, Subtitle 9 and other state and local laws and regulations restricting the sale and use of mercury devices, as applicable.
7. Affirmative Procurement Plan for Purchasing Environmentally Preferable Products and Services at the U.S. Department of Health and Human Services. Available online at <http://intranet.hhs.gov/environmental/documents/APPMay2007.doc>
8. Goals and targets for reduction of toxic chemical use and pollution prevention established by NIH Environmental Management System (NEMS) in compliance with

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Executive Order 13423 Strengthening Federal Environmental, Energy, and Transportation Management dated January 26, 2007.

9. NIH Environmental Policy dated January 13, 2005 from the NIH Director. Available online at http://www.nems.nih.gov/records/NIH_Environmental_Policy.pdf
10. NIH Mercury Abatement Program Website <http://www.nomercury.nih.gov>
11. NIH Waste Disposal Guide. Printed copies of the Guide may be obtained from Office of Research Facilities Development and Operations (ORFDO), Division of Environmental Protection (DEP) at 301-496-7990 or the Office of Research Services (ORS), Division of Occupational Health and Safety at 301-496-2346. The Guide and updated information is available online at:
<http://orf.od.nih.gov/Environmental+Protection/Waste+Disposal/>
12. NIH Manual Chapter 3032 –Waste Minimization and Management at NIH. Available online at <http://www1.od.nih.gov/oma/manualchapters/intramural/3032/>
13. NIH Manual 26101-25-2. Personal Property Management Guide. Available online at <http://www1.od.nih.gov/oma/manualchapters/acquisitions/26101-25-2/>
14. NIH Manual Chapter 1743, "Keeping and Destroying Records," Appendix 1, NIH Records Control Schedule:
<http://www1.od.nih.gov/oma/manualchapters/management/1743/>

E. DEFINITIONS:

1. **Accountable Property:** Government owned personal property that meets the NIH accountable property criteria for which controls must be maintained. The criteria are that the property is either valued over \$5,000 or considered sensitive.
2. **Mercury Added Product:** A product that contains mercury and which is intentionally added in order to provide a specific characteristic, appearance, or quality or to perform a specific function.
3. **Mercury Contaminated Product:** A product that contains mercury at total concentration equal to or above 50 parts per billion as an unintended contaminant arising from the manufacturing process.
4. **NIH Facility:** A facility owned, operated or leased by the NIH.
5. **Special Exception:** Authorization to procure or use mercury added products, and mercury contaminated products with a total mercury concentration greater than 100 parts per billion as provided for in this chapter.

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6. **Standing Exception:** Mercury added products and mercury contaminated products with a total mercury concentration greater than 100 parts per billion that may be procured or used on NIH facilities without prior approval as defined in E.1.
7. **Thimerosal:** Ethyl (2-mercaptobenzoato-(2-)O,S) mercurate (1-) sodium, a preservative and antimicrobial used in multi-dose vaccines and some biological reagents.

F. PROCEDURES:

1. **Special Exceptions:** Exceptions to the prohibition on procurement and use may be granted for limited scientific and medical uses of mercury or mercury compounds for which there are no acceptable alternatives. Examples of such uses may include, but are not limited to, calibration of measurement instruments; fixatives used in histology; components of existing equipment that cannot be replaced; research on mercury toxicology; and serviceable accountable property or other high replacement cost items (e.g., \$5,000 or more) that contain mercury as a necessary component for their intended use or that would be significantly reduced in resale value by removal of their mercury content.
 - a. **Application.** Persons seeking to procure or use mercury added products or mercury contaminated products with a total mercury concentration equal to or greater than 100 parts per billion shall submit a written application for a Special Exception to the Division of Environmental Protection, ORFDO. The application shall contain the following information:
 - i. Identification of the applicant;
 - ii. Name of Laboratory, Institute or Center;
 - iii. Chemical form and quantity of mercury;
 - iv. Location of use;
 - v. Intended use;
 - vi. Justification;
 - vii. Handling and containment precautions;
 - viii. Spill response plan;
 - ix. Acknowledgement of responsibility for clean up costs;
 - x. Request and justification for expedited review and approval if applicable.

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Applicants are required to have the application for the exception reviewed and signed by their Institute or Center (IC) Scientific Director before submission of the application to DEP.

- b. **Review and Approval.** The DEP Director shall review the application and approve it or return it to the applicant within ten (10) business days with an explanation why it was not approved and a recommended course of action to obtain approval. The DEP Director shall notify the applicant, IC Scientific Director and the Division of Occupational Health and Safety in writing within three (3) business days of an approved Special Exemption request.
- c. **Procurement Under Special Exception.** The applicant for the Special Exception shall provide a copy of the special exception approval letter to his/her procurement official to authorize the procurement of the mercury added product. The IC Scientific Director is responsible for reviewing applications for Special Exceptions submitted to them in accordance with this policy and making recommendations to the applicant and approving officials for action on the application.

IC Employees are responsible for:

- i. Avoiding the procurement of mercury added products except as allowed by this Section.
 - ii. Minimizing the procurement and use of excepted mercury added products and mercury contaminated products, and procuring such products with the lowest available mercury content when other technical factors are equivalent. Charts listing examples of mercury-containing equipment, reagents and procedures, and low or mercury free alternatives are available at the following website:
<http://orf.od.nih.gov/Environmental+Protection/Mercury+Free/Alternatives.htm>.
 - iii. Identifying existing mercury added products in their work areas and ensuring that they are removed and disposed of following NIH requirements for surplus property and waste management.
2. **Standing Exceptions:** The items and materials listed below may be procured and used at NIH facilities without applying for a Special Exception. Requirements for disposition of excepted equipment and waste containing excepted materials remain applicable.

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- a. Biological products containing thimerosal and other mercury based additives regulated by the United States Department of Health and Human Services.
 - b. Dental amalgams
 - c. Fluorescent lamps
 - d. Ultraviolet lamps
 - e. Mercury contaminated products with a total mercury concentration less than 100 parts per billion
 - f. Micromanipulation and microinjection apparatus
 - g. Prescription drugs and other substances regulated pursuant to the Food, Drug, and Cosmetic Act
3. **Termination of Exceptions:** The Director, DEP, may terminate Standing Exceptions and Special Exceptions when required by regulatory mandates or when suitable mercury free or lower mercury products become available for previously excepted uses. The Director will provide notice of terminations of Standing Exceptions in the NIH Record available online at <http://nihrecord.od.nih.gov/> and by updating this chapter. The Director will notify holders of Special Exceptions of terminations in writing within ten (10) business days. If an applicant desires to appeal the denial of an application for a Special Exception, or termination of an existing Special or Standing Exception, a written request with justification must be submitted within ten (10) business days of the notice of application denial or termination provided by the Director, DEP. The appeal shall be submitted to the Deputy Director for Management for reconsideration and final disposition.
4. **Disposition of Mercury Containing Equipment and Waste:**
- a. **Unserviceable Personal Property.** Elemental mercury in unserviceable medical and scientific equipment or other accountable property designated for disposal shall be removed and disposed following NIH waste management requirements before transfer of the property to the Office of Logistics and Acquisition Operations (OLA). The DEP provides assistance in safe removal and disposal of the mercury upon request. After the mercury is removed, the Property Custodial Officer shall attach an [NIH Form 2683](#), Certification that Property is Free From Hazards, to each medical/scientific device, equipment, or item. The form shall be completed with an indication that the mercury has been removed. The Office of Logistics and Acquisition Services will arrange for pick-up of the items by the Division of Logistics

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Services (DLS), OLAO. DLS personnel will not pick up items that are not tagged.

- b. **Mercury Containing Waste.** All liquid and solid waste generated at NIH facilities that contains a total mercury concentration above 50 parts per billion shall be managed and disposed of as Chemical Waste following NIH Policy Manual Chapter 3032 - Waste Minimization and Management at NIH.

G. RESPONSIBILITIES:

1. The Office of Research Facilities Development and Operations (ORFDO) has overall responsibility for design, construction, operation, renovation and decommissioning of NIH facilities.
2. The Division of Environmental Protection, ORFDO
 - a. Directs the NIH mercury abatement program and maintains a [website](#) to improve awareness of mercury hazards, mercury added products and non-mercury or reduced mercury alternatives.
 - b. Reviews and approves applications for special exceptions requested for procurement and use of mercury.
 - c. Conducts or assists in the assessment and remediation of mercury contamination in facilities.
 - d. Collects, stores, transports, treats, disposes and recycles mercury contaminated waste.
 - e. Collaborates with the Environmental Protection Agency (EPA) and other agencies and organizations in the development and promotion of strategies, procedures and technologies for reducing mercury use and assessing and abating mercury contamination of facilities.
3. The Division of Occupational Health and Safety (DOHS), Office of Research Services (ORS), is responsible for providing technical assistance and support regarding health and safety risks, and appropriate precautions relating to waste management activities. DOHS conducts safety surveys of laboratories and other work areas and notifies the responsible party and DEP of potential mercury containing or contaminated materials for remediation.

H. RECORDS RETENTION AND DISPOSAL:

Records Retention and Disposal: All records (e-mail and non-e-mail) pertaining to this chapter must be retained and disposed of under the authority of the NIH Manual Chapter 1743, "Keeping and Destroying Records," Appendix 1, NIH Records Control Schedule,

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Section 1300 Station Management, B. Safety (all that apply); Section 2600 Procurement, Property and Supply Management (all items that apply); and Part 4 Protection From Biohazards Contaminants, Pollutants and Research Risks - Section 7000 (all items that apply).

NIH e-mail messages (messages, including attachments that are created on NIH computer systems or transmitted over NIH networks) that are evidence of the activities of the agency or have informational values are considered Federal records. These records must be maintained in accordance with current NIH Records Management guidelines. Contact your IC Records Officer for additional information.

All e-mail messages are considered Government property and, if requested for a legitimate Government purpose, must be provided to the requester. Employees' supervisors, NIH staff conducting official reviews or investigations, and the Office of the Inspector General may request access to or copies of e-mail messages. E-mail messages must also be provided to Congressional oversight committees, if requested, and are subject to Freedom of Information Act requests. Since most e-mail systems have back-up files that are retained for significant periods of time, e-mail messages and attachments are likely to be retrievable from a back-up file after they have been deleted from an individual's computer. The back-up files are subject to the same request as the original messages.

I. MANAGEMENT CONTROLS:

- 1. Office Responsible for Reviewing Management Controls Relative to this Chapter:**
The Division of Environmental Protection (DEP) is responsible for the method used to ensure that management controls are implemented and working.
- 2. Frequency of Review:** Ongoing, Annual review.
- 3. Method of Review:** The DEP will maintain oversight and ensure effective implementation and compliance with this policy through various means. The DEP will audit records of mercury-related spills from several sources, including but not limited to the ORS Division of Fire/Rescue Services, DOHS, the Institutes and Centers.
- 4. Review Reports:** These reports are sent to the Associate Director for Research Facilities Development and Operations, the Deputy Director for Management, the Deputy Director for Intramural Research. Reports shall indicate that controls are in place and working well or include any management control issues that should be brought to the attention of the report recipient(s).