



Massachusetts  
Department  
of  
ENVIRONMENTAL  
PROTECTION

## fact sheet

# Proper Management of Dental Mercury

*Half of all dental amalgam is comprised of mercury. Waste amalgam is created when new fillings are inserted and/or old fillings are removed. When material containing mercury is washed down the drain or thrown into the trash, mercury can be released into our air and water and can pose a threat to our health.*

### **Why is Mercury a Problem?**

Mercury that is released into the environment can be transformed through biological processes into methyl mercury. This form of mercury “bioaccumulates” in fish to levels that are 100,000 times higher than levels in the water in which the fish live, making them unhealthful or dangerous to eat. Methyl mercury is highly toxic to developing nervous systems. For these reasons, the Massachusetts Department of Public Health (DPH) has advised pregnant women, nursing mothers, women of child-bearing age and children under 12 to avoid eating native freshwater fish from any Massachusetts lakes, rivers and streams. DPH has also recommended that all Massachusetts citizens limit their consumption of certain marine species and avoid certain fish from those bodies of water where sampling has revealed a significant mercury problem.

The Massachusetts Executive Office of Environmental Affairs has adopted a “Zero Mercury Strategy,” which is designed to virtually eliminate mercury use and releases to the environment. The Strategy focuses on reducing mercury air emissions and wastewater discharges from Massachusetts incinerators and businesses, and on educating consumers so they know what products contain mercury. Today, the high mercury emissions levels recorded in Massachusetts in 1996 have already been cut in half.

### **How Do Dental Offices Contribute to this Problem?**

Dental offices contribute an estimated 13% of the mercury discharged to Massachusetts waters, primarily through wastewater discharges. Dental offices can release mercury to the environment through wastewater (as drains discharge to sewers or septic systems) and through trash that includes products containing mercury (e.g., amalgam scraps).

### **How Can Dentists Be Part of the Solution?**

You should keep mercury out of your wastewater and trash! To do so, you need to know what products and waste materials contain mercury and how to handle them appropriately.

#### Know what products in your office contain mercury:

- ✓ *Bulk mercury*, formerly used to prepare dental amalgam.
- ✓ *Excess pre-packaged amalgam*.
- ✓ *Mixed amalgam with tooth scraps*.
- ✓ *Residual mercury in wastewater from dental offices*, which can include mercury dissolved in rinse water as well as fine particles of mercury-

containing amalgam that do not get captured by an evacuation trap, filter or screen.

- ✓ *Other products containing mercury, such as fluorescent lights, thermometers, sphygmomanometers, etc.*

One important way to help reduce mercury pollution is to use non-mercury products or products with reduced mercury content where possible. Another is to recycle mercury-containing products that continue to be used at the end of their useful life.

#### Collect mercury-bearing wastes and recycle them:

- ✓ Carefully collect excess amalgam and store it in airtight containers. Send it to a recycler when the container is full.
- ✓ Use an evacuation trap to capture scrap amalgam. The traps can be recycled with their contents (and replaced with new ones periodically), or you can use a reusable trap. When cleaning traps, filters, and screens, be careful not to wash scrap amalgam down the drain or throw it in the trash.
- ✓ Use an advanced amalgam separator to further reduce the discharge of mercury into wastewater.
- ✓ Recycle your remaining supply of bulk mercury.
- ✓ Recycle other mercury -containing products rather than throwing them into the trash.

#### Know your regulatory status and responsibilities:

At this time, we do not have sufficient information to know how much mercury leaches from dental wastes to definitively classify these wastes as *hazardous* or *non-hazardous*. Therefore, DEP recommends that any waste containing mercury be handled as if it is “hazardous,” to ensure that mercury is not released to the environment. Hazardous wastes are regulated by DEP to ensure that they are safely handled and disposed of.

- ✓ *Very Small Quantity Generators:* Dental offices that generate less than 100 kilograms of wastes containing mercury in a month are considered to be “Very Small Quantity Generators”. State regulations (310 CMR 30.000) provide several options for recycling wastes from these generators. Very Small Quantity Generators must properly identify their waste, store it properly, and send it offsite to an authorized recycling, treatment, storage or disposal facility. As long as dental offices that are Very Small Quantity Generators comply with these requirements, they are exempt from regulation by the U.S. Environmental Protection Agency.
- ✓ *Small and Large Quantity Generators:* Dental offices generating between 100 and 1,000 kilograms of wastes containing mercury in a month are regulated as “Small Quantity Generators”. “Large Quantity Generators are those who produce more than 1000 kilograms per month. While there are few if any dental practices that fall into these

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categories, those that do must comply with the full spectrum of state and federal hazardous waste management rules.

The Massachusetts Hazardous Waste Management Act (MGL c. 21C) and federal law make all generators responsible for knowing whether their waste is hazardous or not. This decision can be made by testing a waste or by relying on testing conducted by other parties (e.g., a waste treatment technology vendor). To assist dentists in making this decision, DEP is planning to work with Massachusetts dentists to collect and analyze samples of dental waste to see whether it should be generally classified as hazardous or non-hazardous. The results of this study will be provided to Massachusetts dentists when they are available.

### **What Rules Apply to Management of Mercury-bearing Dental Wastes?**

Recycling Rules: Dentists can recycle mercury-bearing wastes under DEP's "Class A Recycling Rules" (310 CMR 30.200). To recycle your mercury-bearing waste, you will need to send your mercury-bearing waste to an authorized recycler who has obtained a "Class A recycling permit" from DEP (or, if the facility is located outside of Massachusetts, has an equivalent permit from the state it is located in). You may use a common carrier for these shipments. Your shipment should be packaged carefully and labeled properly, and you should keep a record of each shipment. Your recycling facility and/or hauler can assist you with the necessary records, packaging and labeling.

Currently, you also need to file a "Class A permit notification with DEP, pay a permit fee, and file an annual report of your recycling shipments. To promote recycling, DEP plans to amend its recycling rules in Spring 2002. The proposed changes are expected to eliminate the Class A permit, permit fee, and annual reporting requirements.

Disposal Rules: If you do not recycle, you should send your mercury-bearing waste to a hazardous waste facility for disposal. You should comply with the requirements of 310 CMR 30.353:

- ✓ Register with the Department as a Very Small Quantity Generator;
- ✓ Use U.S. DOT-approved containers for waste accumulation and transportation;
- ✓ Mark and label containers as hazardous waste;
- ✓ Arrange to have the waste shipped to a licensed hazardous waste facility by a licensed hazardous waste transporter, or transport your waste yourself to another generator or a hazardous waste facility;
- ✓ Maintain records of the quantities of hazardous waste you accumulate and ship offsite for disposal; and
- ✓ Use a hazardous waste manifest or bill of lading to document your shipment.

### **Who Can Help?**

There are several companies that provide mercury waste handling, disposal and recycling services. Because service and contact information frequently changes, a list of these companies is not provided here. For information, contact:

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- ✓ DEP (through its Mercury Hotline, 1-866/9MERCURY)
- ✓ the Massachusetts Dental Society (telephone: 508/480-9797 or 800/342-8747 for calls within Massachusetts)
- ✓ the New England Waste Management Officials Association (telephone: 617/367-8558 or visit their Web site <http://www.newmoa.org/Newmoa/htdocs/prevention/mercury/>)

**For More Information:**

- ✓ About mercury, its environmental and health effects, and the Massachusetts Zero Mercury Strategy, see the Commonwealth's web site, <http://www.mass.gov/envir/mercury.htm>
- ✓ About the hazardous waste recycling and disposal rules, permit applications, etc., call the Business Compliance Assistance Hotline (in DEP's Bureau of Waste Prevention), telephone: 617/292-5898 or visit DEP's Web site, [www.mass.gov/dep](http://www.mass.gov/dep). Full copies of the regulations are available from the State Bookstore (telephone: 617/727-2834 or 413/784-1376).
- ✓ About a wide varieties of technologies for separating dental amalgam from wastewater, see the Naval Dental Research Institute's Web page ([www.dentalmercury.com/links.html](http://www.dentalmercury.com/links.html))

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