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## Storage and Disposal of Hazardous Waste

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Addressing problem materials at the source is a mandate of the US Environmental Protection Agency and is the most cost-effective means of pollution control. Voluntary recycling and reduction of hazardous waste for all states and all practices is recommended to avoid the need for mandatory restrictions. If certain materials are disposed of in trash or wastewater, they may eventually contaminate the ground water or create a public health problem.

Practices producing less than 220 pounds (100 kilograms) of hazardous waste or less than 2.2 lbs (1 kg) of acute hazardous waste per month or less than 220 pounds of spill residue per month are considered conditionally exempt small quantity generators (CESQG) by the EPA.

As a CESQG your waste must be delivered to an offsite disposal facility (TSDF) "permitted, licensed, or registered by a State to manage municipal or industrial solid waste" (40 CFR 261.5 (f)(3)). This basically means the waste can go to your local industrial or municipal solid waste landfill. However, **most permitted municipal and industrial landfills have created their own regulations that do not allow certain wastes to be disposed or place restrictions on where it can be disposed, especially hazardous wastes. For this reason, make sure that the TSDF you have selected has the necessary permits to handle hazardous waste.**

The state of North Carolina prohibits the disposal of hazardous waste into any municipal solid waste landfill even from CESOGs. Tennessee, South Carolina, Virginia, Georgia and Maryland do not have such a general prohibition.

### **Suggested Practices for Pollution Control**

The ADA, NC Dental Society and many other State Dental Societies are recommending a voluntary program to reduce pollution. Dentists remain one of the last contributors of mercury containing wastes. North Carolina already has some municipalities sampling the water of dental offices in particular and this practice is expected to expand. Some of the recommended practices are outlined below.

#### **1. X-Ray Fixer/Silver -Proper disposal and treatment of x-ray fixer**

Used x-ray fixer is regulated as a hazardous waste because of the high silver content and must be recycled or recovered. Waste x-ray film and old x-rays also contain silver. All are recyclable. You may use your own silver recovery unit for your developing system but it may be more practical to give, sell or pay someone who operates a silver recovery unit to take your used fixer solution.

Developer solution may be diluted and sewered unless it is mixed with fixer solutions. If mixed, the solution is considered hazardous and should be handled as fixer and recycled.

Some x-ray developing system cleaners contain chromium. If possible use a chromium free substitute.

**2. Lead Foil and lead shields – Must be recycled.**

The foil that shields x-ray film contains lead and cannot be disposed of as municipal solid waste. It is exempt from some government regulations when recycled as scrap metal but must be recycled through a licensed recovery facility

**3. Use Precapsulated Materials:**

The American Dental Association recommends that dentists eliminate the use of bulk dental mercury and bulk amalgam alloy and use only precapsulated alloy. Additionally, you should limit the amount of amalgam generated for a procedure to as close to the exact amount needed as possible to further reduce waste.

Use amalgam triturators that are closed and/or vented to the vacuum system to prevent micro-spills from occurring when mixing capsulated amalgam.

**4. Mercury and Amalgam Clean-up and Disposal:**



If you have bulk or liquid mercury in any form, you should have a mercury spill clean-up kit that is suitable to manage accidental spills that might occur. Mercury in the form of dental amalgam is very stable. If this is the only form of mercury you have, recycle jars are all that is needed.

Mercury disposal requires handling by authorized companies.

Collect unused amalgam and mercury for recycling by storage in a closed plastic container and preferably employ a controlled pass-through lid to minimize Hg vapor releases while adding to the container. Insure that amalgam alloy is present in the container in a sufficient amount to consume all mercury and stabilize it as a solid. Label containers as Contact (has been in the patient's mouth) or Non-contact Recyclable Mercury Amalgam Waste.

The containers with Mercury Amalgam must also be labeled as required by OSHA for hazardous materials. **TMC clients: If you need Mercury Amalgam labels call the TMC office 888-862-6742 or email [service@TotalMedicalCompliance.com](mailto:service@TotalMedicalCompliance.com).** Contact Mercury Amalgam (has been in the patient mouth) containers must contain a third label of Biohazard.

If the scrap amalgam has been stored under liquid (water, glycerin, spent x-ray fixer), ***do not decant the liquid down the drain.***

**Recycle Non-contact Amalgam:**

Collect used pre-capsulated capsules and other non-contact scrap amalgam in a wide-mouthed, airtight container to minimize the loss of residual components. Label the container Non-contact Recyclable Amalgam Waste. ***Do not place the capsules in infectious or biohazard containers or the regular garbage.***

Infectious and biohazard trash is often incinerated which will result in the release of mercury into the air. You may place the container in the sanitary waste if local

leaching rates allow but the American Dental Association strongly recommends recycling as a best management practice. ***Incineration of medical waste is responsible for 20% or 65 tons of mercury released into the air annually.***

### **Recycle Contact Amalgam**

Store contact amalgam separate from non-contact amalgam. Some recyclers require treatment of contact amalgam before pick-up.

Contact amalgam includes:

- Extracted teeth that contain amalgam restorations. Disinfect teeth with a 1:10 bleach solution for 10 minutes. Verify that your recycler will accept teeth. ***Do not put in the regular sharps container.***
- Disposable chair-side traps. Place the entire trap in the recycle container.
- Contents of reusable chair-side traps. After emptying the trap, ***do not rinse the trap under running water.*** Rinsing will release mercury into the water supply.
- Vacuum pump filters – Decant as much liquid as you can without losing any amalgam and then place filter in jar.

### **Filters to Recover Amalgam**

Chair-side filters typically remove 40% to 70% of Hg/amalgam material. The filter in the chair-side vacuum system must be cleaned or replaced, preferably on a weekly basis. Separator systems may be employed downstream of the chair-side filter to improve the efficiency for collection of mercury and amalgam debris to the 95%-99% range. A good time to make improvements in the collection efficiency is when renovating the office and replacing or upgrading equipment.

A fine filter at the point of the vacuum pump is often used to collect medium to small particle mercury and amalgam debris that passes by the chair-side filter. This filter also should be maintained as recommended by the manufacturer by cleaning or replacement. Do not allow contents to be washed into the drain where it will enter the sewer system. Mercury will contaminate the water system.

### **Practices for Effective Pollution Prevention:**

Product Substitution:

1. Discontinue the use of thermometers and blood pressure instruments that contain mercury.
2. Use pre-capsulated amalgam and mix minimum amounts.
3. Look at all potentially dangerous chemicals and replace them where possible with less dangerous materials.
4. Reduce amounts of chemicals on hand if substitution is not possible.

Housekeeping Practices:

1. Store containers in appropriately labeled containers.
2. Inspect containers on a regular basis and take appropriate action if damage or leaks are seen.
3. Stored mercury and/or alloy should be recycled promptly. Do not keep on site for extended periods of time.
4. Perform maintenance as recommended. Filters on chair-side vacuum systems should be included in the maintenance.

Train Staff:

Review your policies on recycling, housekeeping practices, product substitution and other actions to reduce potential pollution. Employees should understand your commitment to pollution control and the policies of your office for recycling.