

# Mercury Amalgam Waste

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## Introduction

Dentists and their staff use certain toxic substances that may lead to the contamination of water systems and the environment. In order to prevent contamination, dental offices should implement proper waste management procedures. As a consequence, the Indian Health Service (IHS) has developed waste management guidelines for the use of mercury amalgam.

Dental amalgam can contain up to 50 percent mercury. Although mercury in amalgam form is very stable, it should not be disposed of or rinsed down the drain. This is important because the amalgam waste could end up in municipal garbage, medical waste, or in the sewer system. If the waste is incinerated the mercury could be released to the environment, and if it reaches the sewer system it could contaminate drinking water or accumulate in fish. The best method of dealing with amalgam waste is by recycling it. Mercury can be recovered through a distillation process and reused in other products.

The following document summarizes the different types of mercury amalgam wastes, management practices for dealing with amalgam waste that conform to IHS guidelines, and some Do's and Don'ts when dealing with amalgam waste as outlined by the American Dental Association (ADA).

## Types of Amalgam Wastes

- Non-contact amalgam (scrap): excess mixture leftover after a dental procedure.
- Contact amalgam: amalgam that has been in contact with the patient. Examples include extracted teeth with amalgam restorations, carving scrap collected at the chair, and amalgam captured by the chair side traps, filters, or screens.
- Chair side traps: amalgam that is captured during amalgam placement or removal procedures.
- Vacuum pump filters: filters and traps contain amalgam sludge or water. Some recyclers will accept whole filters, while others may require special handling requirements for this material.

- Amalgam sludge: this is a mixture of liquid and solid material collected within the vacuum pump filters.
- Empty amalgam capsules: amalgam may be left over in the capsules after mixing the precapsulated dental amalgam.

## Amalgam Waste Management Practices

<b>Scrap Amalgam Handling</b>
<ul style="list-style-type: none"> <li>• Dental scrap amalgam should be collected and stored in two designated, air-tight, wide-mouthed plastic containers. One should be labeled CONTACT AMALGAM (amalgam that has been in contact with the patient's mouth), and the other should be labeled NONCONTACT AMALGAM.</li> <li>• NOTE: some recyclers may require special handling requirements for extracted teeth such as shipping the tooth in a disinfectant.</li> <li>• Make sure that the container lid is tightly sealed.</li> </ul>
<b>Amalgam Capsule Handling</b>
<ul style="list-style-type: none"> <li>• Stock capsules in a variety of different sizes.</li> <li>• After mixing the amalgam, place the empty capsules in a wide-mouthed, airtight container that is labeled AMALGAM CAPSULE WASTE.</li> <li>• Capsules that cannot be emptied should also be placed in containers labeled AMALGAM CAPSULE WASTE.</li> <li>• Make sure that the container lid is tightly sealed.</li> </ul>
<b>Disposable chair-side traps</b>
<ul style="list-style-type: none"> <li>• Open the chair-side unit to expose the trap.</li> <li>• Remove the trap and empty its contents into a wide-mouthed, airtight container that is marked CONTACT AMALGAM.</li> <li>• Make sure that the container lid is tightly sealed.</li> <li>• Chair-side traps that are only used for hygiene can be thrown in the regular garbage.</li> <li>• Different states have different requirements for the disposal of infectious waste that is in the traps with the amalgam such as blood or saliva. Check with your local recycler or contact the Area Office of Environmental Health for the proper procedures.</li> </ul>
<b>Reusable Chair-side Traps</b>
<ul style="list-style-type: none"> <li>• Open the chair-side unit to expose the trap.</li> <li>• Remove the trap and empty its contents into a wide-mouthed, airtight container that is marked CONTACT AMALGAM.</li> <li>• Make sure that the container lid is tightly sealed.</li> <li>• <b>DO NOT</b> rinse the trap under running water.</li> <li>• Replace the trap into the chair-side compartment.</li> <li>• Different states have different requirements for the disposal of infectious waste that is in the traps with the amalgam such as blood or saliva. Check with your local recycler or contact the Area Office of Environmental Health for the proper procedures.</li> </ul>
<b>Vacuum Pump Filters</b>
<ul style="list-style-type: none"> <li>• Change the filter to the manufacturers suggested schedule.</li> <li>• Remove the filter. Hold the filter over a tray or another container that can catch any spills. Next pour out as much liquid as possible without losing any noticeable amalgam. The amalgam-free liquid can then be rinsed down the drain.</li> <li>• Place the lid on the filter and put it in the box in which it was originally shipped. Once the box is full, the filters can be recycled.</li> </ul>
<b>Line Cleaners</b>
<ul style="list-style-type: none"> <li>• Use only non-bleach, non-chlorine containing solutions when flushing the wastewater lines and vacuum systems. A list of ADA approved cleaners is posted at the end of this document.</li> </ul>

## American Dental Association (ADA) Do's and Don'ts for Dealing with Amalgam Waste

DO	DON'T
Do use precapsulated alloys and stock a variety of capsule sizes	Don't use bulk mercury
Do recycle used disposable amalgam capsules	Don't put used disposable amalgam capsules in biohazard containers, infectious waste containers (red bags) or regular garbage
Do salvage, store, and recycle noncontact amalgam (scrap amalgam)	Don't put non-contact amalgam waste in biohazard containers, infectious waste containers (red bags), or regular garbage
Do salvage contact amalgam pieces from restorations after removal and recycle the amalgam waste	Don't put contact amalgam waste in biohazard containers, infectious waste containers (red bags), or regular garbage
Do use side-chair traps to retain amalgam and recycle the contents	Don't rinse chair-side traps containing amalgam over drains or sinks
Do recycle contents retained by the vacuum pump filter or other amalgam collection devices, if they contain amalgam	Don't rinse vacuum pump filters containing amalgam or other amalgam collection devices over drains or sinks
Do recycle teeth that contain amalgam restorations. (Note: Ask your recycler whether or not extracted teeth with amalgam restorations require disinfection)	Don't dispose of extracted teeth that contain amalgam restorations in biohazard containers, infectious waste containers (red bags), sharps containers, or regular garbage
Do manage amalgam waste through recycling as much as possible	Don't flush amalgam waste down the drain or toilet
Do use line cleaners that minimize the dissolution of amalgam	Don't use bleach or chlorine-containing cleaners to flush waste water lines

## Recycling

As mentioned earlier, the recommended method for amalgam disposal is by recycling the waste through an Environmental Protection Agency (EPA) approved vendor. The following actions should be taken to properly recycle your amalgam waste.<sup>1,3</sup>

- Carry the amalgam capsules in a variety of different sizes to reduce the amount of waste produced.
- Personal protective equipment such as gloves, masks, and protective eyewear should be worn when handling amalgam waste.
- Some vendors have special requirements for the handling, storing, and transportation of amalgam waste, so be aware of any special conditions. Dental clinics that need to find a recycler should contact their county or local waste authority to inquire about an amalgam waste recycling program.
- Amalgam waste should be stored in covered plastic containers that are clearly labeled.
- Always store different types of amalgam waste (e.g., contact and noncontact) in separate containers.
- Do not store amalgam waste under liquid. This would require the liquid to be treated as hazardous waste. Storage in tight-fitting covered containers and routine recycling should minimize any occupational exposures.

## Recycling Companies

Inclusion of a service in this list does not constitute approval or endorsement of that company by the IHS or provide any assurances with regard to the quality of services provided. All vendors should be asked to provide certification that your mercury waste is actually being recycled.

- Dental Recycling of North America (Dentalcare Waste Management) 1-800-360-1001
- Stericycle Dental Amalgam Mailback program 1-800-355-8773
- Bethlehem Apparatus Dental Amalgam Recycling Program 1-610-838-7034
- Advanced Environmental Recycling Corporation (AERC) 1-610-797-7608
- Amalgaway Mail Disposal Service 1-800-267-1467

Amalgam waste should be stored and managed in accordance with the instructions of the recycler. The vendors can provide shipping instructions. Most provide shipping containers that are already appropriately labeled.

## Additional Information

*American Dental Association.* For more information on mercury use, disposal, and safety, see the ADA website at <http://www.ada.org/prof/resources/topics/amalgam.asp>

*Indian Health Service.* See the Oral Health Program Guide for information regarding mercury use and safety.

*Environmental Protection Agency.* Check state legislation

and regulations at the following site to assure you are acting in accordance with requirements of your state: <http://www.epa.gov/epaoswer/hazwaste/mercury/laws.htm>

## ADA Approved Line Cleaners

The following line cleaners do not contain bleach or chlorine. This will reduce the dissolution of amalgam. Check with your manufacturer to determine which line cleaner would be appropriate for use with your equipment: Biocide (Biotrol International), BirexSe (Biotrol International), DRNA Vac (Dental Recycling North American Inc.), E-Vac (L&R Manufacturing Co.), Fresh-Vac (Huntington), GC Spray-Cide (GC America Inc.), Green and Clean (Metasys), Microstat 2 (Septodont USA), Patterson Brand Concentrated Ultrasonic Cleaner/Disinfectant Solution (Patterson Dental Supply, Inc.), ProE-Vac (Cottrell Ltd.), Pure-Vac (Sultan Chemists Inc.), Sani-Treet Plus (Enzyme Industries Inc.), SRG Evacuation (Icon Labs), Stay Clean (Apollo Dental Products), Turbo-Vac (Pinnacle Products), Vacusol Ultra (Biotrol International), Cavicide (Metrex Research Corp.), Vacuum Clean (Palmero Health Care).

## References

1. American Dental Association, 2003 (Feb.) "Best Management Practices for Amalgam Waste."
2. Sustainable Hospitals "Mercury Information Package." Accessed 1/15/2007 at [http://www.sustainablehospitals.org/HTMLSrc/IP\\_Mer\\_c\\_BMP\\_DentalAmalgam.html](http://www.sustainablehospitals.org/HTMLSrc/IP_Mer_c_BMP_DentalAmalgam.html).
3. <http://www.bemercurfree.net/dental.html> accessed 1/15/2007.
4. California Dental Association "Waste Management Guide for Dental Offices." Accessed 1/16/2007 at [http://www.cda.org/library/public/policy/app5\\_waste.htm](http://www.cda.org/library/public/policy/app5_waste.htm).

