

ADA Guidelines for Amalgam Waste Management

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Clinical context

Dental amalgam waste should be recycled. Following the simple suggestions outlined in this document will help protect the environment.

Although mercury in the form of dental amalgam is very stable, amalgam should not be disposed of in the general waste, infectious waste “yellow bag,” pharmaceutical waste or sharps container, and should not be rinsed down the drain. These precautions are important because some communities incinerate municipal garbage, medical waste and sludge from wastewater treatment plants. If amalgam waste ends up in one of these incinerated waste streams, the mercury can be released to the environment due to the extremely high temperatures used in the incineration process. Increasingly, local communities are enacting restrictions on the incineration of wastes containing mercury.

The good news is that amalgam waste, kept separate from other waste, can be safely recycled. The mercury can be recovered from amalgam waste through a distillation process and reused in new products. Recycling is best practice for amalgam waste management for dental clinics.

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Types of amalgam waste

Non-contact amalgam (scrap) is excess mix leftover at the end of a dental procedure. Many recyclers will buy this clean scrap.

Contact amalgam is amalgam that has been in contact with the patient. Examples are extracted teeth with amalgam restorations, carving scrap collected at chair side, scrap left on instruments and matrix bands and amalgam captured by chairside filters.

Amalgam separators that comply with ISO 11 143 capture over 95% of amalgam waste but also trap other treatment debris

Chairside filters capture amalgam waste during amalgam placement or removal procedures (the content of filters from dental units dedicated strictly to hygiene may be placed in the general waste).

Vacuum pump filters contain amalgam particles and water. Some recyclers will accept whole filters, while others will require special handling of this material.

Amalgam sludge is the mixture of liquid and solid material collected within the amalgam separator or other amalgam capture devices.

Empty amalgam capsules are the individually dosed containers left over after mixing pre-capsulated dental amalgam.

Bulk elemental mercury

The use of bulk elemental mercury (also referred to as liquid mercury or raw mercury) is not recommended for use in dental clinics. Instead, pre-capsulated amalgam alloy should be used.

If there is still bulk elemental mercury in a dental clinic, it should be recycled. Check with a licensed recycler to determine whether bulk elemental mercury is accepted. Do not pour bulk elemental mercury waste into the general waste container (yellow), infectious waste container (yellow) or down the drain.

Steps for reducing and recycling amalgam waste

1. Stock amalgam capsules in a variety of sizes to minimize the amount of amalgam waste generated.
2. Use high velocity evacuation, if appropriate with air/water spray, when carving, finishing, polishing or removing amalgam restorations.
3. Amalgam waste may be mixed with body fluids, such as saliva, or other potentially infectious material, so use personal protective equipment such as gloves, masks and protective eyewear when handling it.
4. Store amalgam waste in a covered plastic container labelled “Amalgam for Recycling” or as directed by your recycler. Consider keeping different types (e.g. contact and non-contact) of amalgam wastes in separate containers—talk to your recycler about any advantages in doing so.
5. Arrange for your recycler to collect your amalgam waste on a regular basis.

Best practices

DO	DON'T
Do use pre-capsulated alloys and stock a variety of capsule sizes	Don't use bulk mercury
Do recycle used disposable empty amalgam capsules	Don't put used disposable amalgam capsules into sharps containers (yellow), infectious waste containers (yellow) or into general waste
Do salvage, store and recycle non-contact amalgam (scrap amalgam)	Don't put non-contact amalgam waste into sharps containers (yellow), infectious waste containers (yellow) or into general waste
Do salvage (contact) amalgam pieces from restorations after removal and recycle the amalgam waste	Don't put contact amalgam waste into sharps containers (yellow), infectious waste containers (yellow) or into general waste
Do use chairside filters to retain amalgam and recycle the content	Don't rinse chairside filters 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 into sharps containers (yellow), infectious waste containers (yellow), or into general waste
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 dissolution of amalgam	Don't use bleach or chlorine-containing cleaners to flush wastewater lines

A practical guide for dental clinics

NON-CONTACT (SCRAP) AMALGAM

- Place non-contact, scrap amalgam in wide-mouthed, airtight container that is marked “Non-contact Amalgam Waste for Recycling.”
- Make sure the container lid is well sealed.

AMALGAM CAPSULES

- Stock amalgam capsules in a variety of sizes.
- After mixing amalgam, place the empty capsules in a wide-mouthed, airtight container that is marked “Amalgam Capsule Waste for Recycling.”
- Capsules that cannot be emptied should likewise be placed in a wide-mouthed, airtight container that is marked “Amalgam Capsule Waste for Recycling.”
- Make sure the container lid is well sealed.
- When the container is full, send it to a recycler.

AMALGAM SEPARATORS

- Check supplier instructions for replacement of the waste container (varies from volume guideline to time cycle e.g. annual replacement).
- Check with supplier re model information against specific conditions in the practice, e.g., space, plumbing, access, workload and regulatory requirements
- Consider capacity (in chairs), maximum flow rate and life cycle.

DISPOSABLE CHAIR SIDE TRAPS

- Open the chairside unit to expose the filter.
- Remove the filter and place it directly into a wide-mouthed, airtight container that is marked “Contact Amalgam Waste for Recycling.”
- Make sure the container lid is well sealed.
- When the container is full, send it to a recycler.
- Filters from dental units dedicated strictly to hygiene and non-amalgam related activities may be placed into the general waste.

REUSABLE CHAIR SIDE TRAPS

- Open the chairside unit to expose the filter.
- Remove the filter and empty the contents into a wide-mouthed, airtight container that is marked “Contact Amalgam Waste for Recycling.”
- Make sure the container lid is well sealed.
- When the container is full, send it to a recycler.
- Replace the filter into the chairside unit. (Do *not* rinse the filter under running water as this could introduce dental amalgam into the waste stream.)

LINE CLEANERS

- Use line cleaners recommended by the unit manufacturer

VACUUM PUMP FILTERS

- Change the filter according to the manufacturer's recommended schedule. *Note:* The following instructions assume that your recycler will accept whole filters; some recyclers require different handling of this material, so check with your recycler first.
- Remove the filter. While holding the filter over a tray or other container that can catch any spills, decant as much of the liquid as possible without losing any visible amalgam. The decanted, amalgam-free liquid can be rinsed down the drain.
- Put the lid on the filter and place the sealed container in the box in which it was originally shipped. When the box is full, the filters should be recycled.

INSTRUMENTS

- Clean scrap amalgam from instruments and matrix bands
- Place scrap into a wide-mouthed, airtight container that is marked "Contact Amalgam Waste for Recycling."

ULTRASONIC CLEANING SOLUTION

- Dispose of ultrasonic cleaning solution via the amalgam separator

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ISO Standards

The appropriate standard for amalgam separators is ISO 11 143, which specifies the use of amalgam separators that effectively filter 95% of amalgam waste, after large pieces have been captured in the chairside trap, that might otherwise go into wastewater streams. The chairside filter collects 40% and the remaining 60% is discharged into the effluent or goes to an ISO 11 143-compliant amalgam separator. This 60% will be reduced by at least a further 95%, leaving 5% or less of amalgam particles being discharged into the wastewater.

Related resources

[Policy Statement 6.11 – Dental Amalgam Waste Management](#)

Contribute to the development of ADA guidance to the profession

This Guideline has been developed by ADA expert committees. Feedback from the profession is welcome and may be submitted to contact@ada.org.au for consideration in future guideline development.