

CENTRAL CONTRA COSTA SANITARY DISTRICT DENTAL MERCURY BEST MANAGEMENT PRACTICES (BMPs)

Many existing mercury pollution prevention programs address ways to keep dental amalgam from entering the environment via the sanitary sewer. CCCSD has reviewed the most successful of those programs and from among all their BMPs, we determined which would be the most effective. The following BMPs are required by your Industrial User Permit.

1. Use, when appropriate, mercury-free alternatives to amalgam.

Mercury-free alternatives include gold, ceramic, porcelain, composites, polymers, glass ionomers, cold silver, and gallium.

2. Store scrap amalgam waste in a designated air-tight container for disposal by the appropriate agency or recycler.

The container should be air-tight to prevent mercury vapor build-up in the dental office. Use small plastic containers in each operatory to collect non-contact amalgam scrap for recycling. Keep this waste dry, and in a separate container from the one containing contact amalgam wastes such as used screens and traps. If waste amalgam must be stored under liquid, do not decant this liquid down the drain. Check with your mercury recycler for additional storage requirements. Use a licensed service contractor to recycle all amalgam trituration wastes, used capsules, chair-side vacuum and cuspidor screens, and vacuum pumps screens or filters. Keep all these items out of sinks, trash containers, and medical waste red bags. Do not place gloves, plastic bags or paper towels into the recycling container because they add to the volume of waste created and cause problems with the recycling equipment.

3. Clean or replace chair-side amalgam traps or screens regularly.

Only traps on chairs used for amalgam placement or removal need special handling; place waste traps from chairs dedicated to hygiene in the regular garbage. Disposable traps, as opposed to reusable traps, are preferred due to their ease of proper disposal and the risk of loss of amalgam particles during cleaning. 100 mesh traps should be used in all suction systems that can function adequately with smaller mesh. If the vacuum system cannot accommodate 100 mesh traps, consider retrofitting or upgrading the system so that 100 mesh traps can be utilized, as they are more effective at controlling amalgam particles than systems utilizing larger (40 mesh) traps. Flush the vacuum system with the line solution before changing the chair-side trap. The best method is to flush the line the last thing before you go home, and then change the trap first thing the next morning. Do not dispose of used screens in the sink, trash or red bag; place them in the recycled mercury container. Use one large plastic container to collect used capsules, chair-side screens/traps, vacuum system screens/filters, extracted teeth with amalgam fillings, and other mixed amalgam wastes. Do not add water or fixer to this plastic container. If reusable traps are used, do not rinse them over a sink.

4. Clean or replace central vacuum filters or traps regularly.

Vacuum pump filters are located upstream of the central vacuum pump, and should be changed in accordance with the manufacturer's recommendation for optimal performance. Change these filters at least once a month. Do not dispose of used filters in the sink, trash or red bag; place them in the recycled mercury container. If you must use a reusable trap, clean it by emptying the trap's contents into the wide-mouth plastic waste amalgam container. Use facial tissues or towels inside to absorb any liquid.

5. Use a line cleanser or disinfectant that will not solubilize mercury retained in the plumbing system.

Some line cleansers, such as household bleach, can solubilize mercury from amalgam particles retained in the wastewater lines, causing excessive mercury releases. If bleach must be used as a disinfectant, then do not dispose this waste to the sewer. Collect all bleach line flushing wastes, and have your amalgam recycling service take them.

6. Use pre-dosed encapsulated amalgam; discontinue use of bulk mercury and bulk alloy.

Due to residual amalgam, amalgam capsules cannot simply be placed in the trash. Any excess amalgam not used in the resonation should immediately be placed in the waste mercury recycle container. Order various amalgam capsule sizes so that the amount mixed can match the amount needed. Purchase less and organize your inventory so that oldest capsules are used first. Place any unusable or broken amalgam capsules with non-contact amalgam waste. Contact your recycler to ensure they will accept capsules.

7. Do not clean up a mercury spill with a commercial vacuum cleaner.

Appropriately trained personnel should clean the spill.

Mercury clean-up kits are available commercially and should be accessible for emergencies. Train staff annually in proper amalgam and other relevant waste management techniques. Also train new staff when hired. If any mercury-containing equipment breaks, contain visible mercury and place contaminated items in the mercury waste container.

8. Install and properly maintain an ISO-certified amalgam separator.

Settlement chambers, filters, centrifugation, and absorption resins in various brands of separators in the vacuum system are usually the only measure that can consistently achieve mercury discharge limits. Qualified personnel should install the unit. Ensure that it is maintained according to the manufacturer or supplier's recommendations, either by staff or a service company. Install it with an accessible monitoring point. All sludge or filtrate from the separator should be recycled either to the supplier, manufacturer or your amalgam recycler.

Considerations: choose a separator that is compatible with the building's plumbing and the existing vacuum system in the dental practice and the entire building. The unit should be installed centrally so all wastewater exposed to amalgam will flow through the device before entering the sewer line. The vendor should be able to prove the effectiveness of the system with an ISO certification. There should be no compromise in suctioning power. The unit should operate quietly. The machine should come with a mechanism that protects against spills or back-ups if a blockage occurs. Simplicity of design is important too, as it would allow fewer chances for something to go wrong. Consider reliability of the vendor; vendors should carry coverage for pollution caused by spills in addition to general commercial liability insurance.