



Hazardous Waste Generated by Dental Offices

Hazardous wastes are chemicals that are dangerous to human health and the environment. In general substances that are ignitable, corrosive, reactive or toxic are classified as "hazardous" and are subject to restrictions and regulations. Dental offices routinely use disinfectants, adhesives, photo chemicals and other hazardous materials. These substances must be disposed of properly or they might contaminate our land, water and air.

Hazardous wastes should NEVER be poured down the drain or disposed of as garbage!

Hazardous wastes commonly generated by dental offices include:

- **Photo Processing Wastes** – x-ray fixer, developer, and cleaner, x-ray film, lead foils and shields
- **Chemical Sterilant Wastes** (also known as chemiclave solutions or disinfectants)
- **Line Cleaner Wastes**
- **Universal Wastes** - batteries, fluorescent lamps, mercury thermometers, etc. **There is a separate factsheet for universal wastes because they are regulated differently.*
- **Amalgam Wastes** – 1) scrap (non-contact) amalgam, 2) amalgam capsules (empty, leaking or unusable), 3) contact amalgam (e.g. extracted teeth), 4) amalgam pieces captured by vacuum pump filters, chair-side traps and screens and 5) sludge captured by amalgam separators 6) chair-side traps, vacuum pump filters, and screens. *(Please note that dental amalgam is classified as a Universal Waste and the requirements under this section are not applicable to universal wastes. A wastewater discharge permit issued by the SFPUC governs amalgam management requirements.)*

For additional information about hazardous wastes...

- If you have questions about the disposal of office wastes (hazardous, medical or universal) or need assistance with waste management, contact **San Francisco Department of the Environment** (a non-regulatory agency) at **(415) 355-3700**.
- If you are unsure whether a waste is hazardous or not, contact San Francisco Department of Public Health's **Hazardous Materials Unified Program Agency (HMUPA)** at **(415) 252-3900**. Material Safety Data Sheets (MSDSs) are also good sources of information on toxic materials.
- If you are unsure whether a liquid can be disposed of down the drain, contact the **SFPUC Bureau of Environmental Regulation and Management** at **(415) 695-7310**.
- For questions about acceptability of waste materials in San Francisco's garbage, please call the **San Francisco Recycling and Disposal, Inc.** at **(415) 330-1400**.



For more information please visit SFEnvironment.com or call (415) 355-3700.

Hazardous Waste General Requirements

For both employee safety and environmental protection reasons, very specific requirements apply to hazardous waste generation, management, storage, treatment and disposal.

This section describes the general guidelines that you should follow in managing your hazardous wastes. **This is not a substitute for understanding the actual regulations.**



Register your practice with HMUPA

In San Francisco, the agency that regulates hazardous materials storage and generation is the Hazardous Materials Unified Program Agency (HMUPA), a program of the Department of Public Health. **If your practice generates hazardous wastes (solid, liquid or gas), you must contact HMUPA** at (415) 252-3900 and complete a hazardous materials registration.

The regulations that apply to the dental office will depend on the type and volume of hazardous wastes that are generated, in addition to the extent of on-site treatment and storage. Once your office complies with these regulations, HMUPA will issue a Compliance Certification.

Obtain the EPA Generator ID Number

Dental offices that generate hazardous waste must obtain an "EPA Generator ID Number." However, facilities that generate less than 27 gallons/month of photo fixer waste, where photo fixer is the only hazardous waste generated, are exempt from this requirement. Mercury recyclers and licensed hazardous waste haulers also require an EPA generator ID number.

* To obtain an ID# go to www.dtsc.ca.gov or call 800-618-6942. Complete and submit DTSC Form #1358.

Below is a list of EPA and California waste codes for hazardous wastes commonly generated by a dental office. You will need these numbers to complete your EPA Generator ID Number application.

| Waste | EPA Code |
|---------------------------|------------|
| Amalgam Waste | D009, D011 |
| Photographic Fixer | D011 |
| Ignitable Waste | D001 |
| Waste containing Chromium | D007 |
| Waste containing Lead | D008 |
| Waste Mercury | D009 |

Store Hazardous Wastes in Appropriate Containers

Hazardous wastes must be stored in containers that can be tightly closed. Recyclers and hazardous waste haulers often provide offices with the necessary containers. However, care must be taken to ensure that the container is compatible with the nature of the waste stored. Also, recyclers and haulers usually have specific packaging requirements for each type of waste that should be taken into account to avoid hazards.

Containers should be kept in a secure area away from the public and inspected once a week for leakage or deterioration. Damaged containers should be repackaged or placed in a secondary containment immediately.

Hazardous wastes must be disposed of within 90 days from the date of accumulation. In San Francisco, businesses that generate less than 27 gallons of total hazardous wastes per month are classified as Very Small Quantity Generators (VSQG). However, no hazardous wastes may be stored for more than one year from the initial date of generation without obtaining a special permit from CalEPA.



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Label Hazardous Waste Storage Containers

All containers that store hazardous waste must be labeled "**Hazardous Waste**," in addition to words identifying the contents (e.g.- HAZARDOUS WASTE – USED FIXER ONLY). Hazardous waste designated for recycling can be labeled "Excluded Recyclable Material."



Container labels must have the following information required by California law:

1. Accumulation start date (the date materials were first placed in the empty container)
2. Name and address of office generating the waste
3. Indication of the type of hazard (i.e., Flammable, Corrosive, or Reactive)

Labels are generally available at no cost from the licensed hazardous waste recycler or hauler servicing your business.

Train Your Employees

Employees must be trained in hazardous waste management and disposal. In accordance with California's Occupational Safety and Health Administration (OSHA), employees must be trained on proper hazardous material and chemical handling, storage, disposal, spill clean-up procedures and reporting.

Employees are required to take an annual refresher on hazardous waste training. In addition, retraining should be provided to employees when there are changes in procedures or methods of processing application.

All employees should read, understand, and be aware of the location of the Material Safety Data Sheets (MSDS). Manufacturers and suppliers of chemical products used in the workplace provide these data sheets to outline all relevant information regarding their products and the related human safety concerns associated with them, including emergency response and procedures. In addition, a Spill Response Plan should be developed, updated and always be made available to employees.

San Francisco's Wastewater Discharge Permit includes a list of mandatory Amalgam Best Management Practices (BMPs), one of which requires that dental practices train staff on proper handling, management, and disposal of mercury-containing materials and fixer-containing solutions.

Maintain Detailed Records

Dental practices must maintain detailed records of hazardous waste **generation, management, and disposal**. Inspectors can ask to review these records at any time.

Appropriate records include:

1. **Hazardous Waste Disposal Log** – Dental offices must keep records of all hazardous wastes generated onsite, regardless of whether wastes are recycled on-site or disposed off-site. **Hazardous waste disposal documentation must be maintained for a minimum of three years.**

In general hazardous waste haulers provide offices with a hazardous waste manifest or receipt for each shipment. Businesses that use the City-sponsored VSQG Program should also receive a disposal document or log with the date, type, and quantity of waste delivered/collected.

San Francisco's Wastewater Discharge Permit includes a list of mandatory Amalgam Best Management Practices (BMPs), one of which requires dental practices to maintain a log of amalgam wastes generated and disposed.

2. **Amalgam Separator Maintenance Log** - Amalgam separator units must be serviced regularly to ensure proper efficiency. Contact your separator vendor for specific information about service requirements and frequency. A record of maintenance services along with date and type of service should also be documented.

For more information please visit [SFEEnvironment.com](https://www.sfeenvironment.com) or call (415) 355-3700.

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3. **Employee Training Log** – A log of training activities must be kept to verify that all employees have been trained in hazardous waste management.
4. **X-ray Fixer Treatment Log** - If spent x-ray fixer is treated onsite, a log showing the date, quantity treated and the disposition of liquid and residual must be maintained.

Properly Dispose of Hazardous Wastes

San Francisco dental practices have two options for disposal (or recycling) of hazardous wastes:

- Option 1: Contract with a certified hazardous waste service
- Option 2: Use the City-sponsored VSQG Program

Dental offices are solely responsible for all hazardous waste from inception to proper disposal.

Choosing a Hazardous Waste Hauler

When choosing companies to recycle or dispose hazardous waste, ask the following types of questions:

Does the recycler...

- accept all kinds of hazardous wastes generated by your office? (contact amalgam wastes, photochemical waste, medical wastes)
- offer pick-up services? If not, does the recycler accept shipped waste?
- provide packaging, storage or shipping of wastes? If packing is not provided, how should wastes be packaged? What types of wastes can be packed together?
- have an EPA identification number and the appropriate permits to transport off-site for treatment, storage or disposal of hazardous waste?
- sign a hazardous waste manifest for the shipment?
- have insurance to cover accidental spills?
- recover mercury and silver waste?

Option 1: Contract with a Certified Hazardous Waste Service

Dental practices can choose to have a certified hazardous waste hauler pick up wastes at regular time intervals. Additionally, some waste haulers provide a shipping service/option for certain types of wastes. (Rules and restrictions apply)

Local Hazardous Waste Haulers

Integrated Waste Control (510) 583-7980

Photowaste Recycling (415) 459-8807

Safety Kleen (707) 584-0415

Ecosolutions/Stericycle (888) 278-7269

Note: The companies listed in this document are for your convenience. Inclusion does not imply an endorsement from the City and County of San Francisco, and the list may not represent a complete list of companies providing these services.

For a more extensive and up-to-date list of waste haulers—both local and national—please visit www.sfenvironment.com.

Option 2: Use the City-Sponsored Programs

In San Francisco, businesses that generate less than 100 kilograms (220 pounds) or 27 gallons of hazardous wastes per month are classified as Very Small Quantity Generators (VSQGs). Most dental practices in San Francisco qualify as VSQGs and are therefore eligible to use the City-sponsored program for convenience and as a less expensive alternative. **VSQG Drop Off Program** allows businesses to make an appointment and transport the hazardous waste to the SF Recycling and Disposal, Inc. facility located at 501 Tunnel Avenue, CA 94134. The prices are partially subsidized by San Francisco garbage bills. Drop off days are held twice a month on Wednesdays. To make an appointment for a drop off, call (415) 330-1425.

VSQG Pick Up Program is for businesses that prefer to have the hazardous wastes picked up directly from the job site at a convenient time. Curbside, Inc. has been contracted by the City to operate this program. Unit disposal costs are higher than the drop-off program, and there is an additional \$50 fixed fee for the transportation. To schedule a pick-up, call (415) 355-3777.

To find out more about the city-sponsored programs, visit www.sfenvironment.com or call (415) 355-3700. Also, see attached brochure.

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Hazardous Waste Management Guide for Dental Offices

This section provides a detailed guide to the management, disposal, recycling and less-toxic alternatives for common dental office hazardous wastes including:

- **Photo Processing Wastes**
- **Chemical Sterilant Wastes**
- **Line Cleaner Wastes**
- **Amalgam Wastes** (Contact SFPUC at (415) 695-7310 for requirements related to amalgam handling and disposal)
- **Universal Wastes** (See universal waste factsheet for detailed information on recycling these wastes)

Photochemical Wastes

Dental practices generate photochemical wastes during photo processing. Typical photochemical wastes include fixers, developers and cleaners.

X-ray Fixer is the solution left over from X-ray processing and is considered hazardous waste because of its high silver content. Whether treated on-site or off-site, fixer can be easily recycled.

- **Disposal Option 1** - Contract with a certified hazardous waste treatment company to pick it up for disposal/recycling,
- **Disposal Option 2** - Use the City-sponsored VSQG program, or
- **Disposal Option 3** - Treat onsite using a silver recovery unit (see below).

Onsite Treatment - Typically a dental office can treat up to 10 gallons per month of spent fixer with an onsite silver recovery unit. Silver recovery equipment can be purchased or leased. The two most widely used types of treatment systems are 1) metallic replacement cartridges and 2) electrolytic recovery units. These are generally used in conjunction and require that a strict maintenance schedule be followed

in order to meet wastewater discharge limits for silver.

Treatment system vendors should be able to provide information on the characteristics of the by-products of their systems (e.g. sludge, treated fixer solution). Based on the characteristics,



sludge may be able to be reclaimed and the treated solution may (or may not) meet local wastewater discharge limits for silver.

Treated fixer must be non-hazardous and in compliance with local discharge limits prior to discharge. Please contact your local wastewater treatment agency (SF PUC) at (415) 695 7310 for further guidance.

X-Ray Cleaner may be a hazardous waste if it contains chromium. Check the package label or the material safety data sheet (MSDS) to see if your cleaner contains chromium or other toxic ingredients. Keep in mind that the solution may exceed the pH standard set by the local wastewater treatment agency, in which case it cannot be discharged to the sewer or disposed of as trash.

- **Disposal** - Contract with a certified hazardous waste treatment company for collection or use the City-sponsored VSQG Program.
- **Less Toxic Alternative** - Switch to non-chrome cleaners or mechanical methods of cleaning.

X-Ray Developer if unused, should never be poured down the drain because it may contain hydroquinone. However, x-ray developer that is fully used and not contaminated with any other solutions can be poured down the drain as hydroquinone is consumed during use.

Some radiographic film processors automatically mix spent fixer and developer together. If this is the case, contact the equipment supplier to adjust the fixer line so as to prevent mixing and allow efficient silver recovery.

- **Disposal** - Contract with a certified hazardous waste treatment company for collection or use the City-sponsored VSQG Program.

Note: Fixer and Developer should never be mixed, as mixing inhibits silver recovery!

Lead Foils and Shields contained in Intraoral dental packets and lead aprons are hazardous wastes because they contain lead but can be easily recycled. These materials are exempt from regulation as a hazardous waste only when they are recycled as scrap metal through a licensed recovery facility.

- **Disposal** - Recycle as scrap metal through a licensed recovery facility, use the City-sponsored VSQG Program, or contract with a certified hazardous waste hauler.

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X-ray Film is a hazardous waste because it contains silver. However, many companies can reclaim silver from the film and reuse the plastic for other products.

- **Disposal** - Recycle as scrap metal, use the City-sponsored Programs, or contract with a certified hazardous waste hauler.
- **Less Toxic Alternative** Switch to digital x-ray equipment.

Chemical Sterilants

Many dental practices use chemical sterilizing solutions to disinfect surgical instruments. Spent chemiclave solution is the liquid left over from the chemical sterilization of dental instruments. Chemiclave solutions are considered hazardous waste if they contain alcohol, glutaraldehyde or other hazardous ingredients. Check the package label or the material safety and data sheet to see if your solution contains hazardous components.



- **Disposal** - Contract with a certified hazardous waste treatment company for collection, use the City-sponsored VSQG Program, or treat with a glycine solution, if appropriate (see below).

Several brands of sterilizing solutions contain glutaraldehyde or ortho-phthalaldehyde (OPA) as active ingredients. As of January 1, 2001, California law authorizes the onsite neutralization of waste glutaraldehyde and OPA solutions by adding glycine. (Chemical suppliers should be able to furnish glycine or provide a list of glycine vendors.)

Neutralization can be carried out without a hazardous waste treatment permit if the chemical sterilant waste is:

- Generated by a medical facility during the disinfection of medical devices;
- Treated at the site where it was generated; and,
- Neutralized by a solution containing glycine as the sole active ingredient.

Glutaraldehyde solutions that are neutralized will generally not need any additional "treatment" to meet local discharge

regulations. Please contact the local wastewater treatment agency (SFPUC) at (415) 695-7310 for further guidance.

- **Less Toxic Alternatives** - Use sterilants containing less-hazardous materials such as quaternary ammonium compounds.



Line Cleaners

Some line cleaners contain alcohols and/or other hazardous materials. Products with such ingredients that go unused are considered hazardous waste and should be disposed properly.

- **Disposal** - Contract with a certified hazardous waste treatment company for collection or use the City-sponsored VSQG Program.

In all cases, NEVER USE BLEACH or other corrosive solutions!!

San Francisco's Wastewater Discharge Permit includes a list of mandatory Amalgam Best Management Practices (BMPs), one of which requires that dental practices use non-bleach line cleaners.

- **Non-Bleach Alternatives** - All-In-One, E-Vac, Evacuation Cleaner, EZ-Zyme, Gobble Plus, Green and Clean, MAXI-EVAC, ProE-Vac, Purevac, Sani-Treet Plus, Stay-Clean, Super-Dent, Turbo Vac Line Flush, VacuCleanse, or VAC-U-EZ.

Note: The products listed in this document are for your convenience. Inclusion does not imply an endorsement from the City and County of San Francisco, and the list may not represent a complete list of non-bleach alternatives.

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