

# Dental, Medical and Veterinary Offices – Managing Your Hazardous Waste



DEPARTMENT OF TOXIC  
SUBSTANCES CONTROL

## Public and Business Liaison Fact Sheet

*DTSC is one of six Boards and Departments within the California Environmental Protection Agency. The Department's mission is to restore, protect and enhance the environment, to ensure public health, environmental quality and economic vitality, by regulating hazardous waste, conducting and overseeing cleanups, and developing and promoting pollution prevention.*

State of California



California  
Environmental  
Protection Agency



The Public and Business Liaisons of the Department of Toxic Substances Control (DTSC) prepared this fact sheet to provide general information about the hazardous waste requirements and exemptions for dental, medical and veterinary facilities. Because they have some unique waste streams, these facilities frequently contact DTSC for guidance. This fact sheet addresses what is and is not considered hazardous waste in those contexts, and describes some aspects of recent regulatory relief granted to businesses that generate waste considered hazardous solely because of its toxicity due to silver content. **It also discusses the changes that now allow many wastes generated by these facilities to be managed under the reduced requirements for Universal Wastes.**

Clicking on highlighted text will take you to sites containing the described references, laws and regulations. If you generate hazardous waste, you should consult with your Certified Unified Program Agency (CUPA). Finally, DTSC strongly encourages all businesses generating hazardous waste to consider waste minimization, source reduction and pollution prevention.

### Does DTSC regulate the disposal of sharps and expired pharmaceuticals?

No, the Department of Health Services (DHS) Environmental Management Branch regulates storage, transportation and disposal of infectious and medical wastes. Sharps and most expired pharmaceuticals, while dangerous, are regulated by the Medical Waste Management Act, not the Hazardous Waste Management Act. With some exceptions, ([Health and Safe. Code § 118030](#)), you must use a registered hazardous waste hauler to transport medical waste. ([Health and Safe. Code § 118000](#)) For further information about medical waste management, contact the [DHS Medical Waste Management Program](#) at (916) 449-5671, or email to [MedWasteInfo@dhs.ca.gov](mailto:MedWasteInfo@dhs.ca.gov).

### What can I do with waste glutaraldehyde and OPA?

Glutaraldehyde and ortho-phthaldehyde (OPA) are the active ingredients in several brands of sterilizing solutions. There has been much discussion in the past about the toxicity of these materials as wastes at different concentrations, and whether the on-site treatment of these wastes was considered to be hazardous waste treatment and disposal. Recent lawmaking authorizes the treatment of these wastes by medical facilities, under conditions that will be explained below.

The passage of [Senate Bill No. 2035](#) (1999- 2000 Reg. Sess.) resulted in the addition of [Health and Safety Code section 25123.5\(c\)](#) to state law, allowing medical facilities to conduct the onsite treatment (neutralization) of waste glutaraldehyde and OPA

For more information about DTSC, visit [www.dtsc.ca.gov](http://www.dtsc.ca.gov)

disinfectant solutions without a permit or other authorization, effective January 1, 2001. The only conditions on the treatment exemption are that:

- the waste is generated by a medical facility during the disinfection of medical devices,
- that it is treated at the site where it was generated; and,
- that the sole active chemical of the neutralizing solution is glycine.

This exemption actually excludes the mixing of these materials from the definition of "treatment." Your disinfectant supplier should be able to furnish you with a list of glycine vendors. If you prefer to dispose of your wastes rather than treat them onsite, you will still need to characterize them as hazardous or non-hazardous, and handle them appropriately. Glutaraldehyde degrades after activation and most likely will become non-hazardous within the allowed hazardous waste accumulation time (90-180 days). See the DTSC fact sheet "[Accumulating Hazardous Wastes at Generator Sites](#)" (Jan. 02) for more information regarding accumulation times. However, the DTSC has not studied the degradation timeline nor the toxicity threshold, and therefore cannot make a recommendation for retention time or toxicity threshold concentration. As long as the degradation occurs unaided by the generator (addition of heat, chemicals other than glycine, aeration, etc.), and it occurs within the allowed accumulation time, authorization from the DTSC is not required.

Generators of waste glutaraldehyde who wish to claim that it has degraded to non-hazardous levels should check with their suppliers to see if they have data to support determinations that the waste will degrade to non-hazardous levels over a set period of

time. If the data is not available, generators will have to produce their own supporting data to make the determination, or handle the wastes as hazardous wastes. The manufacturer of OPA has informed DTSC that the solution at use-dilution fails the California aquatic bioassay toxicity characteristic and thus is hazardous waste when discarded without treatment.

Solutions that do not use glutaraldehyde or OPA may or may not be toxic, depending on the cleaning and sterilizing agents used. Check with the manufacturer for guidance, and your sanitary district inspector may be familiar with the products as well. Many manufacturers of ultrasonic and autoclave systems claim that the chemicals used in their systems are not toxic.

### **What can I do with waste formalin?**

Formalin is commonly used as a tissue preservative. Formalin is a generic mixture containing formaldehyde; it may also contain methanol and other chemicals. As with glutaraldehyde and OPA, there has been much discussion in the past about the toxicity of this material as waste at different concentrations. The passage of [Assembly Bill No. 966](#) (1997-1998 Reg. Sess.) legalized the treatment of these and other wastes by qualifying laboratories.

Assembly Bill No. 966 (1997-1998 Reg. Sess.) added [Health and Safety Code section 25200.3.1](#) to the law. This section exempts the treatment of hazardous wastes generated in certain laboratories from permitting requirements if the lab satisfies the conditions of the law. To qualify for the exemption, the labs must be associated with education, research, chemical analysis, clinical testing, product development, testing or quality control. Treatment of laboratory waste may be conducted without a permit, as

long as the laboratory waste treatment methods used have been published in either a peer-reviewed scientific journal or the National Research Council's [Prudent Practices in the Laboratory: Handling and Disposal of Chemicals](#). DTSC has determined that pathology labs conduct activities that qualify as "clinical testing," and so qualify for the exemption if they desire to treat waste formalin or formaldehyde generated from medical specimen preparation or preservation. When a preserved specimen is being disposed of, the formalin must be decanted off of the specimen. The specimen must be managed in accordance with medical waste management requirements, and the formalin as hazardous waste.

If you prefer to dispose of your wastes rather than treat them onsite, you will still need to characterize them as hazardous or non-hazardous, and handle them appropriately. Formalin solutions may vary in their toxicity, depending on the formulation. Some manufacturers have related to DTSC that formulations containing greater than 2.9% formaldehyde may fail the aquatic bioassay or acute toxicity tests. Generators may characterize their waste formalin by having it analyzed or by getting toxicity information from their supplier, if it is available. If toxicity information is not available for their brand of formalin, and the generator does not want to characterize it by laboratory analysis, it may be assumed to be hazardous and sent off for treatment and disposal as a hazardous waste.

### **How should I handle lead foil from x-ray film and scrap dental amalgam? Are they hazardous wastes?**

The lead foil from dental x-ray film, lead blankets and lead film storage boxes are

considered to be scrap metal if they are sent to a metal recycler, but they are hazardous wastes if you dispose of them. Most metal recyclers accept lead scrap. Dental amalgam is nearly 50% mercury, a metal that is a hazardous waste constituent. If you merely discard dental amalgam, it is hazardous waste, and because amalgam contains mercury, copper and zinc, the amalgam **cannot** be considered an exempt silver-only waste.

Extracted teeth that have amalgam fillings will likely be hazardous waste, so they may not be disposed of with sharps, thrown away as general waste, heat autoclaved, or sent for incineration. Many scrap amalgam recyclers accept teeth with amalgam as long as the sender certifies that they are not infectious wastes. Extracted teeth without attached tissue are considered non-infectious wastes, unless the extracted teeth are deemed infectious or biohazardous waste by the attending surgeon or dentist.

Changes to the universal waste regulations now allow unused mercury, scrap amalgam, extracted teeth with amalgam fillings, chair traps, sink traps and filters containing amalgam to be handled as universal waste rather than hazardous wastes. Empty used amalgam capsules are not considered hazardous and may be simply discarded. Amalgam-containing traps and filters may not be washed out into a sink. Amalgam waste must be placed in airtight containers that are kept closed and are clearly labeled as "Universal Waste--Dental Amalgam," "Waste Dental Amalgam," or "Scrap Dental Amalgam". These wastes may be kept for up to one year; the easiest way to demonstrate this is to mark on the container the date the first waste is generated. A common carrier can take the wastes to a recycler without using a hazardous waste manifest, and some recyclers offer packaging that allows the

generator to mail or ship packaged waste to the recycler. Check the DTSC publication "[Managing Universal Waste in California](#)" for additional details and lists of other universal wastes. Keep in mind that amalgam wastes are still hazardous wastes, and the generator of the wastes can be charged with hazardous waste penalties if the universal waste requirements are not followed or if the wastes are improperly disposed of.

**What does [Senate Bill No. 2111 1997-1998 Reg. Sess.](#)), dealing with "silver-only wastes," mean for dental, medical and veterinary establishments?**

For many dental, medical and veterinary establishments, the only hazardous waste you generate is x-ray fixer. Its regulation was changed by Senate Bill No. 2111 (1997-1998 Reg. Sess.), now codified as [Health and Safety Code section 25143.13](#). Because there are nuances involved, we have prepared the following highlights. DTSC has prepared a Fact Sheet, "[Onsite Tiered Permitting: Changes in Regulation of Silver Wastes](#)" (Jan. 2000) which addresses the changes in waste management resulting from the passage of the bill. Please note that even though many regulations relating to the management of silver-only wastes have become less stringent, the wastes are still considered hazardous wastes, and may not be disposed of to the ground or sanitary sewer. Your local Certified Unified Program Agency (CUPA) may regulate you as a hazardous waste generator, even though you treat your fixer and discharge the nonhazardous effluent under a pretreatment permit.

**In my office, photo fixer is the only waste I produce and it is less than 100 kilograms (that is,**

**27 gallons or 220 pounds) per month. What am I required to do?**

Health and Safety Code section 25143.13 lessened your regulatory load a great deal. You no longer need an EPA (Generator) Identification Number. You no longer need tiered permitting authorization from DTSC or your local program to treat the fixer onsite before it is discharged to the sewer. You may not, however, discharge the untreated fixer directly to the sewer. You must treat it first to remove the silver by using a silver recovery unit. All recovered silver must be reclaimed. Furthermore, you must notify your local sanitation department if you discharge to the sewer after treatment. You may also take it to a permitted recycler or have it hauled off by a service company. You do not need to use a hazardous waste manifest or a transporter registered with DTSC when shipping either the recovered silver or the fixer.

**My office generates a total of less than 100 kilograms (that is, about 220 pounds or 27 gallons) of federally-regulated (RCRA) hazardous waste per month, and I generate other hazardous wastes in addition to photo fixer. What am I required to do?**

Unlike the example above, because fixer is not your only hazardous waste, you need a California ID Number for shipping those other hazardous wastes and those wastes must be manifested. Although you do not need tiered permitting authorization to treat the fixer before it is discharged, you will need authorization if you treat other hazardous wastes onsite, except for the exempted wastes mentioned above. Like the example above, you may not discharge fixer directly to the sewer. You must treat it first to remove the silver with a silver recovery unit, or have it taken to a permitted recycler.

To fit this category, any recovered silver must be reclaimed. You must notify your local sanitation department if you discharge to the sewer after treatment.

**My office generates more than 100 kilograms (that is, about 220 pounds or 27 gallons) of federally-regulated (RCRA) hazardous waste per month, but less than 1,000 kilograms (2,200 pounds or 270 gallons) of federally-regulated waste per month. What are my requirements?**

You must have an EPA ID Number for shipping those other hazardous wastes, and those wastes must be manifested. Although you do not need tiered permitting authorization to treat the fixer before it is discharged, you will need authorization if you treat other hazardous wastes. Like the first example above, you may not discharge untreated fixer directly to the sewer. You must first use a silver recovery unit to reduce the silver concentration to the discharge level allowed by your sanitation district, or have it taken to a permitted recycler. To fit this category, any recovered silver must be reclaimed. You must notify your local sanitation department if you discharge to the sewer after the treatment.

**I have been offered a chemical that solidifies my x-ray chemical wastes, and the salesperson claims that it can be disposed of to the municipal trash dumpster after it has been solidified. Can this system be used in California without a permit or other authorization?**

It cannot be used to treat hazardous waste without a permit. The regulatory exemptions

from permitting requirements are meant to encourage recycling of precious metals. Conducting treatment for the purposes of disposal would require a treatment permit and the resulting waste would have to be sampled to verify that it met Federal and State land disposal requirements.

**I understand that electronic devices, batteries, fluorescent lamps and high intensity discharge lamps are now called “universal wastes.” What does that mean for me?**

Universal wastes include mercury-containing thermostats and most consumer-type batteries (nickel-cadmium or Ni-Cad, lithium, silver button, mercury, alkaline, small sealed lead-acid batteries used for burglar alarms and emergency lights — but not auto batteries), as well as fluorescent and high-intensity discharge (HID) lamps. Recently added to the list of universal wastes are dental amalgam (as discussed earlier) covered electronic devices (CEDs), cathode ray tubes (CRTs) from TVs, computer monitors, and other devices, and spent aerosol cans that still contain hazardous materials. While all of these could be classified as hazardous wastes, they do not have to be managed as hazardous wastes if they are managed according to the requirements of the universal waste regulations.

If the total of all the RCRA (federally regulated) hazardous wastes plus the universal wastes that you generate each month is less than 100 kilograms (220 pounds) (excluding CRTs), and you do not generate more than 1 kilogram (2.2 pounds) of acute hazardous waste, you are called a “Conditionally Exempt Small Quantity Universal Waste Generator”. Through February 8, 2004, you were allowed to dispose of up to 220 pounds of universal

waste batteries, universal waste thermostats, and universal waste lamps by disposing of them in a municipal or hazardous waste landfill that would accept them. From February 8, 2004 to February 8, 2006, CESQGs can dispose of up to 30 lamps and 20 pounds of batteries per month to a municipal waste landfill, if the landfill will accept them. As an alternative to disposal, many local government agencies operate small business waste programs as part of their household hazardous waste program and can accept these types of wastes from businesses for a small fee. Rechargeable battery manufacturers have created a take-back program for the spent rechargeable batteries that are generated by many devices. Check the [Rechargeable Battery Recycling Corporation](http://www.lamprecycler.org) website or call them at 1-800-822-8837 for more information. Waste lamp recyclers have a website at [www.lamprecycler.org](http://www.lamprecycler.org).

As discussed earlier, nearly all mercury-containing wastes and devices may now be handled as "Universal Wastes", including dental amalgam, mercury switches, sphygmomanometers and other mercury-containing gauges. These may not be disposed of in municipal landfills, so cannot be discarded with your regular office trash.

### **A final word . . .**

Remember that all businesses are required to determine whether the wastes that they generate are hazardous wastes. If you have unknown substances, it is your responsibility to determine whether they are hazardous or not. Wastes that have been determined to be hazardous must be labeled and managed as hazardous wastes, regardless of whether you are eligible to treat them onsite under exemptions, or send them away with a hazardous waste hauler for offsite treatment

or disposal. If you generate less than 100 kilograms of hazardous waste per month, you may be eligible to take your waste to a small business/household hazardous waste program, if your local agency has one. Call your county environmental health program (look under "Local Environmental Agencies" in the [Toxic Questions?](#) section of the DTSC website) or your DTSC Public and Business Liaison to determine whether you have a small business program in your area. If you cannot find the answer to your question in this fact sheet, please contact the Public and Business Liaison directly. You can call them at 800-728-6942, or contact them via the Department of Toxic Substances Control website -- <http://www.dtsc.ca.gov/> -- click on "Toxic Questions?" then on "Contact a Live Person!" and you will go to a page with links to the Public and Business Liaisons' email.

DTSC Public and Business Liaisons provide informal guidance only regarding management of hazardous waste for the convenience of the public. Such advice is not binding upon DTSC, nor does it have the force of law. If you would like a formal opinion on a matter by DTSC, please contact the responsible program office directly. You should also refer to the statutes and regulations, DTSC Policies and Procedures, and other formal documents. If you believe that you have received incorrect information from a Public and Business Liaison, please contact Linda Janssen, Regional Coordinator, at 916-255-3594. We also encourage you to complete a Cal/EPA Customer Satisfaction survey (<http://www.arb.ca.gov/calepa/cepacsur.htm>) so that we may improve our Public and Business Liaison Program.