



Dental clinics and photography or radiology labs generate relatively small quantities of several types of hazardous and nonhazardous wastes. Wastes generated by these facilities are considered to be hazardous wastes if the waste:

- is easily combustible or flammable (ignitable);
- dissolves metals or other materials or burns the skin (corrosive);
- is unstable or undergoes rapid or violent chemical reaction or produces toxic gases when mixed with water or other materials (reactive);
- is a metal, pesticide, herbicide, or organic chemical at high enough concentrations that could be harmful or toxic if released into ground water (toxic).

[6 CCR 1007-3 Part 261]

Many small dental clinics and photography or radiology labs are classified as Conditionally Exempt Small Quantity Generators (CESQG) of hazardous waste, meaning that they generate less than 100 kilograms (kg) (about 220 pounds or 25 gallons) of hazardous waste and/or 1 kg of acute hazardous waste per calendar month [6 CCR 1007-3 Part 261.5]. CESQGs are responsible for identifying all hazardous wastes that they generate [6 CCR 1007-3 Part 262.11], can accumulate up to 1000 kg of hazardous waste on site at one time, and may either treat their own hazardous wastes or must ensure delivery to a facility that is authorized to accept hazardous waste [6 CCR 1007-3 Part 261.5].

Some dental clinics and labs are small or large quantity generators of hazardous waste because they generate more than 100 kg of hazardous waste and/or 1 kg of acute hazardous waste per month and/or accumulate more than 1000 kg of hazardous waste on site. These generators have additional requirements including restrictions on how long and how much hazardous waste they can store, record-keeping requirements, training requirements, etc. Refer to the Colorado Hazardous Waste Regulations 6 CCR 1007-3 Part 262 and the "Guide to Generator Requirements of the Colorado Hazardous Waste Regulations," available from the Hazardous Materials and Waste Management Division.

HAZARDOUS WASTES

The most common sources of hazardous wastes generated by dental clinics and photography or radiology labs include:

- Fixer – contains silver, D011
- Undiluted developer – may be corrosive, D002
- Lead foil, dental bite wings, discarded lead shields - contain lead, D008
- Amalgam - contains silver & mercury, D011, D009
- Dental trap filter wastes - contain lead, silver, mercury, D008, D009, D011

- Developer system cleaners – may contain chromium, D007
- Old X-ray equipment - may contain PCB oils, regulated under the Toxic Substances Control Act (TSCA)
[6 CCR 1007-3 Part 261]

Recycling

Silver

Silver from used film, fixer, and paper is a valuable resource that should be recycled. These wastes may be classified as hazardous wastes depending on the concentration of silver [6 CCR 1007-3 Part 261.24]. There are essentially two ways to recover the silver, either recycling onsite or collecting it for an offsite recycling service to pick up. Onsite recycling is generally limited to used fixer, rather than film or paper. The generator can install one or more silver recovery units (electrolytic units, recirculating electrolytic units, or cartridges) at the end of the x-ray or film processing line. The recovered silver can then be sold to a metal reclaimer and the **treated** fixer disposed of down the drain *with prior permission of public wastewater treatment authority* [6 CCR 1007-3 Part 100.21]. Facilities that have individual septic disposal systems should not dispose of this material down the drain even in small quantities as it can harm the septic system. They should contract with an industrial wastewater disposal company to dispose of these wastes.

For offsite recycling, the generator should collect and store used fixer in a closed plastic container. Although not required for CESQGs, it is good management practice to label this container with the words "Hazardous Waste-Used Fixer" and the date that the fixer was first added to the container. Small and large quantity generators are required to properly label their hazardous waste containers. When enough used fixer has been accumulated, the generator can arrange pick-up by a recycling service. The recycling service will reclaim the silver from the used fixer at the recycler's site. Many will offer this service for used film and paper as well.

If the facility is a small or large quantity generator of hazardous waste, shipments of unprocessed used fixer containing silver are considered hazardous waste and the hazardous waste manifest system must be used [6 CCR 1007-3 Part 267].

Lead

Lead from lead foil, bite wings, and discarded lead shields may be recycled as scrap metal through scrap metal recyclers, through some silver recyclers, or contact your dental supply company for recycling assistance [6 CCR 1007-3 Part 261.6(a)(3)].

Amalgam and dental trap wastes

Amalgam containing silver and mercury should be sent offsite for recycling along with dental trap wastes that collect amalgam particles and some lead scraps [6 CCR 1007-3 Part 261.6(a)(3)]. Check with your recycler to make sure they are willing to take both amalgam and lead wastes. These particulates should be collected in a closed container compatible with the waste. It is good management practice for the CESQG to label the container as “Hazardous Waste-Amalgam and Dental Trap Wastes” and mark it with the accumulation start date. When a sufficient amount has been collected, the offsite recycler should be contacted for pick-up. Empty amalgam capsules may be disposed of as solid waste with the regular trash.

Disposal

Hazardous wastes that cannot be recycled and are destined for disposal have to be disposed of as hazardous wastes. Some wastes, such as unused developer (which may be corrosive), may be neutralized by the generator and disposed of down the drain *with prior approval of the wastewater treatment authority* [6 CCR 1007-3 Part 100.21]. The generator should contact a hazardous waste disposal company for assistance with other hazardous wastes.

X-ray equipment frequently contains small amounts of cooling oil. Oils containing PCBs and PCB-containing equipment with greater than 50 ppm PCBs are regulated under the Toxic Substances Control Act by the Environmental Protection Agency (EPA) [40 CFR Part 761]. Contact the EPA Region VIII offices for assistance on PCB management.

NON-HAZARDOUS WASTES

Developer

Used or diluted developer is a non-hazardous waste and can often be flushed down the drain with the permission of the public wastewater treatment authority. Facilities that are on individual septic disposal systems should not pour this material down the drain because it can harm the septic system. They should contract with an industrial wastewater disposal company for disposal of these wastes.

Infectious Wastes

Blood on swabs or dressings and used sharps (needles, probes, etc.) are considered non-hazardous infectious wastes [25-15-401 CRS]. Infectious wastes are a solid waste in Colorado and require special handling prior to disposal [6 CCR 1007-2 Section 1.2]. Receptacles containing infectious waste have to be clearly labeled with the biohazard symbol or with the words “Infectious Waste” in letters at least one inch high. Untreated waste must be stored, packaged, contained, and transported in a manner that prevents the release of the waste material and in a manner to prevent nuisance conditions. [6 CCR 1007-2 Section 13.8] Common industry practice is to use red bags for the disposal of infectious waste.

Properly labeled and packaged infectious waste can be disposed of in a permitted solid waste disposal facility without treatment. This procedure must be documented in the facility’s infectious waste handling plan and must be acceptable to the waste hauler and disposal site. [25-15-403 CRS] Waste generators may treat their infectious waste themselves to render it noninfectious or contract with a medical waste disposal company. Infectious waste that has been appropriately treated to render it non-infectious is no longer considered infectious for handling and disposal purposes. [25-15-404 CRS] Treatment of the waste reduces the generator’s potential liability after disposal. Treated waste can be disposed of with other noninfectious and non-hazardous solid wastes after the generator either identifies it as appropriately treated waste or provides the hauler and disposal facility with a written statement that its general waste includes appropriately treated infectious waste. [25-15-405 CRS, 6 CCR 1007-2 Section 13.8.3]

Appropriate treatment is any method that renders the waste noninfectious. The generator must keep records that include the following: documentation that the method is effective; a written standard operating procedure for implementation of the method; and regular monitoring to test the effectiveness of the treatment. [25-15-404 CRS] Widely used treatment methods include incineration, autoclaving, decontamination, and sterilization. [6 CCR 1007-2 Section 13.4]

Contaminated sharps (needles, syringes) must be placed in a puncture resistant container and be properly designated as untreated infectious waste or made noninfectious by an appropriate treatment method. Untreated containers of sharps cannot be compacted. [6 CCR 1007-2 Section 13.8.4]

For more information:

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This Compliance Bulletin is intended to provide guidance on the appropriate management of wastes based on Colorado solid and hazardous waste statutes and regulations only. The wastes described in this guidance may also be regulated under other statutes and regulations.