



# Environment

I N F O R M A T I O N F R O M K O D A K

N-417(ENG)

## *Waste Management Guidelines for Dental Products*

### **INTRODUCTION**

Dental practices must comply with a growing number of environmental and workplace safety standards for the responsible management of waste materials. Some regulations are national in scope. Others vary by locality. The regulations referred to in this publication pertain only to the United States.

There are two main influences that impact the management of wastes— environmental (i.e., regulations of the EPA: Environmental Protection Agency) and employee protection (regulations of OSHA: Occupational Safety and Health Administration).

While a 3 - 5 member dental office is by no means a major contributor of waste materials, the collective amount of waste produced by all offices requires responsible action on all of our parts. Even some of the smallest communities are becoming increasingly concerned about the purity of water supplies and the decreasing availability of landfills.

Kodak is firmly committed to helping its customers comply with applicable regulations and to keeping them abreast of changes in regulations and recycling technology associated with Kodak dental products. This publication will review wastes associated with Kodak products and discuss the methods appropriate for management of each. This publication contains:

- General guidelines for the proper management of Kodak dental products and packaging, including information on their material content.
- A review of workplace safety regulations concerning medical waste and chemicals.
- Names, addresses, and telephone numbers of reclamation companies.
- Kodak phone numbers for additional information and technical assistance on waste management and safe handling issues.

Some used photographic processing materials or associated products may be considered a "regulated" waste. Federal, state, and local laws must be followed when managing these wastes at your facility.

## WASTE MANAGEMENT AND RECYCLING

There are essentially three types of waste from dental products—waste solids, x-ray processing effluent and medical waste. Waste solids consist of packaging and other materials resulting from the use of Kodak dental film, chemicals and local anesthetics. Effluent is the liquid waste that is produced primarily from x-ray processing chemicals. Medical waste consists of those materials that are potentially infectious. There are many options available to dental offices for management of solids, effluent or medical waste materials, including but not limited to:

### Waste Solids Management

- Local collection systems for recycling.
- Commercial or public trash haulers for disposal.
- Licensed haulers for materials regulated as hazardous waste.

### Effluent Management

- Publicly Owned Treatment Works (POTW) or sewer system.
- Licensed commercial effluent haulers for safe management or recycling of effluent that is regulated as hazardous waste.
- Septic tank systems and/or leach fields are **not** recommended and are often prohibited by state or local regulations.

### Medical Waste Management

- Commercial or public trash haulers where **regulated** medical wastes are taken away for safe management.
- Commercial or public trash haulers for disposal of non-regulated medical waste where it can be treated as normal solid waste.

## RESOURCE CONSERVATION AND RECOVERY ACT (RCRA)

Regulation of discarded materials is not new. In the U.S., the Resource Conservation and Recovery Act (RCRA) was enacted in 1976 to “promote the protection of human health and the environment and to conserve valuable material and energy resources.” The Resource Conservation and Recovery Act uses the term “waste” to describe any discarded materials of a process or procedure.

### Hazardous Waste

There are two principle ways to determine whether specific wastes are defined as hazardous, thus requiring management according to hazardous waste regulations. This means that wastes are required to be hauled away for safe management by licensed waste haulers to permitted Treatment, Storage, and Disposal Facilities (TSDF) or treated on site. Dental practitioners need to be aware that some state and local waste management regulations are more stringent than the federal regulations. To find out which regulations are in force in your area, contact the appropriate agencies listed in Appendix C on page

15. The federal regulations define “hazardous wastes” by:

1. Comparing the produced waste or by-product to a list of hazardous wastes published in the Code of Federal Regulations Protection of the Environment, 40 CFR Part 261, or to your state regulations.
2. Subjecting the waste to the RCRA criteria for toxicity, reactivity, ignitability or corrosivity.

Based on RCRA regulations for toxicity, discarded photographic or x-ray film processing solutions that contain silver at or above 5 mg/L are considered a hazardous waste when collected, stored or transported for off-site treatment or disposal. Some regulatory exemptions may apply for small quantities. Similarly, any lead foil from intraoral dental packets that is discarded with routine office trash may be regulated as a hazardous waste, depending on office size and state or local regulations. Fortunately, as discussed later in this booklet, you also can pursue other options or alternatives for the legal management of silver bearing wastes and lead.

## RCRA Generator Categories

Labs that create hazardous wastes are referred to as “generators” in the RCRA regulations. These regulations define generator classifications; the two that apply to typical dental practices are:

1. **Conditionally Exempt Small Quantity Generator** – People who generate no more than 100 kg/month (approximately 220 lb) of hazardous waste and/or no more than 1 kg/month (approximately 2.2 lb) of acute hazardous waste. “Acute hazardous wastes” are wastes that may be fatal to humans in low doses. Photographic wastes from dental offices would not be classified as acute wastes.
2. **Small Quantity Generator** – People who generate greater than 100 kg/month (approximately 220 lb) but less than 1000 kg/month (approximately 2,200 lb) of non-acute hazardous waste.

In most areas of the United States, the average size dental office is classified as a “Conditionally Exempt Small Quantity Generator” because of the small volume of hazardous waste produced. As a result, they may be exempt from most federal hazardous waste regulations. Large dental clinics or schools, however, may be classified as “Small Quantity Generators” if they exceed the maximum weight limits established in category one. In either situation, they need to check with their local authorities, because some state and local agencies have declined to recognize the conditionally exempt category for dental offices or other small businesses that generate small amounts of hazardous wastes.

## CLEAN WATER ACT (CWA)

The Clean Water Act was passed in 1977 and amended in 1987. The primary goal was to eliminate the discharge of pollutants into a body of water. Most of the wastewater generated in our communities travels through the sewer system to a publicly owned treatment works (POTW). The POTW maintains the responsibility for treating the wastewater and complying with federal and state limits because it is the direct discharge point for all the wastewater that comes through its facility. In order to comply, the local POTW must establish pretreatment guidelines (commonly referred to as sewer codes) that impact dental offices and other businesses.

## REGULATED MEDICAL WASTE

In addition to the above description concerning wastes that may be damaging to the environment, the dental office also must comply with regulations for medical waste. Most states have specific laws regulating the management of medical and/or infectious wastes. Because these regulations vary by state, it is impossible to review them here.

Intraoral dental packets that contain human blood, blood components or saliva should be considered a regulated medical waste and must be managed according to specific state regulations. Additional regulations exist for bloodborne pathogens, which are mandated by OSHA. The agencies identified in Appendix C on page 15 can provide more information.






## KODAK DENTAL PRODUCTS

Kodak dental products fall into three general categories:

1. Film
2. Chemicals
3. Local Anesthetics

Each product has its own management or recycling options. Below are general guidelines for Kodak dental products and packaging components at the time of publication. The acceptance of various materials for recycling varies from community to community. “Recycle” in the table refers to those materials known to be accepted in many communities for recycling.

## General Guidelines

Product Category	Component	Material	Option
Intraoral Film	Box	Paperboard	Discard in regular trash or recycle
	Yellow foil wrap	Foil/plastic	Discard in regular trash
	Band	Mylar	Discard in regular trash
	Film packet wrap	Paper/vinyl	Discard in regular trash*
	Tray	 Plastic†	Recycle†
	End-boards	 Plastic†	Recycle†
	Tear-away cover	Plastic	Discard in regular trash
	Film	Emulsion; base	See "Silver Reclamation" on page 9
	Paper	Black paper	Discard in regular trash
	Lead shield	Lead	See "Lead Foil" on page 6
Dental Barrier Envelopes for Size 2 Intraoral Film	Envelope carton	Paperboard	Discard in regular trash
	Clear barrier envelope	Plastic	Discard in regular trash*
Extraoral Film	Box	Cardboard	Recycle†
	Light tight bag	Foil/plastic	Discard in regular trash
	Film	Emulsion; base	See "Silver Reclamation" on page 9
Processing Chemicals	Box	Cardboard	Recycle†
	Processor effluent	Chemicals; water	See "Silver Reclamation" on page 9
	Bottle	 or  Plastic‡	Rinse, recycle†
	Bottle cap	Plastic	Discard in regular trash
Local Anesthetics	Can	Tin	Recycle†
	Can lid	Tin	Recycle†
	Cover	 Plastic†	Recycle†
	Glass carpule	Clear glass; plastic wrapped to prevent shattering	Discard in regular trash*
	Inner protection	Paperboard	Discard in regular trash

\* Check with your community recycling center for details.

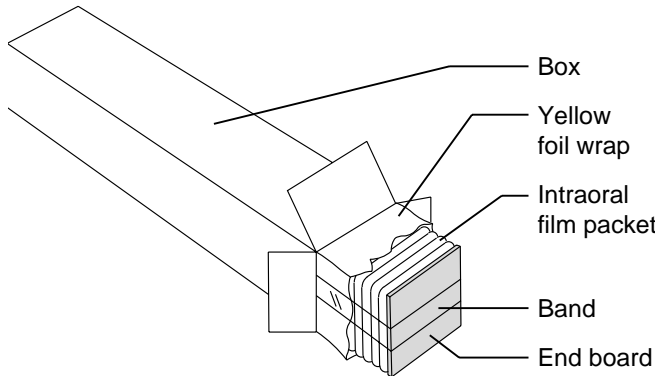
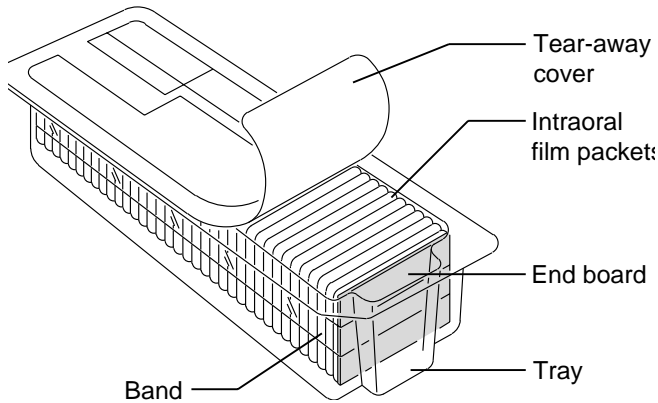
† If contaminated, refer to "Regulated Medical Waste" on page 3.

‡ Refer to "Appendix A" on page 14 for resin codes and descriptions.

**Always** read labels for guidance when evaluating management or recycling of individual items. Changes in materials and subsequent handling may occur at any time due to either Kodak's continual improvement efforts or as a result of changes in regulations. If you have concerns or questions, call Kodak at 1-800-933-8031. This table **does not** deal with potentially infectious wastes.

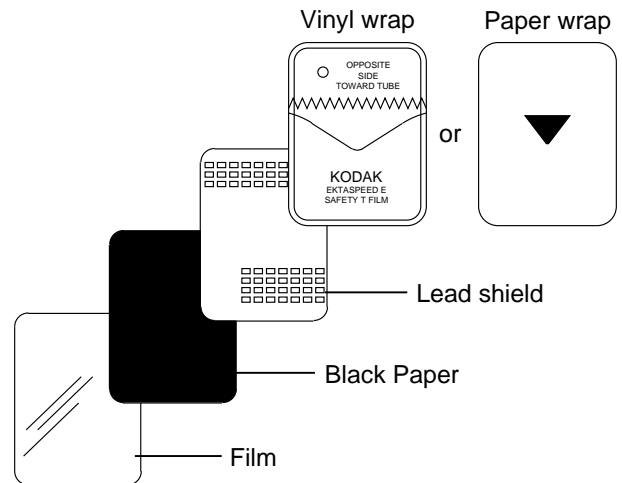
## KODAK FILM

The Kodak products discussed in this section consist of intraoral film wrapped in either paper or vinyl and packaged in a box or a tray, barrier envelopes and extraoral film. Information on packaging materials is listed in the chart that appears on page 4.



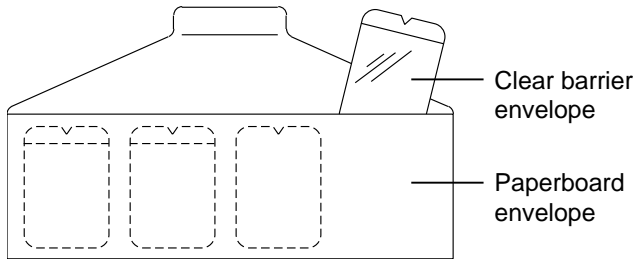
## Managing Intraoral Dental Packets

Intraoral dental film packaging and film packet components should be segregated. The plastic end boards that are packaged with the intraoral packets should be discarded in the regular trash. The outermost layer of individual film packets is either vinyl or paper. The film inside rests between layers of black paper for added stiffness. Outer vinyl covers, paper packet covers and interior black paper stiffeners should be discarded with your regular trash. Recyclers may object if they are combined with regular business paper. The outer covers include small amounts of adhesive, and some recyclers may view black paper as a contaminant, which lowers a paper bale's resale value. If the outer packet contains blood or saliva, please refer to the section on Regulated Medical Waste on page 3. A layer of coated lead foil inhibits scatter radiation (refer to Lead Foil on page 6).



### Barrier Envelopes

To avoid cross-contamination, Kodak recommends use of barrier envelopes when exposing intraoral dental radiographs. As standard practice, this plastic barrier should be discarded with your gloves as infectious waste. Size 2 intraoral film also comes pre-packaged in Barrier Envelopes for added convenience.

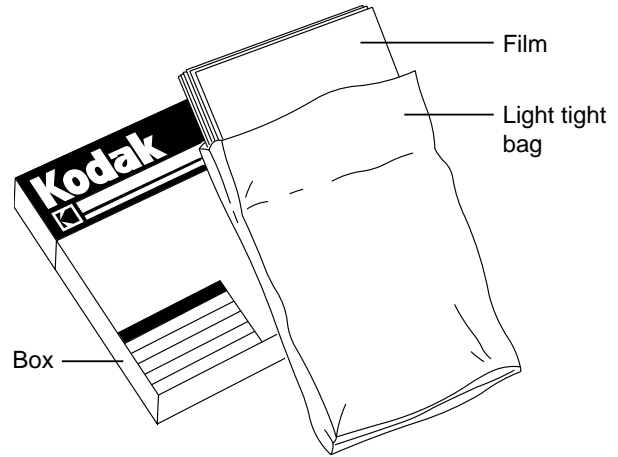


### Lead Foil

Used lead foil may be regulated as a hazardous waste in your state or locality. If the lead foil is collected for recycling, exemptions are available from hazardous waste regulations. To obtain more information on dental lead recycling, access the following website at address: [www.kodak.com/US/en/corp/environment/kes/recycling/dental.shtml](http://www.kodak.com/US/en/corp/environment/kes/recycling/dental.shtml). To speak to a Kodak representative, call toll-free 1-800-933-8031.

### Managing Extraoral Film

Essentially all observations dealing with the components of Kodak intraoral dental films also apply to Kodak extraoral dental films. The outer package is cardboard and may be recyclable in your area. The film inside is protected by a paper/foil wrapper and is not recyclable. Sheet films are larger than intraoral films, but are made of the same basic materials. Film is generally not a regulated item; however, it does contain silver, which can be reclaimed.



### Scrap Film

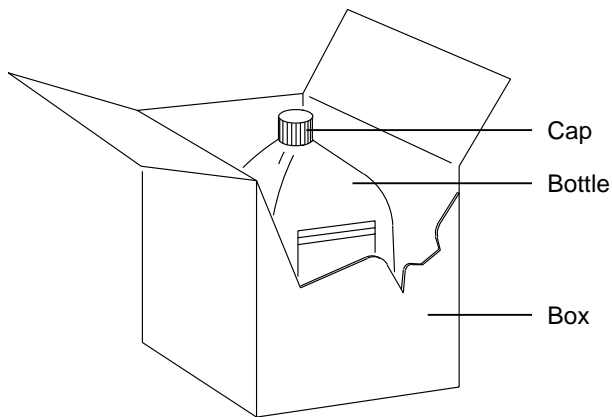
We recommend collection of scrap film in the office, especially before discarding old files. Scrap films are generally not regulated items, however, they do contain recoverable silver. Most dental offices do not produce large volumes of scrap films. When an office is ready to discard old x-rays, they can send them to an appropriate service for recovery of the silver and recycling of the film base. See Appendix B on page 15 for information on how to obtain a list of companies that buy scrap film.

## KODAK CHEMICALS

The Kodak products discussed in this section are the processing chemicals used to develop radiographs. There are two forms of waste from chemical usage—the packaging components and the film processing effluent.

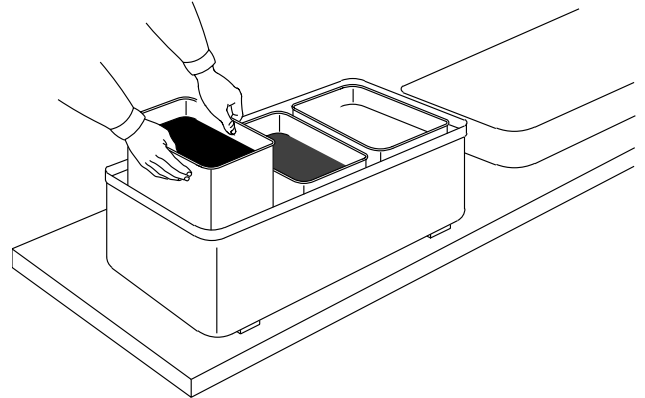
### Packaging Components

Chemicals are packaged in bottles with caps. In most municipalities, the caps are discarded with regular trash while the bottles are rinsed (rinsing 3 times is often recommended) and then recycled. By checking the numbers on the bottom of the bottles (see Appendix A on page 14) and your local recycling authority, you can determine which bottles can be recycled and which are disposed with regular trash. The box in which chemicals are shipped is made of cardboard. Consult with local agencies to see if recycling is an option in your community.



### Film Processing Effluent

Most photographic solutions are biodegradable and therefore compatible with municipal secondary (biological) wastewater treatment systems. However, there may be regulated limits set by your local POTW or sewer authority. Effluent<sup>1</sup> includes developer and fixer involved in processing dental films, as well as film wash water.



1. The quantity of a substance in an effluent is measured by either its concentration or its load. Concentration is the amount of a substance in a specific volume of liquid and is usually expressed in weight—volume relations (e.g., mg/L, milligrams per litre or ppm, parts per million). Load is the actual amount of a substance discharged in a specific period of time, usually reported in grams or pounds per day. These two terms are important because sometimes the concentration of a chemical or substance regulated by environmental regulations may exceed a sewer discharge limit, but because the volume is so small, the load may be within acceptable limits.

## Discharging to a Municipal Sewer

Most effluents discharged from dental operations are effectively treated by municipalities equipped with biological wastewater treatment plants. Occasionally, your landlord and/or municipal sewer authority may request information on the characteristics of your effluent as well as information in business activities. This data can be used by the municipality to issue “discharge permits.” Table 1 gives typical information that may help you with such an information request.

**Table 1**

Typical Characteristics of Batch-Replenished Dental X-ray Processor Effluent	
Volume	7.6 - 15.1L (2 - 4 gal) per month
Temperature	60 - 110°F (16 - 43°C)
BOD <sub>5</sub>	300 - 5000 mg/L
COD	2000 - 10,000 mg/L
Total Suspended solids (TSS)	<50 mg/L
pH	6.5 to 9.5
Flammable or explosives	None
Detergents	Minimal
Oils and grease	None
Phenolic Compounds	<0.2 (less than)
Odor	Scarcely detectable
Silver	(see "Table 2" on page 9)

**Note:** Due to dilution caused by the co-mingling of other effluents, the actual concentration from your facility may not be this high at the street connection to the sewer, where most sewer codes are enforced. For more specific characterization, samples may need to be tested or you can call the Kodak assistance numbers listed in this publication for more help.

The **pH** and **concentration of silver** will vary depending on the type of processing (e.g., batch or replenished system), chemical replenishment rates, and wash water usage. Actual effluent characteristics can be determined by collecting a representative sample and having it analyzed.

You should also be aware of the key characteristics of dental film processing effluent. Developer effluent has a high pH and is therefore alkaline or caustic, while fixer effluent has a low pH and is therefore acidic. When combined as the total process effluent, the resulting effluent is neutral and within the limits of most sewer codes.

Another key characteristic of x-ray processing effluent is the silver content found in the spent fixer solution. By desilvering the fixer with silver recovery equipment and then combining the desilvered fixer and spent developer before discharge, you can manage these key parameters—pH and silver content.

A measure of the effluent's ability to pollute, or the effect of chemical pollutants on water is made by environmental measurements known as BOD<sub>5</sub> and COD.

## BOD<sub>5</sub>

### **Biochemical Oxygen Demand.**

A measurement of the amount of dissolved oxygen that an effluent will consume in water that has a known dissolved-oxygen content. The value indicates the loss of oxygen content in water. It is measured over a five-day period.

## COD

### **Chemical Oxygen Demand.**

An analytical method for measuring the oxygen demand of an effluent. It is faster than the BOD<sub>5</sub> test and responsive to a broader range of components. A chemical can have a high COD and still be non-biodegradable.

## Commercial Waste Management

If your processing effluents do not meet code requirements for municipal sewer disposal, the spent solutions must be either further treated at your facility or collected and disposed of according to federal, state or local waste or hazardous waste regulations. Many dental offices arrange to have wastes such as used film and processing chemicals removed by a waste management company. Such companies are prepared to properly handle, treat and dispose of wastes according to federal, state or local regulations. However, check to ensure that they are licensed to pick up waste materials at your office and manage your materials at their facility. They should also be able to provide you with a suitable receipt or other documentation verifying proper management. You may need to produce such receipts upon request for inspectors from your local or state environmental agencies. Check the yellow pages of your local phone book, or with your state's hazardous waste management agency, for a list of licensed waste management companies in your area. The responsibility for proper treatment off-site still remains with you.

### Septic Tank Systems

We do not recommend discharging processing effluents from x-ray film into a septic. Many state and local authorities have strict permit requirements or may prohibit discharge of process wastes to a septic system altogether. Contact your state water pollution control agency that regulates ground water discharge programs to determine the permissible discharges and monitoring requirements.

### Silver Reclamation

Silver reclamation is an environmental responsibility, and should be an integral part of any photographic processing operation. The metal is present not only in dental films but also in x-ray fixers and wash water. Most municipal sewer authorities limit the amount or concentration of silver in wastewaters. These authorities may also require you to recover the silver from your film processing effluent to meet discharge limitations.

To assist in meeting our responsibility to the environment and to avoid over-regulation of the industry, Kodak is providing technical, project and government relations leadership to a variety of industry/government proactive partnerships such as the Silver Council. The Silver Council is a national group of trade associations, technical societies, municipalities, and government agencies whose members are vitally affected by the regulation of silver. The purpose of the Silver Council is to encourage communications between the regulatory and regulated communities, to support scientific research, and to share current scientific, technical and economic information about silver so that the common goals

of pollution prevention, recycling, water conservation, and compliance can be met.

One product of this organization is *Using the Code of Management Practice to Manage Silver in Photographic Processing Facilities*, KODAK Publication No. J-217(ENG). The publication is a set of recommended operating procedures designed to reduce the amount of silver, and the overall volume of solutions discharged to the drain. Although this publication was designed with photographic processing facilities in mind, it may provide some useful information with regard to silver recovery practices.

The concentration of silver found in film processing effluent will depend on the amount of film processed. Table 2 provides a breakdown of the silver content found in the total photoprocessing effluent described in Table 1 on page 8.

**Table 2**

<b>Silver Concentration Found in the Dental X-ray Processing Sample in Table 1</b>	
Fixer and Replenisher	8 - 12 grams/litre (1 - 1.5 troy ounces/gallon)
Wash water	0.2 - 0.3 grams/litre (0.03 troy ounces/gallon)
Developer	Contains negligible amounts of silver

For laboratories that process large amounts of x-ray film, the reclamation process may yield a return when the collected silver is sold to a precious metal refiner. For most average-sized dental offices, the silver recovered in a KODAK Chemical Recovery Cartridge will not be enough to cover refining costs or to return any credit. However, the cartridge can provide an easy and economical way to comply with municipal discharge regulations.

Silver can be recovered from small batches of fixer by pouring the solutions into a KODAK Chemical Recovery Cartridge, Junior Model II, CAT No. 166 9431. A KODAK Circulation Unit, Model II, CAT No. 175 0868 (plastic fittings) is also needed.

Although the majority of silver resides in the spent fixer, batch wash water can contain silver concentrations well above discharge standards. Silver-rich wash water from a batch process may be combined with the fixer before pouring the solution through the KODAK Chemical Recovery Cartridge. This is appropriate when the volume of wash water is similar to the volume of spent fixer. In cases where a continuous wash is used, the level of silver in the wash water is considerably lower and may not require treatment through the cartridge.

Regardless of the amount of effluent you pass through it, a cartridge should not be used longer than one year. The cartridge may be used to remove free silver from fixer and silver-rich wash solutions only. Do not add used developer or any other chemical to the cartridge. The addition of developer or other chemicals will inhibit the silver recovery process.

**How Is Silver Recovered.** There are two popular methods for removing silver from effluent: electrolytic recovery and metallic replacement.

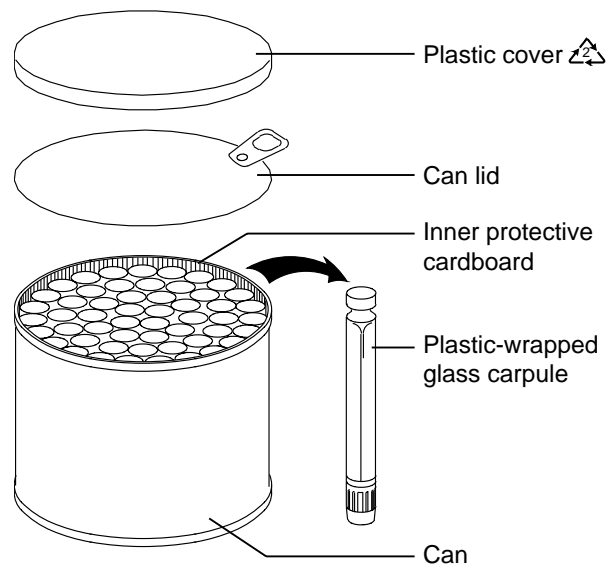
**Electrolytic Recovery.** This is an “active” method suitable for treating medium to large volumes of fixer effluent. The silver-bearing solution is passed between two electrodes attached to a source of direct electric current. Silver plates out on the cathode as almost pure metal. This method is most efficient for very large offices, clinics or dental schools.

**Metallic Replacement.** This is the method used in the KODAK Chemical Recovery Cartridge, Junior Model II. It is a “passive” method suitable for treating small to medium volumes of effluent. The silver-bearing solution is poured over a more reactive solid metal, such as iron. The silver in solution and the solid metal (iron) interact and the more active metal (iron) goes into solution. The less active metal then becomes solid (silver sludge), which settles to the bottom of the cartridge. For economy and convenience, steel wool is the metal most often used in this type of silver recovery.

If you need assistance with silver recovery, call Kodak Environmental Services (KES) at (585) 477-3199. Refer to Appendix B on page 15 for information on companies that purchase silver and silver bearing films.

### COOK-WAITE LOCAL ANESTHETICS

Local anesthetic products are packaged in metal cans with peel-off metal lids, reusable plastic lids and cardboard on the inner circumference of the can to help prevent breakage. Inside are glass cartridges filled with the anesthetic. The metal can and metal cover may be placed with other cans for recycling. The plastic lids may be recycled if accepted in your recycling pickup. The cardboard should be recycled, if such an option is available, or discarded with the regular trash. The glass cartridges may not be accepted for recycling because the cartridges are wrapped in plastic to protect the glass and help prevent shattering. If the carpules are contaminated with saliva or blood, handle them as regulated medical waste.



## WORKPLACE SAFETY

### Occupational Safety and Health

The Occupational Safety and Health Administrator (OSHA) and some state-run programs establish and enforce numerous regulations affecting the safety of employees in the workplace. Everyone is entitled to protection while handling medical, chemical or other materials that could place employees at risk.

#### Bloodborne Pathogens Standard

In recent years, OSHA has focused on infection control practices in the healthcare industry. The Bloodborne Pathogens Standard is concerned with all employees who could be “reasonably anticipated” to come into contact with blood and other potentially infectious materials, including saliva during normal work activities. Because these materials may require special management, employees will also need to properly handle and package the wastes for handling off-site. Employers are required to implement a wide range of procedures designed to protect the employee, to establish and maintain employee exposure-incident records for the duration of employment plus 30 years, and to provide appropriate personal protective equipment to protect workers from infectious diseases.

This regulation is among the most significant regulations that affect dental offices. More information is covered in OSHA pamphlet 3129, “Controlling Occupational Exposure to Bloodborne Pathogens in Dentistry.” You may want to contact your state, OSHA, or local health department directly for more complete and up-to-date information on any employee safety regulations that are relevant to your dental practice.

The key issue here is safety. Human immunodeficiency virus (HIV-1), which is the virus associated with acquired immune deficiency syndrome (AIDS), hepatitis B virus (HBV) and other bloodborne pathogens, are serious potential health hazards to employees. Minimizing the risks of infection to members of the dental team and medical waste handlers outside the office is of paramount importance.

OSHA laws require that employers comply with the Center for Disease Control (CDC) universal precaution that **all blood, bodily fluids, or other potentially infectious materials should be treated as if they are infectious**. While many dental practices do not directly involve exposure to blood, **the presence of saliva may be enough to require adherence to the standard**.

#### Hazard Communication Standard

Employees should also know what chemicals they may be exposed to in their work environment, no matter how slight or incidental the exposure or risk of exposure may be. Dentists should therefore be familiar with their state and local right-to-know laws and OSHA's Hazard Communication Standard. This standard was adopted to help reduce the incidence of chemically-related occupational illnesses and injuries. The standard helps employers devise appropriate protective measures and provide employees with the information needed to handle chemicals safely.

A dental office must meet five requirements in order to comply with the Hazard Communication Standard:

1. A written plan documenting how they will comply with the requirements of the standard, such as the responsible person, implementation timeline and method.
2. Employee training on how to detect the presence or release of a hazardous chemical in the work area; measures that employees can take to protect themselves from the hazards; location of Material Safety Data Sheets (MSDSs) and how to read and interpret MSDSs and product labels.
3. List of hazardous chemicals found in the work area.

4. MSDSs are required on each hazardous chemical, which tell you how to use, handle and store the product safely. The contents of MSDSs vary from one product to the next. Among the topics covered are:

- **Product information**, such as identifying traits and other trade names.
- **Component information**, including which components may be hazardous.
- **Physical data**, such as pH and specific gravity.
- **Fire and explosion hazard**, or whether the material is combustible.
- **Reactivity data**, such as which other chemicals might cause a product to burn, explode or release dangerous gases.
- **Toxicological properties**, such as symptoms of overexposure.
- **Protection and prevention measures**, such as whether rubber gloves, goggles or other protective equipment are needed for personal safety.
- **Storage and management**, special precautions or instructions for cleaning up accidental spills.

- **First aid**, including appropriate emergency procedures and other information.

We strongly recommend an office policy that includes a periodic review of all relevant MSDSs and emergency procedures.

**Copies of MSDSs** can be obtained from your dealer of Kodak dental products, by calling us at 1-800-933-8031, by visiting the Kodak website at [www.kodak.com/go/MSDS](http://www.kodak.com/go/MSDS) or by writing the address noted below. An informal note is all that's needed, but be sure to include the **catalog number** of each Kodak product used and the address to which the MSDSs should be sent. Mail requests to:

Eastman Kodak Company  
Dental Products  
Attn.: MSDS Request  
343 State Street  
Rochester, NY 14650-0547

5. Labels are required on any containers, tanks or processors that contain OSHA-defined hazardous chemicals. Labels include the information below:

- **General Information**—the name of the chemical product and the manufacturer are required. If you mix a working strength chemical from the concentrate, then you become the manufacturer.
- **Hazard Warnings**—for example, hazards associated with inhalation, ingestion or contact

with skin or eyes may be required on labels.

- **First Aid**—any first-aid measures that may be necessary if the chemical product splashes in the eyes or on skin.
- **Ingredients**—some states and localities have listing requirements.

Working strength labels are available through the Kodak Environmental Services website at [www.kodak.com/go/kes](http://www.kodak.com/go/kes) under "Chemical & Film Handling."

## KEEP INFORMED

Recycling technology continues to advance, and economic factors are ever changing. Changes in federal, state and local laws, or changes in local recycling capacity may occur at any time.

A good working relationship with the appropriate agencies helps to ensure that your recycling and waste management program remains in compliance with all regulations in your area. Watch for agency newsletters or other communications designed to keep participants up to date.

Contact your local recycler and local or state environmental conservation authorities. Most are willing to provide information and other forms of assistance to be sure your program meets all requirements and codes.

## MORE INFORMATION

### ENVIRONMENTAL OR WORKPLACE SAFETY ASSISTANCE

For more information and assistance on health, safety and environmental issues such as regulatory compliance, workplace safety, recycling and waste management, call Kodak Environmental Services (KES).

Visit the KES internet site at [www.kodak.com/go/kes](http://www.kodak.com/go/kes) or call the KES Assistance at 585-477-3194 for:

- Environmental and safety advice on specific issues or problems
- Chemical spills
- Out-of-compliance situations or citations
- Questions about regulatory forms, questionnaires, surveys or permits
- Addition information on the management of wastes from Kodak products

Kodak maintains a 24-hour health hot line to answer questions about the safe handling of photographic chemicals.

Call 585-722-5151 for any health emergency involving products supplied by Kodak.

Call Kodak's Dental Line weekdays from 8:00 a.m. to 6:00 p.m. Eastern time at 800-933-8031:


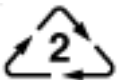
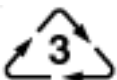
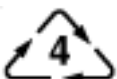
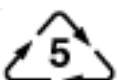
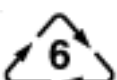
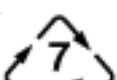
- Information on Kodak dental products
- Customer Support for Kodak dental products
- Publications
- Material Safety Data Sheets (MSDSs)
- Hazardous Chemical Labels

## APPENDICES

### APPENDIX A

#### Resin Codes

Today, plastics are among the easiest types of waste to recycle. Responding to requests from recyclers, the Society of the Plastics Industry, Inc. created the following codes to identify plastic packaging by resin types. These codes are typically imbedded in the bottoms of plastic bottles or containers and allow easy sorting of plastic waste.

Code	Resin Type	Examples
	<b>PETE</b> —Polyethylene terephthalate	Beverage containers, boil-in food pouches, processed meat packages
	<b>HDPE</b> —High-density polyethylene	Film trays, chemical bottles, plastic lids for anesthetics and many other products, barrier envelopes, milk bottles, detergent bottles, oil bottles, toys, plastic bags
	<b>V</b> —Vinyl (PVC or polyvinyl chloride)	Film packet outer wraps, food wrap, vegetable oil bottles, “blister” packaging
	<b>LDPE</b> —Low-density polyethylene	Shrink-wrap, plastic bags, garment bags
	<b>PP</b> —Polypropylene	Margarine and yogurt containers, caps for containers, some wraps
	<b>PS</b> —Polystyrene	Egg cartons, fast food trays, disposable plastic silverware
	<b>OTHER</b> —Other types	Multi-resin containers

## APPENDIX B

### Silver Refiners and Buyers, and Scrap Film Buyers

A list of refiners has been compiled from advertisements in photographic magazines and exhibitors at photographic trade shows. The listing of these refiners is not intended to be an endorsement or recommendation by Eastman Kodak Company. Contact these companies directly for information on their services. The Kodak website address for the silver refiners and buyers list is: [www.kodak.com/US/en/corp/environment/kes/pubs/pubList.shtml#silver](http://www.kodak.com/US/en/corp/environment/kes/pubs/pubList.shtml#silver). Additional listings for silver refiners; buyers may be found in the telephone yellow pages under headings such as Precious Metal Buyers; Gold, Silver and Platinum Dealers or Refiners. Eastman Kodak Company does not accept silver recovery cartridges for refining.

In addition to silver refining of processing chemicals, some companies recycle film for silver recovery. Kodak has a publication that lists companies who buy scrap film. The website location for this is: [www.kodak.com/US/en/corp/environment/kes/pubs/pubList.shtml#recycling](http://www.kodak.com/US/en/corp/environment/kes/pubs/pubList.shtml#recycling).

## APPENDIX C

### Glossary

Worldwide, there are hundreds of regulatory agencies that deal with environmental protection and workplace safety. In the U.S., federal agencies that regulate waste management, infection control and other such issues include:

**OSHA.** Occupational Safety and Health Administration

**EPA.** Environmental Protection Agency

**FDA.** Food and Drug Administration

There are also non-regulatory agencies and professional associations that may offer guidance, such as:

**CDC.** Center for Disease Control

**OSAP.** Office Sterilization and Asepsis Procedures

**ADA.** The American Dental Association



For more information about Kodak Environmental Services,  
visit Kodak on-line at:  
[www.kodak.com/go/kes](http://www.kodak.com/go/kes)

If you have questions about Kodak Dental products,  
call Kodak.  
In the U.S.A.:  
1-800-933-8031, Monday–Friday  
8 a.m.–6 p.m. (Eastern time)  
In Canada:  
1-800-465-6325, Monday–Friday  
8 a.m.–5 p.m. (Eastern time)

This publication is a guide to the Federal Environmental Regulations that apply to a typical photographic processing facility. Local or state requirements may also apply. Verify the specific requirements for your facility.



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