

## **WASTE REDUCTION IN THE PHOTO PROCESSING INDUSTRY**

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### **INTRODUCTION**

Waste minimization means reducing the amount of hazardous waste your business generates through changes in production and housekeeping practices. These changes can include measures such as using non-hazardous materials in your processes, changing to equipment which uses raw materials more efficiently, and treatment or recycling of the wastes your business generates. The measures described in this fact sheet can save you money and help your business comply with local, state, and federal pollution control regulations.

Some of the waste generated by the photo processing industry may be considered hazardous waste. The presence and concentration of toxic substances such as silver in photographic wastes can vary from one process to another and from one business to another. The agencies listed at the end of this fact sheet can provide you with more information concerning disposal of hazardous waste.

Photo processing chemicals contain known carcinogens such as formaldehyde and should always be handled with caution. Chemical suppliers are required to provide Material Safety Data Sheets (MSDS) for all chemicals. The MSDS lists any hazardous components of a chemical, describes the hazards, and explains precautions to use when handling the product.

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### **WASTE REDUCTION MAKES SENSE**

Photo processing businesses will save money by reducing the amount of hazardous waste generated. Savings can result from the following:

- More efficient use of process materials
- Reduced disposal and transportation costs
- Decreased liability and lower insurance rates
- Recovery and/or recycling of waste materials

In addition, regulatory compliance becomes easier when hazardous wastes are reduced or eliminated. Low interest loans are available to help finance costs associated with initiating hazardous waste minimization techniques.

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## **STRATEGIES FOR WASTE REDUCTION**

### **Improve Basic Procedures**

Good housekeeping is the easiest and least expensive way to reduce waste:

- Keep your shop clean and orderly to help prevent spills
- Inspect your equipment regularly and keep it in good operating condition. Repair all leaks promptly.
- Store raw chemicals and wastes separately. Choose an area without floor drains to prevent accidental spills to the sewer or storm drain.
- Segregate wastes for recovery or recycling from those which are to be disposed.

### **Improve Operating Procedures**

Follow the manufacturer's instructions carefully when mixing chemicals and when replenishing baths. Regularly test chemical replenishment rates. Over-replenishment of bleach fixer and stabilizer will not show on process control strips. By ensuring proper chemical replenishment rates you will:

- Reduce raw chemical costs
- Improve silver recovery
- Reduce costs for disposal of chemical wastes

Whether you use automated or non-automated equipment, look for ways to improve operating efficiency, such as:

- For non-automated equipment, use a squeegee to wipe excess liquid from film and paper at the exit to fixing baths.
- For automated equipment, regularly inspect the squeegees or squeegee rollers at the exit of each process bath. Replace parts and adjust tension as required.
- For all systems, keep chemical baths covered as much as possible. This reduces loss from evaporation, reduces the chance of contamination, and reduces employees' exposure to potentially harmful fumes.

### **Follow Proper Safety Precautions**

- Have Material Safety Data Sheets available at your facility for employees to use. Be sure all employees are familiar with Material Safety Data Sheets and the information they contain.
- Have proper safety equipment; be sure it is in good repair; and be sure employees use it. Safety equipment includes gloves, aprons, and safety glasses, as well as vent fans, and fire sprinkler systems.

Older equipment and some special processes use chemicals which contain hazardous materials, such as cyanide or mercury. Read the MSDS, check labels of the chemicals, and ask your chemical supplier if less hazardous products are available. Consider replacing old equipment with new equipment that uses non-hazardous chemicals.

### **Recover Silver**

Photo processing wastes can be hazardous when they contain high concentrations of silver. Recovering silver from photo processing wastes can make them less hazardous, and the silver you reclaim can help offset costs of operating your business.

For on-site silver recovery:

- Install an electrolytic recovery unit followed by two (2) metal exchange cartridges in series. Check the cartridges frequently and replace them as required, using the freshest cartridge last in series. You may want to consider going through a vendor which will periodically maintain the silver recovery units for a nominal fee.
- Waste, unprocessed film (for example, tongues cut from rolls of film before processing) also contain silver and can be sold to a recycler.

For off-site silver recovery:

- If discharge of photo processing waste is not permitted in your area, you may decide not to install silver recovery equipment. Silver recyclers will haul the waste away and pay you for the recovered silver. Your net cost or profit depends on the current price of silver.

### **Reduce Wastewater**

If discharge of photo processing wastes to the sewer is limited or prohibited, reducing the volume of waste to be disposed can greatly reduce disposal costs. Wastewater reduction also means lower water consumption and lower water bills. You can reduce wastewater by:

- Using countercurrent washing rather than a parallel tank system.
- Installing a distillation unit to remove excess water from waste. Check with the air quality board prior to installing an evaporation unit.
- Waterless paper and film developing units reduce wastewater volume, but special restrictions may apply. Check with your local sanitary agency.

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## REGULATORY REQUIREMENTS

### State and Federal Regulations

Wastes are classified as “hazardous” if they are very toxic, very reactive or in some other way present a serious threat to public health or to the environment. Some wastes from photo processing operations may be classified as hazardous. Contact your County health department for help in determining whether your business generates hazardous wastes.

If the waste from your operation is classified as hazardous, you must:

- Obtain a California or EPA identification number. Call 916-324-1781 to get either ID number.
- Notify your County’s Department of Environmental Health that you are generating or treating hazardous waste.
- If you store the waste for more than 90 days (starting from when you have filled one 55 gallon drum), you must also have a Treatment, Storage, and Disposal (TSD) permit issued by the State of California Department of Toxic Substances Control.

### Local Regulations

Many sanitary agencies have regulations that are more stringent than state or federal regulations. In some areas, discharge of photo processing waste to the sewer is not allowed. Most agencies have strict limits on the concentration of silver in waste that can be discharged to the sewer. Check with your local sanitary agency to find out what requirements apply to your business.

### Disposal

If discharge of photo processing waste to the sewer is not allowed, contact a licensed hazardous waste disposal facility. Companies that sell silver recovery equipment frequently also pick-up and recycle photo processing waste.

If disposal to the sewer is allowed, take precautions to reduce the potential for damage to your plumbing system:

- After silver recovery, combine all spent chemicals before discharge to the sewer to help reduce the corrosive effect.
- Be sure that the drain lines where the waste is disposed are plastic, not copper or other metal.

The above information was edited and provided courtesy of  
Central Contra Costa Sanitary District’s Source Control Section and  
Contra Costa County Department of Environmental Health

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## **Central San's Photowaste Disposal Policy**

Revised November 4, 2005

Enclosed is a copy of the District's Fact Sheet for Photo Processors that was developed by the District in conjunction with the Contra Costa County Environmental Health – Hazardous Materials Division.

This Fact Sheet contains information that may help you reduce the amount of waste your business generates. By applying the methods described in the Fact Sheet, you may be able to save money while reducing waste.

You should be aware that the District requires that your wastewater discharge to the sewer contain not more than 1.0 milligrams per liter (parts per million) of silver. Installing and properly operating an appropriate silver recovery system is needed in order to meet this discharge limit unless the photographic waste solutions are containerized and hauled off-site to an authorized recycling/disposal facility. Typically, the District's 1.0 mg/L silver limit can be met by properly maintaining and operating an electrolytic silver recovery unit followed by two metallic replacement (steel wool) canisters. Other treatment options exist so you should check with equipment or chemical suppliers to determine which equipment is appropriate for your needs.

To determine if your business is complying with the District's local discharge limit for silver, you should periodically take a sample of the wastewater coming from the silver recovery system and have the sample analyzed for silver by an analytical laboratory certified to perform wastewater analytical methods. Due to the complex matrix found in photo processing wastes, a special method for silver analysis may be required in order to obtain representative data with minimal chemical interference. The laboratory should analyze the sample for silver using an EPA approved method and should also perform a silver spike-recovery test on the sample.

When the District finds that a user has violated the local discharge limits, the District issues a Notice of Violation directing the discharger to (1) cease to discharge immediately and/or (2) make such changes to the pretreatment facility and procedures immediately to ensure full compliance. If satisfactory corrections are not completed, the District may issue an order establishing a compliance schedule setting forth dates by which specific corrective actions must be completed. Pursuant to Title 10 of the District Code, the District is authorized to impose administrative fines up to \$5,000 per day for discharges in violation of the District's wastewater discharge limits.

If you would like further information, please contact the District's Source Control Section at 925-229-7288.

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## INDUSTRY CONTACTS

### Information and Assistance

Bay Area Air Quality Management District (Ask for Permit Services)	415-771-6000
California Department of Toxic Substances Control Alternative Technology	916-324-1807
California Waste Exchange	916-324-1807
USEPA ID Numbers	415-495-8895
California Hazardous Waste Hauler Information	916-324-2340
Toxic Substances Control Division, North Coast	415-540-2043
California Regional Water Quality Control Board	415-464-1255
Printing Industries of Northern California	415-495-8242

### Financial Assistance and Business Advice

Business Environmental Assistance Center (BEAC)	800-799-BEAC
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### Local Contacts

Contra Costa County Hazardous Materials Section (Ask for Hazardous Waste Minimization Assistance)	925-646-2286
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### Sanitary Agencies in Contra Costa County

Central Contra Costa Sanitary District	925-228-9500
City of Richmond	510-231-3060
Delta Diablo Sanitary District	925-778-4040
Dublin-San Ramon Services District	925-846-4565
West Contra Costa Sanitary District	510-237-6603

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