

### **3.12.1 Photo Processing Industry: Common Operations**

*Tip Sheet #1*

**WASTE ORIGIN:** Material Handling and Storage

**WASTE TYPES:** Empty Containers, Used Film Packages, Outdated Material, and Film and Paper

**WASTE REDUCTION AND RECYCLING METHODS:**

- ! **Label** all containers with content and use information.
- ! **Test** age-dated material (if expired) for effectiveness.
- ! Recycle empty **containers**.
- ! Recycle spoiled photographic **film and paper**.
- ! Develop a working relationship with one **vendor** to facilitate bulk purchases to return old, off-specification products, or to return containers for refill if possible.
- ! **Monitor and manage** supply ordering process to ensure size and frequency of orders, minimizing outdated materials and waste containers/packaging.

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**WASTE ORIGIN:** Finishing Process

**WASTE TYPES:** Paper Waste from Damaged Products

**WASTE REDUCTION AND RECYCLING METHODS:**

- ! **Reduce** paper use.
- ! **Recycle** waste paper.
- ! **Control** storage to minimize damage from handling and humidity.

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**Sources:**

*Facility Pollution Prevention Guide*, U.S. EPA, May 1992, EPA/600/R-92/088.

*Guides to Pollution Prevention: The Commercial Printing Industry*; U.S. EPA, August 1990, EPA/625/7-90/008.

*Hazardous Waste Management for Printers*, New York DEC, Division of Hazardous Substances Regulation, Bureau of Pollution Prevention, September 1991 Draft.

*Hazardous Waste Reduction Facts: General Commercial Printers*, City of Santa Monica, Dept. of General Services.

*Pollution Prevention Opportunities in Printing*, U.S. EPA Region III, October 1990.

*Printing: Pollution Prevention Opportunities Checklist*, Industrial Waste Section, County Sanitation Districts of Los Angeles County, Whittier, CA, December 1990.

*Pollution Prevention: Strategies for the Printing Industry*, Center for Hazardous Materials Research.

Fact Sheet: *Removing Solvent and Ink from Printer Shop Towels and Disposable Wipes*, MNTAP, 8/91-37.

Fact Sheet: *Waste Reduction for the Commercial Printing Industry*, CA Dept. of Health Services, Toxic Substances Control Program, Alternative Technology Division, April 1990.

*Waste Reduction Tips for Printshops*, Alaska Health Project, 1987.

## 3.12.1 Photo Processing Industry: Common Operations

Tip Sheet #2

**WASTE ORIGIN:** Image Processing

**WASTE TYPES:** Photographic Chemicals and Silver

### WASTE REDUCTION AND RECYCLING METHODS:

- ! Install **meters** (e.g., densitometer) on cameras to ensure good proofs the first time.
- ! Install **no-discharge** ("plumbingless") paper and film developing units.
- ! Protect **process baths** that spoil easily by keeping them containerized.
- ! Don't leave **excess chemicals** on films and plates to extend life of developing solution.
- ! Use **squeegees** to reduce carryover.
- ! Extend **bath life** (e.g., monitor temperature and pH of fixing bath).
- ! Use counter-current **washing**.
- ! Use an **acid stop bath** prior to the fixing bath. Add acetic acid to the fixing bath to keep pH low.
- ! Use **floating lids** on bleach and developer containers.
- ! Consult chemical supplier about adding **ammonium thiosulfate** to fixer to extend fixer bath life.
- ! **Separate** fixer from developer waste.
- ! **Recover** silver and **recycle** chemicals (e.g., metal replacement, chemical precipitation, electrolytic silver recovery systems, ion exchange).
- ! Install **electrowinning unit** on fix bath of photoprocessor; on first rinse, and developer waste streams.
- ! Use **silver-free films**, such as vesicular, diazo, or electrostatic types for contact operations.
- ! Use **electronic pre-press** system to prepare copy.

### Sources:

*Code of Management Practice for Silver Dischargers*, Silver Coalition/Assn. of Metropolitan Sewerage Agencies (AMSA), September 1995.

*Environmental Management and Pollution Prevention: A Guide for Photo Processors*, Washington State Dept. of Ecology, September 1994, Publ. 94-138.

*Facility Pollution Prevention Guide*, U.S. EPA, May 1992, EPA/600/R-92/088.

*Guides to Pollution Prevention: The Commercial Printing Industry*; U.S. EPA, August 1990, EPA/625/7-90/008.

*Hazardous Waste Management for Printers*, New York DEC, Division of Hazardous Substances Regulation, Bureau of Pollution Prevention, September 1991 Draft.

*Hazardous Waste Reduction Facts: General Commercial Printers*, City of Santa Monica, Dept. of General Services.

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Fact Sheet: *Waste Reduction for the Commercial Printing Industry*, CA Dept. of Health Services, Toxic Substances Control Program, Alternative Technology Division, April 1990.

*Waste Reduction Tips for Printers*, Alaska Health Project, 1987.

Fact Sheet: *Opportunities for Printers to Reduce Image Processing Costs by Minimizing Waste and Recovering*

*Silver*, University of Wisconsin-Extension, Solid and Hazardous Waste Education Center, 425.WP.9604, 1996.