



# Managing Photographic and X-ray Waste

Waste/Hazardous Waste #4.46, October 2003

*This fact sheet is intended for businesses that generate photographic and X-ray waste.*

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## Environmental Concerns

Many photographic and x-ray wastes contain silver thiosulfate. Wastes having a silver concentration of 5.0 parts per million (ppm) or more are hazardous because they display the characteristic of toxicity. Wastes that typically contain silver in concentrations greater than 5 ppm include:

- Fixer solutions.
- Rinse waters following fixer baths.
- Solutions from cleaning developer tanks (cleaners dissolve precipitated silver).
- Film, negatives and paper

Manage photographic and X-ray wastes as discussed below to prevent harm to human health and the environment.

## Managing Fixer Solutions and Rinse Waters

Fixer solutions and rinse waters following fixer baths generally contain silver at a concentration of 5.0 ppm or more making them hazardous (waste code D011).

Solutions can be run through a silver recovery unit to remove silver. To ensure the maximum amount of silver is being removed, make sure the unit is maintained regularly and is working properly. Old or poorly maintained units may not remove enough silver from solution to make it nonhazardous.

After the silver has been removed, the solution may often be discharged to the local wastewater treatment plant. Contact your sewer authority before discharging. To notify the wastewater treatment plant, generators in greater Minnesota can complete and follow

the directions on the *Sewered Waste Notification Form*, Minnesota Pollution Control Agency (MPCA) fact sheet #7.11, available at <http://www.pca.state.mn.us/publications/w-hw7-11.pdf>. Generators in the metro area should contact their county for the proper form.

### Never discharge waste solutions to a septic system.

Keep records of the amount of waste generated and discharged; report quantity annually. (Minimal and Very Small Quantity Generators in greater Minnesota need not report.)

If you do not have a silver recovery unit, silver-recovery firms will pick up the untreated fixer solution. Store untreated fixer solution in sturdy, closed containers away from floor drains. Mark the container with:

- the words “Hazardous Waste” and “Used Fixer Solution” and
- the date waste was first placed into the container.

Store the container in a place where it will not be damaged and cannot leak into a floor drain. You may want to place the container inside a bucket or pan to ensure the contents will not enter a floor drain. **Do not discharge untreated (or treated) waste fixer solution into a septic system.** Keep for three years: records of amount of waste generated and copies of shipping manifests; report annually.

See the MPCA’s Web site for a list of companies that pick up fixer solution: <http://www.pca.state.mn.us/publications/w-hw6-11.pdf>.



## Managing Developer Solutions

Used developer is not typically a hazardous waste. *Unused* developer, if discarded, may be hazardous because of a high pH. Check the Material Safety Data Sheet (MSDS) for the pH of the solution. Developer with a pH of 12.5 or more is hazardous because it is corrosive (waste code D002). If the pH of the product is close to 12.5, the pH of the waste will generally be less than 12.5 and would therefore fall below the regulated level and be nonhazardous. Used developer is still very caustic and should be handled with care.

Developer solutions can often be discharged to a sanitary sewer system (never to a septic system). Check with your sewer authority before discharging. You will likely need to lower the pH to a level acceptable to your sewer authority before it will allow the discharge. You may be able to lower the pH adequately by simply discharging the developer solution with the waste fixer solution that leaves the recovery unit. Or, lower the pH by mixing the developer solution with another compatible acidic solution.

**Never discharge used or unused developer to a septic system.**

## Managing Developer System Cleaners

Some developer system cleaners contain sodium dichromate making them hazardous for chromium (waste code D007). During the cleaning process, they may also dissolve silver (waste code D011). **Do not discharge any chromium-containing system cleaners to a sanitary sewer or septic system.** Manage developer system cleaner waste as follows:

- Store cleaner waste in a sturdy, closed container located away from floor drains.
- Mark the container with:
  - the words “*Hazardous Waste*” and “*Used Cleaner*” and
  - the date waste was first placed into the container.
- Store the container in a place where it will not get damaged. Check for leaks each week; keep records.
- If you are a Small or Large Quantity Generator (SQG or LQG), contact a hazardous waste transporter to pick up the used chemical cleaner and take it to a hazardous waste disposal facility. Use a manifest (multi-copy hazardous waste shipping paper) to accompany the waste when shipping.

- Minimal Quantity Generators (MQGs – generate less than 10 gallons total hazardous waste per year) and Very Small Quantity Generators (VSQGs – generate a total of 22 gallons or less hazardous waste per month) have another option: they may transport their own system cleaner waste to a VSQG collection site. For more information and a list of collection sites, see MPCA fact sheet #2.51 at <http://www.pca.state.mn.us/publications/w-hw2-51.pdf>.
- Keep for three years: records of amount generated and copies of manifests or shipping papers. Report annually.

## Managing Used Film, Negatives and Paper Containing Silver

Because of the developing process, film, negatives and paper usually contain silver at or above regulatory levels. These items can be recycled and the silver recovered. Manage as hazardous waste or recycle all used silver-bearing film, negatives and paper unless the waste evaluation shows the material is not hazardous. Store all used silver-bearing film, paper and negatives in sturdy, closed containers.

- If recycling, mark the container(s) with the words “*Used Film, Negatives, or Paper for Recycling*”. Keep shipping receipts for three years; report annually.
- If managing as a hazardous waste, mark the container(s) with the words “*Hazardous Waste*” and “*Used Film, Negatives or Paper*” and the date the waste was first placed into the container(s). Use a hazardous waste transporter to take the waste to a hazardous waste disposal facility. This option requires that a hazardous waste manifest accompany the waste. Any hazardous waste transporter can pick up this waste; companies that pick up fixer solution often also pick up silver-bearing film, negatives and paper. See the MPCA’s Web site for a list of companies providing this service: <http://www.pca.state.mn.us/publications/w-hw6-11.pdf>. Keep for three years: records of amount generated and copies of manifests. Report annually.



## More Information

**Waste Management** – The MPCA and your metropolitan county have hazardous and solid waste staff available to assist you with waste management questions. Contact your metropolitan county or the MPCA office nearest you for help.

- **Sewering** – If you reside in the Twin Cities metropolitan area, direct questions regarding sewerage to Metropolitan Council Environmental Services (MCES), Industrial Waste Section. If you reside in Greater Minnesota, direct questions regarding sewerage to your local wastewater treatment plant operator or the MPCA.
- **Reducing Waste** – The Minnesota Technical Assistance Program (MnTAP) has case studies of successful waste reduction at health care facilities and staff available to help you identify ways to reduce waste.
- **Fact Sheets** – The following fact sheets provide detailed information about hazardous waste requirements. Find them and other hazardous waste-related fact sheets at <http://www.pca.state.mn.us/waste/pubs/business.html#general>.
  - Evaluate Waste; Determine Generator Size [1.01]
  - Get a Generator Identification Number [1.02]
  - Get a License; Pay a Fee [1.03]
  - Mark and Store Hazardous Waste Correctly [1.04/1.05]
  - Transport and Dispose of Waste Correctly [1.06]
  - Manifest Waste [1.07]
  - Plan for Emergencies [1.08a-b-c]
  - Train Employees 1.09 [b-c]
  - Keep Hazardous Waste Records [1.10]

## Contacts

### Metro County Hazardous Waste Offices

Anoka County .....	763-422-7093
Carver County .....	952-361-1800
Dakota County .....	952-891-7557
Hennepin County .....	612-348-8100
Ramsey County .....	651-773-4466
Scott County .....	952-496-8475
Washington County .....	651-430-6655
Web Site: .....	<a href="http://www.co.[county].mn.us">http://www.co.[county].mn.us</a>

### Minnesota Department of Health

Radioactive waste .....	651-642-0492
Web Site: .....	<a href="http://www.health.state.mn.us">http://www.health.state.mn.us</a>

### Minnesota Pollution Control Agency

Toll free ( <i>all locations</i> ) .....	800-657-3864
Brainerd .....	218-828-2492
Detroit Lakes .....	218-847-1519
Duluth .....	218-723-4660
Marshall .....	507-537-7146
Rochester .....	507-285-7343
St. Paul .....	651-297-2274
Willmar .....	320-214-3786
Web Site .....	<a href="http://www.pca.state.mn.us">http://www.pca.state.mn.us</a>

### Minnesota Technical Assistance Program (MnTAP)

Toll free .....	800-247-0015
Metro .....	612-624-1300
Web Site: .....	<a href="http://www.mntap.umn.edu">http://www.mntap.umn.edu</a>

### Sewering Contacts

#### Metropolitan Council Environmental Services (MCES)

Twin Cities metropolitan area ..	651-602-4703
Web Site: .....	<a href="http://www.metrocouncil.org">http://www.metrocouncil.org</a>

#### Greater Minnesota Delegated Programs

Albert Lea .....	507-373-9159
Mankato .....	507-387-8665
Owatonna .....	507-444-2452
Red Wing .....	651-385-3641
Rochester .....	507-281-6190 x 3006
St. Cloud .....	320-255-7225
WLSSD (Duluth area) .....	218-740-4815
Winona .....	507-457-8207