



Management of Solvents and Wipes in the Printing Industry

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Printers use solvents and wipes to clean oil-based ink from equipment. Solvent cleaning typically generates hazardous waste solvents, and used cleanup wipes contaminated with ink and solvent residue. By minimizing and recycling hazardous solvent waste, printers can save money while protecting their workers and the environment. This fact sheet provides general guidance on reducing and managing solvent related wastes. For an official interpretation of regulatory requirements for specific situations, contact the nearest district office of the Department of Natural Resources (DNR).

Why is Proper Management of Cleanup Wipes Important?

Printers typically use either leased fabric towels or disposable wipes for cleaning presses. Either type of wipes can become an environmental hazard, and expose printers to expensive environmental cleanup costs, if not managed properly.

Leased Towels

Leased towels are typically sent to an industrial laundry for cleaning. Rags contaminated with solvent are **not** considered hazardous wastes under federal and state regulations if they are **not saturated** (saturated rags can be rendered non-hazardous by wringing or centrifuging) and are **laundered** and **reused**. The effluent emitted from the spent towels at the laundry can become a concern to the local regulatory agency that oversees the sanitary system as the contaminants are washed out into the wastewater. It is the presence of these inks and solvents that create problems for the industrial laundry and the community sanitary sewer system that handles the effluent from the laundry. Printers can be part of the solution by reducing the amount of solvents in rags sent to laundries. Please see side bars on last page for vendors of launderable towels.

Why Reduce and Recycle Solvent Waste?

Reduced compliance requirements

Reduced hazardous waste management and liability costs

A safer workplace for employees

Cost savings when total volume of solvents used is reduced

Improved corporate image with customers and neighbors

Reduced tax burden from generator and land disposal fees

Reduced threat to the environment

Disposable Wipes

Users of disposable wipes need to be very careful about how the used wipes are disposed of they are to remain in compliance with regulatory requirements and minimize corporate environmental liabilities. Used wipes may be subject to hazardous waste regulations if the wipes contain solvents or residues (e.g. heavy metals such as lead and chrome) that are classified as hazardous. However, even if the wipes do not contain hazardous solvents or residues, it may not be in the best interest of the generating printer to dispose of their wipes with the rest of its trash. Contaminants that can leach out of the wipes at a landfill can expose the generator to expensive remediation costs if the landfill that is used is determined to be causing ground water contamination. If disposable wipes are used, it is important that the generators have an accurate, comprehensive picture of all of the solvents and residual contaminants that could remain on used wipes from the plant.

How can the amount of solvent waste be reduced?

Reduce the Need for Cleaning

Improve production methods by coordinating runs according to color, type or quantity, thereby reducing the number of cleanups.

- A. Use standard sequence on process colors to minimize color changes for presses.
- B. Run similar jobs simultaneously to reduce cleanup
- C. Clean ink fountains only when changing color; use spray skin overnight.

Use Alternative Solvents

Review the types of inks used, and the solvents needed to clean presses after their use. Possible alternatives include:

A. Choose a solvent that *minimizes hazardous waste and air pollution*. Carefully review the material safety data sheets (MSDS) when considering purchasing a cleaner. Try to avoid cleaning solutions with solvents or chemicals that would cause used cleaners to be classified as hazardous because of toxicity or flammability (see DNR's "Very Small Generator Guide" for further information). To reduce air pollution, try to use cleaners with a low (no more than 30%) VOC content, and a low vapor pressure (less than 10 mm mercury).

B. *Use water-based inks* whenever possible in flexographic and gravure applications. These inks, are typically less toxic and have a much lower volatile organic compound (VOC) content, and therefore will reduce disposal costs and air emissions.

Methods for Reducing Solvent Wastes

Reduce the need for cleaning

Use alternative solvents

Reduce solvent use in cleanup

Closely manage the dispensing and storage of solvents and wipes

Separate excess solvent from cleanup wipes

Collect all solvent wastes for recycling

Establish accountability for solvent use and waste generation

Educate customers

Reduce Solvent Use in Cleanup

When solvents are essential to a cleanup, alternative cleaning methods can reduce the amounts of solvents used and can result in cost savings.

- A. Avoid soaking cleanup wipes in solvent. Use pump or squeeze bottles to dampen wipes.
- B. Use automatic blanket washes.
- C. Utilize parts washing equipment as an alternative to towels for cleaning the trays that collect the solvents and inks below each press roller.
- D. A parts washing unit with recirculating solvent can be used. Trays can be removed from the press and placed in the washer unit where solvent is used in a closed washing system to remove the ink.

Remove Excess Solvent from Wipes

Excess solvent can be removed from used wipes by hand wringing, mechanical wringing, or spinning in a centrifuge. Be sure that the recovered solvent is stored in a closed, clearly marked container. When installing a centrifuge, be sure to check local fire codes that may affect ventilation and electrical requirements.

Collect Solvent Waste for Recycling

Use efficient methods of collecting solvent waste while reducing the chance of spills.

- A. Provide clearly marked drums or containers to collect solvent waste.
- B. **Modify** drain trays as necessary to make it easy and neat to pour or drain collected solvents into storage drums.
- C. Add receiving funnels with automatically closing covers to storage containers to decrease spills and air pollution from evaporation.

Increase Accountability for Solvent Usage

Using an inventory control program that tracks solvent use and waste generation, makes departments financially accountable for their waste streams. Have one person responsible for oversight of solvent storage and dispensing. Provide regular feedback to departments on waste minimization performance.

Educate Customers

Printers can help customers understand the processes and environmental impacts associated with the use of various inks, papers, and coatings. Show customers that their choices can reduce your need to use cleanup solvents and inks with environmentally problematic constituents. Most customers want to do the right thing, when presented with affordable, environmentally-preferable choices.

Who makes waste reduction a success?

Employee cooperation and commitment is essential. Encourage employees to help identify waste reduction opportunities and understand the changes in procedures and equipment required to achieve waste reduction goals.

Management commitment to a workable solution shows employees that waste reduction is a priority. Keep waste reduction programs visible and communicate goals and accomplishments regularly.

Dispensing and Storage Tips

Cover solvents to reduce evaporation

Dispense solvents from a central source

Track usage at individual press or operator level

Do not allow **personal supplies** of cleanup solvents

Limit the access to disposable wipes and number of wipes available

Methods for Removing Solvents from Wipes

Use a hand-operated wringer

Squeeze or **wring** out wipes by hand

Install an explosion-proof centrifuge to spin wipes dry

Some state regulations prohibit air drying of wipes contaminated with solvents that classify as hazardous waste

* See following page for **vendors of solvent recovery equipment.**

Vendors of Solvent Recovery Equipment

SHWEC, by providing these lists, does not endorse or certify companies.

Hand-Operated Wringers

Environmental Management
Products, Inc.
P.O. Box 1310
Ballwin, MO 63022-1310
(800) 779-2047
(314) 256-0047

Alden Industries
2716 Royal St. Box 3027
New Orleans, LA
(504) 944-7681

Local Sales Rep:
Lab Safety Supply
P.O. Box 1368
Janesville, WI 53547-1368
(800) 356-0783

Ostrin Laundry and Machinery
Company
842 12th Ave. N.E.
Minneapolis, MN 55413
(612) 378-9631

On-Site Solvent Extraction Service

McCarty Water and Waste
6250 Highway 12W
Maple Plain, MN 55359
(612) 479-4343

Explosion-Proof Centrifuges

Bock
3600 Summit Street
Toledo, OH 43611
(419) 726-2645

Printers Service/Prisco
Chicago, IL
(800) 654-1357

Suppliers of Launderable Towel

Industrial Towel and Uniform
Local ITU Rep
(414) 964-5050

Spic and Span Industrial Services
Division
Milwaukee
(414) 964-5050

Ideal Uniform Service
Milwaukee
(414) 257-2262
Madison
(608) 251-5442

Bay Towel-Linen & Uniform
Rental
Green Bay
(800) 242-5606

All Rental Garment Company,
Inc.
Madison
(608) 256-5060

L For More Information, Contact Your County Extension Agent or SHWEC 7

**County Extension
Information**

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