



Partnership for the Environment

Utah Department of Environmental Quality

Pollution Prevention in Printing Shops Fact Sheet

Pollution prevention (P2) is the reduction or elimination of harmful pollutants discharged or introduced to the environment. Pollution prevention reduces the generation of wastes at their source by using, reusing or reclaiming wastes once they are generated.

Pollution prevention is good business

While most pollution control strategies cost money, P2 has saved many firms thousands of dollars in treatment and disposal costs alone. By reducing or eliminating wastes a firm can:

- Reduce operating costs for energy, waste disposal, water and raw materials.
- Protect workers, the public and the environment.
- Reduce risk of spills, accidents and emergencies.
- Reduce vulnerability to lawsuits and improve its public image.

Printing is a chemical-intensive industry. The cost of disposing of hazardous and non-hazardous wastes can provide printing firms with tremendous incentives to reduce the generation of wastes. The volume or toxicity of waste produced by the printing industry may be reduced through source reduction, recycling and product substitution.

Trash and Recyclable Waste Paper

The printing industry produces waste paper in large quantities. The volume of waste paper can be reduced through recycling, improved operating procedures, and equipment changes.

- Recycle waste paper for use in pulp, paper and paper containers.
- Utilize improved start-up procedures to reduce waste to a minimum.
- Use improved maintenance to reduce the occurrence of unexpected machine downtime.
- Recycle spoiled photographic film and paper by sending it out to silver reclaimers.

Waste Lubricating Fluids from Machinery

- Lubricating fluids used in most machinery may be contaminated with hazardous materials, such as lead or cadmium. If not recycled, they should be disposed of properly.
- Segregate used oil from solvents or other materials.
- Recycle used oil or burn for energy in accordance with applicable regulations.

Waste Chemicals, Inks, and Solvents

Certain printing processes produce waste chemicals, inks or solvents. The following methods can reduce the volume or toxicity of these wastes:

- Use silver-free films for contact operations. Recover silver to the maximum extent possible.
- Use water-based developed lithographic plates or wipe-on plates.
- Prolong the potency of oxidation process baths by reducing their exposure to air.
- Recover waste solvents on-site with batch distillation or use professional solvent recyclers.
- Fill ink fountains with only enough ink for the run or shift and return unemulsified inks to their containers. Use anti-skinning aerosols to prevent ink dry-up during shutdowns.
- Recycle empty containers by purchasing ink in bulk containers that can be returned to the supplier for refilling. Recycle used and leftover inks.
- Use water-based inks in gravure and flexographic printing processes.
- Use electronic imaging and laser plate making if possible.
- Only use the amount of solvent from the container necessary to complete the cleaning task.
- Use automatic cleaning equipment to promote more efficient use of cleaning solvent.
- Substitute less toxic solvents, such as hexane, for the highly toxic aromatic solvents. Use detergent solutions instead of solvents.
- Segregate spent solvents according to color and type of ink. Reuse the collected wastes to thin future batches of the same ink.
- Use press wipes as long as possible before discarding or laundering. Use dirty ones for the first pass, clean ones for the second pass.
- Set up an in-house dirty rag cleaning operation.

Process Wastewater

Certain printing processes produce waste chemicals and wastewater. The following methods can reduce the volume or toxicity of these wastes:

- Employ counter-current washing instead of parallel rinse systems to reduce process solution contamination and water usage. Reuse rinse water as long as possible.
- Eliminate once through cooling water for equipment and air compressors.
- Use squeegees to wipe off excess liquid in a non-automated processing system to minimize process bath contamination. This procedure increases the ease with which the bath can be recycled, prolongs bath life, and reduces the amount of replenisher chemicals required.
- Monitor and accurately add replenisher chemicals to process baths to reduce chemical wastes.
- Run similar jobs on the same day, or schedule jobs using light colored inks before darker ones. This may reduce the amount of equipment cleaning required between runs.
- Dedicate presses for various ink colors, if feasible. This will result in fewer cleanups. Dedicate one press for inks containing hazardous pigments or solvents.

Pollution prevention is everyone's responsibility. Management can demonstrate its commitment to pollution prevention and encourage employee participation by: Training employees in pollution prevention techniques, encouraging employee suggestions, providing incentives for employee participation, and providing resources necessary to get the job done.

For More Information, Contact:

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