Waste Reduction in the Screen Printing Industry

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Screen printing is probably the most versatile of the printing techniques, as it can place relatively heavy deposits of ink onto practically any type of surface with few limitations on size and shape of the object being printed on. Screen printers produce billboard advertisements, greeting cards, clothing, fabrics, posters, bumper stickers, and real estate signs. Unlike any other printing method, screen printing can be done on almost any kind of substrate such as metal, paper, wood, leather, and electronic circuit boards.

The screen printing processes, though similar to other types of printing in the image processing stage, are very different from other forms of printing. Screen printing involves chemicals to prepare the image transfer device—the screen, and usually involves several potentially hazardous chemicals for cleanup and screen reclamation. Most problematic wastes from screen printing are generated from ink removal and screen reclamation processes.

This "manual" consists of several fact sheets that focus on the most problematic wastes for screen printers. They are designed to be used as guidance documents to help prioritize, target, and reduce specific wastes from printing processes. Information gathered from local, regional, and national printing projects indicate that printers have very little time to read manuals on waste reduction.

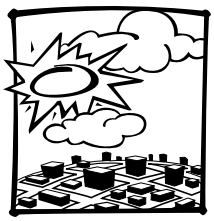
These fact sheets are designed with printers' limited amount of time in mind: they are quick reads, target only one waste stream with several P2 options, give useful resources, or offer a case study to show how other print shops have implemented P2 solutions to reduce costs and simplify their regulatory requirements.

The following fact sheets offer the most beneficial (P2) opportunities or management approaches to help companies reduce operating costs and minimize or eliminate regulatory burdens:

- *Change Your Approach to Waste and Improve Your Profits*
- *Best Management Practices to Reduce Prepress Waste*
- *The Digital Revolution: Hi Tech P2*
- *The Silver Fix—How Much is Your Waste Worth?*
- *Regulated Metals: The Rule of 20*
- *Reduce Wastes from Your Screen Reclamation Processes*
- *Workers Work for Waste Reduction: Pollution Prevention Through Inproved Workplace Practices*

Why do P2?

Pollution prevention saves printers money. No ands, ifs, or buts, about it! Less waste from your printing processes means using fewer raw materials, reducing labor, and spending less profits on disposal costs. It just makes sense, less waste = less costs = more profits.



Pollution prevention was established as a national priority with the Pollution Prevention Act of 1990. This act mandates reducing pollution at the source of generation as the most preferred method of pollution management. In-process and off-site recycling are preferred to toxicity reduction through treatment or disposal in the environment. The following strategies are options printers use to reduce amounts or toxicity of wastes in their shops.

Change the Material

It may be possible to change to less hazardous materials in the product without impacting the desired performance. This can be done, in some cases, in a manner that reduces the amount of cleaning solvents and other hazardous chemicals that are used in your shop.
Example: changing to UV-cured ink or a non-hazardous cleaning solvent

Change the Technology

Today new technologies are being invented faster than they are outdated. Many companies have found they must incorporate new technologies into their processes to remain competitive in today's markets. New technologies may involve the use of increased automation or improvements to current machinery used, or may even involve the incorporation of new technology that replaces existing processes completely.
Example: using digital pre-press technologies to eliminate photographic wastes

Change the Operating Practice

This approach to waste reduction many times offers low- to no-cost ways for printers to reduce waste and labor requirements. Changing the way something is done is most successful when it can be engineered into the process, or if it involves less labor for workers. Changes in the following areas can offer significant waste reductions:

- using more efficient operating and maintenance procedures
- improving equipment layout for more efficient work flow
- establishing waste reduction management practices
- segregating waste streams
- improving production scheduling
- establishing inventory control
- training employees in material handling practices and waste reduction methods

Example: using dauber cans for solvent dispensing on cleaning rags

Although the purpose of this "manual" is not compliance, regulations will be discussed as they relate to the waste stream, or compliance avoidance that can be achieved by using recommended pollution prevention opportunities.

Responsibility for waste generation is more of a public issue than ever before because of limited landfill space, and the increased awareness of health and environment on the part of the public and the worker. The public and businesses alike have both had to find new ways to reduce their waste streams.

If your company would like to initiate a waste reduction program but doesn't know where to get started, call the Pollution Prevention Institute for personal, confidential assistance, or you may wish to use the guidance document: *Change Your Approach to Waste and Improve Your Profits* to get started on a cost-saving P2 project. Specific Web sites are also listed in each fact sheet to provide more information on that topic.

K-STATE Kansas State University

The Small Business Environmental Assistance Program's (SBEAP) mission is to help Kansas small businesses comply with environmental regulations and identify pollution prevention opportunities. SBEAP is funded through a contract with the Kansas Department of Health and Environment. SBEAP services are free and confidential. For more information, call 800/578-8898, send an e-mail to SBEAP@ksu.edu, or visit our web site at http://www.sbeap.org. Kansas State University is an EEO/AA provider.