



# TLMI Recycling Sub-Committee A Practical Guide to Minimizing Ink Waste

## Introduction

Every printer can benefit from a well-implemented ink management program. Minimizing ink waste lessens environmental impact while freeing up resources, space, and energy, ultimately reducing the cost to print.

TLMI distributed a survey in 2012 to gather data on ink recycling practices among its membership. The results are listed here, followed by best practices for minimizing ink waste at all stages of production.

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## Summary of TLMI Ink Recycling Survey Results

**Solvent-Based Inks** accounted for the highest percentage of discarded ink (over 10% of total solvent ink usage), followed by *UV flexo*, at about 4%, then *WB flexo*, at less than 3%.

- **Old/Expired Ink** was the top source of discarded ink, followed by *Quality Issues/Contamination*, *Return/Yield Loss*, then *Obsolete/Test Ink*.
- **Mixing Colors In-House** was the top-reported method of minimizing wasted ink, followed by *Workoff*, *Accurate Job Estimating*, then *Use of Fountain Pan Liners*.
- **Plastic ink containers** are used by the majority of respondents for 1-, 3-, and 5-gallon containers. Most drums used by the respondents are *Metal*, with some *Fiber*.
- **Container recycling** is practiced by over half of the plastic users, and almost all of the metal users.
- **Contamination** was listed as the primary obstacle to recycling containers.

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## Best Practices for Minimizing Ink Waste:

### **In the Ink Room**

***The best workoff program is to minimize its generation in the first place.***

#### **a. Ink inventory management and storage**

- Use a dispenser or tabletop ink scale that includes software for formula management, inventory, batch estimation, and workoff.
- Control access to the ink room, and designate trained personnel to manage inventory and rotate stock.
- Organize the ink room and storage area to make it easy to find inks. Label ink batches with the code number or name, blending ink formula, any additives, and a color swatch.
- Store inks and coatings in closed containers and at recommended temperature, to maximize shelf life.

### **b. Reducing number of inks used**

- Where practical, order blending colors instead of pre-matched colors, and blend them in-house. This enables inventory of fewer inks and minimizes the need for rush orders for matched colors.
- Consolidate ink systems to cover the most applications with the fewest inks.

### **c. Scheduling**

- Before making batches, verify that the colors, substrate, and quantities match the original order.
- Provide up-to-date print schedules to the ink room, to avoid hidden costs due to schedule changes.

### **d. Estimating and batch size**

- Use a scale accurate to at least two decimal points for weighing batches.
- Learn how to calculate ink mileage, and make only the amount of ink that will be needed.
- For long-run jobs, make only enough ink to get started, then monitor consumption after makeready and at the midpoint of the run. Make just enough ink to finish the job, minimizing press return ink.
- If you have a dispenser, make less ink than you think you need for each job. A dispenser can quickly make a small batch that is identical in color to the last one, to finish the job.

### **e. Formula databases**

- Create and maintain an ink formula database, to ensure consistent batches.
- Create formula naming guidelines to make it easy to look up the correct formulas for repeat jobs.

### **f. Color and other specifications**

- Establish Standard Operating Practices (SOPs) for mixing inks and checking color.
- Even simple color adjustments can inflate batch size considerably, resulting in excess workoff. Train ink room personnel on basic color theory and toning inks, and give a color test to color approvers.
- Verify that the correct anilox, substrate, color standard, and light source are recorded for each ink.
- Preapprove color in the ink room by making a lab proof of each batch before going to press.
- Understand which ink system is used for each type of job, to avoid costly mistakes.
- Match colors with no more than 2 or 3 blending inks, as much as possible.

## **On Press**

### **a. Handling**

- Request ongoing training in proper ink handling from your ink supplier.

### **b. Equipment**

- Reduce the amount of ink needed to fill the fountain (and therefore the amount of press return) with modified ink trays or ink fountain pan liners.
- Standardize anilox rolls by volume to improve color accuracy and streamline approvals.

### **c. Color and other specifications**

- Set reasonable color tolerances. Too-narrow QC targets can result in number chasing and excess workoff, without necessarily improving product quality.
- Maintain a single color standard for each formula.
- Standardize job jackets, and ensure that ink-related specifications are correctly recorded for each job.

- Use a spectrophotometer and software for color approval and correction, and to store standards.
- Establish a standard procedure to follow when an ink is off-shade on press.
- Adjust color with the same blending colors used in the original formula.
- Communicate all press-side ink adjustments to the ink room, so the formula database can be updated.

### **Managing Workoff**

#### **a. Creating workoff**

- Discard or quarantine contaminated and unusable ink immediately after printing, and decide whether leftover test inks should be used, returned, or discarded. Anything left goes back into inventory.

#### **b. Establishing workoff goals**

- Set monthly workoff goals, including a goal to use a percentage of workoff in every batch.
- Prioritize high-usage colors as workoff targets.
- Review inventory reports to identify dormant material to work off.
- Identify major waste producers and causal factors, and address quarterly.

#### **c. Using workoff inks**

- Ask your ink supplier to help review your press return inventory and set up a workoff program.
- No amount of workoff is too small to use.
- Small-volume press returns and dirty colors can be used to make black ink.