



Recycling Solutions



Guide Book

Encouraging recycling through increased awareness and education!

Contents

General

The Recycling Solutions Team.....	1
Generally asked questions.....	1

Matrix Recycling

Frequently Asked Questions.....	2
Case Study.....	3
USA Location Map.....	4
Identified Matrix Recyclers.....	5 - 7
USA Location Details by State.....	7 - 14
Canada Location Details.....	14
States with NO identified solution.....	14
Contact.....	15

Liner Recycling

Frequently Asked Questions.....	16
Identified Liner Recyclers.....	17 - 18
Contact.....	18

Ink / HDPE Ink Jug Recycling

Frequently Asked Questions.....	19
A Practical Guide to Minimizing Ink Waste.....	20 - 23
Contact.....	23

Plate Recycling

Frequently Asked Questions.....	24
Identified Plate Recycling Programs.....	25 - 27
Contact.....	28

The RS Team

The Recycling Solutions Sub-committee is broken down into 4 Task Forces; concentrating on Matrix, Liner, Ink/HDPE Ink Jug and Plate recycling.

Environmental Committee Chair - *Calvin Frost*

Recycling Solutions Sub-committee Chair - *Brian Hurst*

Matrix Task Force Chair - *Chris Gillespie*

Liner Task Force Co-Chair's - *Robert Parker & Sheila Widule*

Ink / HDPE Ink Jug Task Force Chair - *Catherine Vitale*

Plate Task Force Chair - *Unassigned at this time*

We have gathered all of the determined solutions to date into this RS Guide to better educate and help TLMI members with their recycling practices.

It is the goal of the RS Committee to help the TLMI membership find solutions that will not only benefit the environment, but the member company as well.

NOTE: *If there is a solution that is not identified in the Guide Book, it is requested that you contact the Task Force Chair with all pertinent information, so we may keep the most up to date information for our membership.*

General FAQ's

Question:

Is recycling a lower cost option to landfill?

Answer:

No, often times when starting a recycling program, it will cost a facility more.

Question:

Are there any local resources on recycling?

Answer:

Every State has a recycling section on their website. You can log onto your State's website and browse through all of the options.

Question:

How much time does it take to start a recycling program?

Answer:

That is going to depend on the size of the facility and the resources that the facility has available to devote time to the project.

Question:

Who can I contact for help in getting started?

Answer:

All of the Task Force chairs are listed within the RS Guide book.

Matrix Recycling

Matrix recycling has been one of the most viable practices that the committee has been able to establish solutions for. The case study, available recycler map and site details will guide converters to the best possible solution for their facility.

Common uses found for Waste Matrix are:

1. Used to form fuel pellets for heating in place of coal.
2. Used as alternative fuel source in cement kilns.
3. Burned in the generation of electricity.

Frequently Asked Questions

Question:

Is matrix recycling a cost effective solution to landfill?

Answer:

It would depend on the area of the country that you are located. Landfill rates are different from State to State.

Question:

Are there any additional cost in matrix recycling vs. landfilling?

Answer:

Landfill is generally a per ton charge from your waste collector plus the pull charge for the compactor. Shipping to an alternative solution would also include transportation fees along with a tip fee at the end user destination.

Question:

How will the recyclers take the waste matrix?

Answer:

It depends on the location, please refer to the location details by State section.

Question:

How do we get our matrix to the recycler's?

Answer:

Transportation is up to the individual facility. It is recommended that you contact your LTL carrier for availability.

Question:

What do the recycler's do with the matrix material?

Answer:

This varies based on the location. See pages 5 through 7 for a short summary of identified recycler's.

Case Study on Waste Matrix used as Alternative Fuel

A Pennsylvania label converter partnered with Systech Environmental in 2013 to reduce the amount of waste going to landfill.

- The waste that would typically go to landfill was sent to Systech Environmental, at their Northampton, PA facility for use as alternative fuel for their cement kiln.

Information provided by Systech Environmental

- **96%** of the waste incinerated; generates **Thermal Recovery** used in the drying process in making cement.
- The remaining **4%** ash is **mixed into the cement**; making the waste matrix and scrap **100% repurposed**.
- Through testing and qualification, it was determined that the waste matrix and scrap generated 11,000 Btu's per lb.

Information obtained from Pennsylvania EIA website

www.eia.gov/consumption/residential/reports/2009/state_briefs/pdf/pa.pdf

- The average household in Pennsylvania consumes an average of **96,000,000 Btu's** (British Thermal Units) per year.
- British Thermal Units was used due to Pennsylvania household being heated by Gas, Electric, Oil and Wood.

Waste Matrix shipped to Systech Environmental (*Converted to BTU's*)

2013 - 1,255,713 lbs. X 11,000 btu's = 13,812,843,000 *Btu's generated in 2013*

* **2014** - 1,271,581 lbs. X 11,000 btu's = 13,987,391,000 *Btu's generated in 2014*

Comparative number of PA household's supplied

2013 - 13,812,843,000 / 96,000,000 : **144** households for 1 year

* **2014** - 13,987,391,000 / 96,000,000 : **146** households for 1 year

Summary

- Local landfill was reduced by 628 and 636 tons per year respectively.
- Cost associated with the alternative fuels program added approximately 31%.
(Bulk of increased cost is associated with the LTL transportation cost to the Systech facility)
- 290 Pennsylvania homes would have benefited from the Btu generation.

***NOTE: 2014 numbers account for the first six months of the year only.**

Identified Recyclers

Covanta

Safe, Reliable Renewable Energy for Communities

Covanta currently operates over 40 modern Energy-from-Waste (EfW – also known as waste-to-energy) facilities around the world. These facilities safely and securely convert approximately 20 million tons of solid waste into more than 9 million megawatt-hours of clean energy each year. Processing more than five percent of the waste in the United States, our facilities provide a sustainable solution to the solid waste disposal needs of more than 20 million people in communities.

Energy-from-Waste Offsets Greenhouse Gases to Combat Climate Change

According to the U.S. Environmental Protection Agency (EPA), for every ton of municipal solid waste processed at an EfW facility, the release of approximately one ton of carbon dioxide equivalent emissions into the atmosphere is prevented due to the avoidance of methane generation at landfills, the offset of greenhouse gases from fossil fuel electrical production, and the recovery of metals for recycling.

Greenwood Fuels

Greenwood's fuel pellets are a sustainable and cost-effective solid fuel that is utilized by industrial consumers, power producers and universities as a pellet-coal blend or a 100% replacement for traditional fossil fuels.

The energy content of Greenwood pellets is similar to that of bituminous coal (approximately 11,000 to 11,500 Btu/lb.) but with significantly lower emissions of sulfur dioxide and mercury. As a result, Greenwood's fuel pellets can be a desirable solution for compliance with the new US EPA MACT (Maximum Achievable Control Technology) regulations for industrial and commercial boilers that take effect in early 2016.

If you have non-recyclable industrial by-products such as paper, plastic films, label matrix, nonwovens, or other forms of paper and plastic, we may be able to integrate these resources into the energy chain as feedstock for our renewable fuel manufacturing process. Keeping these materials out of landfills reduces greenhouse gases (GHG's) and helps manufacturers improve their sustainability.

Identified Recyclers

Pellet America

We recycle industrial manufacturing waste into fuel pellets

The manufacturing process begins with our supply of incoming scrap material. This material generally comes in as bales or rolls, and is brought to our facility via van trailers, open-top dumpsters, and compactors. Pellet America contracts much of the trucking; however, there are some companies located outside of the Fox Valley area that use common carriers. The production crews move the material to the grinders using a crane, forklifts and skid loaders, which is the beginning of our system. As the material moves through, it is finely shredded and mixed thoroughly with the other scrap. The mix is then fed into the pellet mills, where it takes on its form, and is finally conveyed to the train-car storage bins outside. All of the 3/4" paper fuel pellets are shipped out in bulk, via large dump wagons, and are then unloaded at the designated areas, as set up by our customers.

Systech Environmental

Many nonhazardous materials can easily be diverted from landfills for safe energy reuse including plastic, paper/cardboard, wood, textiles, rubber, roofing shingles, and more. At Systech we call these types of materials **alternate solid fuels (ASF)**.

Other nonhazardous materials that several of our locations use are scrap tires and oil. Several locations also use nonhazardous alternate raw materials.

We offer customers the benefit of knowing that their byproducts are put to work, namely, as part of the manufacturing of cement. This green solution has assisted in reducing landfilling and incineration.

You can either send your sales representative an email or give him a call to discuss how we may assist you.

Identified Recyclers

Vexor Technologies

VEXOR's commitment to innovative solutions for waste management and energy recovery led to the development of VEXOR Engineered Fuel® (VEF). The VEF is a manufactured product with a commercial application utilized as a coal substitute in a combustion unit where coal is burned, such as a cement kiln, lime kiln or utility boiler. This alternate energy source is manufactured from various non-hazardous industrial and commercial materials that holds no value and has historically been disposed of in landfills. This includes but not limited to various plastics, paper, and cardboard that can not be further recycled by traditional means, as well as industrial wastes such as soy based inks, chemicals and oleo chemicals. Certain materials are removed such as metals, inorganic materials, and other materials not able to support combustion or are not beneficial to the product being made (cement or lime). We take this waste material, regardless of its physical characteristics (i.e. solid, liquid or sludge), and process to create a **homogeneous, consistent solid fuel** for use in the kilns. By manufacturing an alternate fuel from wastes we are diverting a large quantity of waste that was traditionally going to landfills for disposal.

Matrix Locations by State

Alabama

Covanta

5251 Triana Boulevard

Huntsville, AL

Contact: Woody Wilson

Phone: (256) 882-1019

Type: Matrix

Form: Compactors/Trucks

Shutdown: Schedule/Year round

Rolls: Matrix Rolls

Systech Environmental

8039 Hwy 25 West

Calera, AL

Contact: Ray Nobles

Phone: (843) 532-0483

Type: Matrix

Form: Compactors/Trucks (Bales Preferred)

Shutdown: Schedule/Market

Rolls: Matrix Rolls

California

Covanta

4040 Fink Road

Crows Landing, CA

Contact: Jeff Ruoss

Phone: (209) 837-4423 ext. 202

Type: Matrix

Form: Compactors/Trucks

Shutdown: Schedule/Year round

Rolls: Matrix Rolls

Covanta

118 Pier S. Ave.

Long Beach, CA

Contact: A. Thomas DeMaio

Phone: (562) 436-0636

Type: Matrix

Form: Compactors/Trucks

Shutdown: Schedule/Year round

Rolls: Matrix Rolls

Connecticut

Covanta

132 Military Highway

Preston, CT

Contact: Joseph Vitale

Phone: (860) 889-4900 ext. 134

Type: Matrix

Form: Compactors/Trucks

Shutdown: Schedule/Year round

Rolls: Matrix Rolls

Covanta

170 Enterprise Drive

Bristol, CT

Contact: Joseph Vitale

Phone: (860) 589-1949

Type: Matrix

Form: Compactors/Trucks

Shutdown: Schedule/Year round

Rolls: Matrix Rolls

Florida

Covanta

3830 Rogers Industrial Park Rd.

Okahumpka, FL

Contact: Gary Main

Phone: (352) 365-1611

Type: Matrix

Form: Compactors/Trucks

Shutdown: Schedule/Year round

Rolls: Matrix Rolls

Hawaii

Covanta

91-174 Hanua Street

Kapolei, HI

Contact: Rodney W. Smith

Phone: (808) 682-2099

Type: Matrix

Form: Compactors/Trucks

Shutdown: Schedule/Year round

Rolls: Matrix Rolls

Indiana

Covanta

2320 South Harding Street
Indianapolis, IN

Contact: Judy Grubbs

Phone: (317) 378-8700

Type: Matrix

Form: Compactors/Trucks

Shutdown: Schedule/Year round

Rolls: Matrix Rolls

Iowa

Systech Environmental

301 E. Front St.
Buffalo, IA

Contact: Greg Hendrick

Phone: (270) 978-1074

Type: Matrix

Form: Compactors

Shutdown: Schedule/Market

Rolls: Narrow Matrix Rolls

Massachusetts

Covanta

100 Recovery Way
Haverhill, MA

Contact: Ken Nydam

Phone: (978) 241-3030

Type: Matrix

Form: Compactors/Trucks

Shutdown: Schedule/Year round

Rolls: Matrix Rolls

Covanta

188 M Street Extension
Agawam, MA

Contact: Scott Porter

Phone: (413) 785-5120

Type: Matrix

Form: Compactors/Trucks

Shutdown: Schedule/Year round

Rolls: Matrix Rolls

Covanta

500 Hubbard Avenue
Pittsfield, MA

Contact: Kevin Rousseau

Phone: (413) 464-9270

Type: Matrix

Form: Compactors/Trucks

Shutdown: Schedule/Year round

Rolls: Matrix Rolls

Covanta

141 Cranberry Highway
West Wareham, MA

Contact: Thomas Cipolla

Phone: (508) 291-4450

Type: Matrix

Form: Compactors/Trucks

Shutdown: Schedule/Year round

Rolls: Matrix Rolls

Michigan

Systech Environmental

1435 Ford Avenue

Alpena, MI

Contact: Ray Nobles

Phone: (843) 532-0483

Type: Matrix

Form: Compactors/Trucks *(Bales Preferred)*

Shutdown: Schedule/Market

Rolls: Narrow Matrix Rolls

Minnesota

Covanta

505 6th Avenue North

Minneapolis, MN

Contact: Rick Rud

Phone: (612) 332-9431

Type: Matrix

Form: Compactors/Trucks

Shutdown: Schedule/Year round

Rolls: Matrix Rolls

Missouri

Systech Environmental

2200 N. Courtney Road

Sugar Creek, MO

Contact: Jeff Loulos

Phone: (816) 257-3601

Type: Matrix

Form: Compactors/Trucks *(Bales Preferred)*

Shutdown: Schedule/Market

Rolls: Matrix Rolls

New Jersey

Covanta

1499 Route 1 North

Rahway, NJ

Contact: Paula MacKay

Phone: (732) 499-0101

Type: Matrix

Form: Compactors/Trucks

Shutdown: Schedule/Year round

Rolls: Matrix Rolls

Covanta

183 Raymond Boulevard

Newark, NJ

Contact: Elizabeth Howard

Phone: (973) 344-0900

Type: Matrix

Form: Compactors/Trucks

Shutdown: Schedule/Year round

Rolls: Matrix Rolls

New Jersey (continued)

Covanta

600 Morgan Blvd.
Camden, NJ

Contact: Joe Hrapchak

Phone: (717) 871-9869

Type: Matrix

Form: Compactors/Trucks

Shutdown: Schedule/Year round

Rolls: Matrix Rolls

Covanta

218 Mt. Pisgah Avenue
Oxford, NJ

Contact: Joe Hrapchak

Phone: (717) 871-9869

Type: Matrix

Form: Compactors/Trucks

Shutdown: Schedule/Year round

Rolls: Matrix Rolls

New York

Covanta

99 Town Line Road
East Northport, NY

Contact: Georgette Smith

Phone: (631) 754-1100 ext. 5000

Type: Matrix

Form: Compactors/Trucks

Shutdown: Schedule/Year round

Rolls: Matrix Rolls

Covanta

600 Merchants Concourse
Westbury, NY

Contact: Larry Evans

Phone: (516) 683-5400

Type: Matrix

Form: Compactors/Trucks

Shutdown: Schedule/Year round

Rolls: Matrix Rolls

Covanta

5801 Rock Cut Road
Jamesville, NY

Contact: Luisa Romeo

Phone: (315) 498-4111

Type: Matrix

Form: Compactors/Trucks

Shutdown: Schedule/Year round

Rolls: Matrix Rolls

Covanta

100 Energy Blvd. at 56th Street
Niagara Falls, NY

Contact: Danielle Hanna

Phone: (716) 278-8520

Type: Matrix

Form: Compactors/Trucks

Shutdown: Schedule/Year round

Rolls: Matrix Rolls

Ohio

Vexor Technologies

955 W Smith Rd.

Medina, OH

Contact: Jeff Nimon

Phone: (330) 721-9773

Type: Matrix

Form: Trucks only

Shutdown: Year round

Rolls: No

Oklahoma

Covanta

2122 S. Yukon Ave

Tulsa, OK

Contact: Cindy Drake

Phone: (918) 699-0011

Type: Matrix

Form: Compactors/Trucks

Shutdown: Schedule/Year round

Rolls: Matrix Rolls

Oregon

Covanta

4850 Brooklake Road

Brooks, OR

Contact: Darby Randklev

Phone: (503) 393-0890

Type: Matrix

Form: Compactors/Trucks

Shutdown: Schedule/Year round

Rolls: Matrix Rolls

Pennsylvania

Covanta

10 Highland Avenue

Chester, PA

Contact: Joe Hrapchak

Phone: (717) 871-9869

Type: Matrix

Form: Compactors/Trucks

Shutdown: Schedule/Year round

Rolls: Matrix Rolls

Covanta

1155 Conshohocken Road

Conshohocken, PA

Contact: David Sharp

Phone: (610) 940-6000

Type: Matrix

Form: Compactors/Trucks

Shutdown: Schedule/Year round

Rolls: Matrix Rolls

Pennsylvania (continued)

Covanta

1670 South 19th Street
Harrisburg, PA

Contact: Dave Nowotorski

Phone: (717) 236-0958

Type: Matrix

Form: Compactors/Trucks

Shutdown: Schedule/Year round

Rolls: Matrix Rolls

Systech Environmental

2505 North Main
Northampton, PA

Contact: Ray Nobles

Phone: (843) 532-0483

Type: Matrix

Form: Compactors/Trucks (*Bales Preferred*)

Shutdown: Schedule/Market

Rolls: Matrix Rolls

South Carolina

Systech Environmental

467 Judge St
Harleyville, SC

Contact: Ray Nobles

Phone: (843) 532-0483

Type: Matrix

Form: Compactors/Trucks (*Bales Preferred*)

Shutdown: Schedule/Market

Rolls: Matrix Rolls

Virginia

Covanta

5301 Eisenhower Avenue
Alexandria, VA

Contact: Joe Hrapchak

Phone: (717) 871-9869

Type: Matrix

Form: Compactors/Trucks

Shutdown: Schedule/Year round

Rolls: Matrix Rolls

Covanta

9898 Furnace Road
Lorton, VA

Contact: Joe Hrapchak

Phone: (717) 871-9869

Type: Matrix

Form: Compactors/Trucks

Shutdown: Schedule/Year round

Rolls: Matrix Rolls

Wisconsin

Greenwood Energy

600 Liberty St.
Green Bay, WI

Contact: Dave Robinson

Phone: (715) 443-6868

Type: Matrix

Form: Compactors/Trucks

Shutdown: Schedule/Year round

Rolls: Yes

Pellet America

2601 W 2nd St
Appleton, WI

Contact: Lee Robert

Phone: (920) 954-0466

Type: Matrix

Form: Compactors/Trucks

Shutdown: Schedule/Year round

Rolls: Yes

Canada

Systech Environmental

7611 #9 Road
Richmond, BC
Canada V6W 1H4

Contact: Rustam Dunja

Phone: (778) 833-1968

Type: Matrix

Form: Compactors/Trucks *(Bales Preferred)*

Shutdown: Schedule/Market

Rolls: Matrix Rolls

Systech Environmental

3 Chemin Lafarge, C.P. 25
ST-Constant, QC
Canada J5A 2G1

Contact: Guy Desautels

Phone: (450) 522-0903

Type: Matrix

Form: Compactors/Trucks *(Bales Preferred)*

Shutdown: Schedule/Market

Rolls: Matrix Rolls

The following States have no identified solutions

Alaska

Arizona

Arkansas

Colorado

Delaware

Georgia

Idaho

Illinois

Kansas

Kentucky

Louisiana

Maine

Maryland

Mississippi

Montana

Nebraska

Nevada

New Hampshire

New Mexico

North Dakota

Rhode Island

South Dakota

In the above States you may have to look at neighboring States for a viable solution

Changes to the identified solutions list will be made as the Matrix Task Force determines new resources.

For further information on Matrix Recycling or to volunteer for the Task Force, please contact:

Chris Gillespie (*Task Force Chair*)

Precision Air Convey

cgillespie@airconvey.com

(302) 266-0555 ext. 232

Liner Recycling

Liner recycling has been difficult. While there are solutions available in different parts of the country, we all have to contend with the end user to become a willing participant. Once you get an end user to believe in the program, it becomes very easy. It is up to the converter to educate the end user on the benefits of liner recycling.

Frequently Asked Questions

Question:

How do I get the liner to the recycler?

Answer:

The generator assumes the set up and cost of transportation to the recycler.

Question:

Where can I get Gaylord boxes for the liner?

Answer:

Gaylord boxes can be obtained from your packaging supplier.

Question:

Is liner recycling cost neutral?

Answer:

It can be; weight and volume are critical to cost reduction.

Question:

How many pounds do I need to fill a Gaylord?

Answer:

A minimum of 500 pounds per Gaylord is needed to make it cost effective.

Question:

Can I mix paper and film liner?

Answer:

No, paper and film liners must be shipped in separate Gaylord boxes.

Identified Locations

Indiana

Channeled Resources

6555 East 30th Street
Indianapolis, IN 46219

Contact: Jim Loos

Phone: (715) 443-6868 ext. 221

jloos@channeledresource.com

<http://www.channeledresources.com>

Minnesota

ROHN industries

862 Hersey street
St. Paul Minnesota 55114

Contact:

651-647-1300

info@rohnind.com

<http://rohnind.com>

Ohio

Recycling Group LTD

630 Shepard Drive
Cincinnati, OH 45215

Contact:

Phone: (513) 769-9609

story@recyclinggroup.net

<http://www.recyclinggroup.net>

Pennsylvania

Channeled Resources

4949 Birney Avenue
Moosic, PA 18507

Contact: Jim Loos

Phone: (715) 443-6868 ext. 221

jloos@channeledresource.com

<http://www.channeledresources.com>

Systech Environmental Corporation

2505 Main Street
Northampton, PA 18067

Contact: George "Ray" Nobles

Phone: 610-261-3222

george.nobles@lafarge.com

<http://www.go2systech.com>

Texas

Progressive Waste

2301 Eagle Parkway, Suite 200

Fort Worth, Texas 76177

Contact:

Phone: (817) 632-4000

info@iesi.com

<http://www.progressivewaste.com>

Wisconsin

Channeled Resources

550 Mara Tech Avenue

Marathon City, WI 54448

Contact: Jim Loos

Phone: (715) 443-6868 ext. 221

jloos@channeledresource.com

<http://www.channeledresources.com>

Greenwood Fuels

600 Liberty Street

Green Bay, WI

Contact:

Phone: (920) 432-3200

Greenwood@gwenergy.com

<http://gwenergy.com>

Pellet America

2601 West 2nd St

Appleton, WI

Contact:

Phone: (920) 954-0466

<http://pelletamerica.com>

Changes to the identified solutions list will be made as the Liner Task Force

For further information on Liner Recycling or to volunteer for the Task Force,

Robert Parker (Task Force Co-Chair)

Label King

robert@labelkingcorp.com

(858) 549-9900

Sheila Widule (Task Force Co-Chair)

Expera Specialty Solutions

sheila.widule@experaspecialty.com

(715) 369-4336

Ink / HDPE Ink Jug Recycling

The Ink portion of the Task Force has been closed with the publishing of the "Practical Guide to Minimizing Ink Waste" by Catherine Vitale on the TLMI web site. HDPE Ink Jug is gaining ground, but is looking for more participants to help.

Frequently Asked Questions

Question:

Can HDPE Ink Jugs have any ink residue in them?

Answer:

We have been unable to find a recycler that will accept HDPE ink jugs with any residue in them.

Question:

How many pounds do I need to fill a Gaylord?

Answer:

A minimum of 500 pounds per Gaylord is needed to make it cost effective.

Question:

How do I remove the ink residue?

Answer:

One converter has purchased a restaurant grade dishwasher to clean their ink jugs before recycling.

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.

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.

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 make-ready 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.

Changes to the identified solutions list will be made as the Ink/HDPE Ink Jug Task Force determines new resources.

For further information on Ink/HDPE Ink Jug Recycling or to volunteer for the Task Force, please contact:

Catherine Vitale (*Task Force Chair*)

Sun Chemical

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(201) 960-6542

Plate Recycling

The chemical composition of photopolymer plates have made recycling efforts few. Contained you will find outlined the solutions discovered to date.

Frequently Asked Questions

Question:

Who should I contact about recycling plates?

Answer:

The best place to start is with your plate vendor.

Question:

Is there a fee associated with plate recycling?

Answer:

Yes and No; it depends on the program you decide to use. Contact your plate manufacture.

Question:

How many pounds do I need to fill a Gaylord?

Answer:

A minimum of 500 pounds per Gaylord is needed to make it cost effective.

Question:

Can the sticky back (mounting tape) be left on the plates for recycling.

Answer:

This should be removed whenever possible.

Question:

Where does the plate material go?

Answer:

Some plate material end up as a waste to energy solution.

Flint Group (*Plate Recycling Program*)

To accommodate its customers who are placing a priority on improving the sustainability of their prepress process, **Flint Group Flexographic Products** provides a program to for plate waste recovery service to its flexographic printing plate customers in the continental United States.

The service is simple and easy to use.

- Cubic yard corrugated containers are provided to the customer.
- As plate wastes is accumulated; raw plates, coversheets, and used printing plates with or without mounting tape affixed are placed in these containers.
- When the containers are full, the customer simply calls a toll free number, and the containers are picked-up by a licensed waste service provider and replaced with new ones.
- Title to the waste immediately transfers to the disposal company, who responsibly takes the waste plates and utilizes it for their energy content in the production process in the making of cement. The process involves 100 percent recycling of the waste; even the ash content after incineration becomes part of the cement product, whereas in a landfill it would consume space and might linger for many years.

Another benefit of this program is that when it is administered properly, it indemnifies the customer from future issues related to transportation, disposal and long term liability.

The program is very cost effective and immediately available to all customers in the continental United States. Customers may contact their Flint Group Flexographic Products regional sales manager, or customer service at 800-556-6742, to initiate the program.

DuPont TR-3 (*Plate Recycling Program*)

Program Objectives

TR 3 is a waste disposal program to reduce “solid footprint” of DuPont Cyrel plates and packaging.

If a customer returns:

- Cyrel boxes
- Polystyrene in boxes
- Developer rolls
- PET cover sheets
- Cyrel plates and trim waste

Then DuPont finds ways to recover, reuse and recycle the returned materials.

How DuPont is handling the returned waste today

What happens to returned materials?

- Cyrel boxes – 50% of returned boxes can be reused
- Polystyrene Packaging Material – Is recycled (*new end use*)
- Developer rolls – Are recycled to energy (*incinerated for energy*)
- PET cover sheets – Are recycled (*new end use*)
- Cyrel plates and trim waste – Are recycled to energy (*incinerated for energy*)
- Work is under way to facilitate as crumb rubber alternative

DuPont is working with Rutgers University on other higher-end alternative uses

TR3 Program Fees

There is a modest annual fee based on the volume of purchase intended to offset some of the program costs.

- < 10,000 sq. ft. \$1000
- 10,001 – 100,000 \$4,000
- >100,001 \$7,500

The total of the collected fees will not cover all costs. DuPont continues to be a significant “investor” in the TR3 program.

- The ultimate objective is to develop a program that is cost neutral to all. For some customers, the local landfill may be less expensive than the TR3
- program, but DuPont will not consider landfill as a cost reduction alternative.

Participation Guidelines

The program is open to Trade shops or Printers with internal Cyrel platemaking.

- Customers can purchase Cyrel from DuPont or Pitman.
- Customers must purchase at least 70% DuPont plates.
- Customers must be east of the Rockies.
(expansion to the West Coast is under review)
- DuPont will not accept non-DuPont plates in the return mix.
- DuPont will not accept corrugated “mounts”.
(regardless of the mounting material)
- One-Time annual invoice period begins in July. DuPont will issue prorated invoices for participants joining after July.
- Fees are charged to each participating location.
- Trade shops are welcome to accept used plates for their customers and consolidate with their own returns.
- An annual summary with weight of returned plates will be provided.

How it Works

DuPont works with a 3rd party Logistics Company to pick-up boxes, packing materials, cover sheets and plates.

Boxes, packing material and cover sheets need to be consolidated by the customer.

Gaylord’s for collection of the used plates will be provided if needed.

Unexposed (raw) trim waste should be separated, but all other “used” plate material can be consolidated in a single Gaylord; customers should remove all stickyback.

Gaylord’s with used plates should be carefully packed to get a minimum of 600 lbs. in a single container.

Customer’s will collect boxes, packing material, plates etc. and contact Nelson Company when they have a full load.

Changes to the identified solutions list will be made as the Plate Recycling Task Force determines new resources.

For further information on Plate Recycling or to volunteer for the Plate Recycling

or

To volunteer for the Recycling Solutions Committee and any of it's Task Force's,

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