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ASEPTIC PACKAGING COUNCIL

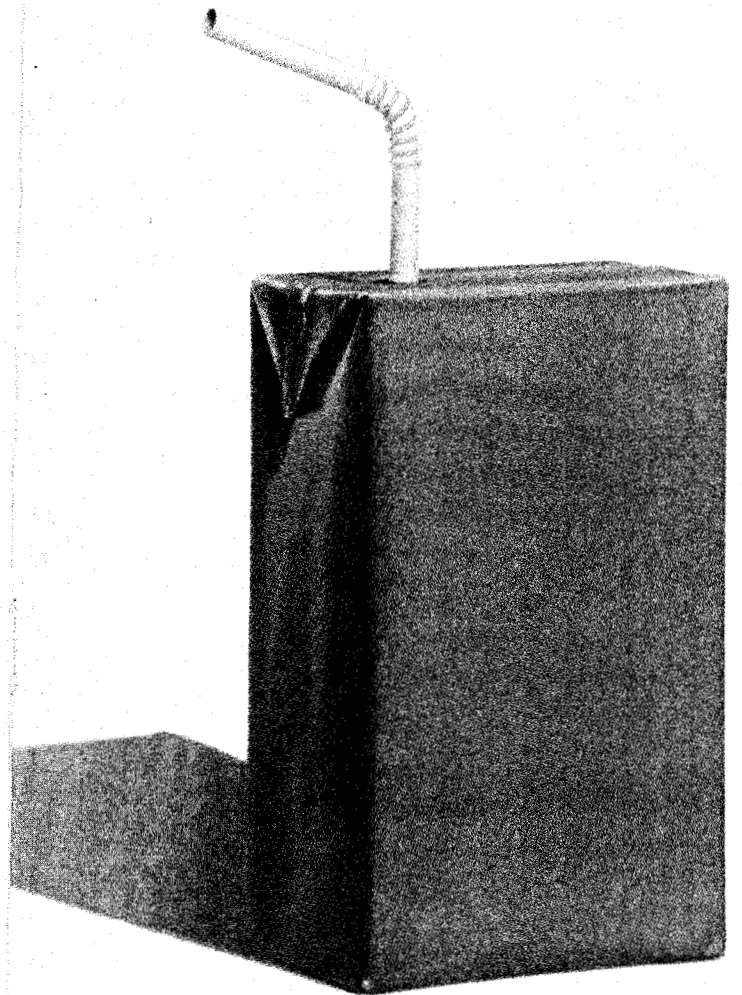
# DRINK BOX RECYCLING



Aseptic Packaging Council  
P.O. Box 3794  
Washington, D.C. 20007  
1-800-277-8088



Printed using soy-based inks on paper made from 50% recycled fibers



*Thank you for your interest in drink box recycling.*

*This brochure contains up-to-date information about aseptic technology, the drink box recycling process and the locations of existing drink box recycling programs.*

*In 1990, the aseptic packaging industry initiated the first drink box recycling programs. The results of these early operations were so encouraging that the industry accelerated its efforts. Today, post-consumer drink boxes are included in curbside collection programs serving more than 1.5 million households. Additionally, there are successful drink box recycling programs in schools across the country. (See insert for current figures.)*

*The drink box industry is a pioneer in developing recycling programs for plastic-coated or laminated post-consumer paper products, including both drink boxes and milk cartons. In fact, milk cartons are being recycled with drink boxes in most collection programs.*

*Our industry is committed to this effort. But recycling programs don't happen overnight. They take considerable time to organize and implement. They also take patience, assistance and support from interested parties in each community in order to assure their continued success.*

*Your interest as well as that of the many others who have contacted us is very encouraging. With the commitment of community leaders and industry alike, we are confident that drink box recycling will continue to grow.*

## **About the Drink Box**

In 1989, aseptic processing was hailed by the U.S. Institute of Food Technologists (IFT) as the "most significant food science innovation of the last 50 years" – even more significant than the microwave oven. Among the reasons cited by IFT was the aseptic package's "outstanding protection of food contents," which, the award pointed out, occurred "while ensuring maximum safety for consumers."

To be the best today, of course, a package must satisfy not only consumer demands for nutrition and safety, but also the desire for a cleaner environment. The drink box meets these needs better than virtually any other leading package for juice or milk on the market.

When developing its hierarchy for solid-waste management, the U.S. Environmental Protection Agency (EPA) chose source reduction as one of the key steps in minimizing the impact of post-consumer waste. Reuse and source reduction of materials were followed in the hierarchy by recycling, waste-to-energy incineration and, finally, landfilling.

In addition to its recyclability, it is its source-reduction characteristics that make the drink box such a positive package for the environment. Combining thin layers of paper, plastic and aluminum to form a unique, high-performance beverage container, the drink box is compact and lightweight, yet tough enough for children and active adults.

Each material used in the drink box plays an important role in protecting food quality.

**Paper** (70%) provides stiffness, strength and the efficient block shape of the package.

**Polyethylene** (24%) on the innermost layer seals the package liquid-tight. An outer layer keeps the package dry while providing a uniform printing surface for consumer information and graphics.

**Aluminum foil** (6%) keeps out air and light, which can harm a drink's nutritional value and flavor. This foil barrier eliminates the need for preservatives or refrigeration, locking in nutrients while saving energy.

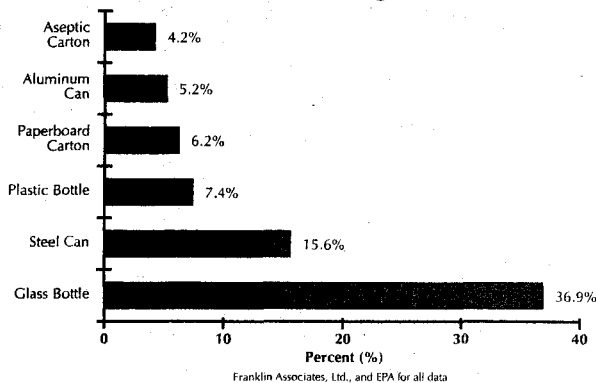
## Separating the Layers of a Juice Box



1. Polyethylene
2. Paper
3. Polyethylene
4. Aluminum Foil
5. Polyethylene
6. Polyethylene

Drink boxes are made using the least possible amount of material, so they can protect more liquid while creating less waste than virtually any alternative beverage container. The weight of a filled drink box is 96 percent product and only four percent packaging. Compare these figures with those of other primary packages and it is easy to see which conserves the most energy and raw materials.

### Weight of Single-Serve Packages as a Percent of Total Contents Plus Package



## Why So Efficient?

Drink boxes are among the most energy-efficient beverage packages on the market today. From production and filling to distribution, storage and disposal, drink boxes conserve energy every step of the way. Aseptic technology eliminates the need for refrigeration of even delicate beverages such as milk and orange juice, thus providing significant energy savings during filling, warehousing, transport and display.

As American visitors to foreign countries have noted for years, items they expect to find in the dairy case are on regular shelves in aseptic packages. The aseptic packaging process has enabled people in areas without modern refrigeration to obtain and store fresh juice and dairy products, something previously impossible in many places.

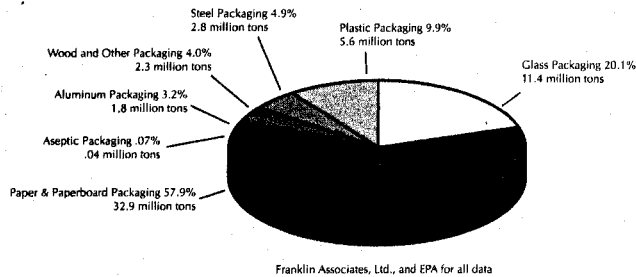
The drink box, with its minimal packaging weight, helps maximize fuel efficiency in transportation because more packages can be shipped in fewer trucks. Its rectangular shape also facilitates the drink box's energy efficiency. Aseptic boxes are compact and stackable, which maximizes available storage space for customers and consumers.

It is the drink box's high-tech, multi-layer design which is at the root of its appeal and makes this efficiency possible. Even better, today the high-quality paper fibers in the drink box are being separated from the plastic and foil layers and recycled into useful products.

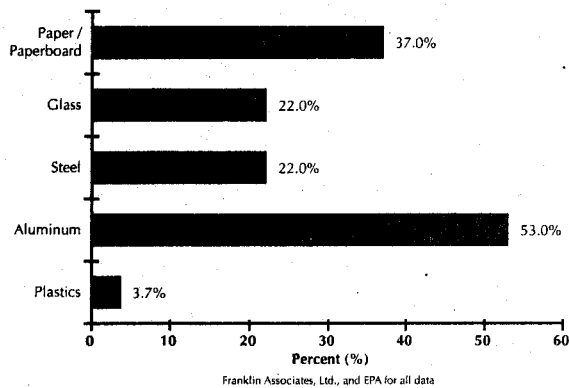
## Drink Box Recycling

Just a few years ago, packaging was being decried as the source of much of the booming "solid waste crisis." The truth is that, thanks largely to source reduction (or reducing the amount of material in packaging), packaging actually declined as a percentage of the household solid waste stream from 35.7% in 1970 to 32.9% in 1988. And it's still going down. Today, the recycling of packaging is a notable success story in the solid waste landscape.

**Composition of Packaging MSW by Weight, 1988**  
 (Total packaging MSW weight = 56.84 million tons)



**Recycling Rate for Various Packaging Types, 1990**



Curbside, drop-off and school recycling programs have created new markets for high-demand recycled materials. The high-quality paper fiber in drink boxes is recycled into consumer products such as writing paper, paper towels, tissues and napkins. The polyethylene and aluminum foil in drink boxes can also be recycled.

The challenges in large-scale recycling are twofold: the establishment of stable markets for recycled materials; and the development of local collection and sorting systems for the recovery of recyclable items so that they can get to their markets. Since the makers of the drink box have been working actively with businesses and local officials to implement recycling programs, drink box and milk carton recycling has taken off.

Today, as a result of this aggressive effort, drink box and milk carton recycling is at an all-time high, with new programs coming on-line regularly. A list of the locations of current programs is included in the attached insert, "Current Recycling Programs for Drink Boxes and Milk Cartons."

The recycling programs listed in the insert demonstrate the technical and economic feasibility of collecting and recycling used drink boxes and milk cartons. The encouraging results of these programs are fueling the continued expansion of drink box recycling efforts across the U.S.

**How It's Done**

In these recycling programs, recovered drink boxes are generally collected along with other laminated paper products, such as milk and juice cartons. The collected packages are sent to a paper company for recycling using a long-established technology called hydropulping.

Hydropulping separates the paper from the plastic and aluminum (used in making the drink box) so that the high-quality paper pulp (70 percent of the package) is recovered for recycling into other paper products. All graphics and labeling on the cartons are printed on the outer plastic coating. Thus, when the plastic is separated from the paper, the result is a bright, white, long-fibered pulp that does not require de-inking. The residual polyethylene and foil can also be recycled.

While drink box and milk carton recycling is new, the process for recovering paper fibers, hydropulping, is actually decades-old. The first hydropulper was used in 1939. In the 1960s, hydropulping gained widespread use as a method for recycling post-industrial paper scraps and, more recently, through the efforts of the Aseptic Packaging Council, it is being used to recycle post-consumer materials.

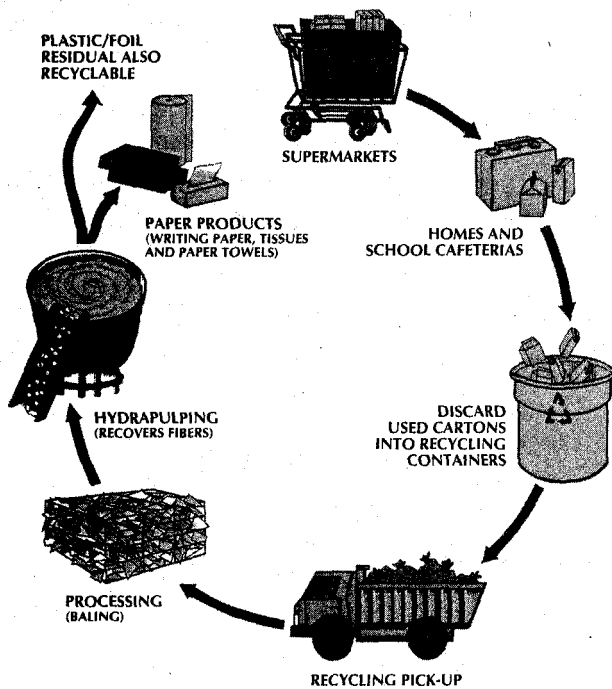
The hydropulper operates much like a large household blender. It is filled with water, drink boxes and milk cartons. During hydropulping, large rotor blades on the bottom of the machine stir up the water.

This motion literally beats the paper fibers away from the layers of polyethylene and aluminum foil.

When the hydrapulper is drained, special filters, which operate like screens, allow the paper fibers to pass through, while the polyethylene and foil are screened off. The paper fibers gather to form a pulp which can be fed directly into a papermaking machine or dried, pressed and shipped to a paper mill.

High-quality, post-consumer pulp is becoming an increasingly popular and required commodity in the manufacture of recycled content products. Because of this, the industry anticipates that the value of recycled drink boxes and milk cartons will remain high and perhaps grow as more hydrapulpers come on-line.

### Recycling Drink Boxes and Milk cartons



### Collection: The Real Challenge

In addition to market development, the biggest challenge associated with recycling drink boxes and many other post-consumer goods is not technological feasibility, but rather materials recovery. After all, successful recycling depends on effective and efficient collection.

Drink box manufacturers are working hard to meet this challenge.

Because drink boxes by themselves represent such a tiny fraction – less than three one-hundredths of one percent (0.03%) – of all solid waste, they are generally collected and recycled with milk cartons, which are more plentiful in the waste stream. Through this approach, recyclers can obtain the large volumes of material needed to make recycling of these laminated paper containers more economical.

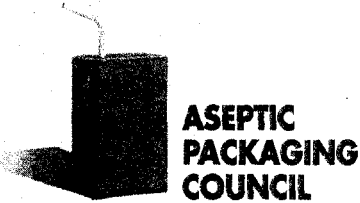
Most drink box recycling programs are extensions of existing curbside and school collection programs which recycle paper, plastic, aluminum, glass and other materials. Given the high concentration of drink boxes and milk cartons in schools, the industry has been working closely with school officials and waste haulers to collect used drink boxes and milk cartons from school cafeterias.

The drink box manufacturing industry is also encouraging municipal officials to add drink boxes and similar products to curbside collection programs, including co-mingled, single-bin, curb-to-MRF (Materials Recovery Facility) systems. Where curbside recycling pickup is not available, the industry is encouraging local officials to allow citizens to drop off clean, rinsed cartons at community recycling centers.

Once the drink boxes and milk cartons are collected, they are baled and shipped to an appropriately equipped hydrapulping facility. There are currently five major paper companies recycling this material at facilities across the U.S. The drink box manufacturing industry is continuing to meet with other hydrapulpers to determine their interest in participating, as well as the feasibility of implementing additional large-scale recycling programs.

## What You Can Do

1. Help us evaluate the potential for expanding drink box recycling into your community by filling out the questionnaire insert included in this brochure.
2. Participate in existing recycling programs in your local community. This will help assure the success of these programs and increase the potential for expansion into new materials.
3. Encourage local officials to examine the potential for including drink boxes, milk cartons and other laminated products in existing school, curbside or drop-off recycling programs near you.
4. Choose products which use minimal packaging (such as drink boxes) and thus support the EPA recommendation of source reduction.
5. Buy paper products that contain recycled (post-consumer) content.
6. Work with local recycling groups, community leaders and your neighbors to make your community a model for comprehensive materials recycling.



**ASEPTIC  
PACKAGING  
COUNCIL**

The Aseptic Packaging Council (APC) is a trade association representing U.S. manufacturers of drink boxes. The APC's primary mission is to inform the American public about the product benefits and environmental attributes of aseptic packaging and to encourage the recycling of drink boxes.

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## Current Recycling Programs for Drink Boxes and Milk Cartons\*

### Curbside Summary

State	Households
Arizona .....	10,000
California .....	676,320
Connecticut .....	125,000
Florida .....	6,800
Illinois .....	63,678
Massachusetts .....	272,000
Minnesota .....	4,925
New Jersey .....	96,000
New York .....	30,000
Ohio .....	29,600
Oregon .....	54,060
Utah .....	4,500
Virginia .....	63,000
Washington .....	183,614
<b>Total</b>	<b>1,619,497</b>

### 1992-93 School Programs

State	Schools
Arizona .....	134
California .....	618
Connecticut .....	49
Florida .....	20
Illinois .....	143
Minnesota .....	49
New York .....	17
Ohio .....	92
Oregon .....	182
Pennsylvania .....	40
Rhode Island .....	21
South Dakota .....	1
Texas .....	7
Vermont .....	7
Virginia .....	8
Washington .....	155
Wisconsin .....	18
<b>Total</b>	<b>1,561</b>

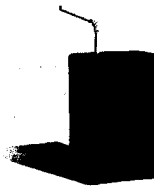
\* As of July 1, 1993

## **Drink Box Recycling**

The APC is working hard to meet the demand for more school and curbside programs. Of course, recycling programs don't happen overnight. They require careful planning, detailed work, establishment of relationships and networks, and the involvement of local governments, schools, haulers and citizens.

As the APC strives to meet these demands and expand as quickly as possible, it is important to note that recycling programs must be self-sustaining. The APC cannot initiate a recycling program where no infrastructure or market exists.

The APC encourages other industries to foster the growth of recycling markets for their packaging, while encouraging their customers and consumers to recycle as much as possible.



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