

► **Polyethylene prices will stay low** p.24

► **Powder & bulk solids handling** p.29

► **Transaction price survey results** p.47

# CPI Purchasing<sup>®</sup>

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## PLASTICS RECYCLING

### How Rubbermaid turns trash into products

Page 18

**Charles Lancelot**  
recycled polyethylene buyer  
Rubbermaid Commercial  
Products Inc.



Polyvinyl chloride prices to rise 4¢/gal p.6  
Chlorine prices up, caustic soda tags down p.7  
Steam trap buying tips p.17



**PLASTICS**

**RECYCLING**

# How buyers can help salvage recycling

*Left with thin, if any, profit margins on some of their products, recyclers look for ways to increase market demand for recycled plastics. Rubbermaid helps the cause by "closing the loop" in LDPE stretch film*

By John Conway / Senior Editor

**R**ubbermaid, a worldwide marketer and manufacturer of plastic and rubber products for household and commercial uses based in Wooster, Ohio, views the use of recycled plastics in its merchandise as more than just the environmentally correct thing to do.

"It goes beyond the altruism of recycling that everybody is into these days," says Joe Ramos, general manager of Rubbermaid Commercial Products Inc. in Winchester, Va. "It is fundamental to our business and will determine our ability to compete over the long term." Ramos says that in the not-too-distant future consumers will be demanding plastic products with recycled content, making it imperative for businesses to produce quality products with recycled resins.

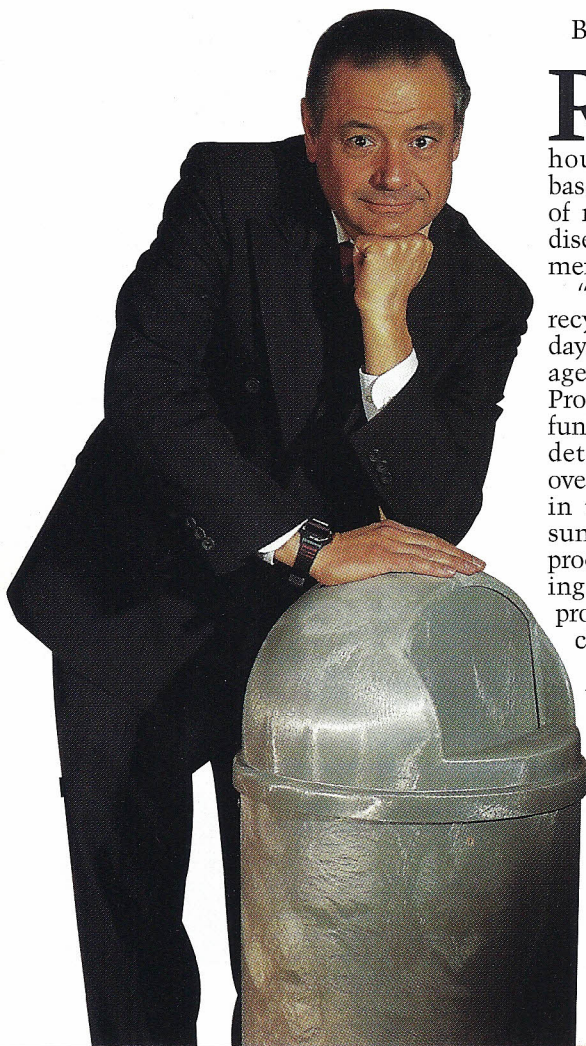
While Rubbermaid's Housewares Products division is the largest potential consumer of post-consumer resins (PCR) in

the company, it is the Commercial Products division that leads the "closed loop" recycling effort in low-density polyethylene (LDPE) and linear low-density polyethylene (LLDPE) stretch wrap. "It is closed loop in the sense that the market sector that used the stretch wrap gets it back in the form of a new product instead of putting it in a landfill," says Charles Lancelot, director of technology and business development for Rubbermaid Commercial Products.

Lancelot, who oversees supplier selection and sourcing of recycled materials, says that in 1993 the division will use about 6 million lb of recycled LDPE/LLDPE in more than 50 styles of refuse containers and other products, all of which will have 20% or more recycled content by the end of the year. "Rubbermaid Commercial Products is converting, on the average, a product a week to recycled content and is on target to use 9-10 million lb/yr of recycled LDPE by 1995," he says. He says the emphasis on recycled LDPE/LLDPE makes sense for Rubbermaid from a practical and an economical viewpoint.

"A variety of our refuse containers are molded from LDPE, and it is

*Charles Lancelot, director of technology and business development at Rubbermaid Commercial Products, leans on one of the company's refuse containers made with recycled materials.*





always best to match as closely as possible recycled resins to the original virgin resins," says Lancelot. "Another advantage is that virtually all stretch wrap is colorless, which means we can manufacture products in standard colors. It also is a high tonnage material, making it economical to collect. Stretch wrap doesn't have the visibility of HDPE (high-density polyethylene) containers, but it is easier to incorporate into our types of products."

#### **"Razor thin margin" in HDPE**

At this point in time, Rubbermaid's success in recycling stretch wrap appears to be the exception to the rule as many companies in the plastics recycling industry have hit a snag called profits.

"The reality is that there are a number of recyclers who are hanging on by their fingertips," says Dennis Sabourin, vice president of post-consumer procurement and recycling industry affairs at Wellman Inc., Shrewsbury, N.J., as well as chairman of the Association of Plastics Recyclers (APR), a trade group with 60-plus members.

In strict dollars and cents, it costs more for manufacturers to use some types of PCR than it does to use virgin materials. For example, recycled HDPE, perhaps most recognizable in the form of plastic milk jugs, currently is priced about 10¢/lb higher than virgin HDPE.

Few in the recycling industry would dispute the fact that recycled natural-grade HDPE should sell for 35-40¢/lb. Even before actual processing begins, costs can be 8-12¢/lb to collect, sort and bale the HDPE bottles, and companies still have the bulk of their expenses in grinding, washing, drying, pelletizing and shipping. During most of 1991 and 1992, buyers were paying closer to 8¢/lb for top-quality natural-grade HDPE bales.

This year, however, began with demand for natural-grade HDPE bales rising, mainly due to exports. With demand up, recyclers found themselves paying closer to 12¢/lb. "It's tough," says Roger Prevot, pres-



*More than 50 styles  
of Rubbermaid's  
reuse containers will  
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recycled LDPE/LLDPE  
by year-end.*

ident of Graham Recycling Co. in York, Pa. "If there is a 2-3¢/lb increase in raw material costs, there is really no way to get relief on the selling price, especially with virgin prices at or near historic lows."

According to exclusive data from *CPI Purchasing's* Transaction Price Survey, virgin HDPE, blow-molding grade, averaged 30¢/lb in the first quarter of this year. To put this in perspective, the first quarter average in 1991 was 46.5¢/lb; in 1990, the first quarter average was 45¢/lb; in 1989, it was 52¢/lb and in 1988, it was 43¢/lb. "In order to compete, most suppliers have had to sell recycled HDPE at the same price level as virgin materials," says Lancelot. "That leaves a razor thin, if any, margin."

Bruce Fortin, general manager at Enviropastics in Auburn, Mass., says the selling price of recycled resins, while heavily influenced by virgin prices, is dictated by quality. "If your recycled material is of high enough quality, you can compete with virgin prices," he says. He says Enviropastics has proprietary technology that allows the company to produce cost-

competitive recycled resins.

Wellman, at one time a major player in recycling HDPE, has all but dropped out of the market. "We're still recycling HDPE base caps and we have the capacity to get back into it," says Sabourin. "But it simply was no longer economically viable for us to produce large volumes. Right now, the market is being driven by virgin HDPE, and we can't adequately compete at those prices." Sabourin says Wellman is concentrating on polyethylene terephthalate (PET), where the company is vertically integrated.

Also making PET an attractive market is the fact that the recycling infrastructure is more established. The bottle bill has been around since the late 1970s, making end-use markets for recycled PET well developed. Prices for recycled PET range from 35-55¢/lb, depending on quality of the material. Clarity is the biggest issue when it comes to recycled PET. But with virgin PET prices hovering around 65¢/lb, new markets for recycled PET should continue to develop.

As for virgin HDPE, there is no sign that prices will return to past levels. *CPI Purchasing's* six-month forecast calls for prices to rise slightly, but to remain in the 29-32¢/lb range. Longer term, prices may dip below 29¢/lb because several capacity expansions recently have been announced. (See polyethylene article that begins on page 24.)

Recyclers report they are busy, but that profits are at a minimum. "Demand is quite robust, but I don't care much for the price we're getting," says Bruce Perlson, manager of plastics environmental affairs for Quantum Chemical, Cincinnati, Ohio. Perlson says that the current glut of virgin PE capacity combined with a slow economy means that virgin prices are under pressure.

#### **A win-win-win situation**

While the economics surrounding HDPE make it difficult for recyclers to compete and, in some cases, create an atmosphere of cut-throat negotiations, Rubbermaid's recycling efforts in the stretch film area offer a refresh-



## PLASTICS RECYCLING

ing combination of cooperation and optimism. "It works out that everybody involved in the loop makes some money, and we're all part of keeping this material out of the landfill," says Lancelot. He points out that about 500 million lb of stretch wrap is used each year in the U.S., with only 10-15% being recovered.

One of the issues that makes recycling of stretch wrap economically viable is the collection process. Whereas the HDPE collection process often begins with community residents putting a variety of bottles in a curbside bin, stretch wrap collection usually is centered around businesses. Among others, Rubbermaid works with Giant Foods, a major food retailer, which has a distribution center in Jessup, Md. Most incoming deliveries are packaged in stretch wrap, generating 40,000 lb of baled material every six weeks.

Giant Foods, which already was recycling corrugated from this location, welcomed the idea of collecting the stretch film. "We pay them 2¢/lb, or about \$40/ton, with freight at our expense," says Lancelot. "Giant Foods is happy because this eliminates the \$60/ton tipping fee they were paying to landfill it and greatly reduces hauling costs. Together, these generate a \$20,000 per year cash flow, net of baling costs, and turns disposal costs into a profit."

Lancelot says one of the keys to the stretch wrap collection process is that there are few steps involved. "The material is baled on site and loaded into an over-the-road trailer," he says. "Forty thousand pound loads go directly to Resource Plastics Corp. in Brantford, Ontario." Resource Plastics acts as a toll converter, turning the stretch wrap into pellets and then selling the material back to Rubbermaid for use in its refuse containers. Giant Foods can use these recycled containers at its site, closing the recycling loop. Lancelot adds that Rubbermaid worked with Resource Plastics on this particular project for more than a year and that this was a "true management by partnership" arrangement.

"This type of operating partnership is an indispensable feature of a cost-effective closed recycling loop," says Lancelot. "Among other things, we work closely with Resource Plastics to establish waste film bale specifications, reclaim pellet specifications, and to provide important feedback to waste film sources regarding contaminants, density of bales, etc."

## Recycling plastics with consumer appeal

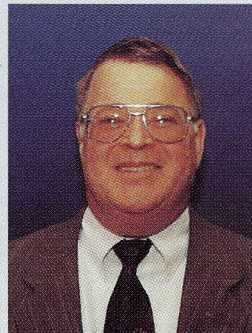
*Three-way partnership produces tri-layer shampoo bottle with 25% recycled content*

In the personal care market, "consumer appeal is one thing companies are unwilling to sacrifice," says Stephen W. Cornell, vice president of technology at Silgan Plastics Corp., a major manufacturer of plastic bottles for personal care products.

Put another way, attractive packaging is one product trait a company involved in competitive consumer markets will not sacrifice, even if that means not using "environmentally desirable" (recycled) plastics in its packaging. Helene Curtis, a personal care products company with \$1 billion in sales in 1992, worked closely with Silgan Plastics and Union Carbide Plastics Recycling Corp. to overcome the appearance problems that are common in packaging made of recycled plastics.

This three-way partnership has worked well enough for Helene Curtis to sell its Salon Selectives brand shampoo and conditioner in bottles made with 25% post-consumer resins (PCR). The coral-colored 15-ounce bottles consist of three layers, with virgin high-density polyethylene (HDPE) on the inner and outer layers and PCR in the middle. The PCR is from recycled milk containers.

"This tri-layer packaging technology makes it possible for us to safely use recycled plastic, while



**Stephen W. Cornell**  
vice president  
Silgan Plastics Corp.

guaranteeing our consumers the highest quality products," says Andrea Reisman, environmental manager at Helene Curtis in Chicago, Ill. "We are working to extend this technology to our other products."

Cornell, who is based at Silgan's technical center in Norcross, Ga., says producing the three-layer bottle and matching its distinctive coral color

"was technically very difficult. It was truly a three-way project, with everyone working together to meet Helene Curtis' needs."

Diane Mesinger, procurement manager at Union Carbide Plastics Recycling in Piscataway, N.J., says advanced recycling technology, including new pre-rinse equipment, as well as great attention to detail in the sorting, washing and grinding stages in the HDPE recycling process, allows the company to produce high-quality recycled resins.

"We're extremely satisfied with the product we've seen," says George Amann, director of packaging/new product development at Helene Curtis, which also produces Suave and Finesse shampoos and conditioners. "Union Carbide is providing post-consumer resins that can be used without sacrificing the high quality for which Helene Curtis is known."

The fact that all parties involved are pleased with this three-way partnership is reason enough for optimism, but it also is encouraging that recycled stretch wrap does not pose the same pricing problem as its HDPE counterpart. Industry sources say recycled stretch wrap sells for approximately 25¢/lb; virgin LDPE, film-liner grade, averaged 35.7¢/lb in the first quarter of this year, according to *CPI Purchasing's* exclusive Transaction Price Survey.

Barry Wood, president of Resource Plastics, recognizes the potential for

increasing stretch wrap recycling, but points out some hindrances to widespread production. "As far as technical difficulty goes, stretch wrap is king of the hill," he says. Because stretch film is an octene-based material, it presents processing challenges unlike other polyethylene resins. And paper labels and adhesives can attract surface dirt, making contamination a concern.

Resource Plastics' relationship with Rubbermaid is an example of a growing trend in the recycling industry of companies working together



## PLASTICS RECYCLING

for a common cause. In fact, due in part to Rubbermaid's projected growth in the stretch film area, Resource Plastics is undergoing a major expansion. "We started out as a small player, with about 15 million lb/yr capacity," says Wood. "But this expansion will give us 68 million lb/yr capacity if we were to do only rigid plastics, and 40 million lb/yr if we split between rigid and film, which is what we will be doing."

### Recycling partnerships

In addition to this relationship with Rubbermaid, Resource Plastics also has a contract with Dow Canada to procure materials for the company and then sell recycled pellets to them. While this is somewhat of a unique relationship, it may be a harbinger of things to come. "Dow recognized that they are really not geared to the custom activities we're involved in," says Wood. "Dow is better in dealing with chemistry, which is heavily capital intensive; recycling is more labor intensive."

He says the relationship has worked extremely well, with Resource Plastics taking advantage of Dow's technical, marketing and distributing skills, and Dow reaping the benefits of Resource's improved products and service. "We get to use Dow's lab facilities, which is something we could never afford on our own," says Wood. "This is very important, because we are producing a material that is a substitute for virgin materials so we have to match technical skills. Recyclers have to gear themselves to be cost-effective, quality producers, and creating relationships like this is one way to go about it."

What's interesting about this relationship is that other virgin polyethylene producers, like Quantum, Phillips, Union Carbide and Hoechst Celanese, have chosen a different path than Dow Canada. Recognizing that, over time, recycled material will replace more and more virgin resins, each of these companies has its own recycling unit.

"Our principal motivation for getting into the recycled resin business is that we see ourselves as a broad-based polyolefin supplier to our customers," says Quantum Chemical's Perlson. "If our customer base wants to be able to purchase recycled polyolefin resins, then we want to be able to supply them."

Virgin polyethylene producers bring more than visibility to the recycling market; they also bring large-

## "Buy Recycled Campaign"

The National Recycling Coalition, in a joint effort with U.S. businesses, has started a "Buy Recycled Campaign" to encourage the purchase of recycled content products. Endorsed by the National Association of Purchasing Managers (NAPM), the campaign's purpose is to develop and expand markets for recycled materials, including plastics and paper.

Member companies in the Buy Recycled Business Alliance include Coca-Cola Co., Du Pont, James River Corp., Johnson &

Johnson, Lever Bros., McDonald's, Rubbermaid and Wellman. In 1992, the Alliance, with approximately 30 members, purchased nearly \$3 billion of recycled materials and recycled content products.

"The purchasing power of businesses could move recycling in this country," says Kathleen Meade, director of communications for the Coalition. For more information on the campaign, contact the National Recycling Coalition, Washington, D.C., at 202-625-6406.

scale production units. In an industry where economies of scale are critical, this in and of itself gives larger companies an advantage. But recycling plastics is not the same as processing virgin materials, and this leaves plenty of opportunities for smaller, efficiently run recyclers to succeed.

"I think there is enough business out there for everyone who is cost competitive," says Graham Recycling's Prevot. Prevot says in today's environment it is important to run at full capacity, a luxury Graham Recycling has because of its relationship with Graham Packaging Co. Graham Recycling and Graham Packaging are operating units of The Graham Companies. Graham Recycling supplies the packaging arm with most of its recycled resins and sells very little on the open market.

George Glenn, president and chief executive officer at East Coast Recyclers Associates, Inc. in Millville, N.J., formerly a division of Wheaton Industries, says smaller companies have the versatility that larger companies do not. "We don't have the overhead, and we can make decisions quickly without waiting for approval from someone else," he says. He also says that smaller companies need to provide top quality materials each and every time. "One or two bad shipments can mean the fall of my entire business," he says.

### Looking ahead

There is little doubt that consumers, manufacturers and legislators need to support recycling efforts if the industry is to prosper. Purchasing professionals also can play a role in solving the industry's current predicament. Buyers of recycled resins should look not only at the black and white of price, quality and availability, but also at the recycling

industry as a whole. By understanding the ins and outs of what is, by all accounts, a relatively young industry, buyers are in a position to help plastics recycling emerge into the growth industry many have projected it to be.

Whenever solutions to current recycling problems are addressed, legislation rises to the top of the list. Says Sabourin, "The industry is in a position right now where it does need assistance if it is going to be sustained," he says. He says the APR supports legislation on the demand side—"initiatives to insist recycled materials be used."

Hal Yoh, president of Day Products in Bridgeport, N.J., says what makes it so difficult for recyclers today is that there is legislation based on the need to recycle. "It's required that materials be picked up, but there is nothing in place that says recycled materials have to be used," he says. "But legislation would have to be practical, not overbearing."

Many industry observers consider legislation the wild card in the future of recycling. For now, programs like Rubbermaid's stretch film recycling help create new markets for recycled materials. "Over time, we designed sorting and processing equipment to deal with stretch film," says Wood of Resource Plastics. "Essentially, in stretch film, you're talking about creating a whole new infrastructure—from collection and processing through reselling—and any time you want to do that, it's a tall order."

Lancelot says creating demand is what this particular recycling program is all about. "We need to swing the pendulum the other way," he says. "We have systems in place to collect and recycle, but we don't have the market demand. With this program, the lack of market demand is the gap that we are trying to close." ■





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