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Reed Business  
Information®

October 2005

# PACKAGING DIGEST®

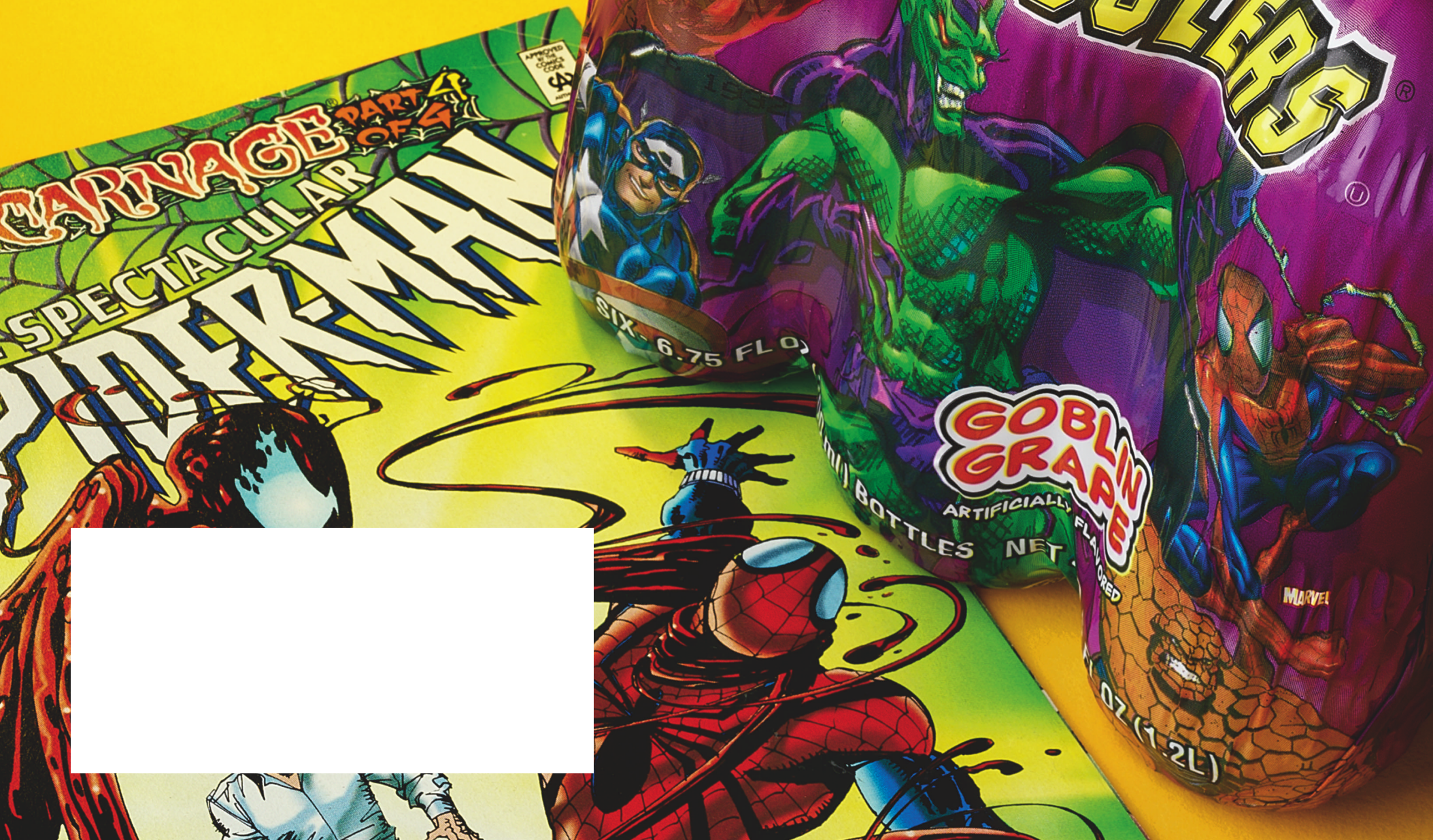
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Upgrade to laser coding 28

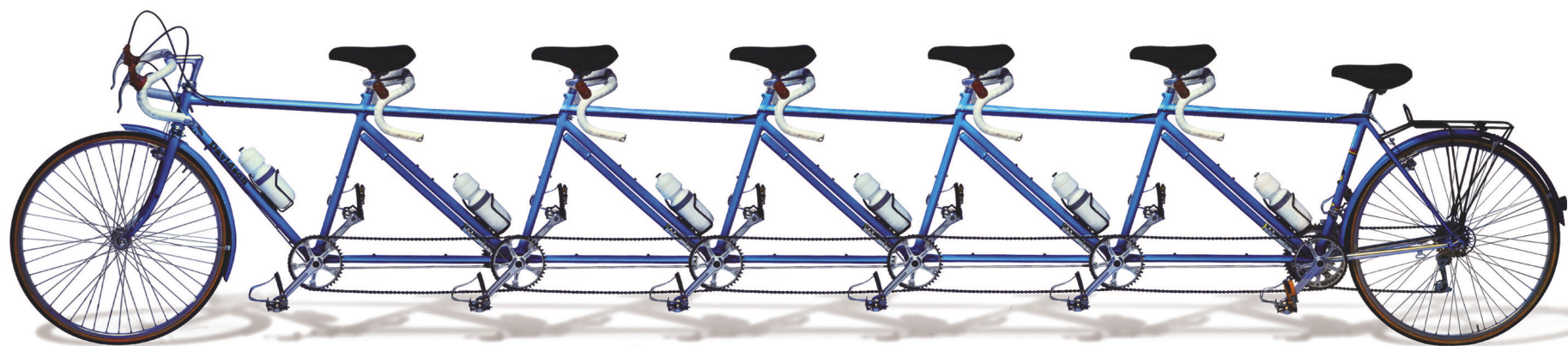
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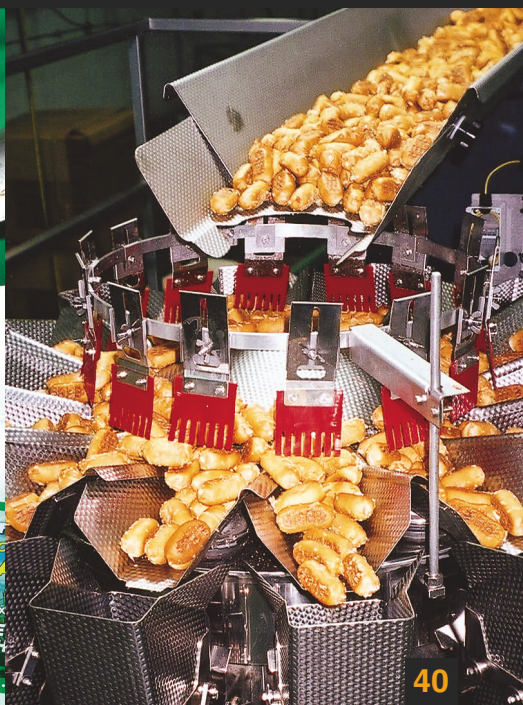
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- 36 Garden State Nutritionals has a healthy outlook on inspection**  
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- 40 J&J Snack Foods puts a new twist on its pretzel bagging**  
The world's largest producer of soft pretzels adds a vertical form/fill/seal machine that fills 9-oz bags, adding a special pressure-sensitive reseal tape that costs fractions of a cent per pack. The system churns out bags of the frozen products at 55 per minute.

- 57 Food show sets the pace in food packaging technology**  
The Worldwide Food Expo 2005 comes to Chicago's McCormick Place, Oct. 26 to 29, spotlighting packaging developments in meat, poultry, seafood, dairy and beverage markets.

- 58 Sparkling and protective mailers for Jewelry Television**  
One of the fastest-growing television shopping networks sees a boost in daily shipments by moving to polyethylene bubble mailers for fine jewelry and gemstones.

- 61 Package Manufacturing: Printed packaging paints a positive picture**  
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- 46 Automation & controls: Controls advance machine innovation**  
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- 50 Smart packaging: Nanotechnology's benefits for packaging**  
Nanocomposites provide enhanced barrier and shelf-life properties, among other advantages, for flexible and rigid polymer packaging.

## web exclusive

### U.S. shipments are on the upswing for packaging machinery

By most reasonable measures, 2004 was a notable year for the U.S. packaging machinery industry. Shipments of packaging machinery (excluding parts and service) surged by \$455 million, or 9.3 percent, in 2004, to an estimated \$5.344 billion. Go to [www.packagingdigest.com/shipments04](http://www.packagingdigest.com/shipments04)



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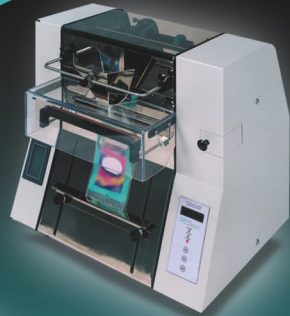


# Advanced

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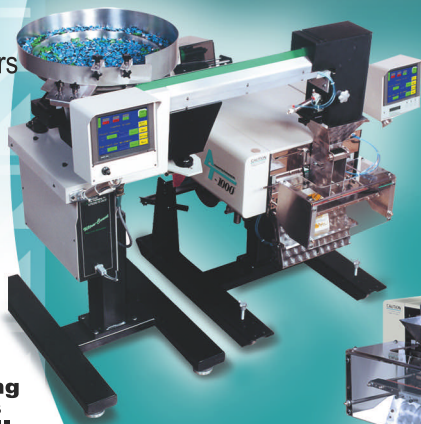
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# design trends

## 'Icicle' bottle takes shape for Ty Nant



If you think water has no shape, think again. When looking at water, you cannot tell whether it has just come out of a tap or has emerged from a pure spring, after filtering through a rock for centuries. And that's exactly why packaging for bottled water is so critical for reinforcing a brand. Since many consumers buy bottled water for looks alone, Ross Lovegrove's Ty Nant natural still spring water from Wales in 16.9- and 33.8-oz clear polyethylene terephthalate bottles are a stroke of brilliance. For this bottle Ty

Nant has gone to PET, omitting the deep blue color of its glass-bottle counterpart, and has subverted the old axiom that water has no shape, other than its container. The glass-clear plastic makes the latest Ty Nant bottle look as much like a torrent as possible, and that was the idea: a bottle that looks like what's in it, as if frozen in the act of pouring.

The Ty Nant spring was discovered on a Welsh farm by a water diviner in 1976. Instead of making its bottle look like so many other brands, Ross Lovegrove knew exactly what to do, and first came up with a now-famous blue-glass bottle, launched in 1989 and snapped up by hotels and restaurants big on image. More than a decade later, the PET version has an organic look sure to make this new Ty Nant package a covetable item. While mass-produced, the sophisticated bottle is also quite functional and may not be thrown away quickly. That might be recycling at its best.

## Korean kids' drink debuts first hot-fill cPP bottle

Representing the first use of clarified polypropylene (cPP) for a hot-fill beverage bottle, Toyoma children's beverage from Hanmi Whole Soymilk Co., Ltd., Korea, now boasts packaging that beats its polyethylene terephthalate peers on cost, and is recyclable, too.

Says Hanmi general manager Y.S. Lim, "We have been researching cost-effective alternatives for our packaging for more than two years. In the past, there was an odor problem caused by the polypropylene clarification process, but new developments have resolved our concerns. Now our packaging is more cost-effective, as well as recyclable."

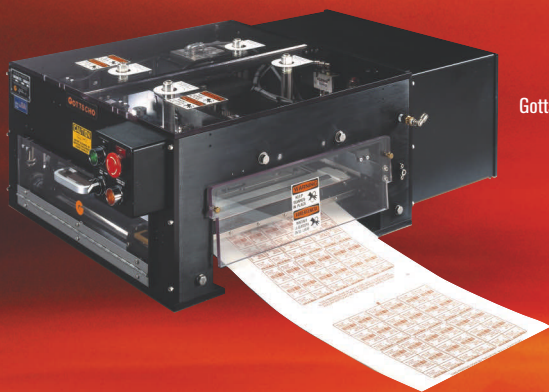
The cPP advancement is the result of research on injection stretch/blow-molding technology by **Milliken Chemical, a div. of Milliken & Co.** ([www.millikenchemical.com](http://www.millikenchemical.com)), which earlier this year completed development trials that increased the production rates of cPP beverage containers by more than 30 percent, matching those for PET and making cPP a viable option for containers. The trials included machine optimization, process improvements and the use of the company's Millad® 3988 clarifying agent.

As an alternative to PET for hot-fill bottles, cPP is typically 10-percent to 20-percent less-expensive than PET. Milliken says that PP is also superior to PET for certain beverage container applications because of its excellent mold duplication properties and the fact that it can be hot-filled at temperatures up to 209 deg F.

Hanmi's Toyoma, which uses characters from Toyoma Island, a popular animated series on Korean educational television, to decorate its labels and to top its push-pull spouts, uses cPP bottles produced by **Bio-One Co., Ltd.** with resin from **LG-Caltex Oil Corp.** ([www.lgcaltex.co.kr](http://www.lgcaltex.co.kr)).



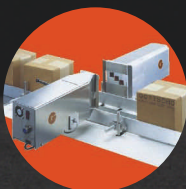
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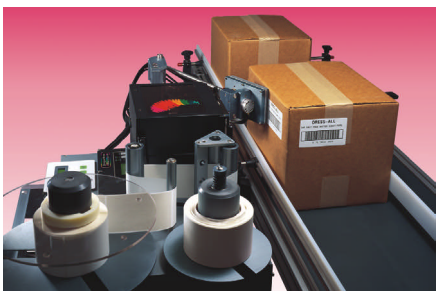
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# design trends food packaging

## A plumb bag for a plump chicken

A new, easy-open and easy-close bag that's convenient for consumers to use and store food products has increased sales in new markets for frozen chicken from Gold 'n Plump, St. Cloud, MN. "This new package is an improvement over our previous bag," says Tracy Miller, a Gold 'n Plump senior product development manager. "The bag has been instrumental in helping us meet our business goals." Miller adds that with the store shelves getting more and more crowded, Gold 'n Plump needed a package that could visually jump from the freezer case. "The new bag graphics have a high amount of appetite appeal."

The premade bag produced by **Bemis Polyethylene Packaging Division PPD** ([www.bemisppd.com](http://www.bemisppd.com)) is constructed of a monolayer low-density polyethylene

film and incorporates a patented Hefty® Slide-Rite® slider-zipper closure. Product is loaded from the bottom, and the bag is then heat-sealed and trimmed in-line. The attention-getting, colorful graphics are flexo-printed in eight colors by the Bemis PPD facilities in Terre Haute, IN. Says Dan Bloedow, Bemis PPD vp of market development, "Our first key step was the pre-planning with Gold 'n Plump." The handy Slide-Rite zipper allows consumers to keep the product in its original package, rather than repacking it into another storage container, as they have confidence the bag will remain closed. "This also helps to ensure the customer's product name and information stays with the product, increasing visibility and brand recognition," adds Bloedow.



The bag also features a tamper-evident membrane within the slider zipper that stays sealed until the consumer unzips and opens the bag upon first use. **Pactiv Corp.** ([www.pactiv.com](http://www.pactiv.com)) manufactures the Hefty Slide-Rite slider zipper. Miller says Gold 'n Plump finds that the package has produced the best results of any package to-date, and the company will expand its usage of this type of bag along other product lines in the future.

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Revolutionary discharger features a SPOUT-LOCK® clamp ring\* that creates a high-integrity, clean seal between bag spout and hopper, preventing contamination and dust during hook-up and discharge. TELE-TUBE® telescoping tube\* raises the clamp ring to make connection, then lowers, applying continual tension to keep spout taut as bag empties/elongates, preventing dead spots and flow restrictions. POWER-CINCHER® flow control valve\* cinches the spout concentrically for easy, leak-proof retying of partially empty bags. BAG-VAC® dust collector creates negative pressure within dust-tight system to collapse empty bags prior to retying and disconnection, eliminating dust from manual flattening of empty bags.



## Connect bulk bags quickly, easily, safely at floor level

New SWING-DOWN™ bulk bag filler\* lowers and pivots the fill head, stopping it in a vertically-oriented position that places the bag inlet spout inflatable connection, inflator button, and four bag loop latches within one arm's length of an operator standing on the plant floor, allowing safe, rapid bag connections. Eliminates danger of stepping onto and over roller conveyors to access rear bag hooks and spout connection collars, standing on the conveyor with head and arms inserted beneath operational fill head components, and straining to pull bag spouts upward over inflatable collars while reaching for bag inflator buttons. Available to industrial, food, dairy and pharmaceutical standards with numerous performance enhancements.



\*Patent(s) granted and/or pending. ©2005 Flexicon Corporation. Flexicon Corporation has registrations and pending applications for the trademark FLEXICON throughout the world.

T-0620



## Honey of a package redesign

A new package is giving a facelift to a 75-year-old brand of honey spread that's now regionally marketed but is seeking national distribution. For decades, Melford Olsen Honey's Mel-O-Creme honey spread has been available in grocery stores in and around Minnesota, but the product had no distribution outside the upper Midwest. The firm wanted to reach a national audience looking for a healthier and less-fattening alternative to butter and cream cheese, but the existing package was a liability. The former mustard-yellow tub and lid had a somewhat dated look that Melford thought lacked flavor appeal.

Working with **Berlin Packaging** ([www.berlinpackaging.com](http://www.berlinpackaging.com)) and its Studio One Eleven design division, Melford switched to a white, 7-oz polypropylene tub and lid provided by **Airlite Plastics** ([www.airliteplastics.com](http://www.airliteplastics.com)). Gone are the former screen-printed graphics in favor of printed, four-color labels and a fresh, rebranded graphics makeover that includes new art elements, typefaces and color schemes. **Viking Label & Packaging** ([www.vikinglabel.com](http://www.vikinglabel.com)) flexo-prints the pressure-sensitive labels in four process colors plus one line color on a 60#, platinum, semi-gloss paper stock and adds an overall UV varnish. The results have caught the eye of major regional and national chains and distributors, and are expected to push Mel-O-Creme onto a much larger retail stage.

The new label does retain the original red Mel-O-Creme logotype and an updated version of the company's teddy bear logo to provide continuity for existing customers, but all other elements have been revised to meet the packager's goal of providing a contemporary package that will encourage more product trial. Continued on p. 10



# Shrink Labelers and Shrink Tunnels



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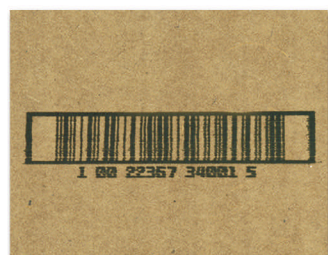


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# design trends



## PETG shrink sleeve creates an overnight celebrity

A new polyethylene glycol full-body shrink sleeve from **Ameri-Seal, Inc.** ([www.ameri-seal.com](http://www.ameri-seal.com)) is being used to market R-Sun Products' O.C. Overnight Celebrity indoor tanning cream. The label is gravure-printed in seven colors, two of which—the gold and silver—are metallic. Increasingly popular in heat-shrinkable sleeve applications, the gold and silver metallics accent the rest of the label graphics in rich warm reds, oranges and browns.

PETG film was chosen for the bottle sleeve because the unusually shaped, 12-oz square bottle has a very narrow neck, which meant that the label shrinkage had to be substantial. Since PETG film shrinks at 75 to 80 percent, it proved to be a wise choice. The heat-shrinkable sleeves highlight the eye-catching colors and illustrations, which the company says are popular for the personal care and cosmetic industries. Ameri-Seal says it offers an array of shrink-sleeve shades and hues and different metallic colors.

## 'Whims'-ical canister shakes up the cookie shelf

Any way you stack 'em, new Whims™ bite-sized treats from Pepperidge Farm, Norwalk, CT, are turning the cookie aisle upside down. Available in Crispy Waves™ and Crunchy Clusters™ in six decadent varieties, the mini cookies are packed in a rounded-corner, rectangular-shaped, paperboard canister from

**Sonoco** ([www.sonoco.com](http://www.sonoco.com)) that adds a fanciful touch, with graphics on one panel printed right-side-up, and printed upside-down on the other.

"When developing Whims, we set out to provide a bit of delicious spontaneity for busy consumers," says Carol Degener, director of innovation at Pepperidge Farm. "The revolutionary packaging design developed by Sonoco—a new technology to the cookie market—allows Whims to meet the fast-paced lifestyle of our customers and adds tremendous impact on the retail shelf in terms of marketing and merchandising."

Crunchy selections, in Chocolate Cashew, Chocolate Chocolate and White Chocolate Pecan, and crispy varieties, in Chocolate Chip, Mint Chocolate Chip and Toffee Chip, were launched nationwide into retail channels in 5.6- and 5.3-oz canisters, respectively, last summer. The snacks, says Pepperidge Farm, are intended as "a sweet, poppable treat that can be eaten at home, at work or on the go."

Supporting this convenience-driven goal is the packaging, which comprises a custom-designed, single-wrap SonoWrap™ pack made of laminated SBS cupstock that tapers at the bottom, making it car-cupholder-friendly. A resealable overcap, supplied by **Sonoco Crellin, Inc.** ([www.sonoco.com](http://www.sonoco.com)), keeps bites fresh between noshing, while a Sonoco-supplied peelable film/foil membrane over the canister top enhances the cookies' shelf life. Graphics, which include the distinctive Pepperidge Farm logo and enticing images of the snacks, are reverse-offset-printed in seven colors and, because of their orientation, allow retailers to display the package either on its base or on its lid.

Relates Tim Hoover, Sonoco senior account manager, "Customers are more selective about the products they choose, and the unique SonoWrap pack used for Whims helps differentiate the product from its competitors by offering distinctive features that are new to the cookie market and meet consumers' needs."

Available in grocery stores, mass merchandisers and drug retailers, Whims carries a suggested retail price of \$3.49 per container.





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# comment

Mary Ann Falkman, Editor



## All indicators are finally pointing up

**A**s the images of unfathomable tragedy and human misery that gripped this country through the final days of August and into September begin to recede into horrible memories instead of living horror, it's still hard to believe that there has been good news, too.

As this issue goes to press, our editors and thousands of packaging professionals are just returning to their jobs after attending PACK EXPO Las Vegas. By any measure, it was a solidly successful show, drawing a total of 33,154 visitors and exhibitors, up from 28,423 in 2003. By noon on the first day of the show, the Packaging Machinery Manufacturers Institute was reporting that visitor attendance had broken its record set two years prior. But it wasn't just in the numbers that we could measure success. The prevailing mood was upbeat, positive and proud.

In terms of product introductions, vendors are clearly listening to their customers' needs for improved machine flexibility, easy changeovers and minimal downtime. Some suppliers are focusing on engineering services, custom orders and guaranteed delivery schedules. Any way you look at it, however, this is definitely The Year of the Customer As King.

Buoying this enthusiasm may be the fact that machinery sales have finally started clicking heartily. According to the PMMI Shipments and Outlook Study, released in late September, packaging machinery sales increased 9.3 percent in 2004, to a value to \$5.344 billion (see [www.packagingdigest.com/info/shipments04](http://www.packagingdigest.com/info/shipments04)). While 2002 and 2003 saw modest sales growth, the industry is only now following through with accelerated strength in recovering from the sharp downturn of 2001.

"Though steadily rising prices of steel and other raw materials no doubt played somewhat of a role in helping to propel the dollar value higher in 2004, their inflationary impact was not of sufficient magnitude to downplay the significance of the final result: that the industry's solid growth was indeed genuine," PMMI's report states. The forecast looks ahead through 2007 and predicts that manufacturers will continue to increase spending for new machinery and equipment primarily for productivity improvements and, to a lesser extent, for selective expansionary purposes.

Looking ahead to PACK EXPO International in 2006, Charles D. Yuska, president of PMMI, announced that the show will be co-locating with the Converting & Package Printing Expo (CPP Expo), which held its inaugural run during PACK EXPO Las Vegas, but at a separate venue. "By adding this emerging converting show, along with the existing Food Processing Machinery Expo co-location, PMMI is trying to bring the entire supply chain together," says Yuska.

And when Chicago's McCormick Place opens its new West Hall in 2008, just think what additional possibilities that may offer.

*Mary Ann Falkman*





### High Speed Print-n-Pack System

The new Autobag® AB 180 is the fastest machine of its kind, packaging at speeds up to 80 bags per minute. It has been engineered with next generation electronics that provide improved control, faster operating speeds, enhanced reliability, built-in diagnostics, and minimized downtime. Package changeovers can be achieved in less than 2 minutes. A new AutoTouch™ control screen provides instant access to job set-up and real time production monitoring.

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[www.autobag.com](http://www.autobag.com)



### Large Bag Packaging System

The new Autobag® AB 255 Large Bag System is capable of packaging bags up to 16 inches wide at speeds of 55 bags per minute, including automatic fill and seal operations. This new bagger has been engineered with advanced electronic controls and built-in diagnostics. This system can automate and streamline many previously manual operations that require a wide package.

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### Shop Towel Bagging System

Automated Packaging Systems has introduced a new Autobag® Shop Towel System designed specifically for shop towel and bar towel packaging applications. This system will package up to 3500 towels per hour with a single operator, which is three times more productive than traditional fold and band applications. Smaller size bags are also available for airline blankets, mop heads, and cotton gloves.

**Autobag®** 888-AUTOBAG  
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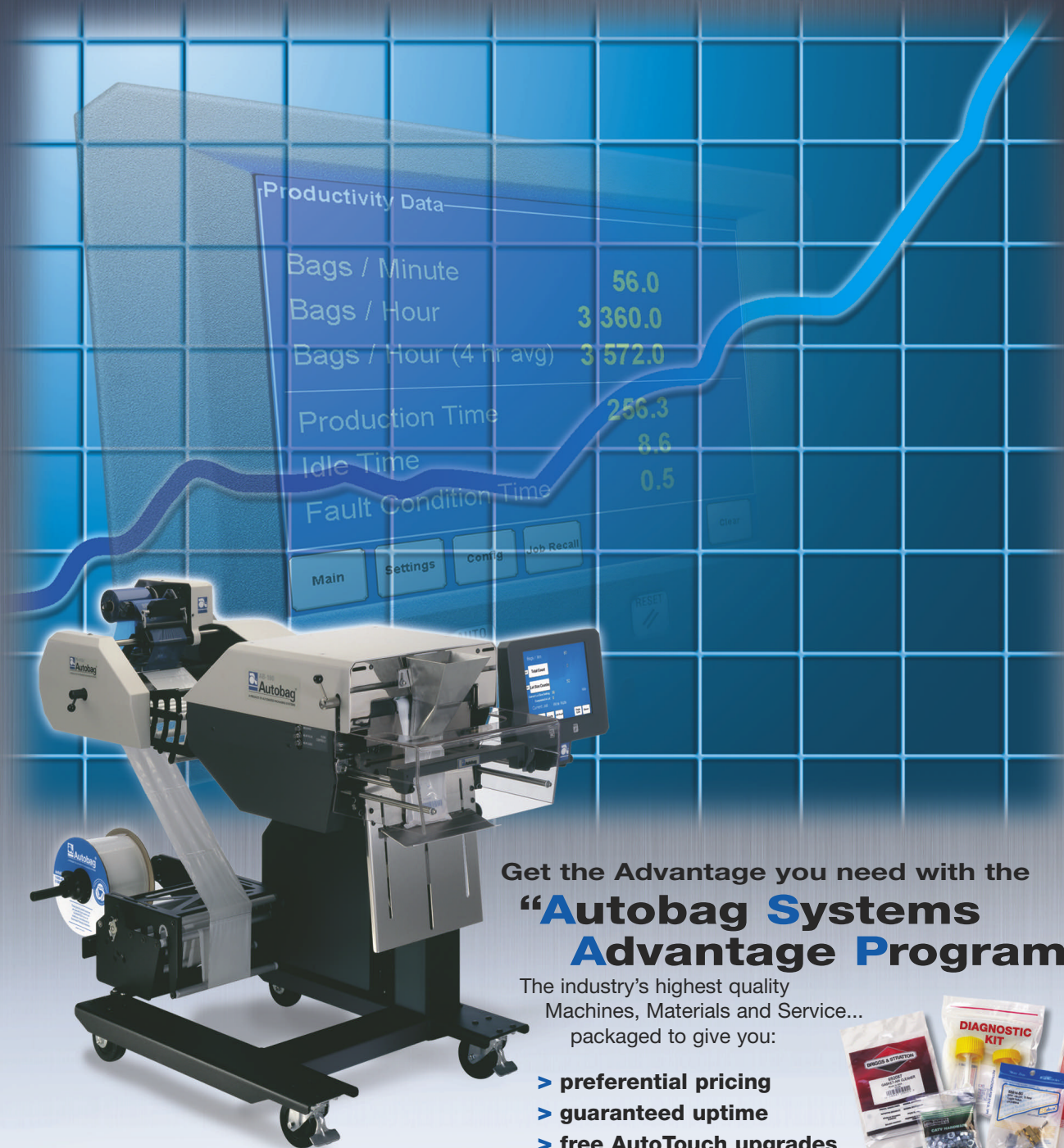


### Versatile Inline Bagging System

The SPrint™ SidePouch™ bagging system provides maximum versatility and efficiency for a wide range of hand-load or auto-load applications. This system is ideal for kit packs and specialty bags, including reclosable zippers, reclosable flaps, and resealable tape. The SPrint system can package up to 120 bags per minute and changeover of bags and products is quick and easy.

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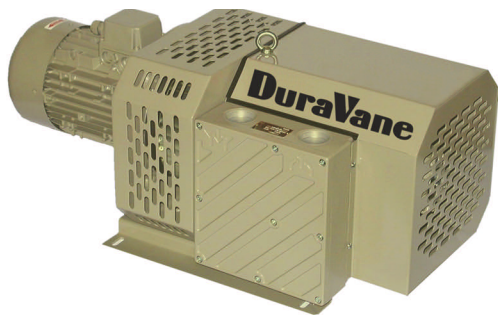
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# new products equipment

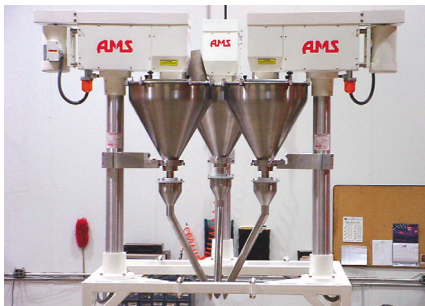
**Rotary vane vacuum pumps** Designed for vacuum-packaging and material-handling applications, DuraVane rotary-vane vacuum pumps come in dry and lubricated versions. The pumps are engineered for low maintenance and low noise levels, and they feature an air-cooled design. Said to be simple to install, the direct-drive pumps have a compact footprint and a heavy-duty construction.

**Dekker Vacuum Technologies, Inc.**, 888/925-5444.  
[www.dekkervacuum.com](http://www.dekkervacuum.com)



**Semi-automatic fillers** The A100 Series of semi-automatic, volumetric auger fillers offer versatility and are designed to be economical, the co. reports. With a rugged design, the fillers can fill free-flowing, dry products, as well as liquids. Filling accuracies average  $\pm 1$  percent, and the fillers can meet the requirements of most applications. Servo drives are standard on the A100, and stainless-steel options are available. The co.'s fillers can also handle blending applications. They're suitable for products such as granules and powders, thick pastes, lotions, nuts and beans, filling rigid or flexible packages at speeds up to 400 containers/min.

**AMS Filling Systems, Inc.**, 800/647-5390.  
[www.amsfilling.com](http://www.amsfilling.com)



**Capper** The CVC-1204 in-line capper is equipped with an extra-large-capacity, floor-level cap hopper that can stock caps for long runs without continual filling. The system is designed to accommodate both round and irregularly shaped bottles and containers with heights ranging from 60 to 200 mm and diameters between 22 and 120 mm. Capable of speeds up to 120 bottles/min, the capper is

equipped with a noiseless cap elevator that unscrambles and feeds caps into the system. An adjustable cap chute with a sensor that detects caps in the chute is available for use with differing cap sizes. The cap elevator stops when the cap chute is full. Other features include variable-speed control, a PLC and a safety guard around the cap-tightening station.

**CVC Technologies, Inc.**, 877/282-7333.  
[www.cvclabeler.com](http://www.cvclabeler.com)



**DeviceNet controller** The DeviceNet safety control device can control multiple safety functions without the need for a safety PLC. It can operate either with an existing DeviceNet PLC or as a standalone device, and it has the flexibility to be used with systems other than DeviceNet to coordinate safety functions. The new controller is based on CIP Safety protocol, an open standard, and it conforms to EN954-1 Category 4 and IEC 61508 SIL3 standards, enabling it to be used with a variety of products from various vendors. The controller also offers diagnostic functions and readily accessible maintenance and status information. Its CIP foundation provides media independence, which enables it to be applied to a variety of CIP-based networks, including Ethernet/IP.

**Omron Electronics, LLC**, 866/886-6766.  
[www.packaging.omron.com](http://www.packaging.omron.com)



**Ink-jet printer** The Model 1310 ink-jet printer is designed to start and stop without requiring cleaning, maximizing uptime for marking and coding operations, the co. says. Its automated back-flushing nozzle minimizes downtime by automatically cleaning itself at startup and shutdown, including after idle periods. It prints seven types of bar codes, alphanumerics, expiration dates and serializers for consumer packaged goods, food and beverage, pharmaceutical and contract packaging industries. Specially designed, no-mess bottles are said to guarantee that ink and makeup fluid are deposited into the reservoir, eliminating waste. Standard features include a simple user interface and text-editor software package and a dual CompactFlash™ memory card.

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[www.videojet.com](http://www.videojet.com)



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## Packaging Solutions

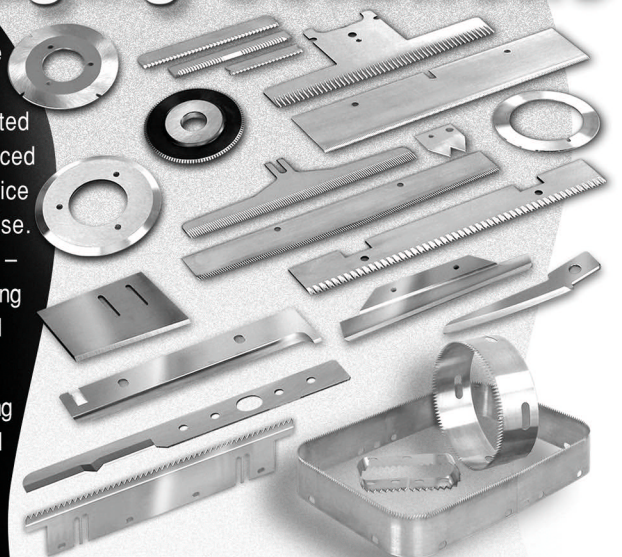
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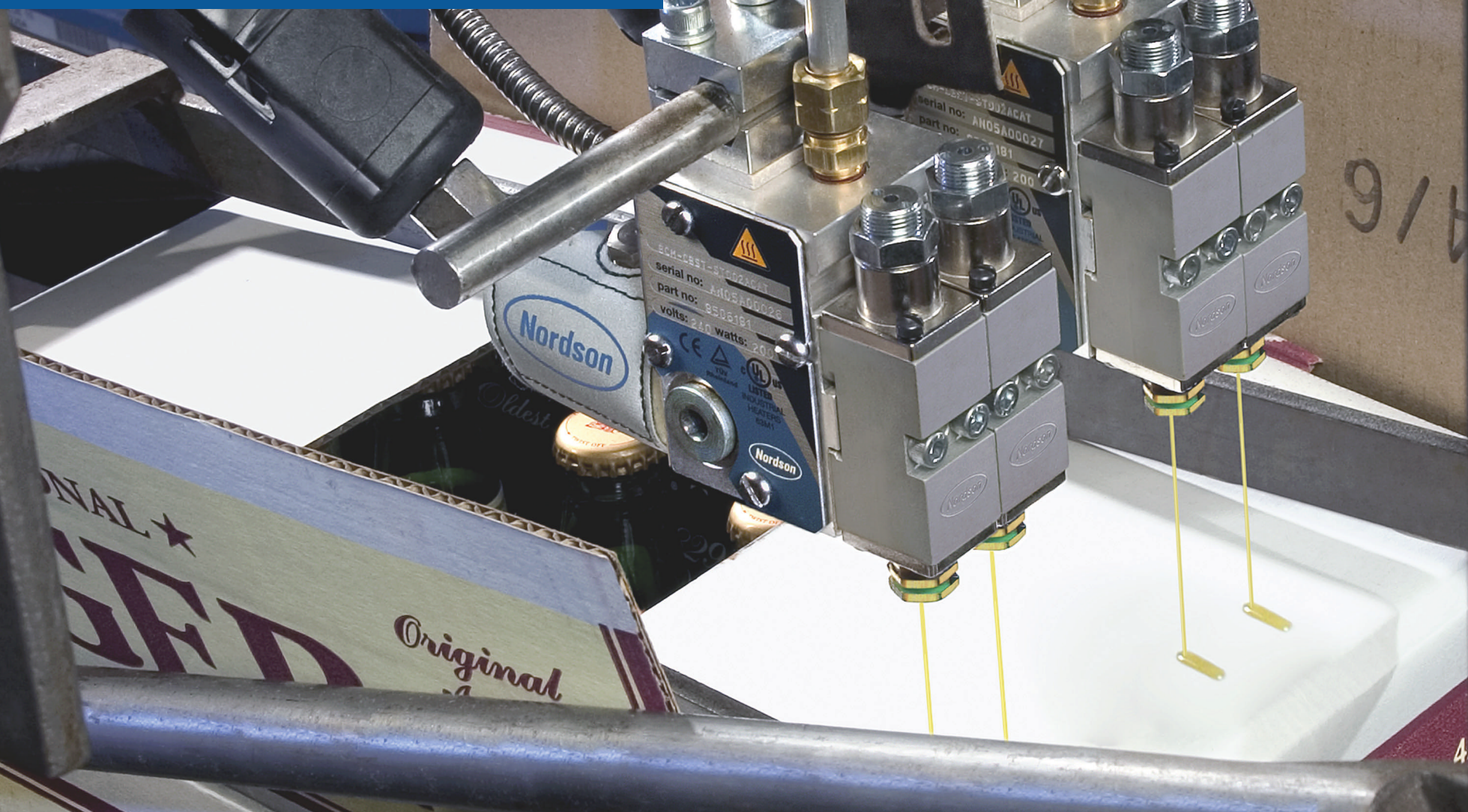
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# new products spotlight

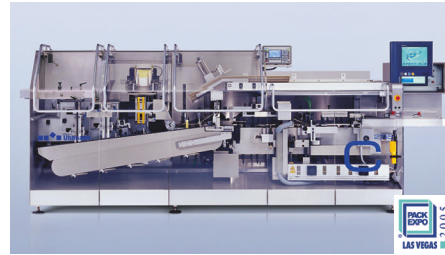
## Cartoning & Traypacking

**Tray packer** The Model 170 tray packer accumulates product and automatically packs and seals trays at speeds of up to 25 trays/min. It has a tubular-steel-frame design that eliminates catch points for dust accumulation, allowing the machine to meet food industry requirements. A low-level tray magazine is positioned for easy loading, and a standard, high-capacity auxiliary section can be refilled at any time during operation.

Trays are indexed from the stack top to ensure proper feeding. Chain-driven flight lugs transfer the tray and product through loading and sealing, and all product-contact components are manufactured of stainless steel.

**A-B-C Packaging Machine Corp.,**  
800/237-5975.

[www.abcpackaging.com](http://www.abcpackaging.com)



**Cartoner** The C 2155 cartoner features intermittent processing with servo-controlled carton pickup and erecting. Visual instructions via a touchscreen interface facilitate easy operation and quick setup. Featuring outputs

ranging from 25 to 150 cartons/min, the C 2155 has an ergonomic design, is self-cleaning and has a GMP-compatible, cantilevered construction.

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### Wraparound packing machine

The Wrapapac features an in-line design and outputs 30 to 80 packs/min. It packs individual containers or multipacks into trays, with or without film, onto pads with

shrink film or into wraparound cases made of corrugated or fiberboard. Case blanks are precisely folded and glued at the flaps with hot-melt adhesive. The unit features a large magazine and an automatic infeed for stacks of blanks. Production parameters are centrally controlled from a touchscreen interface, allowing program changes to be implemented quickly and easily. All changeovers can be performed quickly and without tools, and all container guides feature stepless adjustment with hand cranks and counters. Recent improvements include decentralized servo motors, ergonomic enhancements and a redesigned case magazine that features a roller separator system. Additional components include a partition inserter, a film module and a shrink tunnel.

**Krones, Inc.,** 414/409-4000.

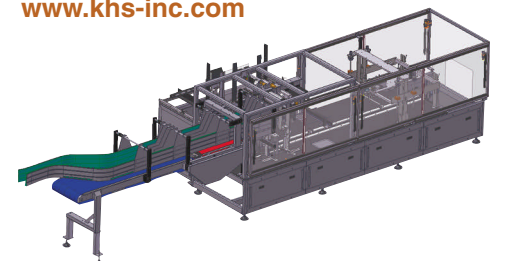
[www.kronesusa.com](http://www.kronesusa.com)

**Tray packer** The Kayat Model PTF-28S wraparound tray packer is designed for medium-speed applications. The machine

features a corrosion upgrade package and a servo-driven control table and cycle chain, facilitating operation and easing changeovers. It's capable of speeds of up to 28 cycles/min, depending on the application.

**KHS, Inc.,** 262/797-7200.

[www.khs-inc.com](http://www.khs-inc.com)





# new products applications

## New canisters seal plant products

Graham Packaging Co., L.P. ([www.grahampackaging.com](http://www.grahampackaging.com)) has created a new, HDPE canister for Scotts Co., LLC's Miracle-Gro® products. The canister is a monolayer, blow-molded container that measures approximately 9¼×4¾ in. Resealable and moisture-resistant, the container replaces a polycoated paperboard carton that was not as resistant to moisture. It is currently in use for All-Purpose and Bloom Booster® varieties of plant food.

"The new plastic packaging for Miracle-Gro water soluble plant food is a better package for consumers, as it provides protection of the product from moisture during storage and actual in-garden use," says Rich Foster, senior brand manager for Miracle-Gro.

Graham Packaging Co., L.P., 717/849-8500.

[www.grahampackaging.com](http://www.grahampackaging.com)



## Pharmaceuticals present challenge to package

Abbott Laboratories recently sought to automate the secondary packaging of key lines at its pharmaceutical production plant in Queensborough, Kent, U.K. Replacing a hand-packing operation, the solution had to handle three different primary packs, standing alone or in cartons, in many sizes and configurations.

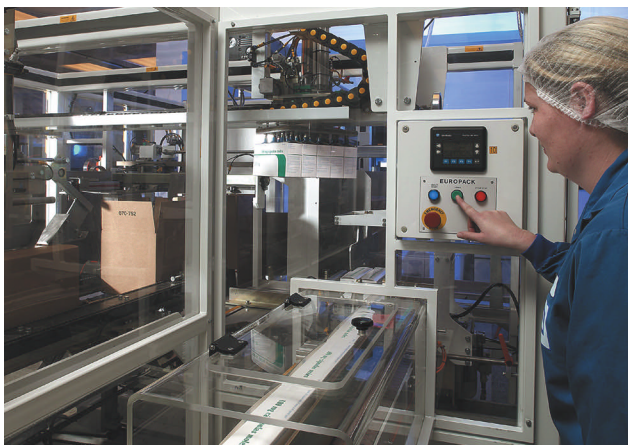
The search proved difficult for Abbott, as some suppliers either couldn't accommodate its needs or demanded unacceptable changes to the primary packaging. But, says Alan Henderson, project engineer for Abbott, "From the start, **Europack** ([www.bradmanlake.com](http://www.bradmanlake.com)) was confident in its ability to meet our complex requirements with end-of-line machines that would fit in with existing equipment."

The company designed three bespoke machines to match Abbott's needs. Working within Abbott's highly regulated environment and with space limitations required compact designs that provided clean operations. The solutions also had to conform to IQ/OQ/PQ validation protocol that sets down a fail-safe sequence of operating procedures.

The first installation was of a combined cartoner and side-load case packer that collates blister-packs into groups of five and packs them into cartons at speeds of 30 cartons/min. The system then collates the cartons, packing them into corrugated cases in 4×1×2-high configuration.

Europack followed with a solution for collating and packing products in Securitainer pots, naked or in cartons,

in 12 sizes. The resulting Swiftpack line uses pick-and-place robotics to top load at speeds of up to 8 cases/min. Products are fed single-file, standing, with the narrow edge of the carton leading, collated into the required format and



picked by the vacuum-operated head. The system then turns and lowers the product into a waiting transit pack. Changeover can be accomplished in about 30 min.

The final solution was a bottom-loading case packer for a line of anesthetics. The machine handles either standalone or cartoned bottles and operates at speeds of up to 15 units/min. It incorporates a leaflet inserter.

**Europack, Bradman Lake Group,** 704/588-3301.

[www.bradmanlake.com](http://www.bradmanlake.com)

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A manufacturer of chocolate-dipped Reception Sticks®, Bogdon Candy Co., Westwood, KS, has used cellophane packaging from Innovia Films ([www.films.ucb-group.com](http://www.films.ucb-group.com)) throughout its history. Originally used to overwrap boxes of candy, cellophane became the primary packaging for each individual stick following their invention and remains so today.

"We've tested other materials over the years, but nothing performs like cellophane," notes Jon Bogdon, owner of Bogdon Candy.

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Innovia Films, 770/970-8212.

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**Thermoformed containers** Suitable for deli applications, the co.'s line of thermoformed containers is available in 8-, 12-, 16- and 32-oz sizes. Designed to showcase product in-store while offering cubic efficiency in the refrigerator, the co. claims, the containers accept heat seals for product protection and can be customized with branded graphics on p-s labels or shrink sleeves. The lid design holds the printed sleeve in place, providing four-sided billboard space. The co. uses a proprietary manufacturing process to produce the clear PP containers. **Berry Plastics Corp.**, 800/234-1930. [www.berryplastics.com](http://www.berryplastics.com)



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**Decorative tin** The Burgundy Scroll tin has an elegant design for the holiday season, the co. reports. Available in four configurations, it's suitable for a variety of applications, including wine bottles. The tin comes in 1-, 2- and 3-lb round versions, measuring  $6\frac{5}{8} \times 1\frac{13}{16}$  in.,  $7\frac{3}{16} \times 2\frac{5}{8}$  in. and  $7\frac{7}{8} \times 3$  in., respectively. The rounds are sold separately or can be combined to form a tower. The wine bottle tin measures  $3\frac{1}{2} \times 12\frac{1}{2}$  in. **U.S. Can Custom & Specialty**, 800/436-6830. [www.uscanco.com](http://www.uscanco.com)



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A black and white photograph of a man in a crowd, wearing glasses and a jacket, holding a large white sign with both hands. The sign has bold, hand-painted text. The background shows other people in the crowd, some looking towards the camera and others looking away.

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# legal impact

Eric Greenberg, Attorney-at-Law

## New coalition advocates sustainability in packaging



**T**he general idea of “sustainability” has been bumping around different industries in recent years. In broad strokes, think of sustainability as doing business without depleting resources or hurting people. The triangle of economic, environmental and social considerations is typically cited as the basis of the sustainability approach.

In fact, so many businesses have made sustainability their guiding philosophy, that the Dow Jones has a variety of sustainability indexes to track the performance of such companies.

Because environmental facts are one of the key considerations in sustainability, you knew that sooner or later the concept would target packaging industries. Sure enough, a Sustainable Packaging Coalition has recently emerged. The first Sustainable Packaging Forum, to be held Oct. 17 to 19 in Philadelphia, sponsored by Packaging Strategies, the coalition and others, is testament to the rising interest in the subject.

The coalition includes prominent consumer product companies as well

as prominent packaging materials manufacturers and converters. In September, it even issued principles toward creating a definition of “sustainable packaging.”

The principles say that sustainable packaging:

- Is beneficial, safe and healthy for individuals and communities throughout its lifecycle;
- Meets market criteria for performance and cost;
- Is sourced, manufactured, transported and recycled using renewable energy;
- Maximizes the use of renewable or recycled source materials;
- Is manufactured using clean production technologies and best practices;
- Is made from materials healthy in all probable end-of-life scenarios;
- Is physically designed to optimize materials and energy; and
- Is effectively recovered and utilized in biological and/or industrial cradle-to-cradle cycles.

Long-time observers of the environmental pressures on packaging

will see some familiar themes here. “Reduce-reuse-recycle” was the mantra of state and local officials who sometimes translated these goals into laws and regulations in the late 1980s and 1990s. More than one effort was made during that era to provide a “scorecard” of materials and industry approaches, sometimes comparing company efforts to those of its competitors, sometimes comparing different technologies, and—although the packaging industry hated the idea—making a side-by-side comparison of different materials, all to determine what was best for the environment.

If anything was learned during that period, it was that this is not a simple question to answer. Packages that are recyclable, for example, sound good until you take into account the lack of economic viability of a recycling program. Biodegradable materials sound good until you realize that they often aren’t disposed of in a way that allows them to degrade.

Advocates of the new approach to sustainability speak in terms of a “cradle-to-cradle” analysis, in contrast to the more traditional “cradle-to-grave.” The cradle-to-grave concept was intended to broaden the perspective in which packaging was evaluated so that its environmental effects were taken into account from its creation through its disposal or other disposition. Cradle-to-cradle attempts to broaden the perspective.

It is still too early to tell what these principles will mean in terms of practices or even pressures, even as individual companies may be starting to translate the concepts into action. The practicality of the various considerations listed for individual packages is, to say the least, iffy. It’s encouraging that the coalition recognizes that economic viability is a necessary part of this equation.

Sustainability, whatever its substantive content, will have to be compatible with economic realities in order for it to really take hold in the hearts and minds of packaging

businesses, as opposed to legislators or environmental advocates. Its goal appears to be to balance business needs with environmental and social justice considerations, not ignore them.

At the risk of throwing cold water on the whole effort, a cursory review of the principles is not encouraging, simply because they are so vague. Words like “healthy” and “market criteria” are just asking for trouble. At presstime, the coalition was about to issue explanatory texts about each principle, which might help clear up ambiguities and chart a clearer direction forward. We hope so, because when principles are vague, in practice, they can end up looking like virtually anything. Then advocates will say, “Look how good we are; we comply with the principles!” And, critics will respond, “But you missed the point completely.” And they will both be right.

Regardless of their practicality, the emergence of interest in these issues assures that the pressure is on to rethink any environmental effects of packaging. Hanging over U.S. packaging is Europe, with its mandatory take-back and other programs. Programs like that can begin to emerge here if consumers and public officials don’t believe industry is doing enough to address environmental considerations.

*Eric F. Greenberg is principal attorney with Eric F. Greenberg, PC, with a practice concentrated in food and drug law, packaging law and commercial litigation. Visit his firm’s website at [www.ericfgreenbergpc.com](http://www.ericfgreenbergpc.com). Contact him by e-mail at [efgreenberg@uhl.com](mailto:efgreenberg@uhl.com), or by phone at 312/977-4647.*

**Advocates of the new approach to sustainability speak in terms of a ‘cradle-to-cradle’ analysis, in contrast to the more traditional ‘cradle-to-grave.’**





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# Shrinkable labels make ‘cool’ drinks cooler

Jel Sert, which made ‘freezer pops’ a summer staple, unveils a vitamin-fortified, fruit-based drink for kids in aseptic blow/fill/seal bottles, sleeve-labeled with cartoon hero graphics, while sleeved bottles reinvent Noga Dairy’s yogurt drinks.

Lauren R. Hartman, Senior Editor

Jel Sert, the company that made “freezer pop” a household expression, knows something about what treats kids like to eat. For nearly 80 years, the West Chicago, IL, company has produced a variety of summertime standbys, including Fla-Vor-Ice® freeze pops, Mondo fruit squeezer drinks and Pop-Ice flavor bars in addition to assorted drink and dessert mixes, puddings, gelatin and other products.

Recently launching Comic Coolers, a vitamin-fortified,

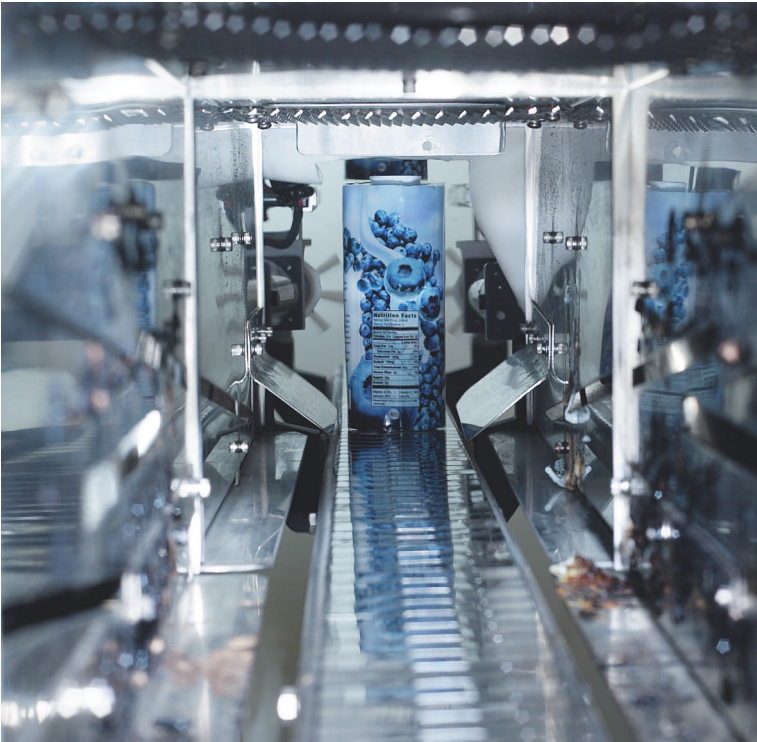
fruit-based drink, formulated specifically for kids aged six to 12, Jel Sert chose aseptic packaging in the form of convenient blow/fill/seal bottles with twist-off caps. Available in select stores across the country, the natural-tone, high-density polyethylene bottles wear full-body shrink sleeves decorated with high-impact, “kid appeal.” Applied on equipment from Axon Corp. ([www.axoncorp.com](http://www.axoncorp.com)), the sleeves adorning each 6.75-oz (200-mL) bottle and the film overwrap for the six-pack



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Noga Dairy's new teardrop-shaped bottles enter the single-head sleeve applicator, top, which applies a sleeve label over each container after it cuts the sleeve from rollstock. Next, the bottles move into the shrink tunnel, above, which snugly heat-shrinks the labels onto the shapely bottles for a tight fit.

feature dynamic Marvel Comics graphics.

At the same time, Noga Dairy, Inc., creator of the Dairy Delite low-fat yogurt shake and the Dairy Delite yogurt cup also chose film sleeve labels to recreate its packaging to the delight of consumers and higher sales.

Jel Sert says unique packaging is what sets its new coolers apart from other juice-based drinks, in addition to their low sugar content, explains Matt Ingemi, vp of consumer healthcare at Jel Sert. "Packaging is a fundamental part of Comic Coolers," Ingemi says. "Kids equate the packaging's images of superheroes to tangible interaction with one of the Marvel cartoon characters, giving them a sense of participation in an experience. One of the distinct aspects of the ready-to-drink segment for children is that you need to appeal to two consumers at the same time: Parents, who are the purchasers; and children, who are the actual consumers. So we believe that every feature of the product has to address the right audience."

Jel Sert entered the ready-to-drink market more than a decade ago, and saw an opportunity to address a niche, Ingemi says. The category had vast offerings and flavor extensions with lots of sugar in them. "An under-served segment of that market is the low-sugar, nutrient-fortified beverage," he says. "The low-sugar content and added nutrients [in Comic Coolers] address the nutritional concerns for parents, while the packaging targets kids."

Comic Coolers' five flavors correspond to the superheroes featured on each package. The flexo-printed graphics in eight colors are adopted in the same manner for both the full-body shrink labels for the individual bottles and for the six-pack overwrap. The designs dazzle kids with their use of vibrantly printed animation of several of Marvel's action heroes. They feature Spider-Man® on Amazing Punch, Captain America® on Battling Berry, Green Goblin® on Grape and Daredevil® on Fearless Cherry. Ingemi says that the sleeves were a must because comic-strip characters printed on high-end polyvinyl chloride film really connects with kids. "Film is the best

Continued on page 24



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medium to convey high-end visuals," he opines. Jel Sert also enlisted the help of graphic designers from **OEC Graphics** ([www.oecgraphics.com](http://www.oecgraphics.com)) to provide assistance with the sleeve designs and



When **WILSON GOLF** came up with a new marketing strategy showcasing golf clubs and golf balls, it called on Axon to create shrink-sleeve labels that discard traditional paperboard cartons for printed shrink sleeves to encase the golf balls. Read more at [www.packagingdigest.com/info/wilson](http://www.packagingdigest.com/info/wilson)

with **The Bill Lutz Group** ([www.billlutz.com](http://www.billlutz.com)) to assist with the illustrations covering the overwraps.

To produce the packaging for Comic Coolers, Jel Sert split up an existing packaging line and dedicated 30 ft to the new sleeving equipment, in this case, Axon's EZ sleeve.

distributor, **KHL Engineered Packaging Solutions** ([www.malow.com](http://www.malow.com)), recommended customizing Axon's EZ sleeve labeler and the EZ Model 108SR heat tunnel for the new line because of the equipments' small footprint and efficient operation.

"The most difficult part of the project was getting consistent film, because the line tension and quality of print really changes the way the label applicator runs," says Matt Kransberger, production manager. "The Axon sleeve has an infeed timing screw that designates the amount of space and position of each bottle as the bottle enters the sleeve, which creates good, consistent tension on the film."

The bottles are blown, filled with the cooler drink and are sealed in-line on a series of eight Asep-Tech® systems from



Above and below, Noga's dairy bottles enter the sleeve applicator/shrink tunnel combination system, which operates at speeds up to 150 containers/min with labels up to 80 mm dia.

**Weiler Engineering** ([www.weilerengineering.com](http://www.weilerengineering.com)), which feed into a tabletop conveyor from **Intralox** ([www.intralox.com](http://www.intralox.com)) that merges them into a single line. The bottles then single-file into the customized Axon shrink-sleeve labeler,



which applies sleeves cut from a roll of 50-micron (almost 2 mils) PVC sleeve film from **Print Flex**. The customized sleeve places them on the bottles at approximately 330/min. The sleeved bottles continue to an **Arpac** ([www.arpac.com](http://www.arpac.com)) overwrapping machine, which groups them into six-packs and overwraps them in HDPE film from **Bemis** ([www.bemisppd.com](http://www.bemisppd.com)). The overwrapper gets the film from a single roll, which is cut by the machine and applied to two six-packs per cycle. As a final step, the six packs pass through the heat tunnel and are sent to a **Douglas Machine** ([www.douglas-machine.com](http://www.douglas-machine.com)) case packer to be packed into 48-count cases of eight six-packs each. As a quality-control measure, an optional missing-sleeve detector that Axon integrated with the sleeve applicator uses a sensor to detect the presence of UV-impregnated film and any unlabeled bottle before the bottle enters the case packer.

"We were determined to have an exciting bottle for this product," Ingemi says, "and the Axon equipment plays an integral role in making that happen. Axon exceeded our cost and performance expectations for this project." Kransberger agrees, adding, "Axon is a 'no-problems' company that always keeps us very satisfied with the equipment and technical service we receive."

Sleeve labels are also helping Noga Dairy, Farmingdale, NY, to update the look of its Dairy Delite line with a curvy new bottle and sleek, appetizing graphics. Successfully manufacturing and selling yogurt drinks for more than 10 years, Noga revolutionized the yogurt drink market when it introduced its products in the U.S. in 1992. Based on a European concept of yogurt drinks, Dairy Delite, which comes in flavors such as strawberry banana, blueberry and peach, was packaged in a conventionally shaped

Continued on page 26



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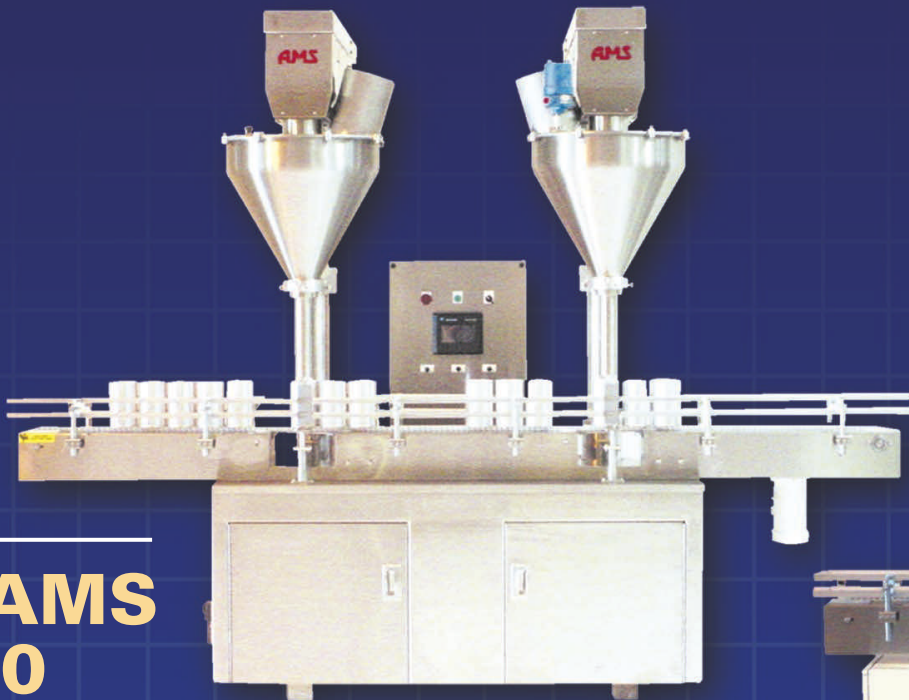


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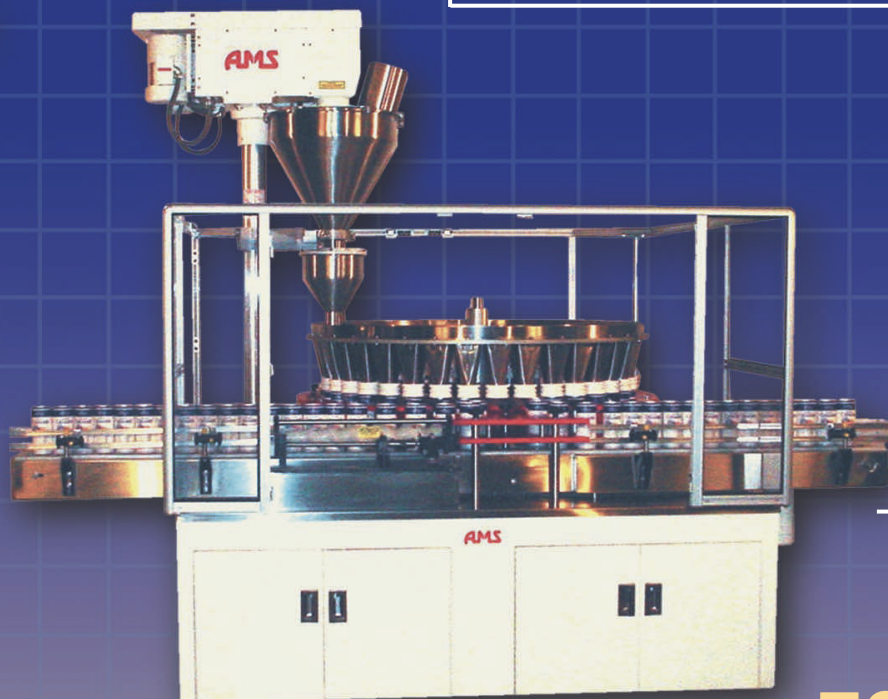
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bottle, in 10- and 16-oz sizes, outfitted with spot paper labels. About a year ago, the dairy decided to update the line to boost shelf appeal by adjusting the packaging and point-of-purchase appearance. The resulting bottle is Noga's custom design, molded by **Suscan, Inc.** of HDPE, with a teardrop-shaped lower half and a ribbed neck. It's covered with a full-body PVC sleeve label produced by **Ultra-Pak** ([www.ultra-pak.net](http://www.ultra-pak.net)), awash in vibrant graphics designed with help from **Creative Image** ([www.creativeimage.com](http://www.creativeimage.com)) that mix fruit and white, yogurt-cream splashes that more than attract consumers' eyes from behind the glass doors of the local supermarket cooler.

The new, proprietary mold for the contoured, 10-oz bottle casts the container into an easily grippable shape of a pear, which is what Noga Dairy had in mind. Topping the container is a 38-mm, plastic, tamper-evident dairy cap with a peelaway tail band from **International Plastics & Equipment** ([www.ipecc.biz](http://www.ipecc.biz)) that's color-matched to the drink or shake flavor and has a tearaway mechanical band. The use of the new label and uniquely shaped bottle also meant that the dairy had to upgrade its existing labeling method of applying paper labels with a pressure-sensitive label applicator.

Searching for a new sleeve applicator, Noga looked at various machines before it heard about Axon Corp.'s shrink-sleeve labeling equipment and decided to visit a plant equipped with an Axon system to see it in action. Axon's EZ-130 applicator for heat-shrinkable sleeve labels had the highest quality at a most competitive price, says Noga's owner, Eli Paz, who decided the EZ-130 would best fit Noga's labeling needs.

The continuous-motion, full-body sleeving machine, with speed capabilities dependant upon the width and length of the sleeve, operates with labels up to 80 mm

## The most difficult part of the project was getting consistent film, because the line tension and quality of print really changes the way the label applicator runs.

dia and, depending on the container configuration, bottle widths from  $\frac{3}{8}$  to  $3\frac{1}{8}$  in., with little changeover, at speeds up to 150 containers/min. Flexible enough to be integrated into an existing line, Noga's single-head sleeve applicator and heat-tunnel system fit within an existing conveyor configuration to label the bottles before they're filled and sealed.

First, the sleeve-applicating machine cuts the full-body, shrinkable label film from rollstock into tubing and drops the tube-like sleeve over each bottle as the bottles convey into the applicator. The labeled bottles then move through Axon's EZ-72-SR7-9 heat tunnel, which heats the sleeve, causing it to fit tightly around the bottle's innovative shape.

In the short period of time since the sleeve applicator/tunnel installation, Noga Dairy says it has built a strong relationship with Axon, based on friendly customer service and reliable technical support. Says Paz, "Employees of Noga needed no special training to operate the system, and any questions or concerns that have arisen have been quickly answered by Axon via the telephone."

The dairy's new packaging configuration has not only increased the esthetic value of the yogurt drink bottles, but it has also increased the number of bottles Noga can label in a given production day. In fact,

capacity has since doubled with the new packaging. Sales numbers are up, and Paz attributes this to the success of the new packaging.

Since the new bottles were launched, Noga Dairy has expanded the number of yogurt flavors it offers to seven and has developed two new flavors: Mango and papaya-pineapple. It's now in the midst of developing other new products and says it has started on a new concept in drink options, a fat-free and sugar-free yogurt version.

As Paz concludes, he is more than pleased. "Our sales have increased greatly, and we are more than satisfied with our new operating system."

### More information is available:

**Axon Corp.**, 919/772-8383. [www.axoncorp.com](http://www.axoncorp.com).

**Arpac Group**, 847/678-9034. [www.arpac.com](http://www.arpac.com).

**Bemis Co., Inc.**, 812/460-6200.

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**The Bill Lutz Group**, 212/398-1990.

[www.billlutz.com](http://www.billlutz.com).

**Creative Image**, 866/863-2311.

[www.creativeimage.com](http://www.creativeimage.com).

**Douglas Machine**, 320/763-6587.

[www.douglas-machine.com](http://www.douglas-machine.com).

**International Plastics & Equipment Corp.**,

724/658-3004. [www.ipecc.biz](http://www.ipecc.biz).

**Intralox LLC USA**, 800/535-8848.

[www.intralox.com](http://www.intralox.com).

**KHL Engineered Packaging Solutions**,

800/600-3580. [www.malow.com](http://www.malow.com).

**OEC Graphics, Inc.**, 800/388-7770.

[www.oecgraphics.com](http://www.oecgraphics.com).

**Print Flex, Inc.**, 630/595-3610.

**Suscan, Inc.**, 717/326-2003.

**Ultra-Pak, Inc.**, 215/295-4600. [www.ultra-pak.net](http://www.ultra-pak.net).

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Filled, capped, labeled bottles of Natural Springs water convey in single file to the laser-coding station where they receive a open date code on the side. The line outputs about 250 containers/min.

# A watershed move to laser coding

To bring its bottle-coding process up to speed and enhance the appearance of its bottled water brands, Natural Springs Water Group opts for laser coding, which improves code clarity, equipment reliability and production-line efficiencies.

Lauren R. Hartman, Senior Editor

**W**hen Natural Springs Water Group, L.L.C., a bottled water manufacturer located in Johnson City, TN, decided to replace an older ink coder, it really cleaned up its act. The coder had a bit of a cleanliness issue and, the company admits, wasn't as reliable as it could be. "It would break down and we'd have ink everywhere. It just wasn't very efficient," admits Danny Aviles, of quality assurance at Natural Springs. "The ink-jet codes would smudge on the bottles in the hot, humid weather and the codes didn't always come out clean. And if they weren't applied precisely, the images would come out looking curved."

That's when the company discovered laser coding and found the SmartLase® digital system from MARKEM Corp. ([www.markem.com](http://www.markem.com)).

Formerly known as Lauré Beverage Company, which began business in 1991, Natural Springs collects the spring water it bottles from a protected, free-flowing spring source in Unicoi County, TN, that produces more than 5.5 million gal of high-purity water each day. Located in a remote county in Northeast Tennessee, within the protected Cherokee National Forest and nearly lost in the secluded evergreen trees, the water bubbles from the

ground. The company processes, filters and bottles the water in container sizes from 8 oz to 1.5 L, and has a gallon jug size copacked by a proprietary supplier. The polyethylene terephthalate bottles are mainly sold in convenience stores throughout the Southeastern U.S.

**N**atural Springs learned about MARKEM's systems on the Internet. To be successful at the retail level, its bottling lines have to perform accurately and consistently. The fully automated plant at Natural Springs boasts a state-of-the-art, nine-step, water-purification process that utilizes microfiltration, ultraviolet light and



**LIPTON** added a whopping 13 laser coders to its tea-bag cartoning lines in efforts to boost line speeds and code quality. Read about it at [www.packagingdigest.com/info/lipton](http://www.packagingdigest.com/info/lipton)

ozonation. So the company wanted the codes on its clear plastic bottles to portray a good first impression of its bottled-water brands, Lauré Pristine Springs Water and Mountain Forest, as well as the 56 other private-label brands it bottles. But could a laser work well on PET?

About a year ago, Natural Springs decided to find out, and looked into purchasing the SmartLase® 100 Series digital laser coder, a

compact, carbon dioxide laser system, designed for use on primary packaging such as cartons, labels and glass and plastic bottles used in the food and beverage, pharmaceutical, cosmetic, personal care, tobacco and household-chemical industries. The system, in this case the SL 110, proved to provide a clear, concise, single-line open expiration date code on one side of the bottles. "With the laser coder, we just set it and forget it," says Aviles. "It's much cleaner, more efficient and there's no maintenance."

Equipped with a vapor-extraction unit from Fumex ([www.fumexinc.com](http://www.fumexinc.com)) that controls any plastic fumes and other airborne particulates associated with laser coding the PET bottles, the SmartLase SL 1100 can be used in harsh, wet, washdown environments, thanks to its stainless-steel enclosure and NEMA 4x and IP65 ratings. The laser system uses electrical energy to cause CO<sub>2</sub> to emit a powerful beam of invisible infrared light. Infrared light is actually a form of heat energy, so when the beam is directed at Natural Springs' bottle labels, the heat either vaporizes or engraves the substrate's surface, creating a mark.

When the coder proved to be very efficient in its use of laser power, allowing the use of a small, air-cooled laser, Natural Springs saw the light. The system's computer-controlled mirrors bounce the laser beam onto a substrate to quickly create the desired character or image, allowing crisp, clean and



**With the laser coder, we just set it and forget it. It's much cleaner, more efficient and there's no maintenance.**



highly accurate codes to be printed on moving surfaces.

The life and reliability of the 10-watt unit's laser tube depends on the number of times the laser emission is turned on and off. Natural Springs looked at competitive laser coders that turn on and off as each character is coded, but MARKEM says the SmartLase coders turn on and off for each legend, which

## We're getting the code accuracies we wanted and the codes come out cleaner and neater.

conserves tube life. Some substrates (such as printed carton stock) require less energy to mark, so the laser coder can be controlled in terms of the amount of energy delivered to the surface. Efficient use of energy not only reduces costs, but, it also has a positive effect on equipment performance.

To bottle the water, the plant starts with tanker-trucking it in from the spring and filters and purifies it in a process that carefully protects the natural minerals in the water. Next, the water is put into holding tanks and from there, it's pumped to the bottling line on which the

laser coder was installed. The line outputs about 250 bottles/min, Aviles says. He describes the packaging process thusly: After bundles of empty bottles have been depalletized, they convey toward the bottling room where they're rinsed and then filled and capped on a combination system from Sidel ([www.sidel.com](http://www.sidel.com)) before they convey single-file to a Quadrel Labeling Systems' ([www.quadrel.com](http://www.quadrel.com)) pressure-sensitive labeler that applies wraparound paper labels sourced locally to the bottles. Then, the filled, capped, labeled bottles are laser-coded by the SmartLase system with the single-line, alphanumeric date code. Next, with codes in place, the bottles are case-packed and palletized, ready for shipment.

While the new laser coder hasn't increased line speeds necessarily, Aviles says that efficiencies on the line have definitely increased. "The system is much more reliable if we can pretty much set it to run and not have to worry about it. We run the line on a regular basis, so we need reliable equipment. We're getting the code accuracies we wanted, and the codes come out cleaner and neater. And we have no problems applying the laser code to the plastic bottles."

### More information is available:

**MARKEM Corp.**, 866/263-4644.

**[www.markem.com](http://www.markem.com).**

**Fumex, Inc.**, 770/514-7907.

**[www.fumexinc.com](http://www.fumexinc.com).**

**Quadrel Labeling Systems**, 800/321-8509.

**[www.quadrel.com](http://www.quadrel.com).**

**Sidel, Inc.**, 770/449-8058. **[www.sidel.com](http://www.sidel.com).**



Bundles of bottles are depalletized as water from the springs is pumped to the filling station from holding tanks. After filling and capping, the bottles are labeled with paper labels and proceed on a conveyor to the laser coder, above and top. While line speeds (about 250 bpm) aren't necessarily higher, Natural Springs says line efficiencies and coder reliability have greatly improved.

on the horizon . . .



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# Carton coders are something to cluck about

Rose Acre Farms installs 78 ink-jet printers to code cartons of its farm-fresh shell eggs. The low-maintenance, all-electric printers provide crisp, legible codes, decreased consumables costs and 'eggs'-treme ease of use.

Anne Marie Mohan, Senior Editor

It has been said that the egg is nature's perfect package. The egg protects its precious contents with a porous shell that—while it allows for evaporation—has a unique weave that repels incursions from bacteria. In today's marketing terms, the eggshell is easy-open, grippable and recyclable, offers tamper-evidence and has an easily identifiable shape. But there are a few things that nature left out—among them, break-resistance and usage instructions.

Across the nation's heartland, Rose Acre Farms, Inc. (Rose Acres), headquartered near Seymour, IN, is adding to the egg what nature left out. With a firm commitment to providing "secondary" carton packaging comparable in quality to the



Eggs move through a blood-detection system, above, that shines a light through the eggs to see if there are any blood spots within. Egg cartons are coded by a four-line ink-jet printer, at top of page, left, with the Julian date, plant number and sell-by date.

Rose Acres can trace its history back to 1939, when the company's founders began selling their barnyard-born Rose Acres-brand eggs to the Indianapolis Farmers' Market. In 1955, Rose Acres constructed its first chicken house in Seymour, and the business has grown steadily since. Today, in addition to its 14 "layer" facilities—or plants where chickens lay eggs for processing—the company also breeds its own stock, runs its own hatchery and feed mills, and operates its own egg-breaking and egg-drying facilities for liquid and powdered egg products, respectively.

Rose Acres' biggest business is shell eggs, which it packs for many supermarkets and other large chain stores under the stores' brand names, as well as under the Rose Acres name. Its farm-fresh shell eggs are categorized into five sizes for retail—jumbo, extra large, large, medium and small—in varieties that include white and brown shell eggs, free-roaming cage-free eggs, Golden Premium nutritionally enhanced eggs and certified organic eggs.

Wasson relates that 99 percent of Rose Acres' eggs are U.S. Grade AA, which, according to the U.S. Department of Agriculture's grading system, means that the eggs have whites that are thick and firm; yolks that are high, round and practically free from defects; and clean, unbroken shells. The balance is U.S. Grade A. Packaging options include polystyrene foam cartons from Dolco ([www.dolco.net](http://www.dolco.net)), paper/pulp containers and clear plastic cartons, in six-, eight-, 12- or 18-pack sizes.

The Cortacres plant, built in the mid-1970s, comprises 32 hen houses, a processing facility and an egg-breaking plant. During a recent visit by PD, Ty Harweiger, complex manager at Cortacres, said, "Currently, we are producing

Continued on page 32

farm-fresh product inside, Rose Acres has recently expanded and upgraded several of its egg-processing facilities.

Last year, Rose Acres' Cortacres egg farm opened an 80,000-sq-ft addition to its facility for shell-egg processing, cooler storage and dried-goods storage. The upgrade included the installation of a new, 13-lane egg grader, equipped with 11 new Hitachi America Ltd. ([www.hitachi.us/ijp](http://www.hitachi.us/ijp)) ink-jet printers from Pak-Tec, Inc. ([www.pak-tec.com](http://www.pak-tec.com)) and a new robotic palletizer from Fanuc Robotics ([www.fanucrobotics.com](http://www.fanucrobotics.com)).

Five other Rose Acres plants received new Diamond Systems ([www.diamondsystem.com](http://www.diamondsystem.com)) graders, as well, each one outfitted with 11 Hitachi PX Series IJP printers. A seventh existing grader was upgraded with 12 printers, bringing the company-wide total of new printers to 78. In addition, robotic palletizers have been installed at five other facilities.

"We have made a huge investment to make our overall package better in the industry," says Rose Acres' Randy Wasson, egg processing manager, Southern, IN. "Cortacres is a state-of-the-art facility right now; everything here has been designed to provide a higher-quality product. I don't know of any other plants in the industry that even come close."



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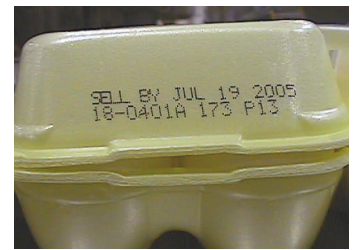
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A phalanx of 11 ink-jet printers, left, stands at the ready, with printheads arranged on one side of the carton conveyors and consoles mounted above. Among the features of the printers that appealed to Rose Acres was their ability to produce crisp, legible copy, above.

5,600 to 5,700 cases of egg cartons per day. When our remodeling is finished, we will be doing well over 7,000 cases a day." He adds that one case of eggs holds 360 eggs, for a current output of more than 2 million eggs/day.

Last year, when Rose Acres installed the new Diamond 8400 graders, it made the decision to upgrade its carton-coding capabilities, as well. Previously, the company had used manual-stamping or viscosity-driven ink-jet systems that required high maintenance, involved considerable consumables costs and did not provide the desired legibility. "We as a supplier feel that it is very important for the consumer to be able to read the carton," remarks Wasson.

Adds Harweger, "Of course, code-dating is a requirement, but as far as the marketing of the product, when the type is more legible, it just makes the carton look that much better. We really put a lot into our carton graphics, and having clear sell-by and use-by dates just adds to that."

Although the company considered laser-coding equipment, it was concerned about the visibility of the code on some of its cartons, such as its clear plastic containers, the high cost of replacing worn out tubes and the safety of the equipment. After a demonstration of the Hitachi PX Series IJP printer by Marc Daniels of Pak-Tec, Wasson was sold.

"He showed us that the printer uses considerably less consumables than the competition," Wasson recalls. "Also, it's much more user-friendly when it comes to changeovers and setups, and maintenance is

much simpler, too."

Daniels explains that the Hitachi printer uses an all-electric, density-driven ink circuit that enables the system to automatically add solvent or ink to the ink circuit when needed, to keep the ink density stable. "That's an extra step that most ink-jet printers don't do," he says. "This is a feature that Hitachi designed to maintain the best print quality around the clock. Some people may only run the printer two days a week, and this feature enables them to get a high-quality print as soon as they turn the printer on."

This functionality, combined with an improved ink-circulation system that reduces solvent evaporation and provides a more stable ink return, results in less ink and solvent use and reduces the associated smell. "Ink is the most expensive of the consumables," notes Wasson, "and that's what we use the least of."

Daniels relates that another of Pak-Tec's customers is using the Hitachi PX Series printer in a similar environment and has reported that they only have to top the ink off every three months.

Installation of the 78 Hitachi PX-D460U printers began in January 2004 and concluded last December. As Wasson recalls, the first step was to determine where to place the console cabinet and printhead on the line. Although the console includes the largest LCD color touchscreen available, at 10.4 in., the cabinet has a fairly compact footprint of 15.7 in. wide, 11.4 in. deep and 20.3 in. high. The printhead connects to the console via a 13.1-ft cord. The solution devised by Rose Acres and Pak-Tec consists of placing the printhead on one side of a

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Each packing line provides six lanes into which the eggs are fired. When six eggs are present, the machine indexes them forward and lowers them, small-side-down, into open cartons below, left. Filled cartons move underneath a missing egg detector, above, that will stop the process if an egg is missing.

Positioned near the end of the egg-processing line, the printers are just one component of a new, state-of-the-art system equipped to ensure the quality and consistency of Rose Acres' shell-egg products. Even before processing, however, Rose Acres has engineered its production "line" to the highest standards. As mentioned earlier, 2.7 million hens at the Cortacres location comprise the production process, with each hen laying approximately one egg every 24 hours. "A good-producing chicken will lay, on average, around 330 to 345 eggs per year," says Harweger.

As the eggs are laid, they roll away from the hens and onto a conveyor-belt system that carries them to the front of the laying house. The eggs are then

Continued on page 34

conveyor carrying filled, closed cartons to a packing station, while the cabinet is mounted on a shelf built by Diamond and positioned over the conveyor.

The four-line printers are used to print either two or three lines of text, including the Julian date, the plant number and the sell-by date, as well as a use-by date, when required. Harweger explains that while many of the sell-by and use-by dates are determined by state regulations, some are at the discretion of the customer. To reduce job setup time and ensure accuracy, the printer includes an auto-dating function that automatically adjusts the Julian date and the sell-by date as soon as the operator selects a new job.

Daniels adds that, while Rose Acres is not using it, the printer also includes a character substitution feature, whereby any word or letter can be automatically substituted with another.

To create messages, Rose Acres uses the printer's built-in software, which includes nine resident fonts. The printer comes standard with low-, medium- and rapid-speed software.

At Cortacres, a library of messages is maintained on one printer. When necessary, the messages, along with the associated parameters and logo data, can be copied to a CF card for installation onto any of the other printers. Depending on how much data is in each message, each printer is capable of storing approximately 300 messages. Hitachi offers an optional, Windows-based Message Manager software package that enables the user to create and edit messages on any PC, with the number of messages limited only by the size of the PC's hard drive. The standard Message Manager package can communicate with up to 16 Hitachi printers.

The Hitachi PX printer also allows the operator to create logos or make custom fonts using the printer's color touchscreen. Optional Logo Editor software lets the customer convert bitmaps to logos and transmit them to the printer.

In terms of speed, Daniels estimates that the printers at Cortacres are operating at roughly 75 to 80 ft/min, depending on how many lines of text are being printed. He adds that Hitachi's single-line maximum print speed is well in excess of 1,100 ft/min.

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transferred to a main belting system that carries them from the houses to the egg-processing line, where they are organized into rows, 12-eggs-wide, by an orienter and conveyor system from **Lubing Systems, LP** ([www.lubingusa.com](http://www.lubingusa.com)). Once arranged into rows, the eggs are carried through two Diamond washers that use oscillating brushes and 120-deg-F water to remove dirt, blood or other unwanted substances. Upon exiting the washer, the eggs move through a rinser that sanitizes them. Next, eggs go through a crack-detection/leak-removal system from Diamond that detects broken eggs and removes them from the processing sequence. Slightly cracked eggs are directed to a conveyor leading to the plant's egg-breaking facility, which handles liquid egg product.

Those eggs that are fully intact then

proceed through a Diamond dryer where they are blown dry, after which they are carried through a dirt detector that directs any eggs that have not come clean back to the washer. Eggs that are clean proceed to the grader, where they are carried across scales that weigh each egg and grade them according to size. This designation is used to determine onto which of the 12 packing lines an individual egg is sent. First, though, the eggs move through a blood-detection system that shines a light through the eggs to see if there are any blood spots within. When blood is detected, the egg is removed from the line. "It's not uncommon from time-to-time for the birds to lay eggs that have blood spots in them," says Wasson. "It's not unhealthy; it's just not appealing to the consumer."

Finally, those eggs that are intact,

clean and blood-free are directed to the appropriate packing line, as determined by the scale. Each packing line provides six lanes into which the eggs are fired. When six eggs are present, the machine indexes them forward and lowers them, small-side-down, into open cartons below. When six more eggs accumulate, the process repeats itself. Filled cartons move underneath a missing egg detector that will stop the process if an egg is missing. The cartons are then carried through an automatic carton closer, and then past the Hitachi coder. Those lines without coders are used for packing cracked eggs that will be sent to the breaking facility, or for small eggs, which comprise such a minute quantity of Cortacre's output that they do not warrant their own printer.

Completed cartons are then conveyed



A portion of the cases are palletized through the use of a four-axis, electric, servo-driven robot that can handle four different case sizes at one time.

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either to a manual packing station or to one of six automatic case packers from Diamond. Once packed, cases are pushed onto a case conveyor that carries them through a Little David case closer/taper from **Loveshaw** ([www.loveshaw.com](http://www.loveshaw.com)) that closes and seals finished cases, which are then carried to a case-stacking line. A portion of the cases are palletized through the use of a new Fanuc M-410iB/160 four-axis, electric, servo-driven robot that can handle four different case sizes at one time. The balance is manually palletized.

With all 78 printers now installed in seven of its egg-processing facilities, Rose Acres is very pleased with the resultant quality, productivity and cost benefits. "The owners take a lot of pride in our graphics," says Harweger. "Our marketing department spends a lot of time creating the Rose Acres-brand packaging, and they were sold on the Hitachi printers. The way the coding looks, it just complements the product."

Wasson agrees, saying "While the cost of operating the ink-jet printers versus the manual stampers is considerably more, when we look at the legibility of print with the new machines, that's where we justify the cost." He adds, "We literally have not had any problems with the printers since they have been installed. There has been only nominal maintenance required, such as changing the filters, and that's been all we've had to do."

### More information is available:

**Hitachi America Ltd.**,  
914/524-6645. [www.hitachi.us/ijp](http://www.hitachi.us/ijp).  
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# A healthy outlook on inspection

Sensitive pharmaceutical metal detectors, pipeline-style inspection systems and checkweighers help Garden State Nutritionals provide 100-percent inspection and ensure quality and accuracy for hundreds of nutraceutical, herbal and nutritional tablets, capsules and powders.

Lauren R. Hartman, Senior Editor

As one of America's largest contract manufacturers and packagers of nutraceuticals, Garden State Nutritionals, West Caldwell, NJ, prides itself on its ability to innovate, creating more than 1,000 custom dietary supplements every year. Its customers rely upon it to give their products flair, effectiveness and the differentiation they need to find success in the marketplace. Manufacturing and packing more than 5,000 active product formulas for various customers in hundreds of different configurations, the company needs flexibility and reliability from package-inspection equipment that can improve acceptability and minimize production losses. Anything else would be a hard pill to swallow.

To be successful, the company's packaging lines in West Caldwell and in Fairfield, NJ, must perform at high accuracies, with consistency and reliability. That's why it recently added a series of new metal-

detection and checkweighing systems from Lock Inspection Systems ([www.lockinspection.com](http://www.lockinspection.com)), including the MET 30+ pharmaceutical metal detector, the Waferthin metal detector, the MET 30+ Pipeline metal detector and the WeighChek CK 100 checkweigher.

Garden State produces thousands of herbal, nutraceutical, energy and sports nutrition products under various brand names, including those for the Windmill Health Div. of parent company, Vitaquest, on assorted production lines that run anywhere from 20 to 120 containers/min, depending on the line, the product and the package configuration.

The products include tablets and capsules in assorted plastic bottles, blister-packs and foil packets, powdered supplements and drink mixes in resealable, composite canisters and caplets that come in packets or plastic bottles that are overcartoned. Some containers are packaged in kits or in secondary containers. Customers include key U.S. brands, multilevel marketers and direct-sales companies.

The company has begun a world-class quality program that includes metal detection and inspection of all critical production areas.

The comprehensive program is based on proposed federal Current Good Manufacturing Practices (cGMPs) for dietary supplements.

Upgrading 13 packaging lines, Garden State performed test trials on new metal-detection and



Read about how **CORNFIELDS, INC.** installed sensitive, 5-in.-high metal detectors between scales and vertical form/fill/seal machines running a wide range of snack products in bags at [www.packagingdigest.com/info/cornfields](http://www.packagingdigest.com/info/cornfields)

checkweighing equipment with several suppliers, and selected Lock for its technology and for its ability to custom-build systems to suit each area and application. Garden State also wanted sensitive, economical, accurate, food-approved systems that could guarantee the quality of the products as well





Vertical form/fill/seal systems for pouches, such as the one at near left, are equipped at the infeed with new metal detection systems. Tablet and capsule bottling lines were upgraded with the pharmaceutical metal detectors, which are sensitive to most metals. Special software allows data and detection parameters to be viewed graphically by networking to a PC or a laptop computer.



as comply with customer needs and changing U.S. Food and Drug Administration requirements. In its search for equipment to improve product quality, the company found several equipment choices from Lock that were suitable for its various production lines.

Explains Ron Smalley, vp of technical services, "The Lock equipment is accurate, reproducible in action, durable and easy to use. We're very happy with its performance and ease of use. It has been a significant addition to our quality systems and has also lowered costs, due to improved manufacturing efficiencies."

Installed were 12 MET 30+ metal detectors, which include six pharmaceutical models, one mini pipeline unit for a granulated product line, two Waferthin metal detectors equipped on auger-filling lines and three WeighChek checkweighers. The equipment rejects only questionable products or those out of

specification—instead of large quantities—in order to minimize waste and improves efficiencies. The product is removed from the line by a mechanical or a compressed-air system into a receptacle.

"Our early experience and success were key in the selection of further equipment from Lock for our New Jersey plant," Smalley says. "Our product lines are so diverse, customization is required to optimize performance, but this has never been a problem for Lock. Every aspect is covered, from the provision of appropriate certification and approvals to training, troubleshooting and the integration of the systems with existing equipment."

The sensitive MET 30+ Waferthin detector provides metal detection on the powder-filling lines, allowing Garden State to meet both its own quality-control standards and those of its customers. The MET 30+ pharmaceutical metal detectors are 1-mHz



systems that are sensitive to all metals. They incorporate Lock's ADC software, which allows all data and detection parameters to be viewed graphically by networking to a PC or laptop.

Lock states that the ADC software takes transmitted and received signals from the metal detector and translates the data into a graphical format, providing operational and maintenance staff with a powerful, on-screen diagnostic tool.

Continued on page 38

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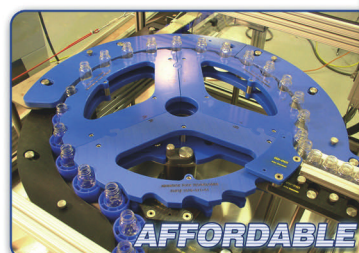
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Positioned at the discharge stations of tablet presses and capsule-manufacturing machinery (Garden State uses a variety of tablet-making equipment, including standalone tablet presses from DT Stokes (now Sencorp [www.sencorp.com]), the MET 30+ system is able to find and reject metallic particles as small as 0.5 mm and 0.3 mm for ferrous metals at a rated speed of up to 30,000 tablets/min, and provides 100-percent inspection of products.

"Like those of our other customers, Garden State's requirements are changing rapidly," observes Mark D'Onofrio, vp of Lock Inspection Systems. "Theirs is a high-pressure environment, with fast production, frequent product changeovers and no

room for mistakes."

Constructed of stainless steel, the MET 30+ is gravity-fed and comes with a polished, 316 stainless-steel reject device and can record profiles for products that are conductive, such as iron-containing products, to minimize false positives and to ensure optimum performance with minimal waste. Able to withstand washdown-cleaning conditions, the detection system automatically stores up to 100 product setups, retaining 300 metal-detection events in memory.

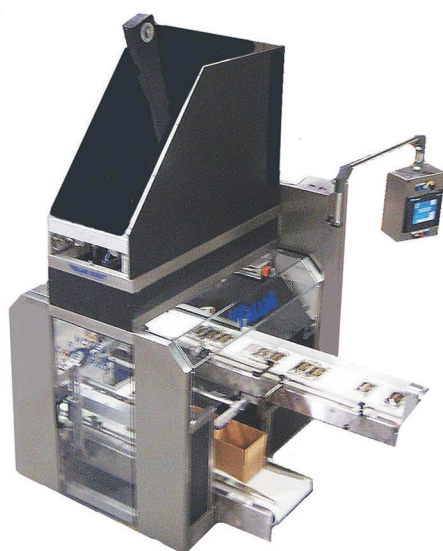
The WeighChek CK 100 checkweighers are able to weigh packages with accuracies to +/- 100 mg, according to Lock, which Smalley says is the case at Garden State. The most recently installed model is coupled with a custom, automatic,



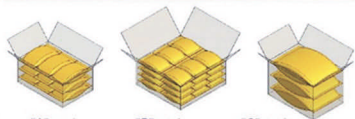
Checkweighers were added to three lines, the most recent of which is linked with a custom, side-transfer system for speedy weighing of solid-dose products and powders. The transfer unit both automates the transfer process and effectively spaces the containers.

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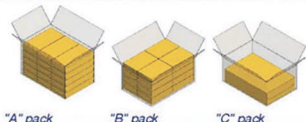
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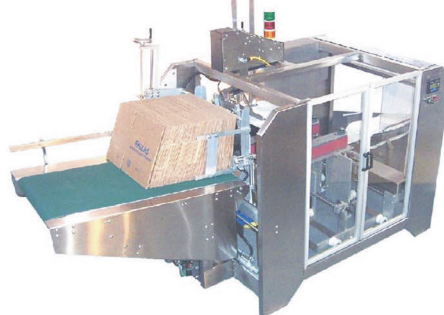


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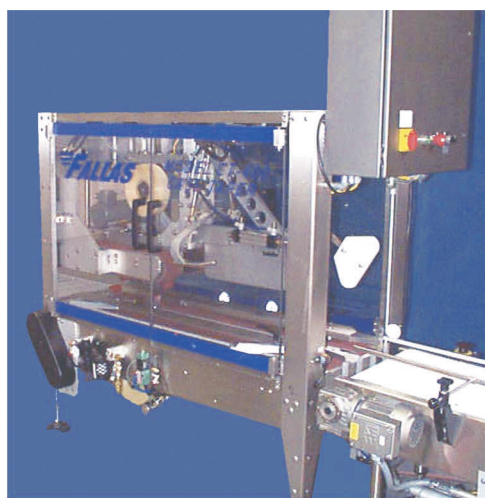
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**We're happy that these systems are working well and anticipate expanded use within our operations as customer requirements and regulatory conditions dictate.**

side-transfer system from Applied Engineering Corp. (www.appliedus.com) for sequential, high-speed checkweighing of solid-dose products and powders. Smalley says this was needed to both automate the transfer process and provide individual, sequential placement of the packages onto the weigh scales.

Explains D'Onofrio, "We worked with Applied Engineering to design the feeding system with a special pick-and-place conveyor that takes packets [produced on a form/fill/seal machine], elevates them and presents them to the checkweigher in a uniform and timed sequence. Space was very tight at this location, so we created a solution that would fit in the production area."

Mounted on an incline, the infeed also provides line-height adjustment and spaces and orients the containers before they pass through the checkweigher. Designed for weighing products up to 200 g, the checkweighers verify the weights of packages at rated speeds up to 120/min, processing the weight signal in real time.

The weighers feature a display and menu screens. The first weigher that was installed features a membrane keypad interface panel, while the most recently installed model put into the



plant has a touchscreen interface and offers a range of statistical report options. The display panel is rotatable and tiltable, and its electro-luminescent touchscreen delivers product information to the operator via a series of windows.

Running on a daily basis, usually two shifts, five to six days a week as required, the packaging lines operate in HEPA-filtered rooms to purify the air as much as possible. After the products are packaged, the packages pass over the checkweighers.

The pair of MET 30+ Waferthin detectors was added to powder-filling lines that deposit sports nutrition, diet, vitamin and herbal products into plastic jars or into canisters in various sizes. Measuring about 4.5 in. tall, these compact detectors were also designed to be positioned on the infeed of Garden State's vertical f/f/s bag- and pouchmakers. Garden State had its models modified to fit the outputs of Cerebus auger fillers from All-Fill ([www.all-fill.com](http://www.all-fill.com)).

**S**pecifically designed for tight spaces, the Waferthin units include a 7-in.-dia aperture and auger collars with a support frame that allows them to be quickly and easily moved vertically when Garden State changes the line over from one package configuration to another. These systems check the powdered products and reject questionable containers. In the case of the 18.6-oz canisters, filling speeds range from 30 to 60 units/min.

The Waferthin and mini pipeline systems in place on the powder-filling lines have remote controls and keypads mounted on remote enclosures for easy operator access. The remote controls are used in this case because the detectors had to fit into hard-to-reach areas. The Waferthin units were supplied with remote air cylinders mounted on an existing conveyor so that if the detectors find a reject, they send a signal to the cylinder to reject the canister contaminated with metal.

**A**pproximately 150 different powdered products are packaged on lines equipped with the mini pipeline metal detector, which tracks products transported from point-of-manufacture to a set of filling machines and sounds an audible alarm that alerts operators to automatically reject questionable packages. The mini pipeline detector has a small case dimension that also fits into a tight space in the facility. Here, the sensitive pipeline system checks for product deviations and guarantees 100-percent-reliable identification of acceptable product. Powder filling is performed on equipment from All-Fill and Mateer-Burt (now available from Pneumatic Scale [[www.pneumaticscale.com](http://www.pneumaticscale.com)]) and f/f/s machines from Enflex ([www.enflex.es](http://www.enflex.es)) and Wrapade ([www.wrapade.com](http://www.wrapade.com)). Lock configured the Met 30+ detector as a vertical-fall system that checks product prior to filling it into canisters or bottles. The free-fall detector was

also customized with stainless-steel mounting frames and product tubes to fit beneath the auger fillers.

Says Smalley, "With the Lock equipment, we are able to perform state-of-the-art metal detection and checkweighing and are able to demonstrate and verify the quality of

our products, which we and our customers expect."

Myron Jacobowitz, executive vp of Garden State, says, "We're happy that these new systems work as well as they do, as we anticipate expanded use [of them] as customer demands and regulatory conditions dictate."

**With this equipment, we are able to perform state-of-the-art metal detection and checkweighing, and are able to demonstrate and verify the quality of our products, which we and our customers expect.**

#### More information is available:

**Lock Inspection Systems, Inc.,**  
978/343-3716.

[www.lockinspection.com](http://www.lockinspection.com).

**All-Fill, Inc.,** 610/524-7350.

[www.all-fill.com](http://www.all-fill.com).

**Applied Engineering Corp.,**  
973/276-0488.

[www.appliedus.com](http://www.appliedus.com).

**Enflex SA,** 34 935 706 550.

[www.enflex.es](http://www.enflex.es).

**Pneumatic Scale Corp.,**  
330/923-0491.

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# Vf/f/s runs frozen pretzel products in resealable bags

A continuous-motion vertical form/fill/seal machine at J&J Snack Foods runs 9-oz bags of frozen SuperPretzel products at 55 bags per minute. A unique resealing system that uses pressure-sensitive tape instead of zippers provides closures that are user-friendly and cost only a fraction of a cent per package.

Jack Mans, Plant Operations Editor

J&J Snack Foods, the world's largest producer of soft pretzels, has seven production lines making the popular snacks at its plant in Pennsauken, NJ. Last October, the plant installed a vertical form/fill/seal machine from Rovema Packaging Machines ([www.rovema.com](http://www.rovema.com)) to run its latest frozen SuperPretzel® bite-size products: Soft Pretzel Bites®, Pretzels™ and Softstix®. Soft Pretzel Bites are short pieces of soft pretzel, while Pretzels and Softstix are small pieces of pretzel with fillings and/or toppings. The products are filled into 9-oz bags at a speed of 55 bags/min by the Model VPK continuous-motion Rovema machine, after which they are hand-packed into cartons and are frozen. "We have other Rovema equipment at other J&J plants, and they have really worked well," says director of engineering Phil Heffelfinger. "They have also given us great service. A large percentage of our workforce is



J&J Snack Foods uses a **ROVEMA MODEL VPK VF/F/S MACHINE** at its plant in Vernon, CA, to run Newman's Own cookies in flat-bottom bags. Read about it at [www.packagingdigest.com/info/vernon](http://www.packagingdigest.com/info/vernon)

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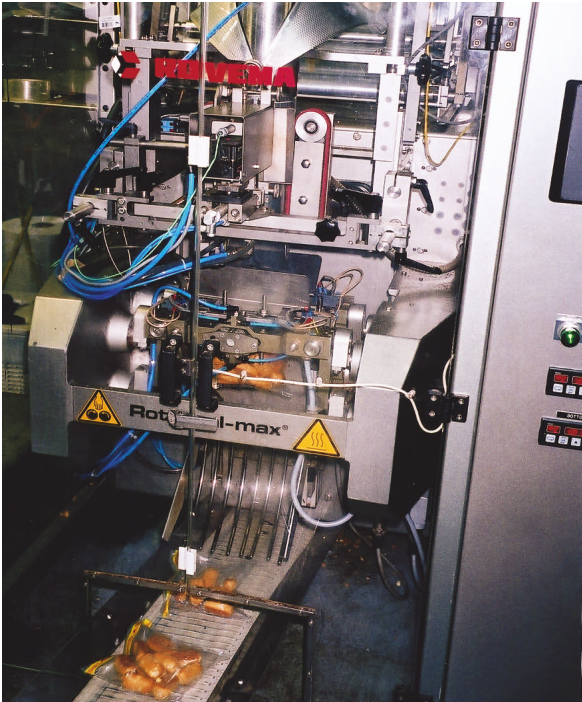
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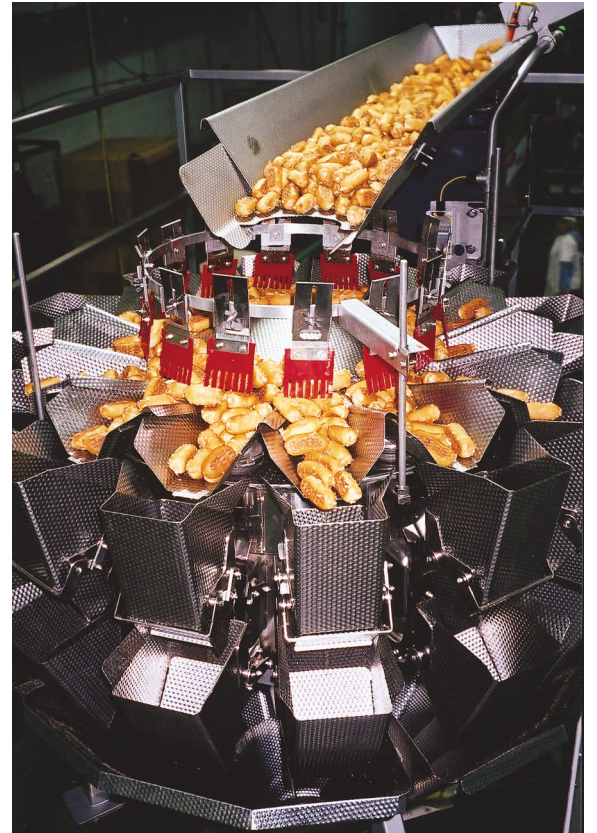
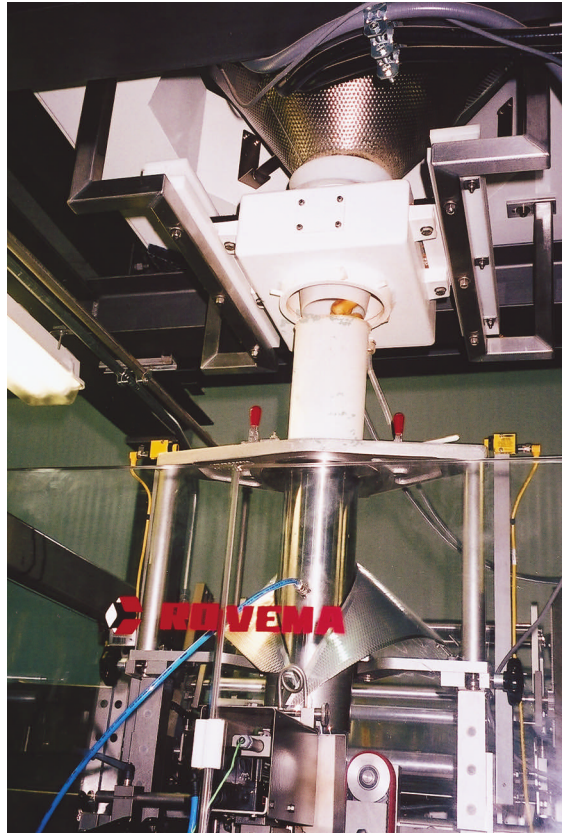
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Vff/s machine runs bags of frozen Superpretzel products, left. Products are weighed by a 14-head radial-weighing system located on a platform above the machine, center. Product from the scale passes through a metal detector on its way to the vff/s machine, right.



Vietnamese, and one of Rovema's startup and service people speaks Vietnamese. He conducted classroom sessions as well as hands-on training in Vietnamese

and English. As a result, this was a very successful startup," he says.

J&J reviewed several reseal options for the bags and decided on a unique bag-resealing system from Sealstrip Corp.

([www.sealstrip.com](http://www.sealstrip.com))

that uses pressure-sensitive tape instead of the usual zipper closure. In this process, a slot is cut in the film, and the tape is applied over the slot. The consumer presses the adhesive side of the tape against the opposite side of the bag to reseal the bag after it has been opened. The tape is applied to the film entering the machine and travels through the f/f/s operation as an integral part of the film.

J&J had used the Sealstrip system earlier and actually retrofitted a system to an existing packaging machine in the plant with good success. "The tape

runs through the machines with no problems, and it holds up very well to freezing," says Heffelfinger.

"The Sealtape closures cost a fraction of a typical resealable zipper per package and are very user-friendly." (Details of this operation are given in the sidebar on page 42.)

The Sealstrip applicator is a standalone unit that is located at the back of the Rovema machine. The roll of film, which was supplied by Advanced Packaging Corp., is normally located on the back of the bag machine, but the film spindle was moved to the back of the Sealstrip applicator for this application. "Rovema sent the spindle to Sealstrip to install it on the applicator, and Sealstrip then sent the entire applicator back to Rovema to mount it to the bag machine," says Heffelfinger.

Integrating the film and Sealtape was also a joint effort. "We wanted the customer to be able to reseal the bag from four to eight times, and the film had to travel through and seal on the Rovema machine without causing problems. It also had to stay sealed in the home freezer," says Heffelfinger. "In addition to the sealability of the Sealtape, the slip of the film moving through the machine was critical. Sealstrip and Advanced Packaging would modify their materials and then we would work with Rovema to see how they performed. These 'trial and error' efforts took about six months before the machine

was installed."

The film is pulled through the Sealtape applicator and into the VPK bag machine by a combination of friction-drive belts and a vacuum assist on the front of the machine. A sensor detects the location of the edge of the film as it leaves the roll and moves the entire film carriage horizontally to maintain the proper tracking through the machine. The film passes over a series of rollers and dancer bars at the top of the f/f/s machine, and these, along with an air bladder in the film spindle, maintain the proper back pressure on the film as it is pulled continuously through the machine. The film passes around a forming tube on the front of the unit, and continuous hot air produces the vertical overlap seal. Pretzels drop intermittently from an Ishida overhead weighing system from Heat and Control, Inc. ([www.heatandcontrol.com](http://www.heatandcontrol.com)) through the forming tube into the continuously moving formed cylinder of film as it leaves the vertical forming section.

An ink-jet printer from Diagraph, an ITW Co. ([www.diagraph.com](http://www.diagraph.com)) applies the date, time and product name to the film as it passes over the forming collar. An encoder continuously measures the speed of the film and

Continued on page 43

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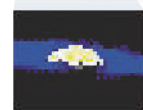
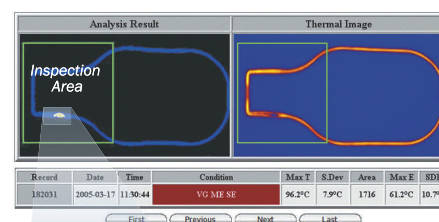
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## J&J's SuperPretzel bite-size products are packed in new, resealable bags

A new, resealable package for J&J Snack Foods' SuperPretzel® products uses pressure-sensitive tape that is easy to open and reseal and provides tamper-evidence. Supplied by **Sealstrip Corp.** ([www.sealstrip.com](http://www.sealstrip.com)) and run on a Model VPK vertical form/fill/seal machine from **Rovema Packaging Machines** ([www.rovema.com](http://www.rovema.com)), the tape is used on most packages of J&J SuperPretzels products. To open the package, the consumer tears away the perforated top and separates the grip area, allowing easy access to the frozen pretzels inside. To reseal, just press the two sides back together, and the p-s Sealtape seals the package closed.

The Sealstrip applicator is a standalone unit that is located at the back of the Rovema machine. The roll of film was moved from its normal location on the back of the bag machine to the back of the Sealstrip applicator for this application.

The film is pulled through the applicator and into the VPK bag machine by a combination of friction drive belts and vacuum assist on the front of the bag machine. As the film travels through the applicator, it applies the Sealtape to the film in the direction of the film flow, creating a package that opens and reseals from end-seal to end-seal.

To form the Sealstrip feature into the packaging film, the film is pulled across the top of the applicator where it is perforated by a rotating wheel. The film then passes beneath a stationary blade that cuts a 1/4-in.-wide slot. Over this slot, the applicator automatically applies the 3/4-in.-wide p-s Sealtape. This leaves a 1/4-in.-wide strip of tape to stick to the film on each side of the slot. The Sealstrip applicator then folds a pleat into the packaging film, forming the Sealstrip feature.

The film travels from the tension-controlled film unwind, through the Sealstrip applicator module and then into the

Rovema as flat film. The easy-open and resealable functions are applied and formed in film-flow direction.

The Sealtape, which is provided on long rolls, is comprised of a thermoplastic substrate coated with a proprietary, FDA-compliant, p-s adhesive that is resistant to moisture, functions well in the freezer and is compatible with the packaging film. The Sealtape can be printed as the customer wishes, and J&J took advantage of this opportunity to print the tape with the SuperPretzel brand logo and colors. Adding this colorful branding message onto the clear bag helps J&J build brand awareness every time the bag is used.

The startup, implementation and ongoing efficiency of the installed Sealstrip systems were important factors in determining the overall cost of the package. The quick and easy integration of the Sealstrip system with the new Rovema vf/f/s bagger, allowed J&J to provide consistent packaging. This addition of Sealstrip systems to new and existing wrapping equipment minimized new capital equipment purchases, installation costs and downtime for integration. An added incentive to install this equipment was that Sealstrip Corp. guaranteed that the system would maintain current line speeds, while producing a high-quality package.

"The tape runs through the machines with no problems, and it holds up very well to freezing," says director of engineering Phil Heffelfinger. "The Sealtape closures cost a fraction of a typical resealable zipper per package and are very user-friendly."

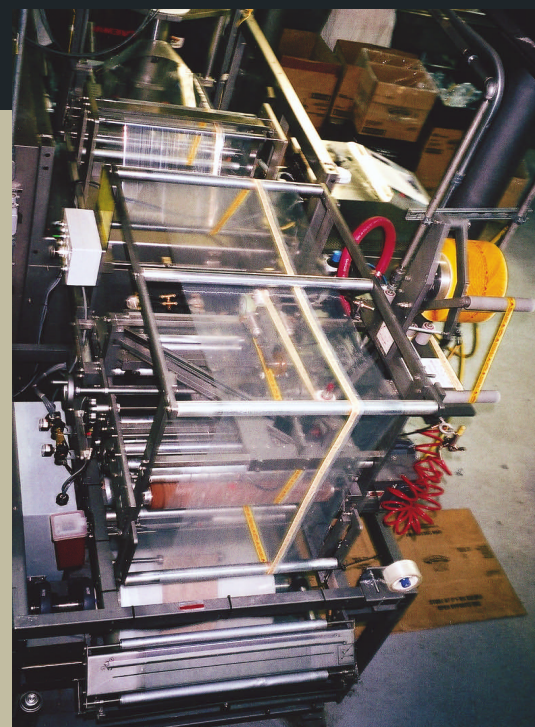
More information is available:

**Rovema Packaging Machines**, 770/513-9604.

[www.rovema.com](http://www.rovema.com).

**Sealstrip Corp.**, 610/367-628.

[www.sealstrip.com](http://www.sealstrip.com).



Standalone unit applies tape to film as it enters the vf/f/s machine, top. A wheel perforates the film so the top can be torn off of the bag by the consumer.

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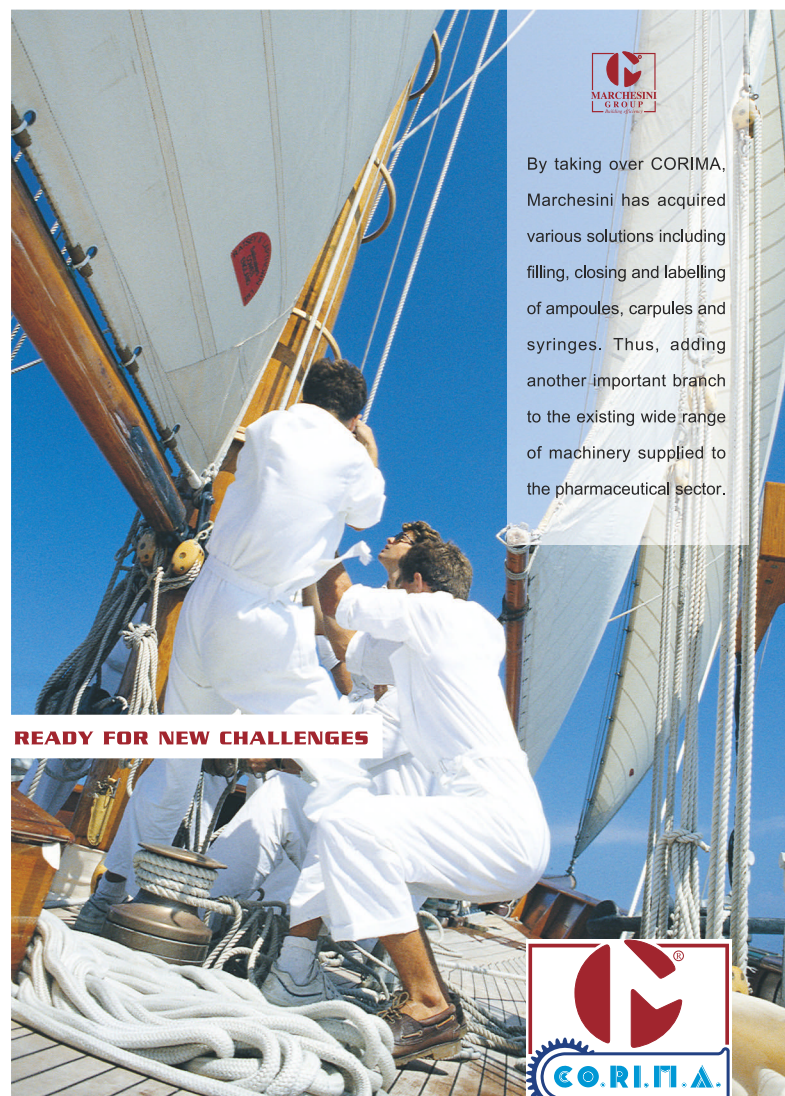
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GenNext is not simply higher intelligence. It includes a commitment to open architecture, industry-standard communications, and an array of products that offer better performance. In doing so, GenNext offers users of food and packaging machines the following benefits:

- **Uptime.** Beyond the reliability of servo system, the intelligence of GenNext-based servo drives brings diagnostics and predictive maintenance to a new level of sophistication. The drive becomes the sensor, spotting such problems as bearing wear, loose belts, and parts falling out of adjustment, so maintenance can be scheduled and problems resolved before they disrupt production.
- **Productivity.** Distributed control allows sophisticated electronic line shafting, cam tables, absolute feedback for individual axes to take place locally in the drive. Equally important, machine changeovers can be accomplished in minutes rather than hours, slashing setup time to a bare minimum.
- **Ease of Use.** Programming, setup, and operation are all simplified, reducing or eliminating the need for mechanical intervention.
- **Connectivity.** GenNext uses standard protocols, making communication to the enterprise level easier and more informative.
- **Reduced Cost.** Given the advantages in reliability, productivity, setup speed, diagnostics and preventive maintenance, GenNext technology enables distributed systems that are less expensive to acquire and less expensive to operate.



automatically adjusts the printing speed to correspond to the film speed.

Next, the film passes through the servo-driven sealing jaws, which move in a D-configuration. The jaws move in against the film and induction-heat a horizontal seal across the film. The jaws move downward with the film for the required time to create the seal, and then move away from the film and reciprocate up to start the next sealing cycle. At the end of each sealing cycle, before the jaws disengage, an air-actuated blade shoots out from the center of the jaws and cuts the bag loose, after which it drops onto the takeaway conveyor.

Although it is not needed for the clear film that J&J is running, the vf/f/s is equipped with a sensor mounted on the film carriage that detects the eye

mark on the film. If the plant were running printed film with an such an eye mark or registration spot, this sensor would initiate the start of each cycle. It compensates for any slight changes in the film length and ensure that the film for each bag would always be in perfect registration. This system basically tells the horizontal sealer and cutoff knife when to energize and tells the code dater when to operate.

The machine is controlled by an Allen-Bradley programmable logic controller and incorporates an A-B PanelView operator panel and three A-B Ultra 3000 servo drives that operate the vertical sealer, the left and right pulling belts and the seal jaws/knife assembly. The Allen-Bradley components are supplied by **Rockwell Automation** ([www.rockwellautomation.com](http://www.rockwellautomation.com)).

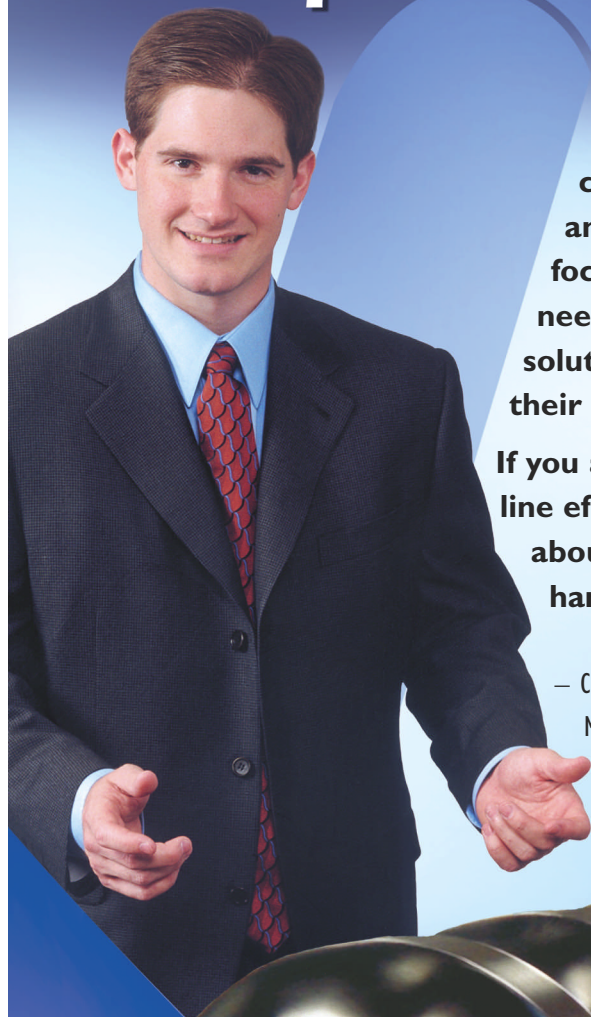
The PLC maintains the recipes for all of the products in memory, and the operator can recall them at a touch. The unit automatically sets the operating parameters, including the sealer temperatures and the servo drives that, among other things, set bag length. Additional touches of the screen display the settings currently in use, causes of operating problems and maintenance requirements.

Product for the f/f/s machine is weighed by a 14-head radial-weighing system that is located on a platform above the machine. Product is delivered on a vibrating conveyor that discharges onto the Ishida weigher's dispersion table. The dispersion table transfers the product to the 14 radial feeder hoppers, which, in turn, move the product by vibration to the pool and weigh

hoppers. Each radial feeder adjusts the strength and duration of vibration to ensure an ample supply to the hopper. Once the product is in the hoppers, the weigher's computer selects a combination of buckets (generally three or four) that cumulatively equals the closest weight to the total bag weight without being under that weight. The selected hoppers then open and discharge their contents down the discharge chute to the bagger.

The Ishida features an easy-to-use computer-controlled operator interface that provides a clear display of charge weight as well as various statistical data. Along with an intuitive control, the Ishida also simplifies cleaning and minimizes downtime with its design focus on easy sanitation. Product contact parts are easily removed without tools. The control panel is located on the first floor next to the bagging machine, so the operator can interact without climbing up to the platform.

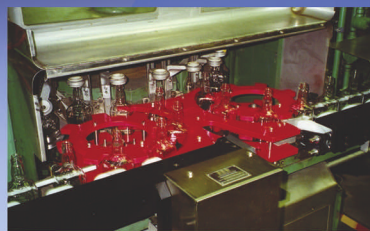
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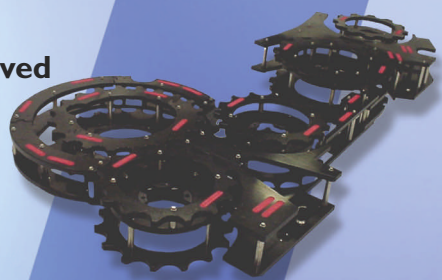
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Product from the scales passes through a metal detector from **Safeline, Inc.**

([www.metalldetection.com](http://www.metalldetection.com)) mounted just below the scale platform and above the bagmaker. The unit automatically calibrates itself as product passes through the system, tracks the pretzels and continuously compensates and updates itself for optimal sensitivity.

"The Rovema machine has done an excellent job for us," says Heffelfinger. "We run the machine very hard—twenty four hours a day, five or six days a week—and we can't afford downtime. Another advantage is the continuous-motion operation, which eliminates a lot of the tracking problems with the film and tape."

#### More information is available:

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**Advanced Packaging Corp.,**  
973/283-1398.  
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[www.heatandcontrol.com](http://www.heatandcontrol.com).  
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414/382-2000.  
[www.rockwellautomation.com](http://www.rockwellautomation.com).  
**Safeline, Inc.,** 813/889-9500.  
[www.metalldetection.com](http://www.metalldetection.com).  
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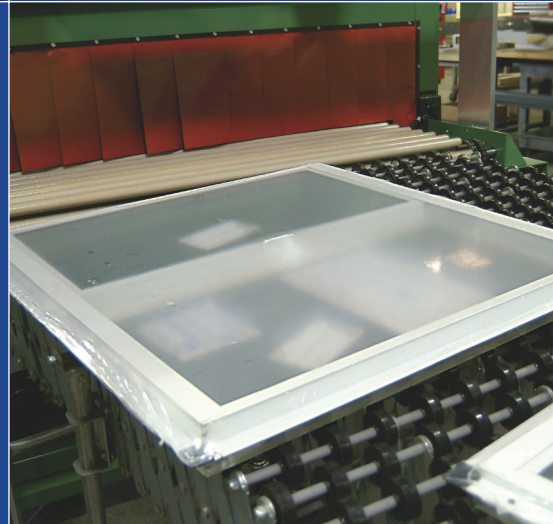
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# Control architecture enhances machine innovation

**H**ensen Packaging Concept GmbH (HPC) ([www.hpc-machines.com](http://www.hpc-machines.com)), Bremen, Germany, has more than 25 years of experience building advanced packaging machinery. Advanced, yet easy-to-use control systems made possible by Rockwell Automation's ([www.rockwell.com](http://www.rockwell.com)) Integrated Architecture approach have been key in developing the advanced packaging machinery that keeps these innovations coming.

HPC is best known for its filling and sealing machinery, offering a range of standard and specialty

machines to suit a wide range of applications. It specializes in machines designed to fill

and seal standup cartons and pouches, a sector that is moving from the humble role of refill packs to highly innovative consumer goods. The company also builds machines to form cartons and assemble finished products in their final packaging, enabling it to offer complete end-to-end packaging systems. Hensen machines are designed to be flexible and easy to maintain, to operate reliably at high throughputs and to enable rapid product changeovers.

HPC's customers in the highly competitive world of fast-moving consumer goods are constantly looking to develop new products to catch the jaded eyes of shoppers in supermarkets the world over. In Germany, standup cartons and pouches are mainly used as refill packs, but in North America and the Far East, manufacturers are now using standup pouches with resealable tops to package liquids such as energy and sport drinks, laundry detergents and personal-care products. In the sports-drink sector, these work particularly well as alternatives to plastic bottles or cans, as the curvaceous pouch, with its molded hand grips, looks different on the shelf and enables thirsty sportsmen and women to gulp down the refreshing liquid faster. Today's high-speed, fully automated packaging machines require state-of-the-art control hardware and software, including accurate motion control, easy-to-use human machine interfaces

A broad family of advanced automation products enables Hensen Packaging Concept GmbH to continue developing and manufacturing state-of-the-art packaging machinery for leading drinks manufacturers and packers around the world.

(HMIs) and powerful logic control.

As a major exporter to customers around the globe, HPC needed a well-recognized automation supplier able to provide first-class, global, technical support and parts backup. The company also wanted to work with proven experts in advanced automation, able to bring their knowledge and experience to help develop sophisticated controls for HPC's next-generation packaging systems.

**A**fter carefully considering a number of automation vendors, HPC selected Rockwell Automation and has standardized on the Allen-Bradley Logix automation platform for its latest packaging machines. Logix is a family of PLCs, ranging from the powerful ControlLogix to the compact FlexLogix distributed controller. With such a wide selection available in the Logix range, HPC always has the right controller to match the application, from the smallest machine to the largest production system. Because all Allen-Bradley PLCs share the same Logix control engine, they are programmed using the same easy-to-use RSLogix5000 software, so HPC's engineers only need to be familiar with one development tool. Code can be reused across the range of controllers.

ControlLogix brings together logic and motion control in a single, integrated architecture, and both can be programmed easily via RSLogix5000 using a common set of tools. In addition to this common development environment, the Logix family also takes advantage of NetLinx, a unique Allen-Bradley network protocol with open software interfaces that

ensures the efficient flow of data. With NetLinx, data can be sent just as easily over DeviceNet, ControlNet or EtherNet/IP and, because these networks use the open CIP Internet protocol, they also link directly to a manufacturer's enterprise resource planning or other business IT systems.

By ensuring completely transparent communications, NetLinx also enables configuration of the complete machine from a single point of access. Because the engineer can program devices remotely over the network rather than having to physically connect to each one separately, commissioning time is greatly reduced.

Similarly, the maintenance engineer is able to diagnose and correct many problems from the control room without having to go to the machine. Internet technology takes this concept a step further and, by installing an Allen-Bradley 9300-Rades Ethernet modem, users can have remote dial-in access to an entire NetLinx-based control network from a PC anywhere in the world.

NetLinx is one of the keys to Rockwell Automation's Integrated Architecture approach, which means that all of its hardware and software work together seamlessly off-the-shelf. Integrated Architecture offers many benefits to machine builders like HPC, as it dramatically reduces the time taken to design and build control systems. It also improves the performance, maintainability and reliability of the complete machine, increasing the productivity and profitability of the manufacturer.

Another benefit of using DeviceNet with the Allen-Bradley platform is Automatic Device Replacement (ADR). ADR enables devices such as Allen-Bradley PowerFlex drives to be replaced in minutes without shutting down the network, which minimizes downtime in the rare case of a breakdown.

To communicate information between the controller and servo drives, ControlLogix uses the SERCOS digital interface and high-speed fiber-optic network. The network replaces the complex bundle of wiring associated with traditional servo drives, and it is also used to send and receive information about the status of the drive. The benefits of using

Continued on page 48

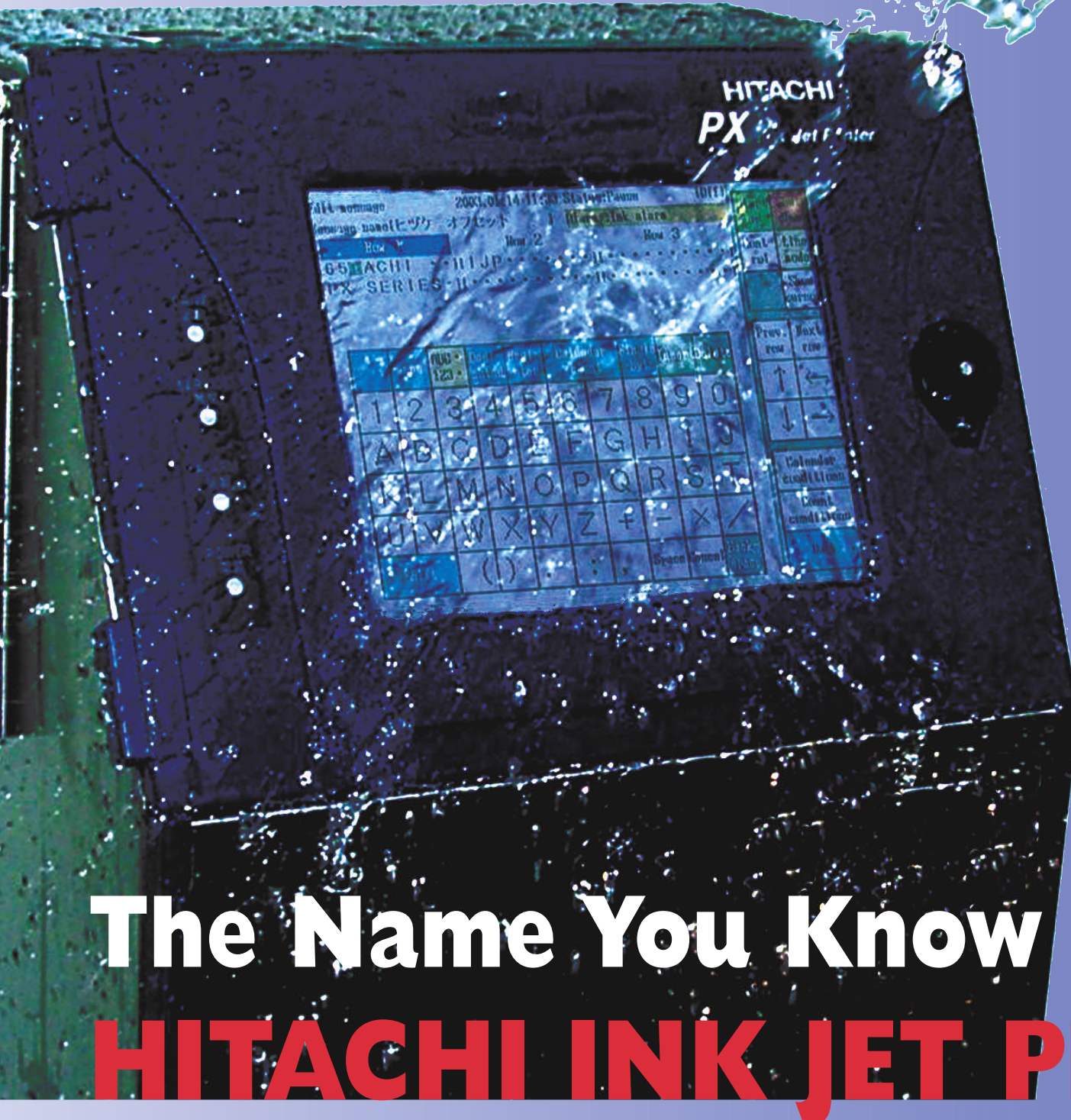


**ROCKWELL AUTOMATION** has supplied automation and controls to many companies featured in *Packaging Digest* stories. For a list of these stories, go to the *Packaging Digest* website at [www.packagingdigest.com](http://www.packagingdigest.com)



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SERCOS include ease of commissioning, higher accuracy and improved system performance.

HPC has also standardized on Rockwell Automation's Allen-Bradley Guardmaster machine-safety systems. With a complete selection of safety products, ranging from simple interlocks to screening systems using laser scanners and light curtains, Guardmaster meets all of HPC's safety requirements, while guaranteeing compatibility with the Allen-Bradley control architecture.

The benefits of Rockwell Automation's Integrated Architecture are demonstrated in HPC's latest packaging machine, the HO-Auto. This fully automated machine uses an integrated system of motion and logic control to insert and seal a spout into a carton.

The ControlLogix controller enables the machine to be rapidly changed from one carton size or format to another, increasing the flexibility and productivity of the machine. The time required to change tools to allow different size spouts to be inserted in the machine has been dramatically reduced compared with conventional machines. This has been achieved by using servo drives to reposition key components within the machine according to instructions sent by the PLC via DeviceNet.

An Allen-Bradley PanelView HMI allows the operator to select the machine configuration required, and ControlLogix does the rest. Control of hydraulic valves and feedback from sensors is via Allen-Bradley Flex I/O modules distributed around the machine and linked to the PLC by DeviceNet, reducing the amount of wiring required to be brought back to the control panel. Once completed, the cartons can be delivered to the next stage of production either by conveyor belt or on rails.

HPC also relies on Rockwell Automation motion control for its CMF range of flexible filling and sealing machines. These continuous machines can handle up to 250 cartons/min, which are supplied via a system of rails or direct from an HO-Auto carton-forming machine. The cartons are fed into the CMF by a patented indexing system and are guided to the filler. Here they are loaded onto a carousel, where 12 stations fill and seal the cartons. A security seal can also be applied at this stage if required.

Each filling station on the CMF's carousel uses an Allen-Bradley MP Series low-inertia servo motor controlled by an Allen-Bradley Ultra3000 digital servo drive. Offering high torque-to-size ratios, the MP Series motors take up a minimum of space and are easy to install on the carousel. The Ultra3000 drives are also mounted on the carousel and are linked to the



A wide selection of PLCs ensures that the controller always matches the application, from the smallest machine to the largest production system.

ControlLogix PLC via SERCOS interfaces. Slip rings connect the moving carousel to the rest of the machine, allowing DeviceNet and SERCOS networks to operate seamlessly across the rotating joint.

The filled and sealed cartons are transported to the final packaging stage on a conveyor belt controlled by a PowerFlex variable-speed drive.

"The excellent levels of integration achieved between networks and the servo technology with Logix reduces engineering time considerably," says HPC's programmer, Jorg von Mallotkie. "This is due to the ability to undertake all configurations of the machine from a single point using one piece of software. Diagnosis of problems during commissioning is also possible from the same single-point interface, enabling us to install and commission the machine far more quickly than before."

## More information is available:

Hensen Packaging Concept GmbH,  
49-42-31-98-47-0. [www.hpc-machines.com](http://www.hpc-machines.com).  
Rockwell Automation, 414/382-2000.  
[www.rockwellautomation.com](http://www.rockwellautomation.com).

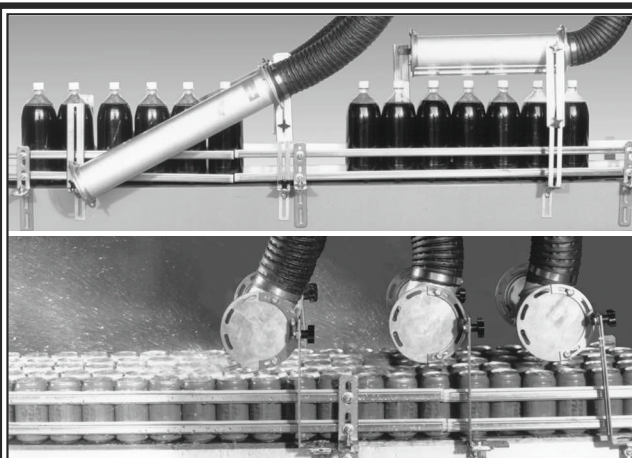
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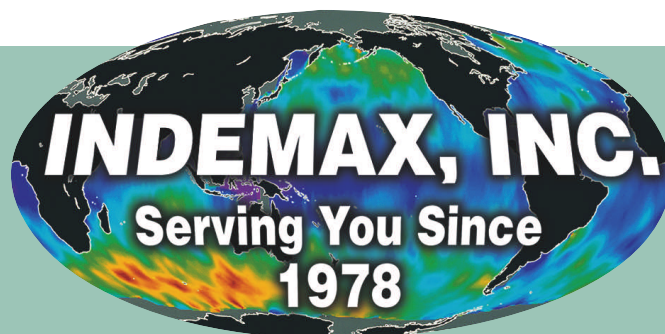
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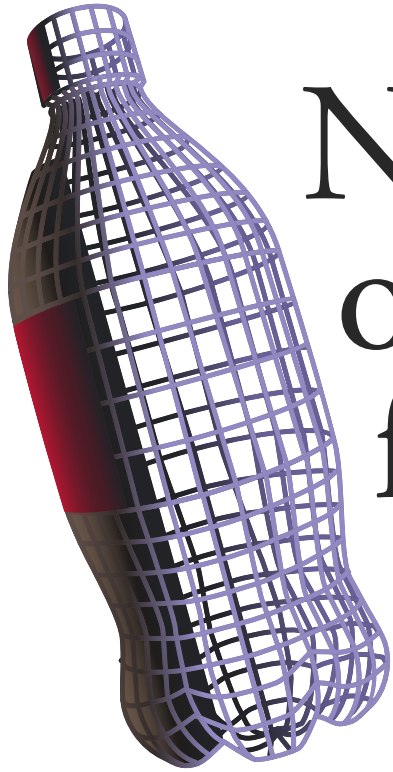
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# Nanotechnology offers big benefits for packaging

Nanocomposite technology paves the way for packaging innovation in the flexible film and plastic container industries, offering enhanced properties such as greater barrier protection, increased shelf life and lighter-weight materials.

*The following article has been reproduced with permission and with appropriate editing by Anne Marie Mohan, Senior Editor, from a paper submitted by packaging student Alyssa Downing-Perrault of the University of Wisconsin-Stout for the 2005 Italian Packaging Technology Awards (IPTA) program. The paper, one of eight chosen by the awards program, discusses how nanocomposites are made, and the numerous advantages they offer the packaging industry. More information on the IPTA program can be found on p. 54.*

Representing a \$38 billion global market, the flexible packaging industry is growing rapidly. With the demand for flexible packaging growing at an average rate of 3.5 percent per year, flexible materials need to meet and exceed the high expectations of consumers and the stressors of the supply chain. Increased competition between suppliers, along with government regulations, have resulted in innovations in films that enhance

product and package performance, as well as address worldwide concerns with packaging waste.

One such innovation is polymer nanocomposite technology, which holds the key to future advances in flexible packaging. In a December 2003 article, packaging industry expert Dr. Aaron Brody stated that "nanocomposites appear capable of approaching the elusive goal of converting plastic into a superbarrier—the equivalent of glass or metal—without upsetting regulators."

Nanocomposites, defined as polymers bonded with nanoparticles to produce materials with enhanced properties, have been in existence for years, but are recently gaining momentum in mainstream commercial packaging use. (References to nano materials simply mean that the material or activity can be measured in nanometers. In the metric system of measurement, a "nano" equals a billionth and therefore, a nanometer is one-billionth of a meter.)

The U.S. is leading in nanotechnology research, with more

barriers to gases and water vapor. The more tortuosity present in a polymer structure, the higher the barrier properties. The permeability coefficient of polymer films is determined using

To view a complete **LIST OF THE SOURCES** Downing-Perrault consulted to write this paper, go to:  
[www.packagingdigest.com/info/smartwinner](http://www.packagingdigest.com/info/smartwinner)

two factors: diffusion and solubility coefficients, i.e.,  $P = D \times S$ .

Effectively, when there is more diffusion of nanoparticles throughout a polymer, the permeability is significantly reduced. According to the Natick Soldier Center of the U.S. Army, "The degree of dispersion of the nanoparticles within the polymer relates to the improvement in mechanical and barrier properties in the resulting nanocomposite films over those of pure polymer films."

Nanoparticles allow for much lower loading levels than traditional fillers to achieve optimum performance. Usually, additional levels of nanofillers are less

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## In the face of global recycling issues, nanocomposite polymers can help to reduce packaging waste and enable recycling efforts.

than 400 research centers and companies involved and more than \$3.4 billion in funding. Europe has more than 175 companies and organizations involved in nanoscience research, with \$1.7 billion in funding, and Japan has more than 100 companies working with nanotechnologies. Globally, the market for nanocomposites is expected to grow to \$250 million by 2008, with annual growth rates projected to be 18 percent to 25 percent per year.

Polymer nanocomposites are constructed by dispersing a filler material into nanoparticles that form flat platelets. These platelets are then distributed into a polymer matrix, creating multiple, parallel layers that force gases to flow through the polymer in a "tortuous path," forming complex

than 5 percent, which significantly impacts the weight reduction of nanocomposite films. This dispersion process results in a high aspect ratio and surface area, creating higher-performance plastics than with conventional fillers.

Different types of fillers are utilized; the most common is a nanoclay material called montmorillonite—a layered, smectite clay. Clays in a natural state are hydrophilic, while polymers are hydrophobic. To make the two compatible, the clays' polarity must be modified to be more "organic." One way to modify clay is by exchanging organic ammonium cations [positively charged ions] for inorganic cations from the clays' surface.

Continued on page 52



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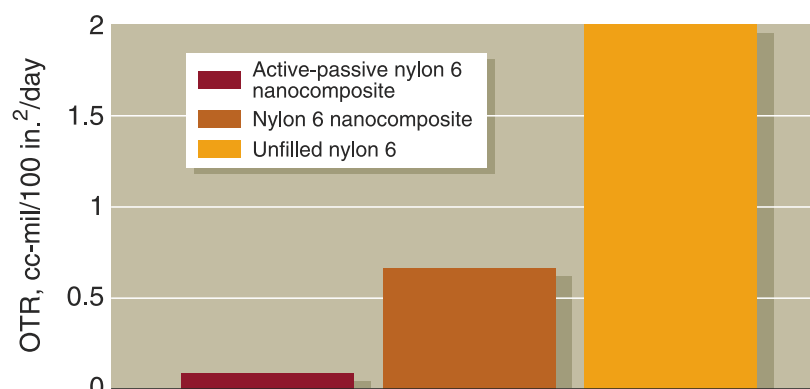
Additional nanofillers include carbon nanotubes, graphite platelets and carbon nanofibers. Other fillers are being investigated, such as synthetic clays, natural fibers (hemp or flax) and POSS (polyhedral oligomeric silsesquioxane). Carbon nanotubes—a more expansive material than nanoclay fillers, which are more readily available—offer superb electrical and thermal conductivity properties. Two major suppliers of nanoclays are **Southern Clay Products** ([www.scprod.com](http://www.scprod.com)) and **Nanocor** ([www.nanocor.com](http://www.nanocor.com)).

There are three common methods used to enhance polymers with nanofillers to produce nanocomposites: melt compounding, in-situ polymerization and the solvent method. Melt compounding, or processing, of the nanofillers into a polymer is done

simultaneously when the polymer is being processed through an extruder, injection molder or other processing machine. The polymer pellets and filler (clay) are pressed together using shear forces to help with exfoliation (the process of separating the particles into the right shape and layer structure) and dispersion. With in-situ polymerization, the filler is added directly to the liquid monomer during the polymerization state. Using the solution method, fillers are added to a polymer solution using solvents such as toluene, chloroform and acetonitrile to integrate the polymer and filler molecules.

Since the use of solvents is not environmentally friendly, melt processing and in-situ polymerization are the most widely used methods of nanocomposite production.

### Oxygen transmission of nylon nanocomposite



Source: Plastics Technology, 2001

The advantages of nanocomposite films are numerous, and the possibilities for application in the packaging industry are virtually endless. Because of the nanocomposite process's dispersion patterns, the platelets result in largely improved performance in

the following properties:

- Gas, oxygen, water, etc. barriers
- High mechanical strength
- Thermal stability
- Chemical stability
- Recyclability
- Dimensional stability
- Heat-resistance
- Good optical clarity (since particles are nano-size).

A majority of consumer products that use nanocomposite packaging are in the beverage industry. Many different types of commercial plastics, flexible and rigid, are utilized for nanocomposite structures, including polypropylene, nylon, polyethylene terephthalate and polyethylene.

Nylon nanocomposites, used as barrier layers for multilayer PET containers, prove to perform better—as much as two to three times better—than the traditional ethylene vinyl alcohol barrier layers, since nylon has a 50-deg-F-higher melt temperature.

Studies show that nylon 6 nanocomposites can achieve an oxygen transmission rate (OTR) almost four-times lower than unfilled nylon 6. In the case of **Honeywell's** ([www.aegisnylon.com](http://www.aegisnylon.com)) Aegis™ OX barrier nylon resins, which were designed for multilayer bottle applications, the nanoclay layers act as a trap to retain the active oxygen scavengers in the polymer while reducing OTR one-hundredfold. Aegis OX's oxygen-scavenging component provides beer bottles with a shelf life of six to 12 months—comparable to glass bottles. Aegis has been used in a three-layer, 1.6-L structure for a brewery in Asia.

Imperm®, produced by **Mitsubishi Gas Chemical Co.** ([www.mgc-a.com](http://www.mgc-a.com)), has similar results when added to a multilayer PET structure. Imperm's oxygen barrier is two times that of Mitsubishi's standard Nylon-MXD6 resin, and its carbon dioxide barrier is four times that of N-MXD6. It also requires no adhesion tie layers to PET and is very recyclable. When used in a 16-oz beer bottle, Imperm guarantees an almost seven-month shelf life.

Tensile strength, tensile modulus and heat-distortion-temperature (HDT) characteristics are also improved with the use of nanotechnology. One example is Cloisite®, a nylon nanocomposite produced by Southern Clay Products, with a clay loading of 15 percent. Nanoclays in nylon increase tensile strength in this example by 23 percent, the tensile modulus by 69 percent and the flexural modulus by 56 percent. In addition, HDT is raised by

Continued on page 54

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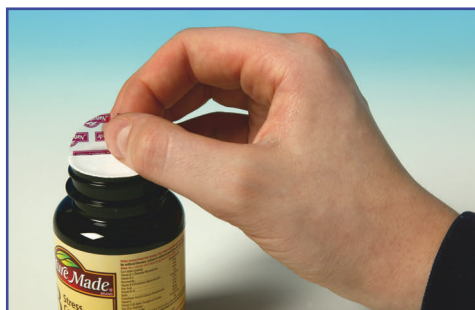


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68 percent. The amount of change in mechanical properties is directly related to the quantity of nanofiller used in the particular nanocomposite. For example, by adding 2-percent nanoclay to a nylon 6 nanocomposite, the tensile strength is increased by 98 percent. This pattern also applies to the HDT and flexural-modulus characteristics. Other nylon nanocomposite polymers have increased mechanical properties similar to Cloisite.

As the global flexible packaging market increases, we will see more and more specialized products utilizing films. Nanocomposites would ease the transition between current packaging with metal layers and glass containers to flexible pouches or rigid plastic structures. Many current structures require multiple layers, which render the

Continued on page 56

## Students use packaging smarts to vie for a trip to Italy

For the past four years, the **Italian Trade Commission (ITC)** ([www.italtradeusa.com](http://www.italtradeusa.com)), in partnership with **UCIMA (the Italian Association of Automatic Packing and Packaging Machinery Manufacturers)** ([www.ucima.it](http://www.ucima.it)), and in cooperation with the **Institute of Packaging Professionals (IoPP)** ([www.iopp.org](http://www.iopp.org)), has provided eight U.S. packaging students with the opportunity to experience Italy's new packaging technologies and marketing strategies face-to-face via a complimentary trip to that country.

Announced in 2001 at PACK EXPO Las Vegas, and held every year since, the Italian Packaging Technology Awards (IPTA) program asks students from among 15 premier North American packaging universities to write technical papers on packaging. The goal of the program is to strengthen the awareness of Italian technology and innovation within various packaging research and education programs by these schools.

The competition is open to registered students in junior-, senior- and graduate-level degree programs of academic studies. In addition to the 15 universities currently involved in the program, other schools may be included with the agreement of ITC, UCIMA and IoPP.

To determine a student's eligibility to submit a paper to the program, each university's respective faculty looks at criteria such as grade-point average, transcripts and co-op program activities. The program requires that students who are selected to submit papers write on topics relating either to technical innovation in the packaging machinery manufacturing industry, or innovation in packaging materials.

For judging, each university program director/co-coordinator selects one student paper for submission to the IoPP for final selection. The IoPP panel of judges, chosen in accordance with guidelines established by the ITC and UCIMA, are tasked with choosing eight papers that best exemplify the criteria decided upon by these two organizations. The authors of the eight award-winning papers receive a complimentary trip to Italy, hosted by ITC and UCIMA and chaperoned by three predetermined faculty professors.

The trip, held in June for two weeks, includes visits to selected Italian packaging machinery manufacturers' offices and facilities, orientation at ITC's offices in Rome and/or at UCIMA's offices in Milan, and other related activities. According to the program sponsors, the trip provides valuable benefits and experiences to the chosen students, while giving the participating Italian packaging machinery manufacturers a unique opportunity to showcase their packaging technology in action to these future decision makers and end users.

Upon their return, students and professors are asked to submit a summary of the program and how it impacted their packaging education.

The 2006 edition of the IPTA program was launched at PACK EXPO Las Vegas in September. While at presstime, no deadline has been set for the receipt of papers, IoPP communications manager Chris Barry says that "by March 15, 2006, the Italian Trade Commission and UCIMA must have a definitive list of the winners selected to allow for the necessary travel preparations."

For more information about the IPTA competition deadline, contact Jim Peters, IoPP's director of education, at 630/696-4011, or by e-mail at [jpeters@iopp.org](mailto:jpeters@iopp.org).

IPTA is an initiative of the Italian Trade Commission, Government Agency. To receive information about the latest packaging machinery and technologies from Italy, call 888/ITALTRADE or visit [www.machinesitalia.org](http://www.machinesitalia.org).



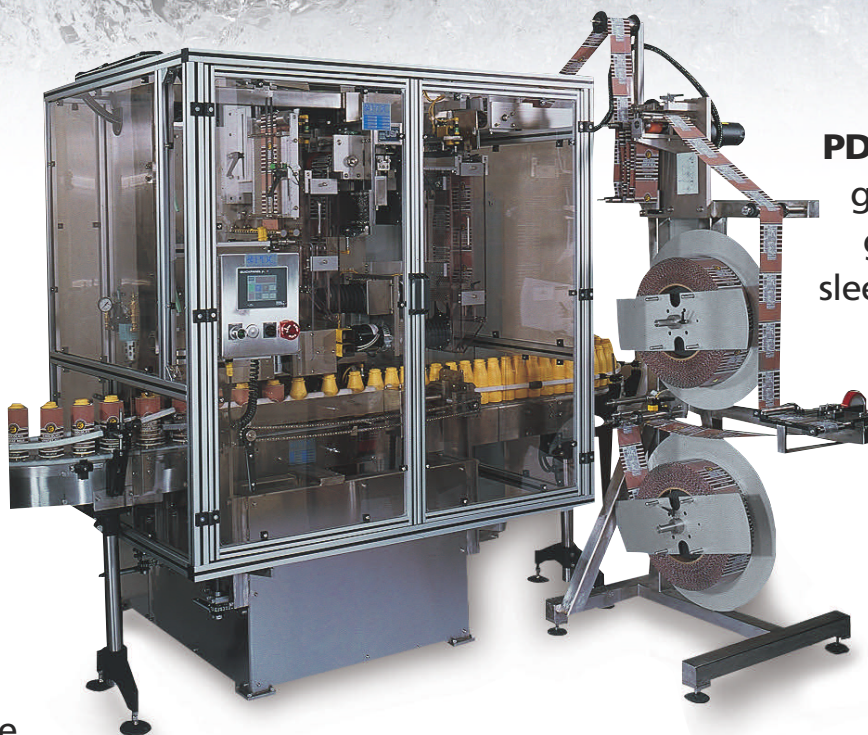
**Front row, left to right:** Alyssa Downing-Perrault, University of Wisconsin-Stout; Ineetu Bali; Joanna Wong, California Polytechnic State University; Jennifer Farrin, Rochester Institute of Technology; and John Halka, Clemson University. **Back row, left to right:** Shelton Wright, University of Florida; Chris Forte, Rutgers University; Maria-Paz Gonzalez, Michigan State University; Claudia Boschi, MG2; assistant professor Jay Singh, Cal-Poly; and associate professor William Scott Whiteside, Clemson University. Not pictured: Ritesh Mahna, Virginia Tech.



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packaging nonrecyclable, but in the face of global recycling issues, nanocomposite polymers can help to reduce packaging waste and enable recycling efforts. Waste reduction is a very pressing issue in the world, and the U.S. military's application is a good example of how nanocomposite polymers can positively impact the environment.

Since 2002, Natick has been conducting extensive research into the use of no-foil polymer nanocomposite structures for military food rations, Meals Ready-to-Eat (MREs). The goal of the research is to reduce the amount of solid waste associated with the current packaging, as well as reduce costs through material savings. Each year, 14,177 tons of MRE packaging waste is generated because of the foil layer, which is

susceptible to pinholing and does not allow the pouch to be recycled. One army ration creates 1.04 lb of waste, while a navy ration creates 3.8 lb of solid waste.

Current MRE packaging, which consists of three- to four-layer retortable pouches with a foil layer, do not meet the rigorous standards of the military. MRE packaging needs to be air-droppable and provide a minimum three-year shelf life at 80 deg F and a six-month shelf life at 100 deg F. By using nanocomposite polymers, which offer high barrier properties, Natick can extend the shelf life and provide greater product protection for its military rations.

Nanocomposite ration pouches are not in production at the moment, but according to Natick, they are in the advanced stages of development for future use. Natick researchers are working

with a variety of different materials, including low-density PE, nylon, EVOH and others to find the right blend of polymers and nanofillers when delivered through various extrusion processes, such as cast film, multilayer film, blown film, single-screw and twin-screw. It is possible that technologies developed by Natick would be accessible to commercial food packagers to increase processed-food shelf life, as military standards are more rigid.

According to U.S. Army research, costs of the future nanocomposite structures are estimated to be 10-percent to 30-percent less than the current pouches. Expected savings come from less material cost, improved manufacturability with more automation, and less waste-handling costs. Overall cost savings are estimated at between \$1 million and \$3 million.

Despite the prosperous future of nanocomposites, there are a few issues that warrant concern about the mass commercialization of these polymers. According to University of South Carolina researchers, there are four main issues surrounding the production and use of nanocomposites: exfoliation, orientation, compatibility and reaggregation.

When clay fillers got through the process of exfoliation, they need to be very thin—1 nanometer—and very wide—500 nanometers—to be able to achieve optical gas permeability without affecting optical quality. Particle orientation also has an effect on the success of a nanocomposite. Nanoparticles need to be dispersed throughout polymer so they are parallel to the material's surface. This position ensures a maximum tortuous path for the gasses when migrating through the polymer. For converters, proper particle orientation is an ongoing problem.

Compatibility between the nanofillers and the polymer substrate may cause issues, as well, depending on how they interact with each other. Certain nanofillers need to be prepared so they can perform well with the substrate. Another concern is that during the processing state, there is a possibility of reaggregation, where the particles clump together. If this happens, the creation of the nanocomposite is unsuccessful.

By 2009, it is estimated that the flexible and rigid packaging industry will use 5 million lb of nanocomposite materials in the food and beverage industry. By 2011, consumption is estimated to be 100 million lb. Beer is expected to be the biggest consumer by 2006, with 3 million lb of nanocomposites. Carbonated soft drink bottles are projected to surpass that, to use 50 million lb of nanocomposites by 2011.

Polymer nanocomposites are the future for the global packaging industry. Once production and materials costs decrease, companies will be using this technology to increase their product's stability and survivability through the supply chain to deliver higher quality to their customers while saving money. The advantages that nanocomposites offer far outweigh the costs and concerns, and with time, the technology will be further refined and processes more developed. Research continues into other types of nanofillers, allowing new nanocomposite structures with different, improved properties that will further advance nanocomposite uses in many diverse packaging applications.

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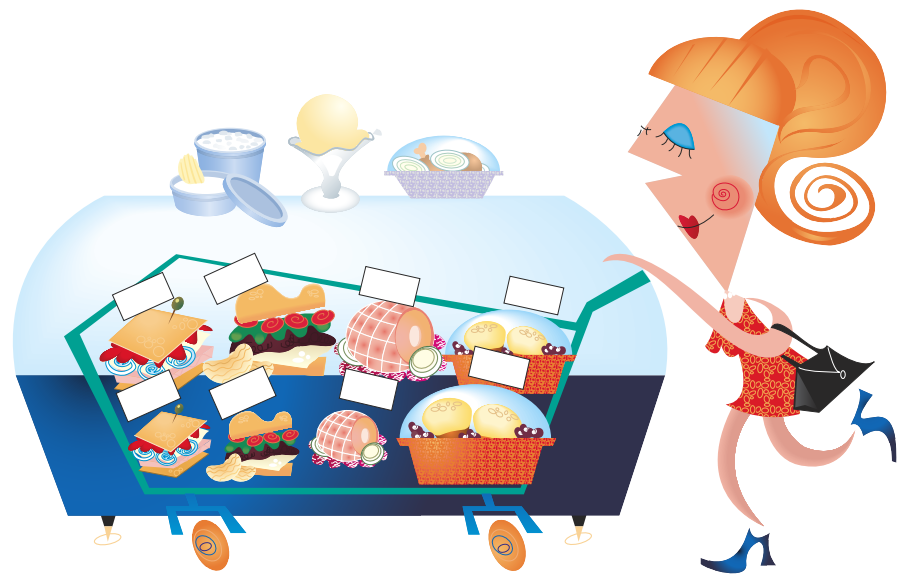
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# Packaging is prominent at food show



The icing on the cake for food and beverage products, packaging will be featured heavily at this year's largest food and beverage event, the Worldwide Food Expo 2005, Oct. 26 to 29, at Chicago's McCormick Place.

**S**howcasing exhibits from 1,200 suppliers to the food and beverage market, and featuring a banquet of 45 workshops from which to choose, the biennial Worldwide Food Expo, co-located with the AMI International Meat, Poultry & Seafood Convention and Exposition and the Food, Dairy & Beverage Exposition, is guaranteed to be a veritable feast of opportunities. Scheduled for Oct. 26 to 29 at Chicago's McCormick Place, the event will cover more than 1.2 million sq ft and is expected to draw more than 30,000 international attendees seeking news on the latest innovations in food and beverage processing, packaging, ingredients and services.

An integral part of the event, packaging will be strongly represented on the show floor, with a large number of exhibitors showing packaging machinery, equipment, materials and containers targeted to the dairy, meat, poultry and seafood, beverage, snack and bakery, refrigerated and frozen food, and

canning and packing industries.

This year, for the first time, the event will offer an enhanced educational program that includes six Super Sessions addressing such hot topics for packagers as food trends, leadership in turbulent times, building strong brands, trends in activism, business ethics, and developing and maintaining a high-performance workforce. More than 45 other workshops will be held throughout the four-day event, discussing plant operation innovations, retail and foodservice customers' future expectations, and consumer and product development trends, among other issues.

Also available will be in-depth technical programming sessions; technology application sessions and demonstrations; and special show-floor pavilions that highlight product development, material handling and distribution, and more.

Show hours are 10:30 a.m. to 5 p.m. on Oct. 26, 27 and 28, and 10 a.m. to 2 p.m. on Oct. 29. For more information or to register, visit the show website at [www.worldwidefood.com](http://www.worldwidefood.com).

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# A gem of a mailer

Jewelry Television, a fast-growing home-shopping network, sees sparkling results from its move to polyethylene bubble mailers to protect fine jewelry and gemstones, as its packaging operation expands with a boost in daily shipments.

Lauren R. Hartman, Senior Editor

**H**ow does a jewelry and gemstone company that ships 4 to 5 million packages a year ensure that each package shipped experiences a “sterling” delivery? For Jewelry Television (JTV), a Knoxville, TN-based, cable home-shopping network with a companion online “e-store,” the secret lies in impeccable customer service and enhanced packaging, among other things. The round-the-clock operations of JTV allow viewers to shop for and purchase fine

Shipping agents load jewelry and literature into a PE, bubble-lined mailer. JTV ships more than 12,000 packages of jewelry incorporating precious and semi-precious gems each day, so it requires a ready supply of lightweight, protective mailer packaging.

jewelry and gemstones in the comfort of their homes or offices whenever they want.

JTV has evolved from a small enterprise in the early 1990s as America’s Collectibles Network into one of the top 20 jewelry retailers in the country. JTV broadcast its first, live show in 1993 from a studio located in Greenville, TN, originally offering for sale collectible items such as coins, knives, quilts and skincare products. After a decade of successful broadcasts and online sales, the company now focuses entirely on offering fine jewelry and gemstones at reasonable prices. Over the past six years, its revenues have leaped to \$250 million in 2003.

And as the retail value of the packages JTV ships filled with precious gems and jewelry is, on average, typically priced at \$100 or more per package, the shipments must be as flawless as the gems they carry.

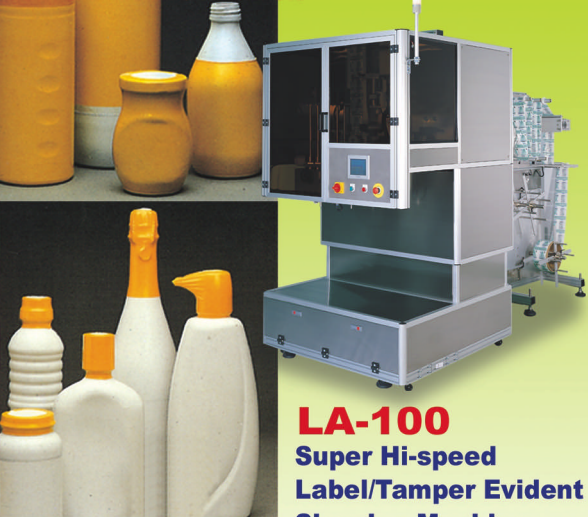
JTV says its packaging must be protective and must have tamper-evident features that thwart any “sticky fingers” eager to snare precious gems in-transit.

**A**s the company’s operation has grown, so too has the number of packages it ships each day. And as sales and shipments have grown, the need for protective packaging supplies has obviously become more important. That’s how JTV found XPAK polyethylene bubble-lined mailers from Polyair ([www.polyair.com](http://www.polyair.com)).

“Our business has been growing rapidly over the past six years, and the timeliness of the delivery and the package quality upon arrival are vital to [our] ensuring complete customer satisfaction,” says Eric  
Continued on page 60



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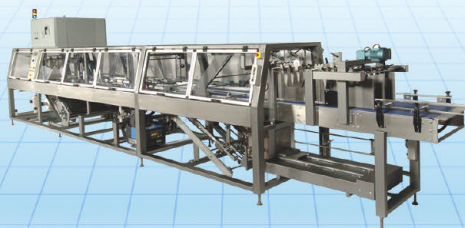


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Dabney, fulfillment operations manager. "About three years ago, we got to the point where business was exploding. There were days when we were running dangerously low on packaging because our distributor was failing to anticipate



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our needs. We required a distributor that could ensure Jewelry Television was matched with the best protective packaging."

Dabney adds that consumers expect nothing less than perfectly packaged products that arrive in top condition. So JTV decided it was time to revamp its

packaging and called distributor **Pinnacle Products** for help. The company quickly took a shine to Polyair's offerings, Dabney recalls. "Pinnacle said that Polyair's broad range of protective packaging products would ensure that our daily demands would always be anticipated, with packaging supplies delivered before we needed them."

JTV's public relations spokesperson Kelly Kress tells PD that the company previously shipped all of its products by courier or through the U.S. Postal Service, relying mainly on their packaging to get the job done.

"Then, we adopted a new system to use First Class mail," she says. "That's when the Polyair mailers came into play."

The new mailers are said to be lighter than many kraft and macerated mailers as well as corrugated sleeves and envelopes,



A shipping agent scans a bar code on each order form that arrives at the shipping department, then prints an invoice and loads and seals the mailers before weighing each shipment.

so can help cut shipping costs.

Available in 12 sizes that range from 4×8- to 14.25×20 in., the XPAK mailers are made of what Polyair describes as a security PE coextrusion, lined with 3/16-in., high-slip Durabubble PE bubble cushioning. JTV has used four of the sizes and currently is using two. Dabney points out that the mailers are durable and help reduce damage to the company's precious

and semi-precious product designs. They include a self-sealing, hot melt-adhesive closure, covered with a polypropylene release liner, which is removed to expose the adhesive, and are moisture-resistant and printable in up to eight colors. The white, outer shell is designed for maximum tear-, puncture- and weather-resistance as well as elongation to handle heavier loads. "The seal makes it easy to determine if tampering has occurred," Dabney adds.

From purchasing agent Paul Moore's perspective, speedy delivery of incoming packaging supplies is more important than ever, considering that JTV now ships more than 12,000 packages each day. In 2004, the company fielded more than 6 million phone calls and shipped more than 5 million packages. "As business expanded, it became clear to us that we need more than just a packaging supplier; we need a partner to work with, as we grow our business. Polyair is incredibly quick in delivering the products to us," glimmers Moore. Now, he says, every customer receives "a jewel of a package."

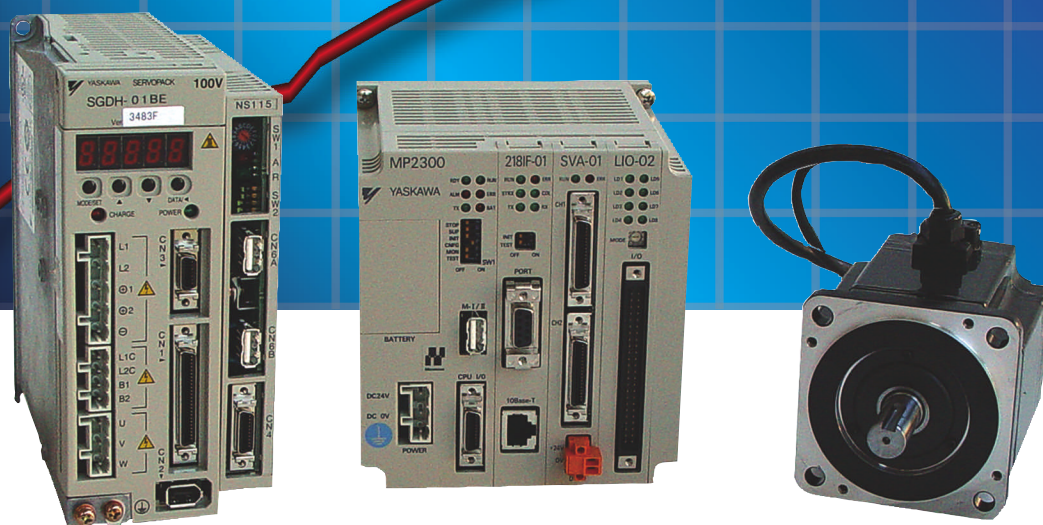
Currently, Dabney says, JTV doesn't use automated equipment or an assembly line to package the products, but is contemplating a move toward automating the packaging process. Each order continues to be individually processed and packaged by an individual shipping agent at a shipping workstation outfitted with a **Mettler Toledo** ([www.mt.com](http://www.mt.com)) weigh scale. Order forms, complete with bar codes, arrive in the shipping department, and a shipping agent scans each code, prints an invoice and places the mailer and the invoice onto the scale to obtain the correct weight. The agent next loads the product into the mailer, along with any literature or other materials, labels the mailer and drops it into an outgoing bin.

"We have considered an assembly line, but haven't found a system we feel satisfies our needs," Dabney says.

Today, the company's customers must get a sparkle in their eyes when they receive baubles cushioned in the bubble-lined mailers, sums up Moore. He adds, "It has been a good experience for all of us." Says Dabney, "We use XPAK as the protective packaging of choice for the majority of our orders."

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**Pinnacle Products**, 865/531-7728.



# Positive picture for printed packaging

By Mark Spaulding, Editor in Chief, *Converting* magazine

**A**fter being battered by the double whammy of the post 9-11 economic recession and a rapid shift toward Internet-driven e-commerce, the U.S. printing industry appears to be recovering nicely. And among the hottest growth areas are printed packaging and converting, says industry analyst and RIT professor emeritus Frank Romano.

Romano spoke Sept. 13 on the "State of Printing and Converting in the U.S." to an audience of about 300 industry professionals during the PRINT 05 and Converting 05 tradeshow in Chicago. While the number of printing firms has declined by about 11 percent since 2000,

employment has leveled off and revenues are surging—\$161 billion last year, nearly the rate of four years ago. Romano forecasts a 15-percent growth surge for all types of printing in

the 2004 to 2008 period. Digital print will rise the fastest (by almost 20 percent); offset and flexo will also show gains, but at a significantly slower pace. He predicts a continued marked decline for gravure.

In light of his audience, Romano reviewed the status of all of the major commercial printing categories, but much of his presentation focused on a positive picture for printed packaging. "It has no electronic competitor," he explains, and as such, it will have the second-fastest growth (after advertising) in this decade. The volume of printed packaging will rise from 17.9 million tons of paper in 2001 to 19.9 million tons in 2010, Romano estimates.

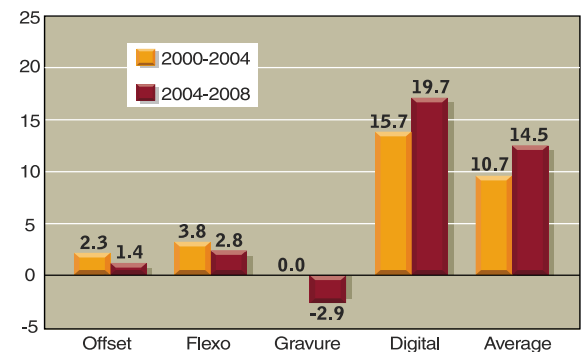
"Converting and packaging are natural markets for commercial printers," he says, both as opportunities for printers and as competitive warnings to traditional converters. "More tags and labels are printed by commercial houses than by converters," Romano says. "And almost as much folding-carton printing is done by commercial printers as by converters."

Looking ahead at several package-printing and downstream converting

processes, Romano made various predictions. Among them:

- By 2010, two-thirds of all packaging graphics printed by ink-jet will be printed on flat-bed equipment rather than on roll-fed systems.
- RFID will replace bar codes. By 2010, 60 percent of RFIDs will be printed in-line with color graphics; growing to 95 percent by 2015.
- Twelve percent of package printing is now done with

**Overall Print Market to Grow 15 Percent**  
(four-year-period percent growth)

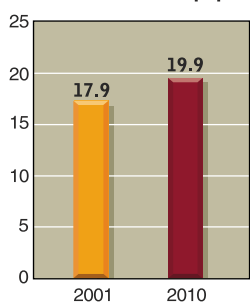


Source: Frank Romano

combination methods (flexo, screen, digital). This will grow to 34 percent.

- Ninety-nine percent of packaging production will be in-line (print, emboss, die-cut in one pass) by 2012.
- By 2010, 65 percent of die-cut material will be laser-cut.

**Printed Packaging Volume to Climb 11 percent by 2010**  
(millions of tons of paper)



Source: Frank Romano

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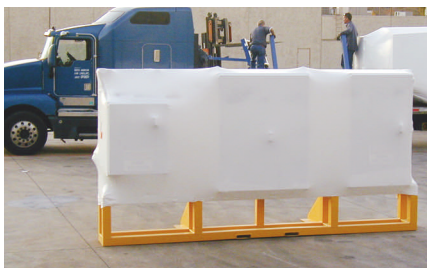


# new products materials

## Protective shrink film

Available in thicknesses ranging from 4 to 10 mils, ProtectWrap shrink film contains anti-corrosion inhibitors and UV protection. Conceived for applications requiring outdoor storage or transit, it protects products against dust, bugs and other occurrences in nature without becoming brittle and cracking from sun exposure, the co. reports. Easy to apply, the film shrinks around the product with the application of heat, cooling to a snug fit. It does not stick to the product, and it is said to not tear, even when punctured. It comes in rolls, in sizes up to 40×200 ft.

**Protective Packaging Corp.**, 800/945-2247.  
[www.protectivepackaging.net](http://www.protectivepackaging.net)



## Shrink film

Sytec® MVP is a new, crosslinked polyolefin shrink film that's engineered to shrink quickly and gently at low temperatures. Approved for food contact, as well as other, nonfood applications, it's suitable for wrapping flexible items such as paper goods and heat-sensitive products like chocolate and ice cream. This film is designed to perform on most types of L-bar sealers, high-speed side sealers and automatic f/f/s equipment with either thermal or static seal systems.

**Syfan USA**, 888/430-5394.  
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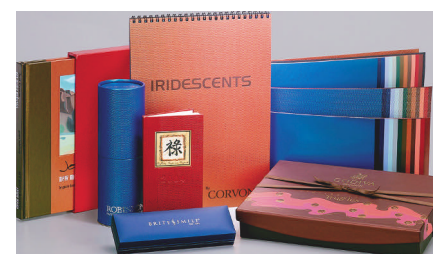
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## Tablet packaging

FamilyPak™ ODT is a child-resistant, senior-friendly packaging system developed for orally-disintegrating tablets and similar products. A carded blister-pak, it has a patented design that's based on dual peeling tabs, and it can be used with a range of unlaminated and paper-laminated foil structures.

**TestPak**, 973/887-4440.  
[www.testpak.com](http://www.testpak.com)



## Iridescent materials

Iridescent by Corvon® is a line of packaging materials that combines lustrous reflectivity with a unique look. Created through a proprietary process, it produces customizable material options for high-impact packaging, the co. says. The line is available in 13 standard colors, but custom matching can be accommodated. The material's coating, texture and finish can incorporate an array of glossy or matte finishes. The line is compatible with a variety of manufacturing and secondary decorating processes, including die-cutting, post-embossing, silk-screening and foil stamping. It offers scuff- and stain-resistance and is available in various weights.

**FiberMark**, 413/539-5273.  
[www.fibermark.com](http://www.fibermark.com)

## Cushioning material

BargerGard™ is a nonabrasive, flexible material that withstands sterilization and is environmentally friendly. An alternative to most foam and vinyl packaging, it's suitable for protecting medical devices. A soft and pliable urethane material, BargerGard offers a tensile strength twice that of vinyl, the co. reports, and its nonabrasive surface eliminates the concern of particulate in porous coatings. It can be thermoformed, die-cut and welded to accommodate most applications.

**Barger Packaging, Inc.**,  
574/536-8264.  
[www.bargerpackaging.com](http://www.bargerpackaging.com)



# sample it!



## Microwave containers

Smart Set Pro® PP microwave containers are suitable for use with food. They provide the durability and leak-resistance required for hot side dishes and complete meals, the co. says. Multisided black bases are matched with translucent lids that snap into place and stack for travel. Standard sizes are 16, 24, 32 and 48 oz, and the two-piece containers are also available in combo case packs. Samples are available from:

**Genpak LLC**, 800/626-6695.  
[www.genpak.com](http://www.genpak.com)

## Thermoformed containers

A clear, high-barrier, 32-oz, thermoformed oval, tapered tub offers clarity and is suitable for food applications such as snacks and cereals. Manufactured of

FDA-compliant materials and a proprietary, multilayer PP sheet, it provides both oxygen and moisture barrier characteristics. The tub is

completely recyclable and includes a flange that withstands heat-sealed membrane lidding. LDPE overcaps are available in a variety of colors. Samples are available from:

**Sonoco**, 843/383-3332.  
[www.sonoco.com](http://www.sonoco.com)



## Multipack bands

The co. offers a line of multipack bands that is suitable for use with "buy-one, get-one" and "gift with purchase" applications, among others. Special seasonal offerings or warehouse economy packs can be created from clear PVC film and can be ordered in cut bands for manual applications or in rollstock for high-speed machinery. Bands are available in clear or printed stock, in custom colors and/or printing. Samples are available from:

**Ameri-Seal, Inc.**, 800/220-7981.  
[www.ameri-seal.com](http://www.ameri-seal.com)

**Jars** Tuscany PET jars are available in 250- and 500-mL sizes and are suitable for a variety of personal care products, including creams, ointments, pastes and dry products. With neck finishes of 70/400 and 89/400, stock jars come in clear and opaque white, while the co.'s standard colors of dark green, cobalt blue and light amber are also available. Custom colors can be accommodated, and additional jar sizes are planned. Samples are available from:

**Alpha Packaging**, 314/646-1101.  
[www.alphap.com](http://www.alphap.com)



## Plastic tubing

Sani-Tech® STHT™-C laser-marked tubing is a platinum-cured, ultra-pure biopharmaceutical tubing with permanent laser marking that provides improved lot traceability without the risk of extractables or code removal, the co. reports. Standard marking includes the part number and lot code, and custom markings can be accommodated. The tubing is manufactured of silicone materials and is fully characterized, validated and tested to a variety of specifications, including USP Class VI criteria and European Pharmacopoeia 3.1.9, among others. Samples are available from:

**Saint-Gobain Performance Plastics Corp.**, 800/722-7106.  
[www.biopharm.saint-gobain.com](http://www.biopharm.saint-gobain.com)

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# new products equipment

## Tray sealers

The newest member of the Ross Inpack S Series of tray sealers, the Inpack S90 is designed to seal packs from preformed trays in both high- and low-oxygen formats. Capable of speeds up to 100 packs/min, the Inpack S90 can be changed over in about 15 min. The S Series can produce standard MAP packs, as well as top-formed packages and skin packages. All packages offer an extended shelf life and superior product presentation, the co. says.

**Reiser**, 781/821-1290.  
[www.reiser.com](http://www.reiser.com)



## Tabletop sealer

The Seal-n-Peel Model 20 tabletop sealer does not require an air compressor to operate the heater head. An all-electric unit that plugs into any 110-v wall socket, the sealer achieves speeds of 7 to 10 containers/min with either foil or nonfoil, precut lidding material and seals up to 4½ in. It has adjustable temperature and dwell settings to ensure secure, peelable and tamper-evident seals. Operator-friendly, the system is suitable for samples, lab testing, startup lines and light- to moderate-volume production.

**Wilpack Packaging**, 815/490-9235.  
[www.wilpackpackaging.com](http://www.wilpackpackaging.com)



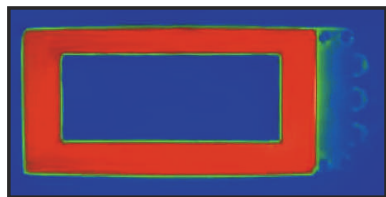
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## Pick-and-pack tray loader

Capable of loading 200-g flexible packages into trays, the six-axis, pick-and-place, multifunction tray loader has been designed around product infeed and handling operations. Products arrive on an infeed conveyor and are gripped, in pairs, by the six-axis robot. They're loaded to form batches of either 8 or 14 products/tray, lying flat or standing upright, respectively. Operations are carried out on four stations, with trays transferred to a bracket system that is suitable for food applications. The unit features an Edixia vision system that identifies and rejects nonconforming products before they are loaded into trays. Rejected products are deposited into a reject tray. The robot can handle products weighing just more than 13 lb, at speeds of up to 100 products/min. The loader's cantilever design facilitates access for maintenance.

**Cermex, Inc.**, 678/221-3570.  
[www.cermexinc.com](http://www.cermexinc.com)

## Graphic user interface

Supporting graphic characters with its WYSIWYG graphics display, a new handheld, graphic user interface (GUI) for the SmartLase® 100i Series of laser coders is simple to program and operate, the co. reports. The unit uses simple icons for operation and programming, minimizing the need for operator training. The interface supports graphic character sets and meets the coding needs of manufacturers who export products to countries requiring printed graphic characters. It provides the flexibility of a PC without the need for extra floorspace or startup and shutdown time. The interface can be easily stored and retrieved for quick access to text files for display and printing.

**Markem Corp.**, 866/263-4644.  
[www.markem.us](http://www.markem.us)





### Bottle unscrambler

The Necosort-III is a third-generation unscrambler that sorts a range of bottle types. The design consists of a rotating, vertical sorting hopper and only two moving parts. The hopper's vertical configuration significantly reduces the overall footprint of the system, the co. says, easing integration into tight production areas. Its two moving parts—the mechanism that sorts and moves all bottles to the discharge starwheel and the starwheel itself—facilitate low-maintenance requirements and minimize downtime. The system requires no reciprocating motions and has no complicated mechanisms or hard-to-adjust container handling parts. Tolerant of damaged bottles, the Necosort-III is designed for high-speed, high-uptime applications. It's engineered to provide a queue for bottles for each sorting pocket, and the drive system and other major components are easily accessible. A user-friendly touchscreen controller is standard.

**Nalbach Engineering Co., Inc.,**  
708/579-9100.  
[www.nalbach.com](http://www.nalbach.com)



### Analog sensor

The Hyde Park Virtu and Virtu18 ultrasonic sensors are now offered with analog output. The dual-mount, barrel-style sensors have a range of 2 to 20 in. and are available in voltage or current outputs. They feature UL-approved enclosures with ratings of NEMA 4X and IP67. CE-certified, the sensors are resistant to dust, high humidity, and most acids and bases, and they're suitable for high-pressure washdown. They also can withstand exposure to splashing food, caustic cleaning solutions and changing light conditions. Shielding and filtering make the encapsulated sensors immune to radiated or conducted energy, the co. reports.

**Schneider Electric Sensor Competency Center, a Schneider Electric co.,** 33(0) 1 41 29 70 00.  
[www.schneider-electric.com](http://www.schneider-electric.com)

**Vf/f/s bagger** The Advantage CM vf/f/s bagger is a heavy-duty system with a vibration-free construction. Suitable for products such as IQF proteins, vegetables, fish, French fries, candy and more, it features an open frame to facilitate complete sanitation. Changeover of the forming tube, end-seal jaws and back-seal apparatus can be completed quickly without tools. It's powered by an Allen-Bradley ControlLogix system.

**Triangle Packaging Machinery,** 800/621-4170.  
[www.trianglepackage.com](http://www.trianglepackage.com)



**Capless sealing system** The co.'s new, rotary solution for capless sealing is suitable for sealing containers without caps or prior to capping, lidding or overcapping. Its new coil design facilitates its compatibility with round, square, rectangular, oblong, metal, glass and plastic containers. Capless induction sealing provides users with an alternative to conduction systems. It provides instant startups and clean operation, and is said to be more forgiving of container imperfections and variations. It requires less power than conduction sealing.

**Enercon Industries Corp.,**  
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[www.enerconind.com](http://www.enerconind.com)



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# info showcase

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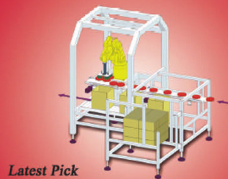
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Sabel Engineering Corporation has added a new Robotic top loading case packer, Model TL-10, to our line of case packers. This new packer reflects Sabel's heritage of versatility with a compact 9' x 8' footprint that includes the robotic packer and an integral case erector. A modular sealer section, utilizing either hot melt glue or pressure sensitive tape, can be added to the machine. The TL-10 is available in stainless or mild steel construction.

**Sabel Engineering Corporation**

[www.sabelengr.com](http://www.sabelengr.com)

Email: [sales@sabelengr.com](mailto:sales@sabelengr.com)

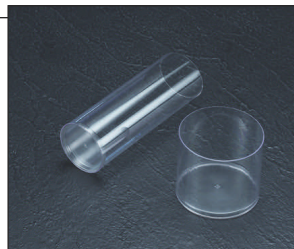
## Closed-End Clear Plastic Tubes

(Buffalo, N.Y.) - Caplugs recently introduced our new line of clear plastic tubing for packaging, storage, shipment, and novelty uses. After reviewing the multitude of uses with the ClearView® Tubing line, it was determined that for retail applications and many novelty packaging uses, a closed-end bottom was desired. Not only does this offer more viewing space on the tube, it also reduces assembly time, as only one cap is needed to close the tube.

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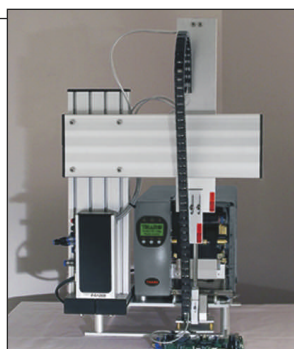
## New PA1200 Label Printer/Applicator

The new Tharo PA1200 Label Printer/Applicator is designed to be universally compatible with many brands of thermal transfer label printers. It can apply labels to the top or side of a product. The PA1200 can print and apply labels as small as .20" wide x .20" high, with a custom tamp pad, and as large as 4.5" wide x 8" high. For product information please visit: [www.tharo.com/products/pa1200/pa1200.htm](http://www.tharo.com/products/pa1200/pa1200.htm)

**Tharo Systems, Inc.**

800-878-6833, Fax: 330-225-0099

[sales@tharo.com](mailto:sales@tharo.com), [www.tharo.com](http://www.tharo.com)



## CVC's New Super Intelligent "Hawk" Labeler

The Model CVC-302 wrap around labeling system has an automatic bar code verification system and rejects any incorrect products or labels. Special features includes SelfSet™ automatic setup, Servo motors, automatic counters, touch screen controls and memory capacity for up to 50 job. The placement accuracy is up to  $\pm 1/32"$ . The "Hawk" is reliable, affordable and comes with a customer satisfaction guarantee.

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# info showcase



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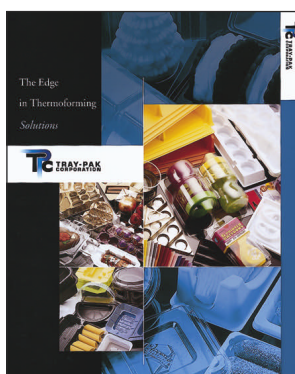
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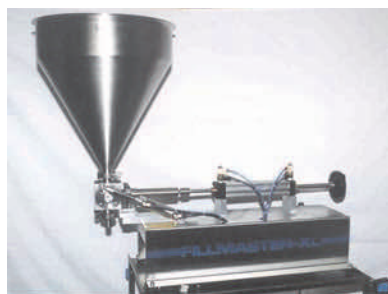
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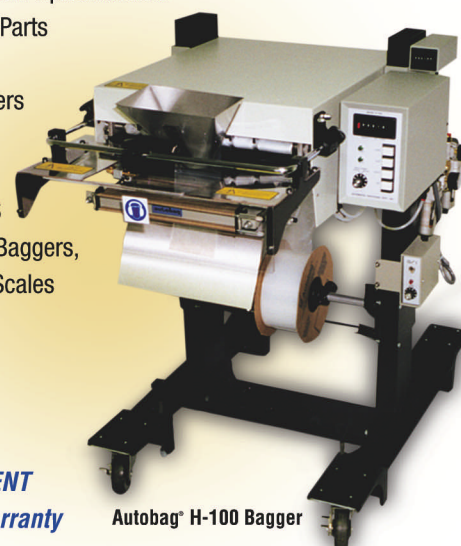
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# newsmakers

## MOVERS & SHAKERS

**Sonoco** names Jeffrey J. Stafford div. vp and gm of its Nashville, TN-based protective packaging div. Replacing Charles W. Coker Jr., who becomes div. vp and gm—flexible packaging, Stafford served most recently as gm of the co.'s Wire and Cable Reels business. Coker has held numerous corporate and division management, sales, marketing and staff positions.

**Klöckner Pentaplast Group** promotes Tom Goeke to group CEO and Michael Tubridy to president and COO of Klöckner Pentaplast/North and South America. Joachim Kreuzburg is appointed president and COO of Klöckner Pentaplast/Europe and Asia.

**FKI Logistex** appoints Ted Clucas president, FKI Logistex Manufacturing

Systems North America. He succeeds Dave Baker, who assumes the role of CFO. Andrew Smith is promoted to the position of managing director, European Warehouse, Distribution and Manufacturing Div. **ABB** names Bruce Wittbrodt senior vp and gm of Automation

Products, Low-Voltage Systems, North American Operations. Mike Plaster is named senior vp and gm of U.S. Operations for the Automation Products, Low-Voltage Products & Systems business.

**Adhesives Research, Inc.** promotes Brian Smith to the position of manager of environmental health & safety.

**Wepackit, Inc.** hires Rob Tiernay as Western Region sales manager. He joins the co. after spending 15 years with Loma Systems.

**Multivac, Inc.** hires Michael J. Lynch as director of sales for its Medical, Consumer and Industrial div.

## ON THE MOVE

**Smurfit-Stone Container Corp.** opens a new corrugated container plant in Milton, ON. The new facility employs 100 workers and spans 250,000 sq ft.

**Rexam PLC** acquires Hot Springs, AR-based Delta Plastics, Inc., a designer and manufacturer of plastic injection-molded jars and closures, for \$154 million.

**Hueck Foils, LLC** adds a 6,500-sq-ft expansion to its Blythewood, SC, production facility.

**Intl. Paper** relocates its global hq to Memphis, TN.

**Sidel, Inc.** moves the manufacturing of its Aidlin cap feeders to Bradenton, FL.

## HAPPENINGS

**Sato Corp.** joins the Intermec RFID Rapid Start Licensing Program, giving the co. access to Intermec's portfolio of patents that relate to RFID fixed and portable printers.

**Intralox**, with its U.S. operations based in Harahan, LA, just west of New Orleans, remains open for business as usual. The co.'s facility, which is located in the highest elevation in the area and is above sea level, was spared from the devastating effects of Hurricane Katrina. In a letter to customers dated Sept. 4, general manager Edel Blanks noted the co.'s readiness to accept immediate orders.

**Tray-Pak Corp.** celebrates its 30th year as a provider of custom thermoformed products and solutions.

**NatureWorks, LLC** institutes a large-volume buy-back program in North America for post-consumer PLA bottles in mixed plastic waste recycling streams.

**Specialty Blades, Inc.** agrees to purchase the blade business of Houston-based Ceramic technologies.

**PennWell Corp.** acquires CMM Intl., the premier trade show for the converting and package printing industry in North America.



Ted Clucas  
President, Mfg. Systems  
FKI Logistex

## INDUSTRY happenings

Visit [www.packagingdigest.com](http://www.packagingdigest.com) for more event information.

Oct. 20-21 PLGA 3rd Biennial Technical Conference. Adam's Mark Hotel, Charlotte, NC. 937/996-0328. [www.plga.com](http://www.plga.com)

Oct. 26-29 2005 Worldwide Food Expo '05. McCormick Place, Chicago. 703/934-5514. [www.worldwidefood.com](http://www.worldwidefood.com)

Oct. 26-29 2005 International Meat, Poultry & Seafood Convention (co-located with Worldwide Food Expo). McCormick Place, Chicago. 703/841-2400. [www.meatami.com](http://www.meatami.com)

Nov. 2-3 MidPak Exposition &

Conference. Minneapolis Convention Center, Minneapolis. 310/445-4200. [www.midpakshow.com](http://www.midpakshow.com)

Dec. 7-9 Labelexpo China 2005. Shanghai New Intl. Centre, Shanghai, China. 020 8846 2731. [www.labelexpo-china.com](http://www.labelexpo-china.com)

Dec. 13-16 Upakovka/Upak Italia 2005. ZAO Expocenter at Krasnaya Presnya, Moscow, Russia. 312/781-5180. [www.mdna.com](http://www.mdna.com)

Jan. 31-Feb. 2, 2006 WestPack 2006. Anaheim Convention Center, Anaheim, CA. 310/445-4200. [www.westpackshow.com](http://www.westpackshow.com)

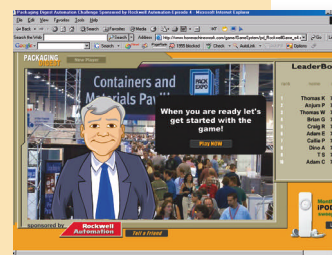
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### Online Exclusive: U.S. shipments are on the upswing for packaging machinery

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## newsbytes



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### Kids prefer plastic, survey says

In a survey of 308 school children in four markets, 94 percent said they preferred to drink milk from plastic bottles rather than paper cartons. A majority of students also indicated that the plastic bottle is easier to open and drink from and had a better flavor.

### Javalution takes 'coffee to go' to the next level

Javalution Coffee, maker of functional coffees, is taking the leap into the latest cutting-edge packaging technology first seen earlier this year with the Wolfgang Puck line of lattes in self-heating, single-serve containers.

### Food packaging film uses nanotechnology and cuts oxygen transmission by 50 percent

Kuraray Co. has developed a highly airtight food packaging film that limits the oxygen transmission volume to at least half the level of conventional films. The company used nanotechnology and distributed an inorganic substance in the film, which is used as a food retort pouch material. The substance interferes with the motion of oxygen molecules, thereby preventing their transmission.

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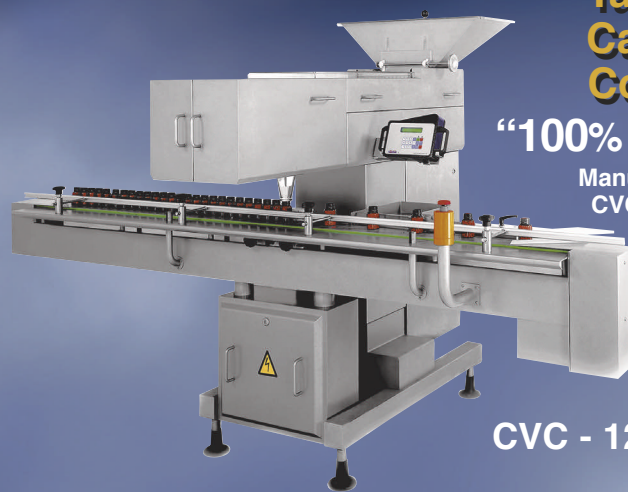
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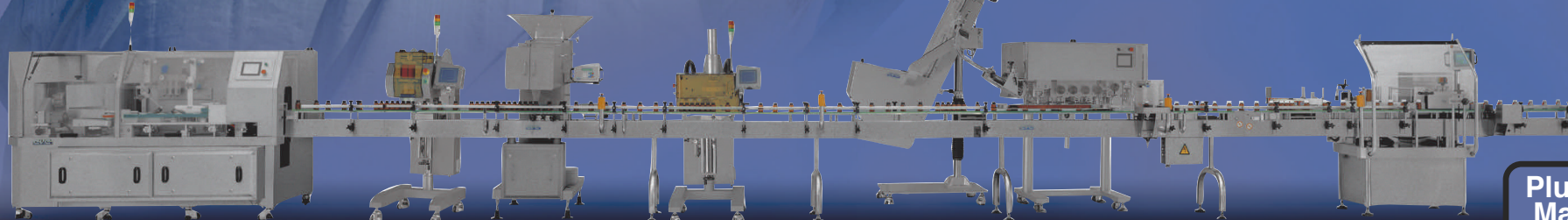
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