



## 29<sup>th</sup> DuPont Awards for Packaging Innovation

### DIAMOND AWARD

#### **Fritz™ Water Vest**

*Solutions Inc., USA*

Solutions Inc. was named a winner of the 29<sup>th</sup> DuPont Awards for Packaging Innovation, earning a Diamond Award for the Fritz™ Water Vest, a simple but appropriate packaging solution for water-transport issues in developing countries. In remote areas, accessing drinkable water requires people—most often women and children—to spend many hours a day carrying heavy, unhygienic and non-ergonomic containers on their head and shoulders. This causes significant physical stress on their bodies over time and presents serious risk of water contamination. The Fritz™ Water Vest allows users to carry up to 20 pounds of water safely and hygienically, with the weight evenly distributed across the chest and back. It's an innovative application of modern packaging technology that solves water-access problems for at-risk populations.

The vest innovatively incorporates relatively new materials to accomplish two key, functional needs. The multi-layer nylon structure provides a robust material suitable for rough terrain and multiple uses in dry and rugged environments. The proprietary lamination uses several layers for functional protection and allows for quick heat sealing during manufacturing. In addition, an additive included in the material inhibits the growth of mold, mildew and odors. Together, these properties provide a robust, hygienic and reusable water-carrying and storage pouch. The Fritz™ Water Vest is an out-of-the-box solution for a significant global problem.

### DIAMOND FINALIST AWARD

#### **Compostable "Pizza Pod"**

*Zume Pizza, USA*

Zume Pizza has been named a Diamond Finalist Award Winner in the DuPont Awards for Packaging Innovation for their compostable "Pizza Pod," which keeps pizza crisp and warm for longer periods. Most pizzas are delivered in square, cardboard boxes that consumers have accepted as the industry standard but that are prone to collecting grease and moisture. The Pizza Pod is optimized to absorb maximum oil and moisture, so pizzas stay hot and crispy long after leaving the oven. Composed of 100%

sustainably farmed sugarcane fiber, the Pizza Pod is tree-free, compostable, and biodegradable, making it the most sustainable pizza box on the market. It also doubles as an elevated serving tray for the product.

The innovative container allows pizza shop employees to assemble boxes with less time and labor, and requires less shelf space compared to traditional paperboard boxes. Zume Pizza's Pizza Pod also sustains brand equity, with the branding clearly presented up to the point of consumption. The design considerations given across the full lifecycle of the package—from sourcing, to retail to consumer experience—were impressive.

### **Cryovac® OptiDure™ Abuse Bag**

*Sealed Air, USA*

The Cryovac® OptiDure™ Abuse Bag has been named a Diamond Finalist Award Winner in the 29<sup>th</sup> DuPont Awards for Packaging Innovation. This package represents a significant breakthrough in vacuum packaging for protein, where there is a typical industry leaker rate of three percent and a 1% reduction in leaker rates could eliminate \$140 million in food waste globally. The OptiDure™ Abuse Bag's enhanced sealing capability enables improved seal integrity through contamination and wrinkles, helping facilitate faster throughput, increase production efficiency, and reduce product and package waste. The high transparency, gloss and two-sided printing ability give the package an aesthetically pleasing presentation to consumers. The Cryovac® OptiDure™ Abuse Bag highlights collaboration across the value chain to develop solutions for industry problems.

### **Light-weight sustainable agrochemical auto-stackable 15L PET containers**

*Dow AgroSciences, Germany*

Dow AgroSciences' light-weight, sustainable, agrochemical, auto-stackable, 15L PET containers have been named a Diamond Finalist Award Winner in the DuPont Awards for Packaging Innovation. The containers provide considerable functionality in stacking and distribution and allow greater ease of product dispensing than traditional containers. Dow AgroSciences took many design requirements into consideration and integrated them with stackability and pourability to enable added functionality to the lightweight containers. Addressing the whole value chain, Dow AgroSciences considered the distribution chain, end user, and the end of life for the package.

The containers' added functionalities increase safety, improve usage and reduce their environmental footprint. Reducing the need for added packaging for transport, the upper safety top adds strong stability when the containers are stacked on top of each other, allowing them to be stacked up to three containers high on a pallet without the need for an outer carton case. A large, centered neck compatible with closed-transfer systems and bore seal caps minimizes operator exposure and allows for easier pouring. The PET body is blown from a pre-form to allow for on-demand production, minimizing the need for transportation and storage of empty bottles before filling. Lightweight construction, improved

logistics, and the elimination of the carton case reduce the overall environmental impact made by this packaging system.

### **MGI JETvarnish 3D Digital Decoration Process for Folding Cartons & Labels from Marris Printing & Packaging**

*MGI, USA*

MGI JETvarnish 3D Digital Print Decoration Process for Folding Cartons & Labels has earned a Diamond Finalist Award in the DuPont Awards for Packaging Innovation. This technology allows companies to achieve a premium branded look for their folding cartons and labels without the time, cost and expense of using traditional dies, screens or plates. MGI has simplified the production decoration process for manufacturers, printers and converters. The JETvarnish 3D solution dramatically increases the speed and ability of consumer and commercial firms to bring new products to market at a lower cost. The workstation software offers rapid prototyping for new product launches and full high-volume production management.

The MGI innovation achieves 2D, 3D and Variable Foil Embossing on cartons and labels on a single line. The technology allows printers, converters and finishers to produce luxurious, eye-catching special effects with variable data personalization and customized short-runs faster and much less expensively than other printing technologies.

MGI's innovative new system is a cost-effective, fully digital process that eliminates the time, waste and limitations of traditional foiling, UV screen and embossing methods. Additionally, MGI has also created a unique hologram-based, digital finishing security process. These variable data holograms are both decorative and functional as secure, anti-counterfeiting authentication imprints.

For brand owners who are looking for more multi-sensory packaging to attract consumers at the point of sale, MGI has created the next level of digital print finishing technology.

### **Plantic™ R: Ultra-high barrier renewable and recyclable packaging material**

*Kuraray (Plantic Technologies Ltd.), Australia*

Plantic™ R, a bio-based, renewable and recyclable plastic material with ultra-high barrier and ideal for barrier packaging applications, was named a Diamond Finalist Award Winner in the DuPont Awards for Packaging Innovation. The technology combines the best of recyclable materials (Polyethylene Terephthalate (PET)) and Plantic's bio based ultra-high barrier material, which dramatically increases the shelf life of packaged meats. Plantic™ R is a multilayer film made from thin layers of PET on a core layer of renewably sourced, high barrier Plantic™ HP. The PET provides the moisture and water vapor barrier, and the Plantic™ HP core provides the oxygen and gas barrier. In recycling, where typical multilayer films

contaminate PET recycling streams, the solubility and biodegradability of the Plantic™ HP barrier layer will allow that layer to wash away and biodegrade in the recycling process, while the PET is recovered.

In addition to being renewable and recyclable, the Plantic™ R packaging requires approximately half of the energy to produce than traditional fossil fuel plastics. Plantic™ R's on-pack communication provides easy-to-understand directions for disposing the tray and the film, since both are recyclable. Plantic™ enables retailers and brand owners to achieve their sustainability goals without compromising product quality, shelf life or performance.

## **GOLD AWARD**

### **Design realization with breakthrough technology enhancing productivity and less footprint**

*AMOREPACIFIC, South Korea*

AMOREPACIFIC's Prime Reserve jar has won a Gold Award in the DuPont Awards for Packaging Innovation. AMOREPACIFIC designed the cream jar with the consumer experience in mind. The elegant design of the cream jar provides consumers the ultimate indulgence and is an attractive addition to the consumers' personal care product display in the home. Made of ten different components, this molded "jar within a jar" conveys luxury with its remarkable feel and weight. Thanks to AMOREPACIFIC's technology, product manufacturers can decorate the outer jars while leaving the inner jar untouched and, if the formulation of the product is ever altered, the outer jar can still remain the same.

The previous package had the same water ripple effect but was made using the CNC shaving process. By using the new injection molding process, AMOREPACIFIC was able to achieve the same extraordinary effect with a 76% reduction in material waste. This package was a great success in molding advancement, consumer indulgence and sustainability, going well beyond what was expected to deliver a high level of premiumness and distinctiveness.

### **Ice Cream Mini Cup 140ml: Closure PP In Mold Label with spoon inside, Cardboard Cup and Alu/PE sealing**

*FRONERI, Brazil*

FRONERI Brazil has earned a Gold Award in the DuPont Awards for Packaging Innovation for their Ice Cream Mini Cup. The clever cup is the combination of a suite of technologies, including thin wall thickness, fast cycle time injection molding, and in-mold labeling for decoration. It is a packaging solution designed for the on-the-go consumer. The plastic spoon molded into the lid of the ice cream mini cup is an innovative solution improvement to those currently available. This approach is unique among ice cream cups that include a spoon.

Demonstrating a strong commitment to responsible packaging, FRONERI did not add another film layer to separate the spoon and did not use additional materials for the spoon. The smart package design repurposed 26% of the whole lid weight to be formed into the detachable spoon. Consumers can close the lid even after the spoon is removed. The Ice Cream Mini Cup showed increased production efficiency, a commitment to responsibility, and a clever use of materials.

### **Insignia Freshtag**

*Insignia Technologies, UK*

Insignia Technologies won a Gold Award in the 29th DuPont Awards for Packaging Innovation for their Insignia Freshtag. This dynamic shelf-life indicator tag is designed to change color over a pre-set number of days at a prescribed temperature. It also changes color faster when the temperature increases. This gives consumers a more realistic view of the actual life of the product based on the different conditions to which it has been subjected.

Insignia took a complex and confusing component of packaging and turned it into an overly intuitive food waste reduction tool. The Insignia Freshtag takes the confusion out of sell-by and fresh-by dates, dramatically upgrading the consumer experience. It demonstrates a clever use of materials by allowing consumers to dial into the life cycle of the product, helping to take the confusion out of the "sell by" and "eat by" dates. The Insignia Freshtag can play a significant role in helping people reduce food waste as well as potentially allowing manufacturers to extend shelf life.

### **MosquitoPaQ™ OUTDOOR ZONE no-bite SPATIAL Repellent Pouch**

*PPI Technologies GROUP, USA*

The MosquitoPaQ™ OUTDOOR ZONE no-bite SPATIAL Repellent has earned a Gold Award in the DuPont Awards for Packaging Innovation. The package demonstrated a clever use of a frangible sealed pouch for this new application of mosquito repellent. The pouch allows consumers to mix and activate the dry and wet chemicals at the time of use, without having to pour out or touch the contents. After activation, consumers can simply hang the pouch on a tree and leave it alone as the repellent is released over the course of fifteen days. With a holistic focus on customers, the Penta5 USA division also included graphics on the pouch itself that teach consumers how to use this innovative package. This package is a great example of an application of an existing technology into a new category - lawn and garden!

### **New packaging combining tradition and science**

*CJ Cheiljedang, South Korea*

The Bibigo kimchi jar that combines tradition and science from CJ Cheiljedang won a Gold Award in the 29th DuPont Awards for Packaging Innovation. This kimchi jar is a real breakthrough in terms of packaging science and innovation. It marries a very traditional product with contemporary, high-tech packaging. A clever incorporation of multiple existing technologies from different markets (including

channeled lids and membrane with valve), the new kimchi jar achieves perfect sealing, gas emission, and fermentation. The gas channels in the lid allow the gas to vent through the closed lid as the product continues to ferment inside the jar. The pressboard was designed with the identification of the shape of the traditional Korean style, and the ingredients were pressed to suppress yeast production and to maintain the taste for a long time. It is designed and developed to have a push plate seating structure and a broth prevention function when pulling out.

The modern jar has a connection to the past, enhancing the consumer experience by preserving the traditional look and feel of the beloved ceramic kimchi jar. While it preserves the shape of the traditional jar, it has all the advantages of advanced materials and technology, decoration techniques, and good ergonomics of the cap. This remarkable integration of many known technologies together in one package is especially innovative because it allows CJ Cheiljedang to use plastic to contain a highly aromatic product.

### **Peelfit™ Can**

*CROWN Food Europe, France*

CROWN Food Europe's Peelfit™ Can has won a Gold Award in the 29<sup>th</sup> DuPont Awards for Packaging Innovation for their easy-open foil sealed can. The Peelfit™ Can eliminates the need for a rigid steel ring typically required with double seaming applications. CROWN Food Europe was able to seal a peelable foil directly to the can body. Traditional steel rings had to be stamped out and recycled – this new innovation eliminates that need, easing manufacturing and enhancing sustainability. The Peelfit™ Can's major reduction to this component of the package enabled a 16% reduction in can weight and 32% reduction in energy usage while continuing to deliver 100% protection against oxygen, gas and moisture. The Peelfit™ Can also can increase convenience thanks to the possibility to create a compartment on the top. Peelfit™ is an excellent example of how companies can develop more sustainable packaging without compromising on performance.

### **PepsiCo's Granola Goes Nuts Cross – Directional Laser Scored Flow Wrapper**

*PepsiCo and Printpack, USA*

PepsiCo's Granola Goes Nuts Cross – Directional Laser Scored Flow Wrapper has earned a Gold Award in the DuPont Awards for Packaging Innovation for its innovative incorporation of a unique, easy-open package that also allows users to keep their hands clean during on-the-go use. Through extensive research, consumers continually articulated their frustration with current 'bar' opening: common frustrations included that it was both difficult and messy. The joint development between PepsiCo and Printpack led to an innovative idea and application. The cross-directional, laser-scored opening feature on the horizontal flow wrapper provides a controlled, easy opening of the pack. The clever design keeps consumers from creating litter when opening, with a creative configuration of the technology to keep the wrapper together. The laser scoring applied above the metalized layer preserves the barrier properties and ensures the shelf life of the product. Despite the materials' inherent properties to track and tear in the machine direction, this technical advancement allows for controlled tearing in the cross

direction. Through proper design of material, laser specifications, and dieline layout, this wrapper technology is capable of running on the industry's fastest machines without modifications or loss of production efficiencies. Granola Goes Nuts wrapper technology incorporates the consumers' needs for easy open and improves sanitation for on-the-go consumption.

### **Skol Beats Secret – Red Glass**

*Owens Illinois, Brazil*

Owens Illinois' Skol Beats Secret – Red Glass beer bottles has won a Gold Award in the 29<sup>th</sup> DuPont Award for Packaging Innovation for excellence in enhanced user experience and technological advancement. Advancing product branding in its target market, Brazil – the third largest beer distributing market in the world—Skol Beats Secret has introduced the first red glass bottle for beverages to be mass-produced in the world. The dramatic color helps provide differentiation from other alcoholic beverages at the point of sale and provides merchandising appeal to its target consumers, the millennials, who are looking for a new experience. The red color reinforces the flavor profile of the flavored beer, while also offering UV protection to the product. The UV protection offered by the red glass is similar to the UV protection of the typically-used amber glass beer bottles, extending the shelf-life of the product.

### **Vento™: Advanced coffee packaging with integrated degassing system**

*Amtor Flexibles, Switzerland*

The Vento™ advanced coffee packaging with integrated degassing system has earned Amtor Flexibles a Gold Award in the DuPont Awards for Packaging Innovation. Amtor recognized the need to improve the traditional systems for degassing freshly roasted coffee from bags. Vento™ is the only coffee packaging system delivered to roasters with the degassing system already applied in the laminate. Traditionally, roasters have to apply rigid valves to coffee bags during packaging to allow carbon dioxide (CO<sub>2</sub>) to escape from the bags. The Vento™ coffee packaging system uses a low-pressure, one-way, flexible valve integrated into the laminate of the coffee bag instead of the commonly used rigid valve for degassing. As coffee starts to degas, the pressure inside pushes a small venting layer open allowing the CO<sub>2</sub> to escape. As soon as degassing is complete, the venting layer returns to its original position, preventing oxygen from entering and keeping the coffee fresh. The simplified packaging process runs on all packaging machines, eliminating the need for new equipment investment by producers, thereby facilitating adoption. Since operators do not have to put the rigid valve on, Vento™ helps save on time and improves operating efficiency. Its improved sustainability profile includes a six percent reduction in the carbon footprint over traditional systems and a 10 percent weight reduction.

## **SILVER AWARD**

### **Direct Object Printing for Full Package Decoration**

*Plastipak Packaging, Inc., USA*

Plastipak Packaging, Inc. has received a Silver Award in the DuPont Awards for Packaging Innovation for their Direct Object Printing for Full Package Decoration. Direct Object Printing takes technology that typically prints to a label substrate and instead prints directly to the package, eliminating the need for label materials. Packages can be decorated in-line at production, simplifying the supply chain and reducing the time to market. This technology utilizes white-plus process coloring printing to deliver a wide color gamut and brilliant graphics for full, state-of-the-art decoration of a round package. Plastipak's technology offers unlimited graphic design capabilities to promote the brand, opening up a new perspective in marketing. With the ability to decorate the complete package, this breakthrough technology eliminates the need for label substrates reduces landfill scrap, as well as reducing the time to market for new designs. Receiving recognition from the Association of Plastic Recyclers for recyclability, this environmentally friendly process offers unlimited graphic design capabilities to promote the brand, share product improvements, and drive seasonal or regional promotions.

### **Farmacy Beauty – Honey Potion Renewing Antioxidant Hydration Mask**

*VP+C, USA*

Farmacy Beauty's Honey Potion Renewing Antioxidant Hydration Mask package won a Silver Award in the DuPont Awards for Packaging Innovation. The package enhances the user experience because of the outstanding execution of the package design in telling the brand story. The origami-like box unfolds to reveal the brand story inside, while the hand-drawn illustrations on the package help to tell a holistic story about the brand. The honey comb-shaped glass jar highlights the honey color of the product and contains a magnetic lid that holds the steel spatula to the wooden lid.

### **“FUJI • M • O”, Flexible packaging for the inkjet-gravure hybrid printing machine**

*FUJI TOKUSHU SHIGYO CO., LTD, Japan*

FUJI's “FUJI • M • O”, Flexible packaging for the inkjet-gravure hybrid printing machine won a Silver Award in the 29<sup>th</sup> DuPont Awards for Packaging Innovation. The FUJI • M • O is a hybrid printing press that combines full-color inkjet printing and water-based white photogravure printing to achieve vibrant, full-color and white color printing on transparent plastic film. By combining water-based photogravure printing traditionally used solely for white printing, with inkjet printing for full-color, FUJI TOKUSHU SHIGYO CO achieved a breakthrough that solves challenges associated with white color inkjet printing. For this process, FUJI TOKUSHU SHIGYO CO also developed new inkjet ink with high-adhesion strength to plastic film, as well as a white, water-based photogravure ink that adheres to inkjet ink and reduces

the quantity of organic solvent by 95%. This innovation was a remarkable accomplishment that required great collaboration among the ink, printing machine manufacturers, and FUJI TOKUSHU SHIGYO CO.

### **How2Recycle®, the next generation recycling label for packaging**

*GreenBlue, USA*

GreenBlue earned a Silver Award in the 29th DuPont Awards for Packaging Innovation for How2Recycle®, the next-generation recycling label for packaging. How2Recycle® is the first universal recycling labeling system that was designed specifically for consumers. It fulfills brands' need to simplify the understanding of packaging recyclability. With the How2Recycle® label, consumers can easily understand the recyclability of each package, how to prepare each component of the package for recycling, and if a component is not recyclable. Not only is How2Recycle® changing the recycling behavior of consumers, but it is also catalyzing design changes in packaging. The How2Recycle® program is encouraging member companies to look at their packaging in a new way and think about how they might design their packages to be more recyclable. Three quarters (76%) of respondents to a poll conducted by GreenBlue have a more positive impression of a company that uses How2Recycle®.

### **Kellogg's® Nutri-Grain® Bakery Delights Tactile Packaging**

*Bemis Company, Inc., USA*

Bemis has earned a Silver Award in the DuPont Awards for Packaging Innovation for their work on Kellogg's® Nutri-Grain® Bakery Delights Tactile Packaging. Kellogg's® Nutri-Grain® Bakery Delights package features textured film to represent a bakery treat that looks like its wrapped in kraft paper and twine. To uniquely capture the attention of millennial shoppers, the package is designed to look like paper, feel like paper, and even crinkle and crunch like paper. The thin-gauge flow wrap film is a highly practical, responsible alternative to paper laminates, extending the breakfast cake's shelf life and appeal, while meeting brand owners' need for packaging speed, hermetic seals and product protection.

### **Lightweight 20-ounce Vitaminwater® container with PowerStrap™ and ActiveHinge™ technologies**

*Amcors Rigid Plastics, USA*

The lightweight 20-ounce **Vitaminwater®** container with PowerStrap™ and ActiveHinge™ technologies from Amcor Rigid Plastics has won a Silver Award in the DuPont Awards for Packaging Innovation. The technology enables a 15 percent weight reduction from an earlier **Vitaminwater®** bottle with enhanced vacuum absorption capabilities compared to conventional bases used for hot-fill containers. Amcor Rigid Plastics' unique PowerStrap™ technology offers enhanced side compression properties for improved line handling as well as vertical load-bearing properties for stacking.

The new **Vitaminwater®** bottle design provides better stacking strength at lighter weights, improved label application and stronger packaging performance, including labeling and distribution across all container sizes. The technology also offers consumers a more attractive rigid plastic container and

comfortable grip. The **Vitaminwater**<sup>®</sup> bottle is made of 100 percent recyclable PET and features PowerStrap<sup>™</sup> and ActiveHinge<sup>™</sup> technologies that are scalable to all container sizes.