

To address rising market demand, Borouge is enhancing polyethylene and polypropylene's core competencies in lamination film with its unique Borstar process technology

The recent trend in packaging per-se is the shift from cans and bottles to laminated flexible packaging regardless of whether it is food or non food applications. It is expected that the use of linear low density polyethylene (LLDPE) as well as blown PP will increase phenomenally in lamination. This combination improved stiffness at thinner gauges and with comparable mechanical as well as better sealing properties, the process allows an increase in packaging speed.

To meet the growing demand of polyolefins in flexible film packaging, Borouge (www.borouge.com), Borealis' (www.borealis-group.com) joint venture with Abu Dhabi National Oil Company, will expand its polyolefins operations with Borouge 2 coming on stream in the second half of 2010 boosting Borouge's capacity to 2 million tonnes from its current 0.6 million tonnes worth of PE and PP.

The fundamental feature of the Borstar technology marries the better features of various conventional PE into one unique product family. As a result, Borstar enhanced PE is a bimodal PE that is consistent not only in quality and low in gels, as with Borstar PP - which is paramount in lamination film - but is also easy to process in terms of having great bubble stability in the blown film extrusion. Borstar enhanced PE or PP yield significantly improved mechanicals in terms of puncture, dart impact and tensile properties over competitive products.

Moreover, it has been well documented that the bimodality of the Borstar enhanced PE has outstanding environmental stress crack resistance (ESCR) properties for a PE; thus containment usage for various chemicals for non food packaging such as detergents, washing lotions, bath agents, spices, are of little concern. All PP's have inherently good ESCR performance.

Increased value with Borstar

With Borstar's technology of controlled comonomer distribution, this gives rise to good organoleptics and improved low temperature properties compared to traditional

Laminate with greater success

PEs and can be used in a myriad of lamination application requiring low temperature. Preservation of taste and quality is crucial in food packaging particularly for drinks, sauces and condiments, because these have delicate notes in taste.

Because the Borstar enhanced PE gives an inherent matt look, there is no necessity for a slip and additive formulated package since achieving a low COF is understood. The absence of slip additive in Borstar enhanced PE gives an additional benefit in lamination film as there is no cause for concern over slip migration which interferes with adhesive during the lamination process which can result in either lower adhesion or de-lamination.

Contrary to some belief, the matt look of Borstar enhanced PE in fact gives converters more freedom in choice of packaging display for further differentiation. For instance, production cost can be reduced by 20% if a matt look is desired since a matt look can be

achieved if the printing ink is changed but this will typically increase converter's cost. Thus, instead of running up production cost, the converter can select to pass some or all this cost savings to the end-user.

A blend of Borstar FB2310 gives higher hot tack performance as well as a broader sealing window compared to competitive LLDPEs. A higher hot tack performance allows for faster packaging speed since hot tack is a measurement of the strength of the seal when it is hot. However, it is also crucial that the sealing window is wide so that the film can tolerate the idiosyncrasies of sealing equipments.

Similarly, the same can be said when Borstar PP is used. In addition, formulating Borstar PP - Borpact BC918CF or Borclear RB707CF, into blown film results in another benefit of improved heat resistance. This prevents film burn through as well as easier conversion since films do not stick to the sealing

High barrier compostable packaging film increases chocolate's shelf life



Innovia Films' (www.innoviafilms.com) high barrier compostable material, NatureFlex NK, has been selected by Amigos to wrap its new range of Ananda fair trade, organic chocolate.

Jeroen Kruff, the owner of Amigos, states that, "Amigos is a long time distributor of organic products. We appreciate not only the ecological aspects of the ingredients, but were also looking at packaging to complement this. That is why we started to look at more environmentally friendly options, which led us to Innovia films and NatureFlex."

"Supplying Amigos with NatureFlex NK to package their Ananda Chocolate is a win-win-win situation, as the transparent film offers high barrier, increases product shelf life and is certified compostable. The NatureFlex range continues to develop fast, driven by both consumer demand for greener alternatives - more sustainable packaging -, and by niche companies like Amigos and large brand owners alike who see the differentiation and environmental benefits," enthuses Alexander van 't Riet, Innovia Films' global sales & marketing director.

bars of the form-fill-seal machines. Ultimately, it gives converters a better looking package, lower defects and thus increased profits.

Amidst rising energy costs, converters will be glad to know that usage of Borstar enhanced PE utilises less power to achieve similar surface tension after corona treatment. Aging of the treated film also results in a longer lasting corona treated film with Borstar enhanced PE. Coupled together with its ability to be a stiff yet strong film, this makes it easy for handling through printing, lamination and slitting. These lamination films, typically of 30-120µm must be easily printable since this results in a higher consumer appeal.

The most important demands of laminating films are good optical properties and sealability in terms of hot tack, seal strength upon cooling as well as a broad operating window. In today's competitive environment, it is an additional bonus for converters to reduce their operation cost by lower usage of energy during corona treatment as well as ability in obtaining increased output without additional capital outlay. There is no question that usage of Borstar enhanced PE and PP give converters a cutting edge over competition.

Sirane's Crisp It takes food service packaging to a new level

Sirane (www.sirane.com) has come up with a radical new design for food service packaging using a new type of microwave susceptor material that can be shaped in various formats. Jeremy Haydn Davies, Sirane sales director says that the new Crisp it Light product is already wowing the market both for its lightweight appeal and for its amazing in-transit cook-in performance abilities.

Sirane's next generation version of its Crisp It packaging is an integrated two layer film that can be shaped into more or less any kind of package to suit the microwaveable cooking application of the food. Additionally, the film can also be used to flow-wrap foodstuffs, so eliminating the need for additional outer packaging. This new formula also means that direct printing onto the film is easy - thus removing the need for a label.

"The accent," says Davies "is on what the food service market desires; lightweight and functional and ideal for busy take-aways, airlines and food-to-go outlets. Great also for fast food needs in the office or home, too."



Packaging for the international flower business

Launched as Flower-Fresh last year the flower pouch is manufactured from Sirane's trademarked absorbent packaging material called Resolve. Sandra Evans, Sirane's sales manager notes that "the past year has seen us really working with the users and the flower trade to create a compostable and absorbent product that not only gives real functional improvement over alternatives but that also looks terrific as well." She adds that "we shall be showing Flower-Fresh as part of our stall offering at the Fruit Logistical exhibition in Berlin next February - since we expect a good deal of international interest."

Sirane's Flower-fresh pouches contain super-absorbent materials which maintain a cool reservoir of water around the flower stems. Sirane currently supplies Flower-Fresh in compostable and (standard) non-compostable versions. The packaging product has a key role in ensuring product integrity in postal deliveries and for transit bouquets that are delivered to retailers, thus ensuring the freshness, quality and leak-proofness of the bouquet. The current design can hold up to 200ml of water.

The compostable version of Flower-Fresh is made from natural, plant-based compostable materials which can be safely discarded with the flowers themselves and will

completely bio-degrade completely within approximately nine weeks. Flower-fresh can be produced in any colour - green, unsurprisingly being the most popular with customers - but black being a popular alternative.

Sandra Evans says that "our intention with this work is to make Flower-Fresh the mainstream international packaging item that it deserves to be - with growers, retailers and consumers. At the time of launch we saw a clear need in the international flower business for an environmental friendly, absorbent pouch to keep cut flowers fresher for longer. That need is still there today - and Flower-fresh fills it."



Constant improvement

The market for PET bottles is growing significantly, however, competition is intense. To remain competitive in the global market, improved technology and successful innovation are crucial for plastic bottle manufacturers. **APN** reviews some of the latest developments

Croda Polymer Additives (www.croda.com) has announced the launch of a new PET slip concentrate under its Atme tradename. This active component is claimed to reduce surface friction by up to 60%, leading to a range of product and efficiency improvements, and significantly reduced mould release force. It can be used to improve product quality and process efficiency in both PET film and sheet, and also in injection moulding, without having any adverse effect on PET colour or clarity.

James Lawrence, Croda's sales and marketing manager explains further: "This is an exciting new addition to our Atmer range that alleviates the problems associated with adding IncoMax 100 in its natural physical form, which is a low melting point solid.

Atmer 7510 is supplied as a free-flowing pellet which means it is very easy to dose as its physical form and melting point closely match the base polymer. It can be added directly to the polymer or alongside masterbatch in conventional dosing systems." Target applications include food packaging, beverage and cosmetic bottles and thermoformed trays and tubs.

New hot-fill bottle technology

Likewise, Amcor PET Packaging (www.amcor.com) has unveiled a new patented hot-fill bottle technology that significantly reduces weight and cost while offering better performance than competitive hot-fill alternatives. The technology is used for the first time in a 16-oz PET container for Purity Organic, a supplier of organic fruit juices and functional drinks. According to Paul Geffner, founder of the California organic beverage company, Purity Organic's 16-oz PET bottles use 20% less material and cost 20% less than its previous PET containers.

Amcor's innovative technique makes use of horizontal hinges which exhibit vertical movement and absorb the vacuum as the liquid cools. Amcor engineer Pankaj Kumar

claims that the result is an attractive appearance and feels that approaches that of a straight wall container. The active hinges provide high radial stiffness and give the 31-g container excellent top load strength – almost 30% better than competitive hot-fill bottles.

The active hinge bottle also significantly enhances aesthetics, according to Geffner. "The label fits more securely and the bottle has a better feel in the hand; overall we have a more integrated product," explains Geffner.

Optimum shape and function

The Kavodrink bottle family has a new mem-

ber: the 750ml Kavodrink bottle. It completes the bottle family Kavodrink 500, 750 and 1000ml made by Greiner Packaging (www.greiner-gpi.com). "The benefit of the new Kavodrink bottle with Kavocap closure is its easy handling. It can be opened and closed with one hand", explains Günter Ausserwöger, head of Division Kavodrink at Greiner Packaging.

Its wide bottle neck allows for comfortable drinking and easy refilling. The bottle can be manufactured using various materials and different colours. Its transparent Kavocap closure is made of polypropylene. It convinces through its robustness and shape retention.



The innovative, refillable water bottles convince through easy cleaning – even in the dish washer – and through high quality and long service life

Bericap's doubleseal supershorty crown O₂S for beer in PET introduced in the Chinese market successfully

Starting some years back in Germany; several countries, mainly in Eastern Europe, have meanwhile introduced beer in PET bottles. To secure the quality of the beer, Bericap (www.bericap.com) introduced an oxygen scavenger, which absorbed the oxygen in the headspace of the PET beer bottle in Europe. This was an important development as to absorb the oxygen was an important step to secure the quality of the beer during its shelf life.

Bericap introduced the doubleseal supershorty crown O₂ scavenger closure suitable for the neck PCO 1881 for beer in PET first in the German market. Outside Europe it is now the Chinese market, which converts to the PCO 1881 neck and to Bericap's doubleseal supershorty crown O₂ Scavenger.

Martens China together with his joint venture partner FEG and the collaborator Suntory from Japan have set up a new filling line of PCO 1881 and started filling beer in a PET barrier bottles using Bericap's doubleseal supershorty crown O₂ Scavenger. First bottles are already available in the market.

Bericap has developed a crown cork design which looks very similar to the traditional beer crown cork and therefore keeps the product integrity of beer

