PFFCA Newsletter
Paper, Film & Foil Converters' Association
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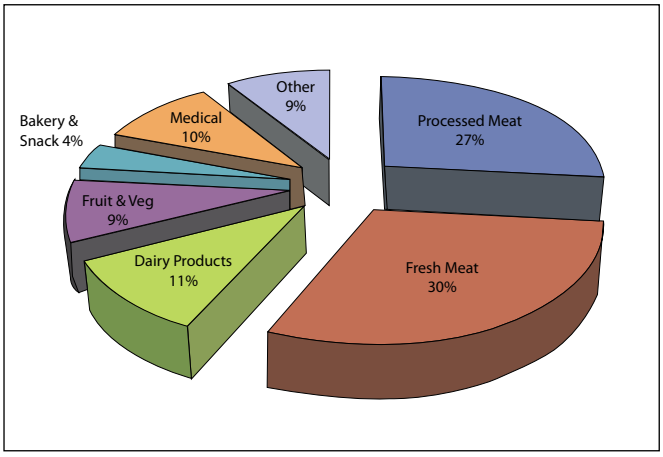
Recycling in Spain



Clear Film: Global Applications

Waste Reduction System (WRS)

Rising Raw material costs

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Business
superbrand
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Industry Validated

Our technology has fired the imagination of many brands worldwide.

Today a host of International brands prefer to work with us because not only do they believe in our technology for food packaging (we are one of the few who use FDA approved food grade material) they also appreciate our solution oriented approach towards complex packaging needs
.This in turn has encouraged them to experiment with their packaging. Our list of satisfied clients cut across various industries and include names like Procter & Gamble, Unilever, Nestle, TATA Tea, Cadbury, Britannia, Wal Mart, GSK, Perfetti, DS Group, Halidram, Fritolay, Castrol, Marico, Emami, Dabur, Godrej, United Spirits, Agrotech .....
And with so many luminaries encouraging us to challenge the technological frontiers of packaging, at UFLEX sky is the limit

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Foreword

Consumer Friendly Packaging

Demands for consumer friendly packaging is essentially the market drivers that influence the introduction of products- product mix in width and depth adopting different technologies. The strategy is indeed based on a global scope catalyzed by leadership and specialization. The major segments are indeed consumer goods and food services, personal care, health care and pharma products. These open up opportunities for a wide range of package types – sizes, shapes, technologies and many to suit to the cross section of customer groups and varying end use applications. Innovations could well succeed and possibly hold the key as the consumer today is willing to experiment, adapt to new products and experiences. If they can articulate the aspirational needs and solutions even at a price-the success ratio becomes high. Quality and reliability have become the buzzwords. Quality assurance and tamper identification are specific criteria that need to be built in , to make the pack more or complete consumer friendly. Curiosity factor in the consumer is the path for innovation. Value addition through packaging is a measure of satisfaction in the consumer and market growth will be direct impact of exploration of opportunities.

Changing patterns and changing preferences are influenced by "Individualism", "Life style" implications, consumers and society, packaging choices, sizes, shapes and materials. Where these lead to:

- Diminishing family demands smaller packs
- Single person household needs portion packs
- Consumer group shifts to mosaic pattern requiring more variety
- Consumer Hedonism demands utility-beauty combination packs
- Consumer marketing is aided by packages for social motivation, pleasure, impulse and be reasoned.

Consumer-the ultimate buyer is always behind times, eco centric, careful and interestingly different.

What are the priorities and requirements expected by the target audiences from packaging-understanding the customer within, understanding external customer, and understanding other aspects that include use pattern, consumption pattern, use frequency and consumption frequency. The underlying relevance is indeed that the package builds a relationship between "Brand" and "Consumer". The result is more the consumer friendly package-more the emphasis on packaging and higher is the influence on consumer mindset.

Consumer expositions with increasing literacy will demand newer concepts. Consumer expectations will witness a sea change. They will continue to be cost centric but value for money propositions to higher value offerings will surface strong. Packaging will become the vital opportunity to build new brands, reinforce and add value even for an existing brand.

P. V. Narayanan
Editor

Value added oxide coatings for barrier applications

– Professor Nadir Ahmed

Clear barrier coated films hare become a favoured choice for flexible packaging of various products. At present there air different clear barrier film products available in the market. However, there is always a need for new barrier Coatings for existing and future products. This article will discuss the development of a new metal oxide coaling to provide a good barrier at a competitive cost. Clear barrier processes can be retrofitted on a standard vacuum web metailiser to provide films with good transparency, high surface wettability as well as gas and moisture barrier. This article will also review the main clear barrier coatings deposited by vacuum technology and will outline rite newly developed metal oxide coating as a newcomer to clear barrier films.

Transparent barrier coatings polymers are receiving much attention for different applications including pharmaceutical, food and beverage packaging. Food packaging is part of our daily life as it protects the integrity of the product. Food can now be stored for weeks or even months on shelves or in refrigerators without losing its freshness or taste.

Barriers prevent chemical or physical reactions between packed food products and their environment. This includes dust, contamination, light, mechanical impact, gas, moisture and aromas.

Various packaging materials can provide these necessary barriers to protect and preserve our loud, but all have their specific properties and limitations. For example, glass is transparent and is an excellent bar- tier material, but it is less good against light, it is heavy and breaks under high impact. Aluminium foil is a very good barrier against moisture, gases, contamination, and light, but it provides very little protection against mechanical impact and is very brittle. In cans and glass Jars, the moisture and oxygen barriers are provided by the dense nature of the material. With thin plastic films, the situation is different. The molecular structure of polymer plastic films is in the form of chains, oriented like a grid. The more these chains are linked to-gether, the better the barrier will be. The required baffler specifications for different applications are shown in figure 1. For food packaging, an oxygen harrier (OTR) of less than 10 would be acceptable fur many products.

So far, Aluminium foil was has been considered to be the best packaging material to provide high barrier properties. It is durable to moisture and gases regardless of its thickness. However, Aluminium foil at thicknesses of less than 25 microns has pinholes which have an impact oil barrier properties. The foil also has its limitations particularly in terms of cost and transparency. As the price of raw materials increases and the requirement for see-thought products. particularly in food packaging. becomes more demanding. Aluminium foil starts to give tip to oilier types of packaging products including Aluminium metallisarion and clear barrier coatings.

Barrier selection criteria

The selection of a barrier for a particular product depends oil factors. These can be sum mariscd as follows:

1. Type of material required to provide oxygen, Water vapour, aroma. chemical, UV light and/or microbial barrier properties. This will suppress oxidation of protein, fats, and oils as well retaining freshness and taste.

2. The compatibility of a barrier material with the packaging material and product. For example. if the product chemically reacts with the barrier material.

3. The barrier material should not be affected by converting equipment used to process the pack-aging material.

4. The barrier material should not be affected by the sterilisation method. environmental conditions and or disposal method.

5. The barrier material should not acid too much to the final cost of ihe packaging.

To meet most of these requirements, metallised Aluminium films have been used since early 1970's in packaging applications for decorative, food, biomedical and electronic products as an alternative to Aluminium foil. The quality of the metallised coatings is usually measured using several parameters which include surface finish, optical density, surface resistivity, gas and water vapour barrier.

Reasons for clear barrier coatings

There are increasing demands by consumers for secthrough food packaging with a high degree of transparency, long shelf life and the ability to cook by microwave technology. Aluminium foil or metallised films are unable to provide such a combination of properties, whereas polymer-based barriers coatings are well suited.

The degree of transparency of a polymer layer will depend on its structure (amorphous, i.e. transpa- rent, or crystalline, i.e. translucent) and its thickness. In some cases, e.g. for replacing cans by retorting in flexible pouches for shelf-stable products, the barrier should ideally be both heat-resistant and transparent. For many applications, there are conflicting interests between product visibility and light protection. To some extent, the problems can be alleviated by using small see- through windows rather than fully transparent packages (figure 2). As the demand for clear packaging and fast microwaveable food has increased, transparent thin film barrier materials based on oxides of silicon and Aluminium and melamine have been developed. Such materials can provide a similar performance to metallised films but with high transparency.

Advantages of clear barrier coatings

There are many advantages to using clear barrier coatings for food packaging. These can be summarised as follows:

I. High degree of transparency which allows microwaveability, retortability, metal detection during and after manufacturing of the finished packaging, visible inspection and long shelf life.

2. Some oxides such as silicon oxide and Aluminium oxide are more environmentally friendly compared to conventional Aluminum foil or polymeric clear coatings such as EVOH. PVdC or PVC.

Currently, most transparent flexible barrier films are produced using polymeric barrier layers in- eluding EVOH and PVdC. The thickness of 'such layers are in the range of several micrometers to several tenths of micrometers. However, some of these coatings contain chemicals such as chlorine, which are not considered to be environmentally friendly.

Usually, films with polymer resin compositions such as PVA, EVOH, PVdC and PVC are laminated to provide clear harder films.

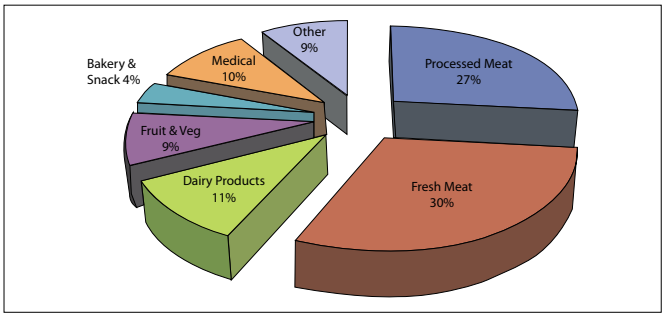
However, sonic polymer resins such as PVA or EVOH have high- temperature and humidity dependency which lowers the gas barrier property. Therefore, boiling or retort treatment during converting affects the harrier properties of the laminated film.

The alternative technology for thick polymeric coatings such as PVdC or PVC call a vacuum coating process with a coating thickness several orders of magnitude thinner and in the range of only 10 nano- metres. This can achieve the same or better barrier properties compared with polymeric coatings. Another advantage of vacuum based processes is that the source materials for the barrier layers are usually natural occurring oxides like SiOx or AlOx

Although environmental aspects, barrier and optical properties are all import a tit, equally important are the cost aspects, process flexibility regarding different base films and coating robustness to survive the converting processes. Table I shows the clear barrier requirements for different Food products.

Applications and the world production of clear barrier films

Most applications for clear barrier coatings are for fresh and processed food packaging. Figure .3 shows the application of clear barrier films for different product. Daily products arc in third position.



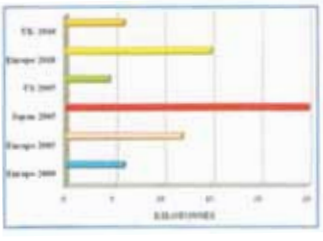


Figure 3 (Above): Applications of clear barrier (films in packaging. Source: Packaging Innovation. Vol.2, Issue2, 2008

Figure 4 (Left): World production of SiO and AiO clear barrier films (in 1000 mt/a).

Figure 4 shows the world production of SiOx and AlOx clear bar- tier coatings for packaging. lit 2009. Japan exported between 80100 million sqm (861-1076 million sqft) of transparent barmier Films, mainly SiOx and AlOx to Europe. According to the research association Pira International. the global demand for clear barrier coatings is forecast to grow by 4.3°/o per year bt 2014. Other forecasts indicate a figure of 5-10% annual growth. In Great Britain the main applications of SiOx and AlOx barrier films are in meat packaging.

Vacuum coating techniques used for clear barrier products

There are three main vacuum web coaling processes used for the product ion of clear harrier coatings: Sputtering, electron beam and thermal resistance evaporation.

Sputtering is based oil utilisation of energetic ions produced by dense plasma oil magnetron sputtering target. The ions bombard the target at a high energy level causing the target material to be ejected and deposited oil film (substrate). Sputtering provides dense coatings and is used for many technical application which de- man ii high quality specifications. However, the sputtering process usually runs at relatively low coat- ing speeds resulting in higher coating costs. Also, sputtering web metallisers are expensive compared to standard thermal I evaporation web metallisers.

Product	Primary	Secondary	Tertiary
Fresh meat	Oxygen	Moisture	Light, aroma
Dairy products	Oxygen, light	Moisture	-
Condiments	Oxygen	Flavour	Moisture
Coffee	Oxygen Moisture, Light	-	
Potato chips	Moisture	Light	Oxygen
Bakery goods	Moisture	Flavour	-

Electron beam evaporation uses all electron beam to evaporate the material front water-cooled crucible. With this process different types of materials call evaporated. However, electron beam vacuum web metallisers are expensive and require highly skilled operators in run the process. The third and most common process is standard web inetalljsers which use thermal resistive evaporation. This type of machine uses standard resistively heated boats and call converted for other value added coatings. Standard web metallisers are less expensive than hightech sputtering or EB metallisers.

In recent years, new technologies have been introduced for conventional thermal evaporation web metallisers to improve coating quality This includes tile introduction of plasma treatment and plasma reactive (assisted) evaporation for clear hat-tier product such as Aluminium oxide. shows different types of vacuum coating tech-niques used for the production of clear barrier films. Chemical Vapour Deposition (PFCVD) is based oil injection of silicon gas into gas plasma to deposit SiOx on the film.

Vacuum coating materials for clear barrier

Aluminium oxide (AIDx)

It can be produced by different coating methods. In a sputtering machine. Aluminium or an Aluminium oxide target is sputtered in the presence of oxygen plasma. In an election beam evaporation mach- me, Aluminium or Aluminium oxide is reactively evaporated from

a crucible in the presence of oxygen plasma. In standard thermal evaporation Aluminium metallisers, the machine can be converted to the AIOx process by evaporating a thin layer of Aluminium in the presence of oxygen or ions. A controlled injection of oxygen is directed towards the Aluminium vapour stream causing a reaction between the two elements to produce AIOx This compound can be transparent if the process conditions are correct. AID clear barrier films based on this process are already available in the market. With a closed loop process control, a good water and oxygen hauler is achieved without the need for exotic and expensive vacuum ancillaries. such as plasma guns. This process is based oil the utilization of an advanced control loop which constantly monitors the optical properties of the coated substrate to control the injection of the oxygen into the system. Although AiDx coated films are used for food packaging applications, it has limitations for some food products since it may react with the contents resuiting in the loss of harrier property. However, the AIOx process uses a very low level of process con - sumables, enabling low-cost production of a relatively high priced coating to be achieved.

Silicon oxide (Si0x)

Silicon oxide coatings are applied using different vacuum web coating techniques. It can be applied by Sputtering, electron beam evaporation or by modifying the resistive heating source in a standard Aluminium metalliser. In EB and thermal evaporation processes, solid silicon oxide is heated to its sublimation temperature in a vacuum.

SiOx vapour then condenses on the substrate, forming it thin barrier layer on the film. The thickness of Si0x thin layer is between 40 and RU nanometers depending on the application.

Chemical vapour deposition (CVD) is also used to deposit a clear Si0x coating on film. This process involves plasma decomposition of 1,1,3,3 - tetraniethyldisiloxane

(TMDSO) or hexxamethyldisiloxane (HMDSO) using a 40kllz oxygen and helium plasma discharge onto polymeric webs. The films are coated at 50 mTorr process gas pressure. Common polymer packaging films such as PET and OPP are used as substrates. However, the cost of such process and equipment is high. In general, SiOx coatings provide excellent oxygen and water vapour barrier properties. The main drawbacks with are the limited flex and crack resistance and the relatively high production costs. The mechanical resistance can be improved by covering the SiOx layer with a varnish, or by lamination of the SiOx coated substrate. However, SiOx performs favourably when compared to Aluminium foil and metallic composites. SiOx coating is available in grades appropriate For retort/ autoclave applications. Due to the initial cost of the material. SiOx coated films are more expensive than standard metallised Aluminium and AlOx clear barrier coatings. Because of the many advantages of clear barrier coatings including transparency and microwaveability, the extra cost of SiOx is often justified.

Freshure process

Recently, Know fort Technologies BV (DSPv1) has developed another process for clear harrier films. This involves the application of additional organic topcoat such as melamine on the inorganic AlOx layer for the barrier application. This process is called Freshure

Development of a new clear barrier coating

Recently, idvac has developed another type of metal oxide bar- tier coating. This coating can be applied on polymeric films such as PET inside a standard vacuum web metallization machine. The inorganic metal oxide can be evaporated in a vacuum environment at a lower temperature than SiOX. This means that the process can run at faster line speeds. The thickness of the coating is between 45 and 80 nanometres according to the application. Barrier tests are usually conducted on clear barrier li lot to check he harrier per- formance. Oxygen and water vapour transmission rates are measured using equipment with modern controls according to ASTM standard methods. For oxygen transmission rate (OTR), ASTIVI D-3985 is used at 23 C (73 F) mid O% RH. For water vapour transmission rate (WVTR) ASTM F- 1249 standard is used at 40 OC (104 0F). 900/o RH. Some equipment has a couple of test cells running simulia neously ['or statistical accuracy. Figure 6 shows the barrier properties of Idvac metal oxide compared to others such as Si0x and AIDx

The effect of coating thickness on a barrier for metal oxide on 23 micron PET Film is shown in Figure 6. It is evident. From figure 7 that OTR is reduced when the coating thickness exceeds 35 nanometre

Characterisation of the Idvac metal oxide coating

The characterisation of the metal OX ide coaling can he summarised as follows:

- **Refractive index:** 1.7; Highly-conformal - uniform coating;

Low stress - good adhesion: Amorphous/semi crystalline surface structure (figure 8); Good transparency (figure 8); Lower evaporation temperature than SiOx. .i.e. does not require EB evaporation. This means less heat load on the film. The coating is antistatic.

Water contact angle of metal oxide coating on PET

The water contact angle of any clear barrier film is preferably not less than 300 when defining the

moisture vapour barrier property after an inorganic thin coating layer has been vapotir deposited. Figure 9 shows the water contact test of the metal oxide deposited on PET film. It is evident from this picture that the angle is about 70, which means that the coating/PET surface has good surface energy and harrier properties

Lamination of clear barrier films

Clear harrier vacuum coated films are usually laminated with materials for retort or non-retort applications. The laminated substrate enhances the moisture and oxygen barrier of the structure (figure 10). Lamination also protects the coating from mechanical damage during the convert ing process.

A heat-sealable resin layer is formed by the city lamination method. A thermoplastic polymer forming a heat-sealable resin layer may be used as long as the sealant adhesiveness can be sufficiently expressed. Polyethylene resins such as PE, LDPE, LLDPE, PP resin, ethylene-vinyl acetate copolymer and ionomere resins can be used.

Retrofits of clear barrier coatings onto standard web metallisers

Retrofitting a standard vacuum web metalliser for other value added coatings in addition to standard Aluminium represents a cheaper option for the following reasons:

1. Introduces a new business opportunity to meet the market demand for new functional coatings.
2. Offers flexibility for a wide product range.
3. Offers a technical lead ahead of the competition.
4. Introduces new technology to a standard machine.
5. Offers the opportunity to explore new markets and applications.

However, a retrofit is usually kept to a minimum and does not interfere with the flexibility of the machine to produce standard Aluminium metallised products. This makes a standard Aluminium web metalliser more flexible in meeting some of the demands hit new value added products and emerging mar- kets, particularly when the selling price of metallised Aluminium kilogramme becomes very competitive. Idvac has developed a range of retrofits to convert standard Aluminium metallisers to enable the production of new value added coat-ings/products

Summary

In comparison with wet polymeric atmospheric coating, vacuum coating only requires a small fraction of the thickness of the equivalent atmospheric coated layer to produce similar functionality. Typically, atmospheric coatings are measured in micrometres (10-6m) while, vacuum coated layers ate measured in nanometres (10 -9 m). The harrier properties of the two structures are similar. This creates a huge environmental and economic advantage for vacuum coating technology.

Most clear barrier coatings available in the market are natural oxides and are not toxic or dangerous to the environment or individuals. Recycling and waste management is relatively cheap and simple. In combination with a compostable substrate, it can even be fully biodegradable.

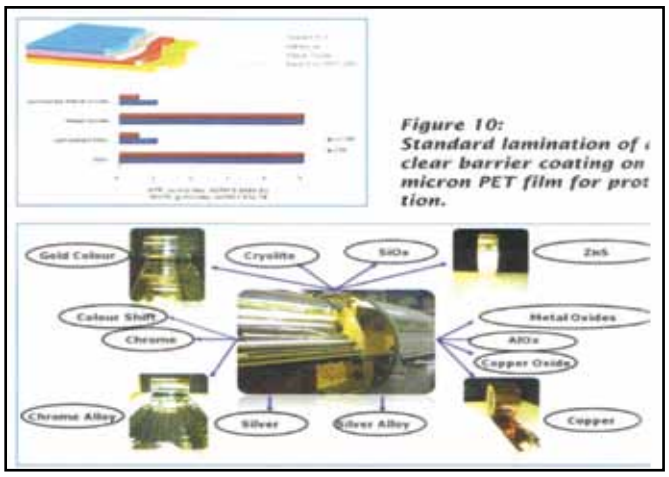


Figure 10: Standard lamination of clear barrier coating on micron PET film for prot tion.

The vacuum production process is usually based on well accepted and reliable advanced systems. The standard vacuum web metalliser layout provides optimum flexibility, depending on the actual needs of the customer. Metallising of different types of transparent barrier processes can be accomplished by standard or specialised web metal-users. Selecting the most convenient clear barrier coating depends on the application. Currently, there is a wide variety of clear barrier materials from which to choose. However, clear barrier films produced by vacuum technology are the favoured choice for many demanding Products.

Source: Flexo Gravure Int'l. 3-2011

Waste Reduction in Paperboard Processes

Getting the most from a roll is smart, sustainable and profitable

- Craig Thompson

Much of the global discussion on sustainability has centered on the concepts of "renew, recycle, and reuse." These are important topics, but the discussion should start with preventing as much waste as possible.

This focus applies to all printing and converting processes, including those involving paperboard. Our analysis of the causes and cures of waste — and thus our discussion of sustainability — starts not with the press itself, but where all roll-fed processes start: the unwinding roll.

Nonstop Roll Change

Each time a roll-fed press or process press stops, it creates waste. Automatic splicing will eliminate material waste, but one factor that may go overlooked or unaddressed is core waste. That is, how much usable stock is thrown away at the end of a roll, and can that waste be reduced?

Diameter Calculation

The chart compares four common methods of automatic roll change initiation, showing a typical amount of unused paperboard material at the end of a roll resulting from each method.

On many splicers, the standard method of detecting that the roll is expiring is by diameter calculation. The operator sets the diameter at which the splice will be initiated, and when the roll reaches the splice diameter set point, the splicer makes the transfer while the accumulator pays out web to the press at full speed.

The amount of core waste resulting from this typical method of splice initiation depends upon three factors: the outer diameter (O.D.) of the core, the caliper of the board, and the operator's set point. For consistently low waste, it is beneficial for the core O.D. to remain consistent. Because cores often vary in thickness and thus in O.D., even by just a few thousandths of an inch, it is not atypical for the operator to set the splice diameter slightly higher than if the cores were consistent. In this way, a marginally thicker core will not result in the web running off the core; conversely, a marginally thinner core will leave more wraps and generate more waste.

Recycled stocks are a good application for this method of splice initiation. The advantages of this method are that it is simple, effective, accurate, and generally repeatable. But can an automatic roll changer (splicer) do more to help reduce the amount of stock left on the core?

Tailgrabbing

The first method allows the web to run down to, and in many cases, all the way off the core before clamping the trailing end of the roll. "Tailgrabbing" is not dependent on material caliper, core O.D., or operator input. The result is that the amount of core waste is greatly reduced to less than the web span between the core and the splice unit.

There are several considerations to bear in mind regarding tailgrabbing:

- **Core Detachment:** The material must come off the core cleanly.
- **Material Strength:** The stock must be strong enough to tolerate a hard stop. Certain recycled boards may not be good candidates.
- **Material and Core Contrast:** The web must differ from the core in reflectivity. This requirement also negates the use of transparent stocks such as clear plastic folding carton stock.
- **Slippage**: Heavily coated or slippery stock may slide through the clamp, possibly affecting splicing efficiency, marring the stock, or creating lateral movement of the web.
- **Lateral Alignment:** When detached from the core, the web may move laterally, causing a misaligned splice. This may or may not be acceptable, depending on the process.

- **Winding Quality**: Winding issues at the core or damage to material near the core may compromise splice efficiency or process quality.
- **Infeed Quality:** The infeed must be able to absorb the temporary tension spike or disruption resulting from the hard stop.

Typical applications for tailgrabbing would be general folding carton work using virgin stocks.

An alternative to the above "active mode" of letting the web detach from the core is to run the tailgrabbing feature in a backup or failsafe mode of initiating splices. The advantage in this is to give the operator a greater confidence to dial the diameter calculator closer to the core without the fear of losing the web, with the result being greater material use without the above considerations related to core detachment.

Waste Reduction System

The third method of reducing material loss at the core in an automatic splicer is through the use of a Waste Reduction System (WRS). In fact, this method goes beyond mere waste reduction; it enables running all the usable material from a roll through the exercise of additional control over the web.

Such a system can operate in one of two alternative modes:

- **Web Attached Mode:** Upon reaching the end of the roll, the splicer initiates the transfer immediately, leaving the web attached to the core and avoiding the possible negative effects of core detachment discussed above. This is essential in applications when, for example, lateral misalignment at the splice is unacceptable.
- **Web Detached Mode:** Upon reaching the core, the splicer will pull a specific length of web before initiating the transfer. In this mode, the web detaches from the core, and all the usable stock is fed through the splice unit, stopping the web with as little as 12 in. (300 mm) of material loss.

In addition to allowing the absolute maximum usage of a roll, a WRS overcomes many of the material and tension control concerns associated with typical diameter calculation and tailgrabbing systems. A WRS does have its considerations, however. As with tailgrabbing with optical sensors, the stock must be opaque and differ in reflectivity from the core.

In terms of cost, such a system will see a much quicker return on investment the more expensive the material in question. For this reason, applications such as liquid or aseptic packaging or products made from expensive laminates would be good candidates for a waste reduction system.

Reality Check

While the preceding discussion has concerned waste at the core, the reality remains that the number of wraps discarded at the O.D. of a roll will add up much more quickly. It will take more than five wraps at the core to equal the loss of one outside layer on a roll 72 in. (1828 mm) in diameter, pointing to the importance of addressing that waste point by considering roll handling, floor cleanliness, operator training, and other impacts.

Sustainability & Profitability

The technology exists and is being employed in the paperboard industry to reduce material loss at the beginning of the process by maximizing the amount of material used. Printers not only gain more salable product from their rolls of paperboard, they also reduce the need for and cost of handling and disposing waste material.

An important aspect of sustainability is the responsible use of resources. Minimizing the amount of material discarded from a roll of paperboard is very responsible. It is a truer practice of sustainability because it eliminates waste rather than tries to determine what to do with waste. Utilizing the maximum amount of material on a roll results in higher profitability and greater sustainability and will enable your company to claim a stake in leading sustainability efforts elsewhere.

Source: Narrow Webtech

Trends for label materials

Although paper labels enjoy a current market share of about 70%, the demand will slow down in the future.

The main reasons for this are:

- Poor resistance to chemicals and humidity;
- No-label-look applications not possible;
- Considerable limited weight reductions.

The demand for plastic labels (current market share about 30%) is increasing faster than for paper labels.

The main reasons for this are:

- Good resistance to chemicals and humidity
- No-label-look applications possible
- Long durability
- Good squeeze and roll properties
- Weight reductions possible
- Thin film liners offer price advantages

According to the author, release liners made of paper (glassine and kraft liners) will he replaced by PP (Polypropylene) and PET (Polyethylene terephthalate).

The reasons for this are:

- Low material costs;

Thickness reductions with OPP and PET is better than with glassine or kraft liner (OPP 25 micron; PET up to 12 micron)

- Thinner film release liners and face materials facilitate more running metres per roll;
- Smoother surface than glassine or kraft liner and therefore more suitable for no-label-look (labels)
- The recycling of OPP and PET is better positioned than for glassine and kraft liner.

Recently the material manufacturers announced that they would take back film release liners for recycling; some paper manufacturers also agreed to recycle siliconised paper release liners. However, due to material thickness reductions, the share of plastic labels will have a dominant position in the field of pressure-sensitive labels in the future.

"Rising Raw material costs pose quite a challenge to the Adhesives market catering to the Flexible Lamination packaging industry"

Raw Material Cost Increases Force Chemical Companies to Raise Prices.

- Manikkam. S., *Purchase Analyst,*
e-mail: manikkam.chandra@yahoo.com

Similar to the third quarter of 2010, many chemical makers dealt with higher raw- material costs in the fourth quarter, and the rising price of oil means further increases in 2011 are likely for some producers. , Flexible Lamination Packaging Adhesives companies are raising sales prices to battle higher material costs. Even with capacity underutilization decreasing, some companies are having mixed results raising prices.

The chemical industry is rife with examples of materials cost inflation in the fourth quarter of 2010 and 1st Quarter of 2011. Driven primarily by higher propylene prices,' coatings and resin raw materials costs rose during the fourth quarter. The company was unable to offset higher costs in this business, despite a 9% increase in year-over-year prices. and Raw material manufacturer have implemented in 2011 a substantial price increases to fully offset rising raw materials costs. As a result, packaging Adhesives companies could see lower profits if cost inflation accelerates. Major PU based manufacturing companies have aggressively announced price increases in various commodity chemicals, including MDI, TDI, IPA, Adipic Acid titanium dioxide, resins, and plastic additives, among others.

In my opinion, chemical companies should be relatively successful passing along cost increases as long as demand remains strong. That said steady price increases could choke off the very demand that is allowing companies to pass along higher costs in the first place, a dynamic that could leave downstream specialty players without a chair when the music stops. Higher oil prices are creating a backdrop that is making price increases from commodity chemical producers more palatable. Downstream PU based manufacturers, could be squeezed if they are not ultimately able to pass further cost hikes down the value chain.

The recession had hit the chemical industry hard. Shying from a lack of demand, chemical companies shelved their growth strategies. With plants idled or running at historically low rates, the companies looked for avenues to streamline operations and increase productivity. Accordingly, the companies resorted to restructurings, plant closures, and layoffs. Cost-cutting initiatives

The global chemical industry is, however, recovering from the recession-hit lows. Domestically, chemical production volumes have increased across all regions of the Globe in 2010, reversing the steep declines experienced in 2008 and 2009. Reflecting a boost by export demand for basic chemicals and plastics. Output is expected to grow moderately in all regions in 2011 and continue to improve through 2012.

Growth in export markets has been driven by several factors. These include favorable energy costs,; and demand from emerging markets, where recovery and expansion have been the strongest. Europe exports would grow by 9.7% in 2011, outpacing the expected 7.8% growth in imports.

Further, the cost-containment measures implemented by chemical companies, such as plant shutdowns,

aggressive cost cutting and production improvements, should continue to bolster industry-wide margins. The resultant large cash flows could then he leveraged for growth opportunities.

Trends in Raw Material Markets

The chemical industry is a large consumer of oil, naphtha and natural gas, which are widely used as energy and feedstock input.

Oil prices trended upward throughout 2009, and in 2010 crude oil prices averaged around $79 per barrel. With current economic conditions improving worldwide, global demand for oil is rising, leading to higher prices. Naphtha prices are also expected to rise in early 2011, fueled by robust global crude prices, as bitterly cold winters in Europe and U.S. spark demand for home heating.

Opportunities

Chemical companies spent much of the past two years on their core business and tailoring their business processes and structure toward becoming more efficient. Consequently, many of these companies have ended up with excess cash on their balance sheets. Growth by further reducing costs is not a viable option anymore as most companies have already taken drastic measures to cut costs and improve operating efficiencies.

The chemical companies are seeing mergers and acquisitions as an option to grow in the current economic environment. Thus, there has been a pickup in the volume of deals announced during 2010, a substantial increase from the previous year, indicating that the global economy is stabilizing.

The companies are focused on exploring growth opportunities in emerging markets with strong performance in fast-growing regions of Asia-Pacific and Latin America, particularly China and Brazil. The United States expects growth to continue, albeit at a slower rate than last year. Business conditions are improving, with corporate profits and investments rising and industrial production showing solid gains compared with the year before.

Weaknesses

The chemical industry as a whole remains heavily exposed to economic cycles and pretty much all of the industry's under performance of the last two years can be attributed to the economic turmoil. The global economic meltdown led to weak industrial demand for chemicals, resulting in an under-utilization of

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production capacity, perpetrating a dramatic fall in operating profits worldwide.

While the global economic recovery appears to be firmly in place, the recent turmoil in Europe and its impact on global growth remain sources of near-term uncertainty.

In Europe, disparate growth rates have been reported across the continent. Economic conditions have shown improvement in northern Europe and in the emerging countries of eastern Europe. Meanwhile, growth in southern Europe continues to be restrained by sovereign debt concerns and tightening in government spending.

Many companies will find it extremely difficult to achieve the level of price increases necessary to fully offset these higher costs. Moreover, there is a huge lag between high raw material costs and the industry pricing gains, which would continue to restrain margins.

Impact on Flexible packaging Adhesives industry.

The global packaging adhesives industry is doing well. To succeed, it is important to have a global approach not only because of stiff competition but also due to the tremendous opportunities for the industry brought by the rapid growth of the markets. The market is very challenging, especially for organisations who always raise their productivity levels to world-class standards.

The latest trend in the industry is being responsive to the customers' unique product needs, and working closely with them to understand the challenges that their products face - whether it is to protect highly sensitive products, tracking & tracing the supply chain or increasing the adherence of end-users requirement.

Sustainahility is also a new component that is now part of any successful business strategy in an organisation. I believe that sustainable-packaging initiatives could serve the environment better. In today's struggling economy, revisiting packaging Adhesives mfg may be necessary given the rising price of oil and therefore, resin and energy costs. To remain profitable, companies have to be looking at ways of running leaner and more- efficient operations.

It is mandatory for the company to position themselves in a way that can offer top- quality products & services and act as a high-performance partner. Hence, the company should focus its investments on the development of modern production facilities equipped with state-of-the-art equipment. Moreover, the company needs to establish a network of Centers of Excellence throughout the Globe., notably resulting in the purchase of new equipment, the construction of new infrastructure and the optimisation of some facilities with one common goal - customer benefit.

Margin pressure from both rising raw material costs and price sensitivity pose quite a challenge to the packaging adhesives industry. Moreover, the exchange rate also has a significant impact on the industry, . Therefore, it is mandatory for the company to keep improving their productivity and invest in state-of-the-art technology.

Future outlook for the Flexible packaging Adhesives industry globally and in India...

As the Indian economy grows, there will be a huge need for high-quality packaging adhesives to meet the rapidly growing demands of the market. The future is promising and needs to be constantly evaluated on the way the company needs to do business with all their customers around the world.

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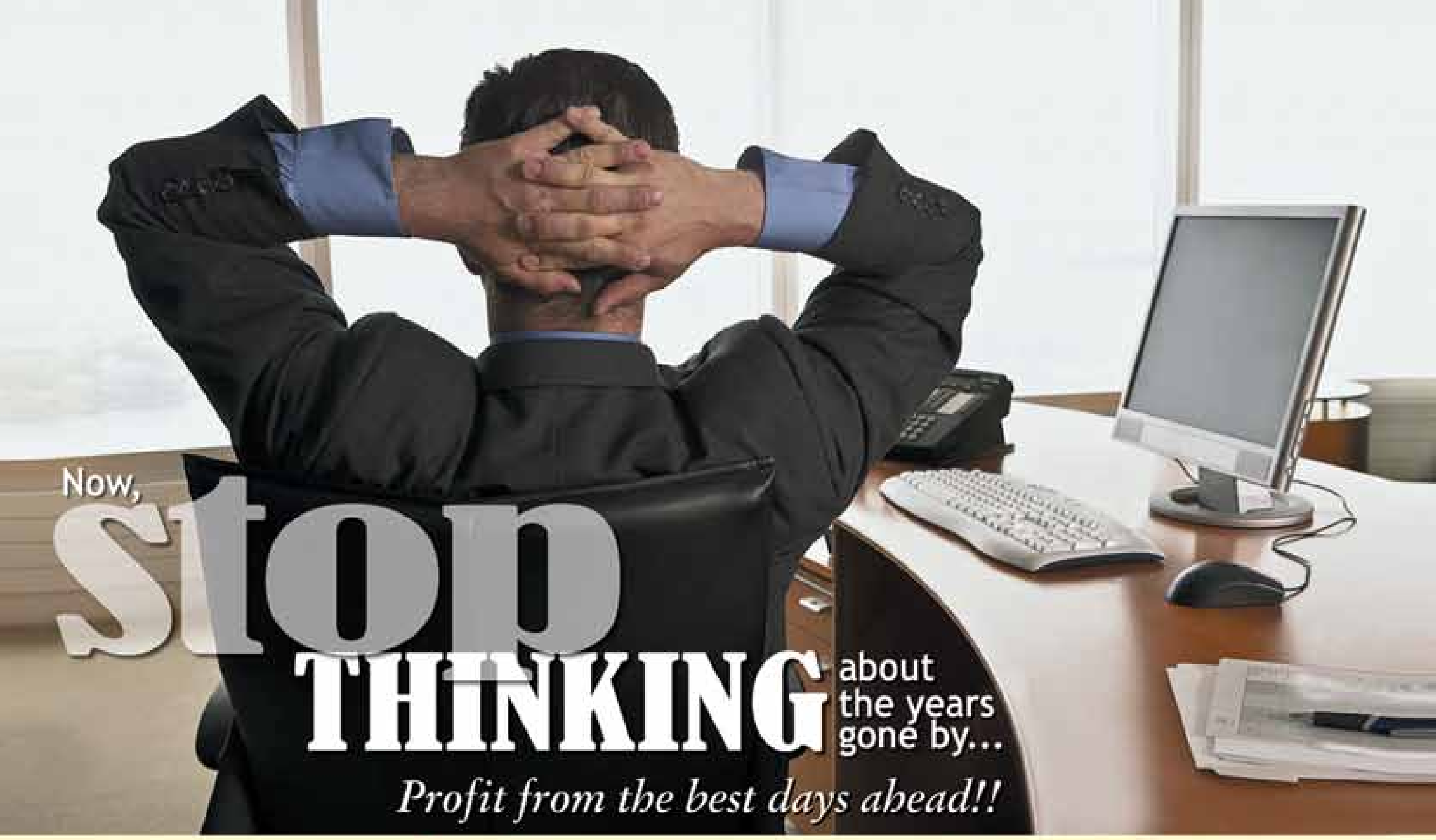

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Recycling in Spain

APEAL supports campaign against a Spanish deposit system

The adoption of the Waste Framework Directive (2008/98/EC) into the Spanish legal system required profound changes to the 1998 Spanish Waste Act.

One of the issues represented by the new legislation was the eventual mandatory establishment of a deposit refund scheme for one-way drinks packaging. This was an issue that would directly affect cans, and Spain is the second biggest consumer of cans in Europe.

"Previous deposit-refund schemes have had negative effects on the environment the cost of waste management, consumer finances and also on the markets."

Ecoacero (the Spanish steel recycling organization) and Latas de Bebidas (the Spanish association of beverage can makers), in partnership with APEAL and other organizations in the industry such as AME (the Spanish can makers association) defended the positive performance of steel regarding sustainable development and specifically cited the high levels of recycling achieved in the country.

At the same time, they disputed the results of such plans in other countries, notably Germany. None of the proposed goals of such schemes, a marked increase in recycling, promotion of reusable packaging, reduction of littering, have ever been achieved; in fact, previous deposit-refund schemes have had negative effects on the environment, the cost of waste management, consumer finances and also on the markets, as they create hindrances to the proper functioning of the internal market.

Whilst canvassing to the Spanish Congress of Deputies and the Senate, Ecoacero contacted various parliamentary groups and presented their amendments calling for the renunciation of the articles regarding returnable materials.

Packaging and retailer organizations, the food and drinks federation FIAB, and both waste integrated management systems ECOEMBES and ECOVIDRIO have taken similar action, highlighting the voluntary

nature of recycling and stating that the scheme should only be made compulsory if the legally established recycling targets are not met.

The Environment Ministry declared itself very surprised by the reaction of the industry in response to the scheme. However it clearly recognized the investments and successes of recycling in Spain during recent years. 65.9% of household waste was recycled in 2010.

In the approved law, known as Law 22/2011 on Waste and Contaminated Soils, the implementation of a deposit refund scheme is now dependent on approval by the Congress of Deputies, but only following an evaluation of its technical, economic, social and environmental viability. A significant win for the industrial sector is that consultation with industry bodies in an ad-hoc Waste Committee would also be mandatory before implementation.

(Source: www.apeal.org)

Extrusion exudes confidence in Europe

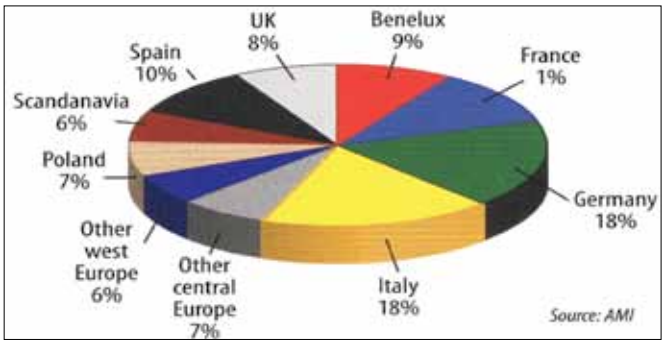
The PE film extrusion industry is recovering from the global recession with production forecast to move in line with underlying GDP growth for Europe, according to a report by UK based AMI, which predicts annual average growth of around 2-3 per Cent, per year, equivalent to the industry processing more than 8.7 million tonnes by 2015.

With recession hitting Europe in 2008, the PE film extrusion industry took a downturn between 2007 and 2009, and production declined by one million tonnes. About half of this lost volume was recovered during 2010 and the industry continues to make steady progress this year.

With a volume demand in excess of 7.5m tonnes for 2010. PE film extrusion still represents one of the largest plastics processing sectors, accounting for 19 per cent of polymer consumption in Europe during 2010.

There has also been a steady decline in the number of companies operating in Europe with producers of carrier bags, heavy duty sacks and building firms worst affected. while food packaging suppliers generally performed better as there was less contraction in demand from this see- ton' through the downturn.

The PE film industry within Europe has had to adapt to these changing demands, which in turn has seen a shift in the importance of end use applications. Stretch film still remains the largest single application by volume. This is due to stretch film becoming one of the most cost effective means of protecting goods while they are in transit.



The market for bags and sacks has had differing trends between the various sectors. The demand for carrier bags has seen a steady decline due to environmental pressures. Incentives for consumers to reuse bags, shops beginning to charge for carrier bags and increasing volumes of imported bags many from Asia. In contrast, the 8b market for refuse sacks has continued to grow, driven by the move to more recycling and sorting of domestic waste.

A significant change has - been the g-growing demand for more sophisticated mu It layer films and technical co-extrusions which now account for 9 per cent of PE film production in Europe. In All's guide, about it) per cent of the corn- panics listed are capable of manufacturing five or more multilayer films.

Italy still has the largest amount of PE film production with Germany a close second. But with the fragmented structure of Italy's industry it has 100 more companies than Germany. Poland leads the way in Central Europe, accounting for around 50 per cent of film production in the region and the largest number of film extruders.

Source: Plastics in Packaging Oct. 2011

PFFCA (IFCA) Star 2011

The awards for excellence in creativity/innovations – under the categories of i) Carton / Pouch – Newer Forms / Innovations & Creativity – New Applications; ii) Structural & Graphic Design for improved Aesthetics; iii) Enviro Products; iv) Product Development (Basic Substrates); v)Pack Enhancement; vi)Non Packaging Applications; vii)Special Entry Category – Students / Institutions; was introduced in the year 2005. These essentially cover flexible packaging – substrates, laminates and co-ex structures and adjuncts. The response has been excellent.

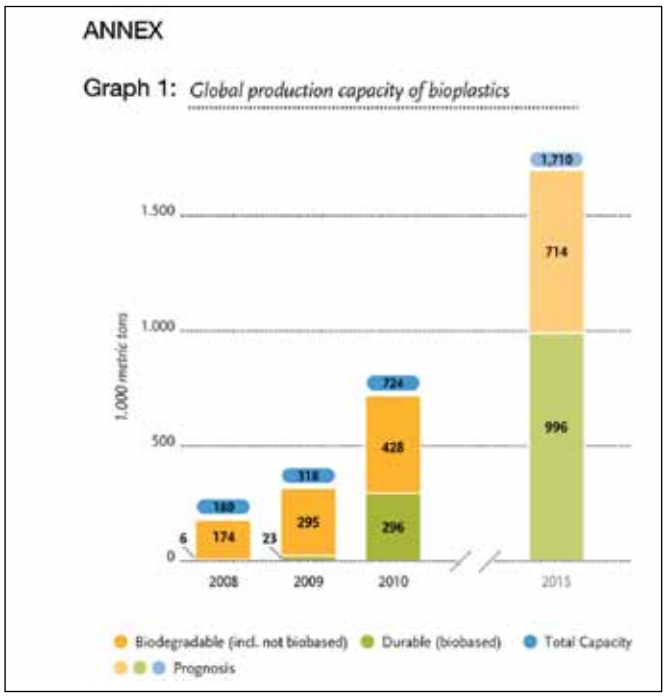
The entries received are being categorised and the action initiated for the judging of the same.

The award presentation function will be held during end February or early March 2012, in Mumbai, synchronising the promotional events of the PackTech 2012 and DrinkTech 2012 international exhibitions; scheduled to be held later in the year.

For queries, please contact: **PFFCA (IFCA) Secretariat,**
Tel.: +91 22 6588 0160 | E-mail: pffca01@gmail.com
www.pffca.in

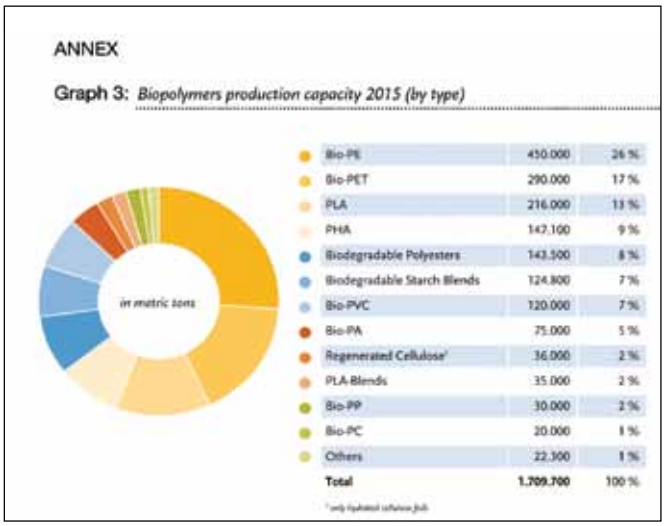
Bioplastics to pass the one million tonne mark in 2011

Global bioplastics production capacity wills more than double from 2010 to 2015. Capacity is predicted to pass the one million tonne mark already in 2011, according to a study presented by the industry association European Bioplastics in cooperation with the University of Applied Sciences and Arts of Hanover.



From a figure of around 700,000 tonnes in 2010, the production capacity for bioplastics will increase to a predicted 1.7 million tonnes by 2015. The current year will see capacity pass an important threshold: the first half of 2011 already shows production capacity exceeding 900,000 tonnes. The million tonne mark is close, and will likely be passed by the bioplastics industry within this year. "The encouraging trend in production capacity allows to assume, that the figures will even be exceeded in the coming years."

A further change is evident in the composition of global production volume. In 2010, the bioplastics branch primarily produced biodegradable materials, totalling around 400,000 tonnes (compared to 300,000 tonnes of biobased commodity plastics). This ratio will be reversed in the coming years – despite overall growth. Market study shows that biobased commodity plastics, with a total of around one million tonnes, will make up the majority of production capacity in 2015. Biodegradable materials will, however, also grow substantially and will reach about 700,000 tonnes by then,".



Essential to this rapid growth is the swift expansion of bioplastics into an ever-increasing number of applications. From packaging to car manufacture to toys, carpets and electronic components – bioplastics are in demand as never before. The strongly growing group of durable biobased bioplastics appeals strongly to the packaging market, for example. Several large brand producers such as Danone and Coca-Cola have brought products to market.

Europe is the world's largest and most interesting market for bioplastics and is the leader in research and development. The number of production facilities, in contrast, is growing most markedly in Asia and South America. The competitiveness of European industrial sites must therefore be improved through better frameworks and regulations. European Bioplastics challenges politicians to support the local bioplastics industry.

Source: Interpack 2011, Messe Dusseldorf

Package - Sustainability - Service Resource

The impact on environment due to packaging varies considerably. Packaging waste to a landfill is essentially a local level problem. However, contribution of packaging to global warming represents an externality at the global level. The international network for sustainable design undertook the task of updating the well known Three Rs of Reduce, Reuse and Recycle, with a goal to tap into ideas already existing and create a resource list based on minimal energy/resource consuming. The object is aimed at a shift " to do less bad" to create " more good" underlining a restorative economy. The emphasis of the 5 R concept provides simple guidelines for actions by the organization from one end to the other-energy sourcing to design and marketing to packaging. The 5 Rs represents one level higher to address to product impacts used as a tool for quickly moving through design ideas in the brainstorming phase. Ecological systems and biological inspirations should lead to creative package diversity. One could review the variations with a choice for selection. The best use of energy in the manufactured item is reuse. Design for reuse by making the package robust and creating a system to take advantage of its durability. Even though it may cost more initially the overall life costs are lower resulting in customer satisfaction. What is needed is identification of the reusable item and reward those who return it. The system needs to be considered carefully as materials and energy get wasted if the times is not reused. Returnables work well only when systems are in place for them to be effective.

Recovery can happen in two ways. The materials are fed back into the production process or the materials are returned to nature directly. Towards this the item needs to be created with the production process or nature in mind. The strategies to increase recovery/ recycling- Increase market demand for recycled materials; Use materials that have maximum recovery/ recycling potential, encourage customers to return the packages with incentives like rebates, recognition and rewards, design packages with single component or easily separable components; label correctly on material type and ease in assembling/dismantling etc. Recycling has no effectiveness unless the material is selected to fit into a recycling market with effective collection and reprocessing system.

To achieve the sustainability goals, suppliers/users of packaging should consider:

- Avoid unnecessary packaging, oversize boxes, components
- Optimise on packaging materials, size and weight etc.
- Deploy maximum reuse packages
- Maximise on renewable packaging- meaning, materials made of renewable resources- biodegradable or compostable materials.
- Materials with high content of recyclates but not sacrificing on quality needs.
- All above should ensure cost effectiveness and as possible cost savings
- Convey sustainability and its significance.

The above conceptualizes into 7 Rs viz: Remove, Reduce, Reuse, Renew, Recycle, Revenue and Read.

A good ecopackage should address to:

- Market expectations. Does the package fulfill it?
- Does package convey- the feel of consumer and environment
- Does the package understand the end user and market competitiveness.
- Is the package align all activities in the supply chain
- Will the package- connect the consumer and promote brand loyalty with true quality and deep integrity
- Does the package- effectively aid the customer decision.

How best sustainable packaging can be understood:

- Benefit, safety and hygiene
- Meets market criteria w.r.t. cost and performance

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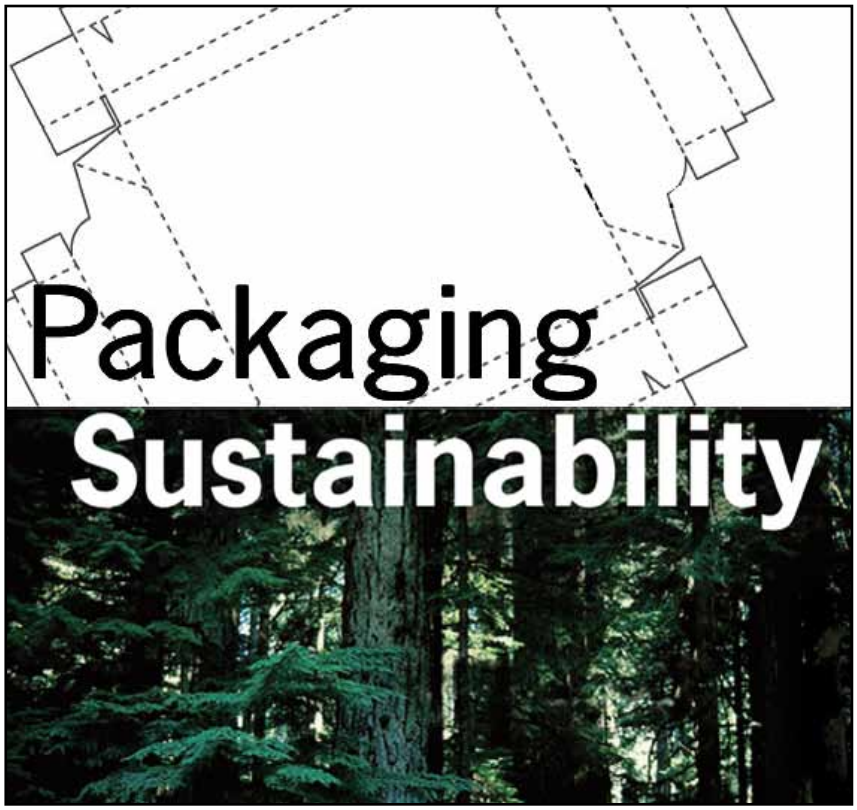

- Deployment of renewable energy
- Maximise use of renewable or recycled source material
- Adoption of GMP
- Use of product- package compatible and conforming to food standards-materials.
- Optimised material and energy consumption
- Fits in cradle to cradle cycles.

It is believed that packages designed with the above foregoing criteria should result in a system that is economically robust and provides benefits throughout the life cycle- in principle "A sustainable system". The product package life cycle can best be taken as the basis for innovation. The system needs to be defined firs followed by package design to live within. This dynamic process commences by individualizing the package-components and functions and move through the puzzle till the package transforms into a service. Innovation is applied creativity and covers location - direction - Materials - cycles and users. The process of innovation can have its genesis in people, process and products or within the permutation and combinations of these. Innovations can be stage wise (incremental), reducing lacunas , shift to service from a mere product and be dynamic

People in the innovation bracket- the designers should clearly define their methods and means of interaction with the world. This should help to create the set of design principles. This should broadly be:

- Do not use inappropriate materials. Aim at optimal needs. Do not end up in under or overpackaging.
- Consolidate the design knowledge and use the identified best suited.
- The process is dynamic and hence continual experimentation is necessary.
- The guiding factor today is ultimate-ecofriendliness-follow-user/market needs, statutory regulations and commercial deployment.
- The inputs cannot be exclusive to and from localized zones but needs to have a larger networking.

The process should consider the time cycle of packaging and design to represent ideal package life.

What does package innovation and package designers need is to integrate and work with function, system and end users. Innovations with function have to convert package as a service rather than in its isolation. Systems are to transform and create new structures and multiple opportunities. The designer should also explore and define the functions the user is most interested in. The users are the best resource to inform the missing links and features both in the product and package. Innovations can be many and varied and different aspects provide the base. Quality improvements, market expansion and new market, product-package mix in width and depth, optimization in all inputs are the few areas where innovations can make inroads. The end goal is to move from package as product to package as service.

What is New

The new 4-Corner Seal Bag for GNova System

Goglio has just developed a new bag for the GNova range of packaging lines. It is a premade 4-corner seal bag supplied in z-belt, the characteristic format of Gogilo System till now including flat and stand-up pouches.

This new step forward will further broaden the fields of application of the GNova lines.

The 4-corner seal is a bag usually produced in VFFS lines; the main advantages are very good stability and display on shelf. The premade bag will add a superior quality of the sealings, increasing the reliability of the pack for critical productions as retortable processes.

The z-belt structure, as usual, guarantees the same automation of machines starting from reel, reducing time for size changes and increasing production flexibility.

This bag can be used for every kind of product: whole pieces (ham and meat), liquids (fruit juices, soups), powder (coffee), solids (cheese, coffee in beans) only to give some examples. Time for size changes and increasing production flexibility.

Majority takeover

CONSTANTIA FLEXIBLES - The closing of the majority takeover of Asas Ambalaj Baski Sanayi one of the leading flexible food packaging companies in Turkey, was completed. Since signing the sale/purchase agreement in April the trans-action has also been cleared by all relevant merger control authorities.

Asas' approximately 360 employees achieved sales of EUR 63 million last year. 70% in Turkey, 30% in export markets, primarily Europe and the Middle East. Asas operates two sites in Ankara/TR and Rumania. Customers are local Firms and renowned international groups in the food industry.

Constantia Flexibles has bought around 930/a of Asas, the remainder stays with the Asas management. The acquisition is part of the international growth strategy of Con-stantia flexibles and constitutes the basis for further expansion in the Middle East, North Africa and South Eastern Europe. The per-capita-consumption of flexible packaging in Turkey amounts to less than 50016 of' the consumption in Europe, which will open sustainable growth potential.

Flexi-Al bags:

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Goglio ELEXI-AL aseptic bags are the most significant example of how our company has committed to research in aseptic packaging, being the ones which better express our in-depth product and market knowledge and our focus on sustainability.

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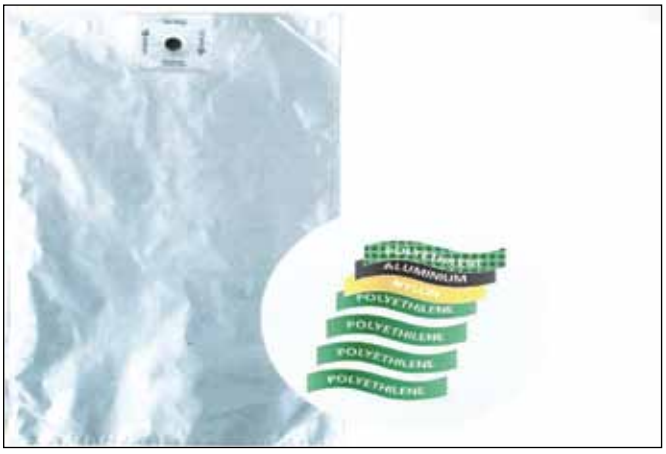
The special composition of the outer multilayer film, which combines aluminum and nylon, assures the highest oxygen barrier, granting at the same time also a



very good elasticity and adaptability to the packaging; these aspects are enhanced by the revolutionary three liner inner structure, which also ensures very high flex-cracking resistance.

FLEXI-AL aseptic bags are the ideal solution to preserve high oxidation products, such as value-added tropical fruit purees (mango, guava etc), and respond best to the requirements of the most demanding producers, who often operate under very difficult environmental conditions.

They are also ideal for the packaging of traditional products, such as tomato derivates, whenever it proves necessary to extend to the maximum the products shelf life, preserving the product value and allowing more time for the products to be consumed, as well as generating a higher return on investment for the manufacturer.

GNova 5/10

The Goglio GNova 5/10, the enhanced version of the existing filling lines of the GNova series, is Equipped with two rows of 5 filling heads placed one facing the other which, filling simultaneously 10 puches at a time, can reach a productivity of 180 pouches per minute in function of the product and process type.

As with all lines of the GNova series, also this model stands out for its versatility and usability. It is available in several versions, to meet the requirements of our cutomers, asking for more and more efficient solutions, being it hot filling, retort or ambient.

Recommended to pack different types of food and non food products, liquid, fluid or in pieces, it is really ideal for portioned, single-serve solutions for the ready meals market, sauces, fruit preparations, dairy products and drinks.

The new GNova 5/10 is suitable to accept z-belt pouches, flat or stand up, with a maximum width of 90 mm, If it is necessary to pack larger sizes, up to a width of 140 mm (capacity ca, 500 ml), it is however possible to exclude the four intermediate filling heads, and fit the machine with a special equipment for larger sizes; all this is done simply and quickly in a few steps.

As to the pouch styles, in addition to the traditional flat and stand up packs, it is also possible to choose from a wide range of customized solutions, such as laser cut, hanging hole, ergonomic shaping or multipack sizes for unusual, eye catching shelf presentation also ideal for promotions.

Digital Sachets

Al Printing has a selection of digital printing presses at its branch in Turnhout (Belgium). These presses can produce graphically high-quality sachets in small to medium-sized print runs.

The advantages of this digital printing technology are: very low preparation costs

- The highest possible graphic quality
- Print runs of one - for example, for mock-ups short turnaround times personalisation

Here you can see some examples of digitally produced sachets.

To the Point

A biodegradable additive made by Ecologic for polyethylene and polypropylene has received the Brazilian equivalent of FDA food contact approval. Eco-One is claimed to show 5-15 per cent biodegradation within 30 days of being in a biologically active landfill.

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Barrier film butchers competition

An anti-fog, shrink harrier film has been developed by Sealed Air Cryovac to help French firm Puigrenier create consumer appeal with the packaging of its Carpaccio beef.

The round foam tray is a rarity in French butcher\ but is said to allow the consumer to transfer the product easily onto a serving plate in four steps taking 10 seconds.

The Cryovac BDF Soft is strong and easy to open, yet creates minimal tray distortion. The dish itself consists of two layers of meat separated by a non adhesive transparent film.

Users remove the tray, cover, turn the top layer of protected meat over onto a plate, remove the second layer of film and dress the

Carpaccio with the sauce provided.

A Shelf-life of eight days is offered by the package, while the barrier film is suited to horizontal, form-fill and seal packaging machines. It is also said to produce lighter, cheaper trays, and a reduc-tion of idle times due to fewer changeovers of film roll, and a weight advantage.

More information from: www.sealedair-emea.com

Shrinking Sleeve prices

Flexible packaging manufacturer Reflex Labels is aiming to accelerate its growth within the UK packaging market with the formation of its latest division, Reflex Dynamic Sleeves (RDS).

Managing director Ian Kendall said that RDS has been established to reduce minimum order quantities and increase speed to market. The division will supply shrink sleeves manufactured using both UV-cured and solvent-based flexo. With the ability to offer bothshort and large runs.

"Shrink sleeves have long been the first choice of marketing departments, but the comparatively high prices often cause the purchasing team to I put the brakes on," said Kendall. "Price increases for self-adhesive label stock over the last two years have created a swing in favour of shrink \ sleeves, as opposed to labels. RDS will make shrink sleeving even more accessible to UK brand owners, by taking away barriers such as high minimum order quantities and long lead times."

Dynamic factors such as rising raw material prices for other pack- aging formats are a part of it, but what is driving the marketing and design sectors desire for shrink sleeving is how good this product is, according to Kendall.

Reflex will work closely with The Greenhouse reprographics and artwork agency, which has software to show how the sleeve will behave during shrinking, allowing Reflex to accommodate for any warp that inevitably occurs.

According to a recent report. by AWA Alexander Watson Associates, current share of sleeves in the world labelling market - 12 per cent— is estimated to grow by an annual 4.5-5.0 per cent to 2015. This is the highest projected growth rate for all labelling types, and places the technology as a prime competitor to pressure-sensitive labels in premium product labelling applications. Heat shrink sleeve formats dominate usage with 76 per cent of the market.

IPACK-IMA 2012.
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PROCESSING, PACKAGING AND MATERIAL HANDLING

Innovative and organic materials, packaging to advertise and boost sales, institutional meetings: the IPACK-IMA 2012 calendar of side events is already impressive

Inside and beyond the exhibition, with an exceptional ability to attract and involve professional publics from every corner of the world: four months away from the official opening scheduled on February 28th 2012, the calendar of events and meetings planned during IPACK-IMA is nearing finalization and will involve all business communities represented at the fair.

Nearly all industrial and professional trade associations will hold their institutional meetings at Fieramilano, including journalists from IPPO (International Packaging Press Organization) who have chosen IPACK-IMA as their exclusive reference exhibition.

Let us take a look at more technical meetings. Again on Thursday March 1st the stage will be given to the following issue: "Food Contact Materials (FCM)" for a discussion – organized by AIDEPI – on the role of food safety in connection to packaging and in particular to the new EU Regulation 10/2011 on plastic items and materials designed to come in contact with food products.

This issue is especially crucial since packaging technology and materials are acquiring an increasingly important role in the food industry, both in terms of safety and of quality preservation. For this reason the following day, Friday March 2nd, will also feature a particularly significant event: a meeting organized by the Italian Packaging Institute on issues connected with the "CAST Project", developed in 2007 with the objective to experiment new integrated strategies and approaches to food safety involving both private and public institutions. The discussion is open to any company interested in the issue of compliance with provisions on food contact materials (discussion topics include the application guidelines of Regulation 2023/2006/CE) and will feature the participation of the National Health Authority, responsible for the scientific aspects of the "CAST Project", and of key stakeholders involved in the food industry and in the various supply chains of the basic materials used in packaging production.

Again on Friday March 2nd the main event will be the meeting titled "Packaging for vending" promoted by CONFIDA – the Italian Vending Association – and featuring a debate on new distribution channels and packaging solutions for vending machines and the problems connected to it.

The complete and continuously updated list or all meetings and events on schedule is available on the exhibitions'

website www.ipack-ima.com

Events

PlastIndia 2012
01st – 06th February 2012
8th International Plastics Exhibition & Conference.
New Delhi, India.
Organised by PlastIndia Foundation.
W:- www.plastindia.org
E:- plastindia@vsnl.com

IPF 2012
15th – 18th February 2012
Dhaka, Bangladesh.
Bangladesh International Packaging & Foodtech Industrial Fair.
Chan Chao International Co. Ltd.
Taipei, Taiwan.
W:- www.bangla-expo.com/IPF
E:- exfdp@chanchao.com.tw

Ipack Ima 2012
28th Feb – 03rd Mar, Fieramilano, Milan, Italy.
Processing, Packaging & Material Handling.
W:- www.ipack-ima.com/eng/home
E:- ipackima@ipackima.it

PROPAK VIETNAM 2012
29th FEB – 02nd MAR.
ProPak Vietnam 2012, Plastics & Rubber Vietnam 2012.
Ho Chi Minh City, Vietnam.
Bangkok Exhibition Services Ltd.
Bangkok, Thailand.
W:- www.propakvietnam.com
E:- arayabhorn@besallworld.com

Print 2012
2nd – 5th March 2012
Venue:- Century City New International Convention & Exhibition Centre
Organiser:- Donnor Exhibition Group.
W:- www.donnor.com/china/chengdu/print/
E:- donor@163.com

APEX 2012
7th – 10th March.
7th Arab African Packaging & Food Technology Exhibition.
Middle East Trade Fairs – Cairo, Egypt.
W:- www.apexcairo.net
E:- k.farid@mtf-fairs.com

Afera Tape College
18th – 20th April 2012
Brussels, Belgium.
Afera, Tel:- +31 (0) 70-312-39-16,
E:- mail@afera.com

Drupa 2012
03rd – 16th May, Dusseldorf Exhibition Centre.
Messe Dusseldorf GmbH
Postfach 10 10 06, 40001 Dusseldorf
Messeplatz, Stockumer KirchstraBe 61, 40474
W:- www.tradeshows-biz.com/trade_event/drupa.html

International PackTech India 2012
06th - 08th November 2012.
Bombay Convention & Exhibition Centre, Goregaon(E),
Mumbai, India.
Organisers: Messe Dusseldorf India, IPMMI & PFFCA.
W:- www.packtech-india.com
E:- SharmaS@md-india.com or ipmmi01@gmail.com or pffca01@gmail.com
Tel:- +91-11-26971745/1066.
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www.packtech-india.com

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