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Editorial

PLASTICS INDIA

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Hi Friends,

In my quest for growth, I was trying to research on the habits and qualities of successful people. There are myriad books and discussions debating the traits and skills necessary to become a successful entrepreneur. However, what I feel is rarely considered are the weird, different and strange elements that people running prosperous companies embody.

Below are four elements which I thought were worth sharing. Not my gyaan, handpicked exclusively for you –

1. Not knowing is essential

   Experience and knowledge are important to running a business, but naivety can be your best friend when starting out.

   Most successful entrepreneurs would never have taken their first steps had they known just how long and hard the journey would be. Building a successful business takes a level of not knowing what's involved when starting.

2. Stay small, and do big things

   Knowing that your business is improving the lives of others can bring your motivation to new heights and the success of your business along with it. Whatever the size of your customer base -- 10 or 10,000 -- making a difference for those customers will give you a huge boost in the happiness you get from what you're doing.

3. Do what agrees with you

   We assume that successful people follow all the well-worn productivity advice commonly doled out by business consultants, coaches and gurus.

   In my experience, the opposite is true. All successful entrepreneurs have a unique daily routine that works for them, based on their own way of working and living. Beyond that, each of them is confident that they know themselves best, and they set up their days accordingly.

   To be successful, you need to trust yourself and find what works for you -- no matter what the advice of the day tells you to do. It's not what you do, it's how you do it. Find what works for you, know that what works will change and then do it confidently.

4. Work in instalments

   Nothing worth accomplishing happens overnight, and expecting success too soon can burn you out and keep you from your goals. This has been the demise of many would-be entrepreneurs that could've gone on to build world-changing businesses.

   With the launch of a new product, blog or podcast, many have the false notion that if it's not wildly successful right away, it wasn't a viable idea. When the initial launch isn't the lottery win they were hoping for, they give up and move on to other things. This isn't to say that the launch was a failure -- it's a testament to the need to think longer-term. To find success and build the businesses that will change your and your customers' lives, you need to plan ahead and work in monthly increments. You then eliminate the temptation to quit too soon and failing to work through the dip.

I hope we all strive to implement the above in our life. Happy reading ahead.

Warm Regards,

Manish Kr. Bhaia
Editor

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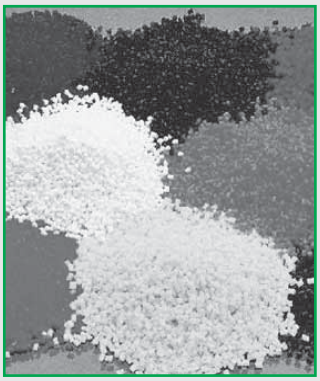

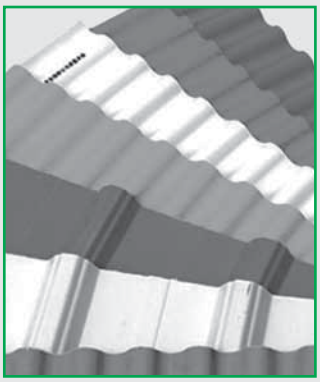

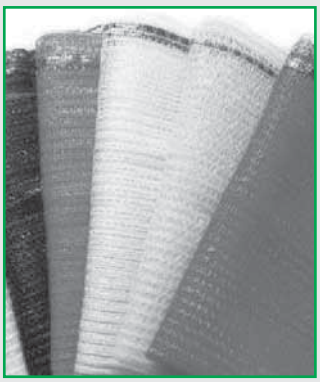

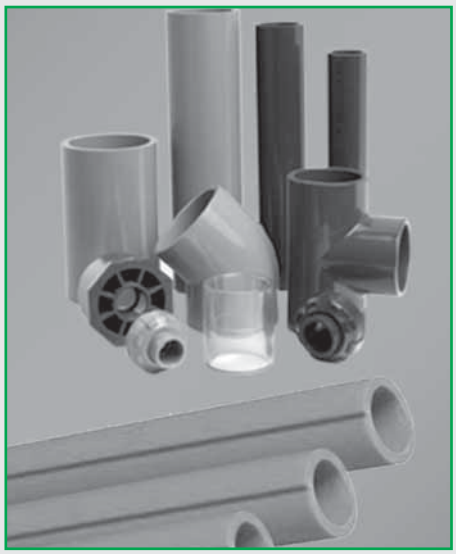

PRESIDENTIAL ADDRESS

Dear Friends,

Consumers are very familiar with packaging of products, be it food or any other product. Solutions to packaging problems differ from region to region. Variations are the result of factors such as economics, the availability or access to packaging materials, infrastructure, distribution systems, climatic conditions and consumer habits. Foods with a longer expected shelf-life have different needs and may require more sophisticated packaging to protect them against air, light, moisture and bacteria.

Packaging also represents a large part of the total cost of processed food. This may be in part the result of the higher unit cost when small quantities are ordered for small-scale production.

Plastics are regarded as the material of choice in packaging. It is extremely useful as they can be made in either soft or hard forms, as sheets or containers, and with different thickness, light resistance, and flexibility.

Flexible films are the most common form of packaging in plastics. Generally flexible films have the following properties:

Their cost is relatively low;

They have good barrier properties against moisture and gases;

They are heat sealable to prevent leakage of contents;

They have wet and dry strength;

They are easy to handle and convenient for the manufacturer, retailer, and consumer;

They add little weight to the product;

They fit closely to the shape of the product, thereby wasting little space during storage and distribution.

With all its positive properties, there are also many myths associated with plastics esp. films that result in many NGO going to the court in raising social issues. Its high visibility attracts the attention of the people. The National Green Tribunal is hearing an application on banning the use of plastics in certain packaging. The Federation, along with AIPMA, OPPI and many others are contesting the application. The tribunal in passing any judgement has to deal with the following issues:

Legality that involves preliminary objections regarding the maintainability of the original application on various legal points as well as legal objections of its maintainability even on merit;

Rationality which involves the issues relating to reasoning behind the proposed reliefs sought by the applicant which is a mixed question of law and fact as it involves the issues deliberating upon outlining of the real issues involved in the case and their proper address e.g. issues relating to waste management and implementation of various legal measures etc.;

Propriety, feasibility, viability etc which deals with the issues of environment impact assessment and the consequences of use of alternatives and substitutes and various environmental ramifications and finally;

Technicality which will be a pure science explaining the science of plastics and its various dimensions.

Many members of the Federation have contributed towards appointing a competent advocate to plead on our behalf and we thank them for it. Those who are yet to contribute are requested to do so in the interests of the plastics industry.

With best wishes,

Pradip Nayyar
President

From the Desk of Hony. Secretary

Dear Members,

Our prestigious Indplas'15 exhibition is approaching fast and just 6 months away. The entire team of Exhibition Organizing Committee is working hard to make Indplas'15 a memorable and one of the best exhibition in the East. Different work has been entrusted to various Sub-Committees under a Convenor. We are confident of arranging everything well in time for a successful show. Indplas exhibition organized by IPF is handled by our dedicated IPF members. Hence support and co-operation of one and all is essential. The booking of stalls is gaining momentum and exhibitors are coming from all over India. Good positions are being rapidly filled up. IPF members are requested to kindly book their stalls as quickly as possible to avoid disappointment at a later stage. Advance payment towards booking of Science City ground has already been made and work contract to various vendors will be issued in due course.

IPF's delegation of around 50 members to Chinaplas 2015 exhibition which is to be held at Guangzhou, China from May 20-23, 2015 will leave Kolkata on 18th May 2015 night. We wish them all the best for a safe and successful business trip. We shall share their review and experiences in the next issue.

The Federation has decided to hold an Extraordinary General Meeting for approval and decision for enhancement of our Annual Membership and Life Membership subscription charges. The last increase of membership subscription has taken place over 15 years back. In the intervening period all input costs have increased manifold and it has become very difficult to run the Federation on such a low membership subscription. The detail of the EGM will be informed to all members in due course. Support and co-operation from all members is solicited.

Four new members have joined the Federation last month. Their names are given in the enclosed pages. We welcome all of them to IPF family.

With best wishes

Ashok Jajodia
Hony. Secretary

MEDICAL-GRADE PP NOW AVAILABLE FROM INTERSTATE PLASTICS FOR ORTHOPEDIC APPLICATIONS

Interstate Plastics (Sacramento, CA) has announced the availability of medical-grade Propylux HS, a heat-stabilized polypropylene (PP) rod used primarily in orthopedic applications.

Propylux HS PP rods, designed and manufactured by extruder and compression molder Westlake Plastics (Lenni, PA), are biocompatible and chemically resistant materials.

The round bar stock offers dimensional stability, even after repeated autoclaving cycles. The product also withstands exposure to cleaning and disinfecting agents, while offering a balance of strength, ductility and overall toughness. Applications include trial heads and cups for hip implants, knee provisional trials and impactors.

Propylux HS round bar stock is available in 15 colors and 13 diameters. All colored materials are made with FDA-compliant ingredients, and the shaped bars have been tested and comply with key parts of ISO 10993.

Interstate Plastics is a distributor of plastic sheet, rod, tube, bar, film and profiles as well as plastic accessories and tools through 10 locations nationwide.

Source : Plastics Today

FIGHT IS BIGGER THAN JUST PLASTIC BAGS

The American Progressive Bag Alliance is highlighting its commitments to encouraging innovation promoting environmental progress and protecting the plastic industry at NPE 2015.

As you may have read in any of the countless media reports on the subject, on Feb. 24 the California Secretary of State announced the qualification of a ballot measure to repeal the nation's only statewide plastic bag ban. More than 800,000 signatures of California voters were submitted by APBA, the industry group that led the referendum on behalf of plastic bag manufacturers and recyclers.

APBA is proud of its work on the front lines of the fight for plastics, pushing back and protecting industry in a meaningful way. This involves educating the public about existing and effective recycling solutions, refuting inaccurate and misleading claims and advocating against such bans and taxes.

What we've accomplished thus far is impressive, but we can and will do more. That's why we're reaching out to the plastics industry at large — to suggest that this is about more than plastic bags. The broader industry has a clear and vested interest in this issue, and a role to play as well.

If we collaborate and stand together, we can prevent future attacks on plastic products by telling the industry's sustainability story and protecting our industry — the third largest manufacturing sector in the United States — from being irreparably damaged. We are more than the sum of our parts.

APBA is happy to help lead this industry effort, which can and should include advancing recycling education and encouraging industry innovation, in addition to protecting industry through advocacy.

For example, APBA currently promotes environmental progress by strongly supporting A Bag's Life, a public education campaign dedicated to encouraging consumers to remember the three R's — reduce, reuse, recycle — and return their plastic bags and film to collection bins located in participating local stores and schools. In State College, Pa., 16 schools and 4,000 students tallied 360,384 bags slated for recycling thanks to their efforts in 2014. And 9 local schools in Galveston, Texas, participated in a district-wide recycling competition, wherein they collected over 350,000 bags — just under 5,000 pounds of recycled plastic.

Education is crucial, because, as we all know, this is a behavioral issue — not a material one.

APBA is equally committed to encouraging industry innovation, particularly as it pertains to closing the recycling loop on plastic bags. Novolex, a member of the APBA, created its Bag-2-Bag program, a standout example of reducing environmental impact and advancing the availability of recycled content. Their state-of-the-art, $22 million recycling plant turns plastic bags and wraps into clean bags that can be reused and recycled again and again. In 2013 alone, Novolex recycled more than 35 million pounds of material and distributed tens of thousands of recycling bins to retailers across the country.

In short, everyone in the industry must work together to accomplish these goals. That's why NPE 2015 represents a unique opportunity: we can gather to collaborate and collectively commit to advancing recycling innovation and sustainability education. We hope you will find us at the SPI Outreach Zone and consider supporting the work of APBA.

Source : The Economic Times

BRAZIL'S SÃO PAULO LAUNCHES PLASTIC BAG RESTRICTIONS, FINES

Brazil's mega-city of São Paulo initiated a ban on petroleum-based plastic grocery bags on April 5, following a multi-year

dispute between plastic industry trade groups and city government.

Supermarkets can now only offer bags made from plant-based plastics, and those bags must be color-coded green or gray for use with recycling or trash. Citizens who don't use the bags properly face potential fines.

São Paulo aims to increase recycling by requiring that only the green bags be used for recyclables, an unusual provision in a bag law. But critics are skeptical, saying the new regulation alone — without major investment in collection services — won't greatly boost recycling.

São Paulo's initial effort to ban plastic grocery bags in early 2012 was quickly halted by industry legal action and vocal consumers, who complained they were being cheated when grocers stopped providing plastic bags, which Brazilians rely on as liners for small trash cans at home.

Grocers can now offer only biodegradable plastic bags colored green and gray, or any type of plant-based packaging such as cardboard boxes, at no cost or for a few cents. The law says bags must have at least 51 percent plant-based content.

Stores that continue distributing non-biodegradable plastic bags will face fines of up to 2 million real ($644,000). Citizens must use green bags at home just for recyclables, or face fines of 50 to 500 real ($16 to $161).

"It's not all about applying fines, it's about creating a movement in the city for recycling," said Simão Pedro, secretary of public services in São Paulo, in an April 7 news conference. "The city will adapt slowly and rely on the efforts of citizens and businesses in this educational process."

São Paulo's biggest retailers — Carrefour and Grupo Pão de Açúcar — said they will charge 0.08 real ($0.03) per bag. Most major grocers already sell reusable cloth bags.

Pedro

Latin America's second most populous city, with 11.9 million people, generates 12,500 tons of residential waste daily, but recycles just 3 percent of it, according to local figures. Officials want to increase the recycling rate to 10 percent by 2016.

Municipal garbage collection is available for 68 percent of residents, or 86 out of 96 districts. The city says neighborhoods that don't have public recycling collection won't be inspected for proper bag use.

But since public recycling is far from city-wide, the law alone — without investment in broader collection and education — carries little weight, said Renata Amaral, researcher at the Brazilian Institute for Consumer Defense.

"The consumer in these districts [without municipal collection] … will continue to have those [green] bags taken to landfills," she said.

Plastic bags are considered by some to be a major contributor to flooding problems in São Paulo. Large black and old plastic grocery bags can still be used for garbage under the new law.

Elisabeth Grimberg, coordinator for solid waste at the non-profit Instituto Pólis, says the law should have been focused on eliminating all plastic bags.

"To invest in creating a new [green] plastic bag means generating one more piece of waste that is not necessary for the functionality of recycling," she said. "This reinserts plastic into the conversation, even though there is a replacement: the permanent reusable bag."

Source : The Economic Times

PETROLEUM MINISTRY TO SET UP SKILL DEVELOPMENT CENTRE FOR SKILLS IN HYDROCARBON

Mangalure will see a World Class Skill Development Centre (SDC) to cater the growing needs of hydrocarbon sector, said Union Minister of State (Independent charge) for Petroleum and Natural Gas Dharmendra Pradhan. After inaugurating the new Polypropylene unit at Mangalore Refinery and Petrochemicals Limited (MRPL), Pradhan said the SDC of international standard will train youth in 136 skills identified in hydrocarbon sector.

"The new government has set up skill development and entrepreneurship ministry. All the infrastructure and employment generation related departments are formulating their own strategies in their respective fields through the ministry. In hydrocarbon sector, we have identified 136 skills. In Mangaluru there is huge presence of hydrocarbon based industries. The city has all many infrastructures like port, airport and railway connectivity. We have MRPL, OMPL, petrochemical complex, strategic petroleum reserve, special economic zone, New Mangalore Port, fishery network, Kudremukh steel plant here. Looking into all these sides of potential, MRPL will be the anchor of the SDC. It will be coordinating with all other departments and the cooperation of state government will also be sought for this initiative," he said. The ministry will appoint a consultant to look into the areas and submit a report, Pradhan said adding that a timeframe has not been fixed for the setting up of centre. "We have not fixed deadline as of now. However, we are committed to set up a World Class SDC in Mangaluru," he said.

Source : Daily Plastic News

PROTOTYPE CYLINDER BLOCK INCORPORATES FIBER-REINFORCED PLASTIC COMPONENTS

It's self-evident that cars must become lighter in order to reduce fuel consumption. For most car designers this principally means body parts but the power train system, which includes the engine, also accounts for a large proportion of the vehicle's weight.

Until now, car makers have relied on aluminum to reduce the weight of engine components such as the cylinder block. In the future, however, car manufacturers will be able to achieve further weight savings by designing cylinder blocks in which selected parts are made of fiber-reinforced plastics. An experimental engine developed by Germany's Fraunhofer project group for new drive systems (NAS) in collaboration with SBHPP, the high-performance plastics business unit of Japan's Sumitomo Bakelite, Japan, demonstrates this principle. NAS is part of the Fraunhofer Institute for Chemical Technology ICT.

"We used a fiber-reinforced composite material to build a cylinder casing for a one-cylinder research engine," reports Dr. Lars-Fredrik Berg, who is the project leader and manager of the research area Lightweight Power train Design at the Fraunhofer Project Group for new drive systems. "The cylinder casing weighs around 20 percent less than the equivalent aluminum component, and costs the same."

It seems an obvious solution, but getting there involved numerous technical challenges, because the materials used have to be able to withstand extreme temperatures, high pressure and vibrations without suffering damage. That plastics possessed these qualities was recognized back in the 1980s, but at that time it was only possible to produce this types of parts in a small volume and by investing a lot of effort in the form of manual labour - a no-go for the automotive industry, in which cylinder blocks are mass-produced in millions of units.

So what did the researchers do to ensure that their engine would be sufficiently robust? "First we looked at the engine design and identified the areas subject to high thermal and mechanical loads. Here we use metal inserts to strengthen their wear resistance," explains Berg. One example is the cylinder liner, inside which the piston moves up and down millions of times during the life of the vehicle. The researchers also modified the geometry of these parts to ensure that the plastic is exposed to as little heat as possible.

The characteristics of the plastic material also play an important role. It needs to be sufficiently hard and rigid, and resistant to oil, gasoline and glycol in the cooling water. It must also demonstrate good adherence to the metal inserts and not have a higher thermal expansion coefficient than the metal - otherwise the inserts would separate from the substrate. Berg's team uses a glass-fiber-reinforced phenolic composite developed by SBHPP, which fulfills all of these requirements and comprises 55 percent fibers and 45 percent resin. A lighter-weight but more expensive alternative is to use a carbon-fiber-reinforced composite - the choice depends on whether the carmaker wishes to optimize the engine in terms of costs or in terms of weight.

The researchers manufacture these components from granulated thermoset plastics using an injection molding process. The molten composite material, in which the glass fibers are already mixed with the resin, cures in the mold into which it is injected. The scientists analyzed the process using computer simulations to determine the best method of injecting the material in order to optimize the performance of the finished product. The process is compatible with mass production scenarios and the manufacturing costs are significantly lower than those for aluminum engine parts, not least because it eliminates numerous finishing operations.

A prototype engine will be presented at this year's Hannover Messe, which takes place on April 13-17 (exhibit in Hall 2, Booth C16). Test runs of the new engine have been completed successfully. "We have proved that it is capable of the same performance as conventionally built engines," says Berg. Moreover, it promises to offer further advantages such as lower running noise as against engines relying exclusively on metal parts. Initial data also indicates that the amount of heat radiated to the environment is lower than that generated by aluminum-based engines. The scientists intend to take their research further by developing a multi-cylinder plastics-based engine, including the crankshaft bearings.

Source : Plastics Today

SABIC REVEALS NEW THERMOPLASTIC ROOF FAIRING CONCEPT THAT REDUCE FUEL CONSUMPTION

SABIC has unveiled a thermoplastic roof fairing concept that can potentially reduce annual fuel consumption of a heavy-duty truck by at least 3%.

The new design incorporates air ducts to reduce front end pressure and accelerate airflow both over the surface and through the fairing itself. The result is a dramatic drop in drag, up to 5.9%, thereby improving the fuel efficiency of a heavy-duty truck by almost 3%.

"By improving the aerodynamic

performance of this one application alone, fleet operators stand to save millions of dollars in fuel costs each year and over the lifetime of their entire vehicle fleet," said Scott Fallon, General Manager, Automotive, SABIC's Innovative Plastics business. "We understand that reducing operating cost is always a priority for truck operators so we're excited to introduce solutions like this unique roof fairing concept to help them realize that goal and address evolving needs."

SABIC used Computational Fluid Dynamics (CFD) simulation technology to evaluate and quantify the aerodynamic performance of its roof fairing concept.

Specifically, SABIC applied CFD modeling to compare a baseline day cab with dimensions and geometry representative of top aerodynamic designs available today to a day cab featuring many iterations of an injection-molded, aerodynamically-optimized roof fairing.

The CFD data helped reveal opportunities to alter the design for improved airflow and reduced drag, according to the material supplier.

SABIC is planning to corroborate its CFD findings with wind tunnel and on-road testing of functional prototypes on a commercial vehicle later this summer.

A 3D-printed version of SABIC's aerodynamically-optimized roof fairing was on display at the Mid-America Trucking Show (MATS) in Louisville, Kentucky, the US from March 26-28.

The new solution will be particularly welcomed in the US, said SABIC, as new and demanding fuel efficiency and greenhouse gas emission standards for medium- and heavy-duty trucks beyond model year 2018 are expected to arrive by March 2016.

Source : China Plastic & Rubber

BAYER INTRODUCES NEW PU FILM FORMER FOR TRANSPARENT SUN PROTECTION

At the in-cosmetics trade show in Barcelona, Spain from April 14-16, Bayer Material Science will introduce the Baycusan C 200 ethanol-based polyurethane (PU) film former for fully transparent sun protection solutions.

Whether it is used in light sunscreen gels, practical aerosol sprays or nourishing sun oils, Baycusan C 2000 is compatible with all common UV protection substances and is easy to incorporate into the product.

In comparison with other film formers, Bayer said this PU solution saves manufacturers time, energy and money, as it is not necessary to heat or neutralize the product.

Vivo tests have shown that using even small quantities of Baycusan C 2000 in sun protection formulations results in significantly higher SPF than conventional film formers.

Once applied, sun care products containing Baycusan C 2000 are fully waterproof and retain their protective function even if users jump into the water to cool down. This water resistance has been confirmed on ten test participants in compliance with guidelines from Colipa, the European cosmetic industry's trade association.

New formulations containing the polyurethane solution ensure smooth application and easy absorption and leave the skin feeling great, according to Bayer. It will not cause a "milky" film or unwanted lumps to form thanks to its non-pilling effect.

A total of five new sun care formulations based on the Baycusan C 1000 and C 2000 lines are being exhibited at in-cosmetics under the new "Beauty made possible" slogan.

Source : China Plastic & Rubber

PLASTICS PACKAGING DRIVING TOWARDS SUSTAINABILITY, SAID PLASTEMART

Significant progress has been made in the development of biodegradable plastics, largely from renewable natural resources, due to increasing environmental concerns of rising proportion of plastics packaging waste, a Plastemart report said.

Sales of single serving portioned coffee machines have increased six-fold since 2008, making up 75% of coffee machines sold in 2014. With global sales of coffee pods in the billions, the result is enough rubbish to circle the planet more than ten times, the report said.

A new 100% compostable coffee capsule made from thistles has been unveiled by Lavazza, the Italian coffee giant. Jointly developed with Italian biopolymer company Novamont and Turin's Polytechnic University, the patented pod is the first of its kind to be wholly biodegradable.

A single-serving container when popped into the specialized coffee maker results in an easy pre-dosed brew while the empty shell disappears into the machine's collection receptacle. The new patented compostable pod represents a 70% reduction in greenhouse gas emissions.

The pod is made from a material called Mater-Bi 3G which is a patented bioplastic produced from wild thistle in three plants in Sardinia and certified for organic recycling according to EU compostable packaging standard EN 13432.

The plant-based pod has not affected the

flavor and odor. But coffee and scent are intertwined more intricately than just the smell of freshly brewed espresso, according to Plastemart.

Meanwhile, the BIOMAT Research group from the University of the Basque Country in Spain has developed a new biodegradable/compostable container for both liquid and solid oily products.

The container is transparent and, at the same time, provides a strong barrier for keeping out UV light and gases like oxygen.

Multi-layer laminates are generally used as a barrier against gases, yet the product developed has a single layer, which cuts its cost considerably. Furthermore, it can be thermally sealed and is printable.

The demand by consumers for products that do not contain synthetic chemical compounds has led to a growing interest displayed by the food industry in the development of active containers with natural additives, the report noted.

The BIOMAT group has manufactured an active container with natural antioxidant agents for full-fat, fat or semi-fat cheeses, and cheese portions.

Tetra Pak launched a carton made entirely from plant-based, renewable packaging materials - the new Tetra Rex carton that will be the first in the market to have bio-based low density polyethylene (LDPE) films and bio-based high density polyethylene (HDPE) caps, both derived from sugarcane, in addition to Forest Stewardship Council-certified paperboard.

Developed in partnership with Braskem, the new Tetra Rex package is commercially available in early 2015. Tetra Pak customers using the standard 1-L Tetra Rex with TwistCap OSO 34 can easily transfer to the new version without the need for any additional investment or modification to their existing filling machines.

The package is manufactured solely from a combination of plastics derived from plants and paperboard, the industry's first of its kind.

In these cartons, the LDPE used to create the laminate film for the packaging material and the neck of the opening, together with the HDPE used for the cap, are all derived from sugar cane.

New Frontier Foods, a San Francisco area-based company offering a line of flavored snack chips made from seaweed, has chosen to use a flexible pouch package for its chips made from Innovia Films' NatureFlex bio-based packaging.

Derived from sustainable wood pulp, NatureFlex is certified compostable and offers high barriers to oxygen and moisture to extend shelf life. These bio-films are based strongly on renewable resources (wood-pulp from managed plantations) and are certified to the European (EN13432), American (ASTM D6400) and Australian (AS4736) norms for compostable packaging.

In addition, the majority of grades have been certified by Vinçotte to the OK Compost Home standard for home composting and certain grades have been proven to biodegrade in a waste-water environment.

Further testing has proven that most NatureFlex grades are also suitable for anaerobic digestion. These films use novel heat seal-resins on each side. They are static free and offer a super wide heat seal range for outstanding machine performance.

The films offer good gas barrier properties and the coatings can be tailored to provide varying degrees of moisture barrier, depending on the needs of the wrapped product.

Source : China Plastic & Rubber

RECYCLING EFFORTS ADD UP TO ZERO (WASTE ZONE) AT NPE 2015

As part of its continuing push to promote the collection and use of recycled plastics, the Society of the Plastics Industry Inc. is provided an unprecedented amount of educational space to the topic at NPE 2015.

The Zero Waste Zone featured recycled plastics from head to toe as SPI recruited a variety of companies to show off the viability of recyclables at the event in Orlando last month.

That includes recycled-based flooring donated by Eco Strate and Interface as well as a variety of products — electronics, personal care items, building and construction products and toys, for example — that all feature recycled content.

Utsav Sanghvi is an international trade consultant for Strategic Trade Alliance in Kendall Park, N.J., and was hanging out in the Zero Waste Zone during NPE March 23-27. Sanghvi buys plastic scrap in India for export to the U.S.

"I'm absolutely a fan of the zero waste. It helps my business, it helps the environment. I believe it helps everyone's bottom line," he said while enjoying a cold one from the beer garden in the zone. "I definitely appreciate the initiative and promotion of the zero waste."

Not far from where Sanghvi stood there were several displays promoting various aspects of recycling and zero waste. And beyond that was a grinder set up to reclaim plastic jars made at the show.

"Each of those products has a story, talks about how much recycled content it has, what the feed stream is," said Kim Holmes, senior director of recycling and sustainability at SPI.

"I think one of the important things to educate the prime industry about is that recycled plastics are not necessarily an inferior material," Holmes said.

"I think there's this perception of it being not as good as prime [virgin] quality," she said. "Certainly it's got its challenges, but certainly it can go for innovative and high-end applications. And that's what we wanted to demonstrate."

Nate Saint, chief operating officer at Iron Mountains LLC of Morgantown, Pa., was checking out some toys made from 100-percent recycled plastic, largely high density polyethylene, by Green Toys Inc.

"I think it makes a lot of sense," he said about the zero waste concept. "It doesn't make a lot of sense for every segment of the industry, but it seems like a good idea to me."

The idea of trying to expose attendees from recycling through end use at the Zero Waste Zone is designed to give people a broad picture of what recycled plastics are all about.

"People are really going to get a sense of the recycling process and then the potential for recycled plastics," Holmes said.

Some of the fashions displayed from a recycled fashion show during NPE's opening ceremony also are on display in the Zero Waste Zone. "I think it definitely sets the stage for people who do want to come back to the Zero Waste Zone and learn more about the recycled materials and processes," she said.

Those fashions include jewelry created by one of the students at the Savannah College of Art and Design who contributed to the fashion show. That's where Clara Battle, a product designer for 3-D printing materials company Prinnel in Barcelona, Spain, was found looking at the repurposed plastics.

"I think it's very interesting and it has a lot of potential," she said about the use of recycled materials to create new products.

Creating the Zero Waste Zone and devoting so much time and energy to that portion of the show is all by design as SPI looks to promote plastics recycling.

Holmes has said that this show is the first time that the prime, or virgin materials, plastic industry has placed such a focus on recycling at a major show such as this.

There have been conferences devoted to just plastics recycling for years and years, but they are smaller affairs attracting smaller crowds. The Plastics Recycling 2015 conference held recently in Dallas, for example, had about 1,600 attendees. NPE 2015 is bringing together more than 60,000 folks.

Embracing the use of recycled plastics, Holmes said, is a smart business decision for the industry.

"I think that's the direction that NGOs certainly want to see. They want to see a change in the industrial ecology of plastics. Everyone talks about the circular economy. Well, I think we're actually laying the groundwork to begin to make that happen, which is really exciting," she said.

Source : Plastics News

PET & PBT MARKET IN INDIA TO SURPASS US$1.9 BLN

The PET & PBT resins market in India is expected to surpass USD1.9 billion in 2015, as per Research and Markets.

PET is predominantly used for packaging of bottled drinking water, carbonated soft drinks, edible oils, juices, alcoholic beverages, etc., while PBT is majorly used in electrical and electronics industry. India PET resin market is highly consolidated and dominated by three major players, Reliance Industries Limited (RIL), Dhunseri Petrochem Limited and JBF Industries Limited. RIL is the largest player in the country's PET resin market and is expected to maintain its leadership position through 2020. Few of the major PBT players operating in India include Toray, BASF, SABIC, SRF, DuPont and Laxness. Polyethylene Terephthalate (PET) is a plastic polymer produced by reacting two raw materials, Purified Terephthalic Acid (PTA) & Monoethylene Glycol (MEG); whereas Polybutylene Terephthalate (PBT) is manufactured from PTA and BDO (1, 4-butanediol). PET & PBT resins demand has been witnessing robust growth over last five years on account of increasing usage in various end user industries such as packaging & bottling, automobile and electrical and electronics.

Increased demand for PET resin is driven by replacement of traditional packaging materials like glass, aluminum, paper, metal and growth in FMCG sector while the factors like thermal stability, high heat resistance, superior electrical properties are the reasons for increased demand for PBT resin.With the increasing government focus on domestic manufacturing with Make in India tag the demand for PET and PBT resins is further expected to increase in India.

Source : Plastics News

FIRST FLUOROPOLYMERS UP-CYCLING FACILITY TO REUSE WASTE CREATED FROM PERFLUORINATED POLYMERS

Polystyrene sellers in Europe target massive April hikes (3-4-2015).

The first ever fluoropolymers up-

cycling facility has been opened, as part of a partnership formed between 3M subsidiary Dyneon, the University of Bayreuth and the InVerTec institute. The up cycling plant in Burgkirchen was created to reuse waste that had been created from the manufacturing of perfluorinated polymers. It is hoped that the plant is able to up cycle around 500 tpa of fluoropolymer waste and was made possible by a US$1.1 mln grant from the German Federal Environment Ministry (BMU). The up cycling facility will become part of the closed loop manufacturing plant at Dyneon, as fluoropolymers that are unnecessarily created will undertake a pyrolysis process, which turns them into gaseous monomers. They are then cleaned and re-entered into the production process, so the total amount of waste is reduced. Dyneon will not only be eliminating waste with the facility, but the company will also save considerable energy as part of this new manufacturing setup.

"The up-cycling facility and process will abruptly change the way all of us think and do things. Now, what was once regarded as a useless waste stream or at best a by-product with little utility is a valuable material," according to the idea owner and 3M corporate scientist Klaus Hintzer. "The up-cycling possibility means the monomer can be recovered, which in turn aids the environment since less mining activities are required. The process also affords energy savings."

Source : Plastics News

IMPACT OF IRAN NUCLEAR DEAL ON GLOBAL PETROCHEMICALS DEMAND-SUPPLY BALANCE

Negotiators and diplomats from the 5 permanent members of the UN Security Council, Germany and Iran have been locked in talks over whether, how and when to lift sanctions on Iran, as per Platts. The US and EU on January 20, 2014, suspended certain sanctions on Iran's petrochemical trade for six months, a temporary reprieve that was later extended for a further six months.

Years of sanction have seen Iran being choked off from the international banking community, along with dwindling of exports of key petrochemicals methanol and polyethylene. Petrochemicals were largely being exported in exchange for cash through Dubai and banking mechanisms that work directly with China, India and South Korea. The current meeting is the end of a 12-month process that could see Iran once again become one of the world's major exporter of plastics.

An easing of sanctions could lead to an investment boom in Iran over the longer term, in the short and medium-term it is likely to have a limited impact as most Iranian products have been finding a home in Asia. Easing of sanctions will give the Iranians more choices for exports. They have begin exporting to Europe-volumes of exports may not increase, but European buyers may be faced with a greater choice of suppliers.

Source : Plastics News

GLOBAL PETROCHEMICALS MARKET TO CROSS US$885 BLN BY 2020, AT A CAGR OF 6.8%

The global petrochemicals market was valued at US$558.61 bln in 2013 and is anticipated to reach US$885.07 bln by 2020, expanding at a CAGR of 6.8% from 2014 to 2020, as per Transparency Market Research.

Petrochemicals are widely used in various end-use industries such as construction, automobile and packaging. Hence, growth in these end-use industries is one of the major factors driving the global petrochemicals market. Abundant availability of raw materials in the Middle East - the region is one of the largest producers and exporters of crude oil and natural gas in the world - is another factor boosting the petrochemicals market.

Government initiatives in India and China for establishing petrochemical complexes are also expected to drive the market for petrochemicals. However, shift towards bio-based chemicals coupled with environmental issues arising due to usage of various petrochemicals is projected to hamper market growth during the forecast period.

Ethylene was the leading petrochemical product, accounting for over 25% of the global petrochemicals market in 2013. Ethylene was followed by propylene, which is primarily used in the manufacture of polypropylene and propylene oxide. Methanol is projected to be the fastest growing segment from 2014 to 2020. Growth of methanol is directly related to its increasing usage in gasoline blending and methanol to olefins (MTO) processes.

Other petrochemicals such as butadiene, benzene, xylene, toluene, vinyls and styrene accounted for a significant portion of the global petrochemicals market share in 2013.

China was the leading consumer of petrochemicals, accounting for over 25% of the global market share in 2013. Initiatives taken by the government of China to boost the petrochemicals market coupled with growth in end-use industries in the region is likely to drive the market during the forecast period. Rapid development of shale gas as an alternative feedstock for petrochemicals is reshaping the chemicals industry in North America. Europe emerged as the

third-largest petrochemicals market in 2013. The petrochemicals market in the region is estimated to grow at a sluggish rate during the forecast period. High demand for petrochemicals in the Middle East & Africa is primarily ascribed to rapid capacity additions in the region. The global market for petrochemicals is highly fragmented in nature. It is dominated by top multinational corporations that operate across the value chain.

Source : Plastics News

MEDICAL DEVICE PACKAGING TAKES CENTER STAGE AT HEALTH PACK

The "average" medical device packager is male (75% vs 25% female), is between 40 and 50 years old, and earns between $100,000 and $150,000 a year.

These and other findings from an exclusive survey conducted by Healthcare Packaging between Jan. 15 and Feb. 15 were presented at HealthPack 2015 in Norfolk, VA, to a conference attended by 270 professionals. The research was gathered from 110 end-user respondents. Healthcare Packaging served as the exclusive media partner of the conference, which is produced for professionals involved in the packaging of medical devices.

At the early March HealthPack event, Healthcare Packaging staff revealed that while the vast majority of medical device packagers respond positively to general questions about "being supported by their organization" when it came to packaging's seat at the table, or having enough time to meet project deadlines, results were less positive.

Responses were broken out by upper management and line-level engineers, and by large and small companies, to reveal that upper management has a far rosier view of their organization than employees in the trenches, and smaller organizations are stressed more by regulatory requirements than large organizations with more resources.

Designing medical device packaging with passion

Medical device packaging design requires meeting patient needs, FDA and regulatory requirements, testing and sterilization processes, time-to-market deadlines, etc. So there's no reason to seek out additional packaging design considerations, right? Think again.

A men's body wash package that looked as if it would have been appropriate sitting in a garage served as an inspiration to Jennifer Goff, CPP, Associate Manager, Packaging R&D, Stryker Instruments.

In her presentation, "Medical Device Packaging's Story Told Through Design Control," Goff advised attendees to draw inspiration from packaging used in markets and industries beyond the medical device world. In fact, she discussed a team-building exercise in which team members would invest the time to go through a retail store and evaluate packaging—everything from healthcare products to cosmetics to food—and determine how their appeal could potentially be utilized in packaging medical devices.

Empathic design, defined by Wikipedia as "a user-centered design approach that pays attention to the user's feelings toward a product," was also touted by Goff. She explained that incorporating user needs can emanate from voice-of-customer inputs, customer complaints, and empathic design. "These may be things we don't know," Goff said, "but could, for example, help us understand that we need to design individual cavities within a device tray to hold separate screws so they don't get lost in the surgical theater.

"Packaging needs for the end user to tell its story. In the case of medical devices, we need to watch how a nurse opens a device and how he or she uses it in the operating room, and determine the challenges the package gives the user. We have to remember that nurses have considerable influence in hospital purchase decisions."

Source : Plastics News Daily

EMERGING TRENDS IN THERMOFORMING

Sustainability, automation, in-mold labeling and improved technology are some of the drivers of change in the thermoforming sector, according to a new report from the Plastics News research department, North American Thermoformed Packaging Market Review & Outlook 2015.

Here's a peek at one section of the report, on emerging trends in thermoforming:

Automation and technology making an impact

Evolving trends in the thermoformed packaging industry include robotics integration, inventory control optimization, extrusion, thermoforming and assembly equipment upgrades, improved tools in packaging design and graphics, lightweight packaging and sustainability issues.

Jeff Mengel is Plante & Moran's national practice leader for plastics and the food processing/packaging industries. When it comes to current trends facing processors serving the thermoformed packaging market, he points to automation. "I know it sounds like a broken record, but advances in automation remains a primary trend," he said.

Machinery and tooling continue to evolve with new control systems and automation in the form of robotic stacking systems. These developments have allowed thermoformers to be more efficient while improving the

repeatability of the process.

Daniel Slavin, president and CEO of Woodstock, Ill.-based Dordan Manufacturing Co. Inc., noted that thermoforming has evolved tremendously over the last 30 years.

"From small job shops using hand-made modeled prototypes by pattern makers, to sand/pressure castings, to solid aluminum machined prototypes machined off the same engineering files that create the production tooling, it has been quite the evolution of skill, technology and machinery," he said. "This history of evolution demonstrates the thermoforming industry's ability to adapt and innovate … its ability to stay relevant."

The thermoforming process may replace injection molding in many applications in packaging due to speed of production and lower tooling costs. According to Julie McAlindon, senior vice president, DSS for PolyOne Corp., there is a rise in the conversion of injection-molded packaging to thermoformed components, which reduce lead times and tooling costs so that customers can get to market faster with less risk and investment.

Further, in-mold labeling (T-IML) has evolved over the past decade and is now becoming more common for the higher end of the thermoforming spectrum. The technology has improved and standards are being developed so that systems integration is easier.

Light weighting and sustainability gaining ground

As more consumers are seeking "green "products, sustainability is a key issue for processors serving the thermoformed packaging market.

In addition, light weighting and down gauging are growing trends as weight reduction has impacts beyond the part itself (e.g., transportation and logistics).

There is an increased focus on sustainability via thin-walling and the use of recycled and/or bio-based materials. "We see an increase in demand for barrier properties in thin-wall packaging as producers continue to seek light weighting solutions, McAlindon said.

Companies today are addressing sustainable packaging and waste-to-value propositions in different ways. Some are proactively playing a positive role at the heart of recycling initiatives (e.g. Dordan and PET clamshell recycling). Others are investing in recycling technologies and effectively closing the loop themselves (e.g. Placon & Ecostar facility, Octal's new investments in U.S. PET flake recycling).

In the food service segment, current packaging trends are focused on both the environmental attributes as well as the "look" of containers. Demand for products that can be recycled or composted continues, with perhaps a greater interest in 2015 in compostable products.

This could be the result of a growing number of food waste diversion initiatives throughout the foodservice industry.

Source : Plastics News

BASF LAUNCHES FIRST NYLON POLYMERIZATION PLANT IN ASIA

BASF SE's 100,000-metric-ton-per-year nylon polymerization plant in Shanghai has officially come on stream.

The company on May 6 inaugurated the wholly owned facility in the Shanghai Chemical Industry Park, which also is home to a world-scale facility for integrated isocyanates, operated by BASF and partners.

The new plant makes Ultramid nylon 6 and 6/6 resins.

Kurt Bock, chairman of the board of executive directors of BASF, noted this is the first investment in nylon polymerization for BASF in Asia Pacific, enabling the company to respond to customers' needs faster and with more flexibility.

Demand for nylon products in engineering plastics, fiber and film will continue to see strong growth, particularly in China, added Albert Heuser, president of the company's Greater China operations.

"With the local production facility, we are well-positioned to support our customers' strong growth and help them to develop innovative products for tapping into market opportunities," Heuser said.

BASF also operates Ultramid polymerization plants in Ludwigshafen, Germany; Antwerp, Belgium; Freeport, Texas; and São Paulo.

Last week BASF hit another milestone in its China production, beginning trial production in the first precursor plant of its integrated 400,000-metric-ton-per-year methylene diphenyl diisocyanate (MDI) complex in Chongqing.

In Greater China, BASF posted sales of over 5.5 billion euros ($6.1 billion) in 2014 and employed more than 8,000 people as of the end of that year.

Source : Plastics News

SURVEYOR INVENTS PLASTIC TOOL TO TEACH BUILDING SKILLS

A chartered surveyor has invented a learning tool which he hopes will help teach a variety of building techniques to students looking to enter the construction industry.

With a quarter of a century in the construction sector behind him Richard Winson believed there was a "more practical, effective approach to teaching

the necessary skills" for those looking to enter the sector and develop their knowledge once there.

His answer was 'Bimbrix', what he calls a plastic 'active learning' tool.

The product consists of 1:5 scale building components which aim to shed light on a variety of construction technologies, including setting out; estimating and tendering; construction programming and sequencing; façade detailing; centre-line calculations, and space planning.

Developed in collaboration with Amey plastics, a Hampshire-based injection moulder which planned and designed the tools needed for the individual components, Winson said the idea of Bimbrix was to help students understand the concept of 3D design and introduce them to building information modelling.

"The bricks are compatible with 3D printing techniques, but bespoke components can be created to compliment any model.

"Other CAD/CAM/CNC techniques can be used to create 1:5 scale components and Bimbrix is an ideal way of encouraging collaboration between different departments and design disciplines," he added.

Source : Plastics & Rubber Weekly

SCIENCE INDUSTRY PARTNERSHIP TACKLES POLYMER SECTOR SKILLS SHORTAGE

A well-trained skilled workforce is the lifeblood of any UK plastics company hoping to prosper in today's economy. But just as order books are beginning to look healthy due to the UK winning more business from overseas competitors it is becoming more difficult for the plastics industry to recruit staff they desperately need.

Stephen Hunt, the British Plastics Federation's (BPF) membership services director, says: "What is abundantly clear is that the desire for staff with the required skills is increasing amongst members, yet the ability to source them is getting harder."

Hunt draws this conclusion from the BPF's members' survey at the beginning of 2015, which he says illustrates just how wide the gap has become. "Nearly half of those firms surveyed stated that they were having difficulty recruiting staff, which compares to 2012 where only 22% were having problems with the issue. At the same time the number of firms looking to increase staff numbers had grown from 20% in January 2013 to over 50% by January this year."

The BPF's response to these findings was to launch its Education and Skills Committee, which is made of members including training providers, awarding organisations, plastics processors and raw material suppliers, to act as the Federation's main point of contact for skills and education initiatives.

Hunt says the BPF is currently working on a 'Plastics Industrial Strategy', which has been created following a series of professionally facilitated workshops with BPF member firms. The strategy is supported by the Department for Business, Innovation and Skills (BIS) and will be published later in the year.

He adds: "What was clear from the very early stages is that skills and education will be front and centre in the strategy. What happens in this area over the next few years will play a huge role in defining the future of the UK plastics industry. The issue is that skills and education is very broad and as a result the committee is looking at all levels of education including primary, secondary and tertiary."

Like many in the polymers sector Hunt believes the future of the plastics industry and its ability to attract top-level workers is closely linked with the general perception people have of the plastics industry "Unless mindsets of students, parents and teachers change, the likelihood of people choosing plastics' as a career is slim," he says. "This leads to a great challenge and we will be working with the committee to help develop resources for schools in order to promote positive stories about our great industry."

One of the first undertakings of the new committee will be to survey companies within the plastics industry in order to better understand their requirements.

Hunt says: "We would therefore like to invite companies to go online and spend a couple of minutes completing our new survey www.bpf.co.uk/skills, which will be used to engage with relevant stakeholders to ensure the right training is made available within the industry."

THE SIP INCENTIVE

The BPF's findings that polymer companies need to do more in the skills arena are borne out by metrics from the Science Partnership (SIP), a consortium of UK-based life sciences companies led by GlaxoSmithKline and facilitated by Cogent Skills. These show only 11% of polymer processing companies have participated in year one of SIP. However, 39% of the apprenticeships have been taken up by polymer companies and 90% of these at level two. The good news is that 59% of the SIP training has been taken up by small and medium-sized enterprises.

Richard Brown, managing director of G&A Moulding, concurs with the BPF's Hunt. "Investment in engineering training is imperative to succession planning if a business is have a future."

Brown is an advocate of ongoing training for employees and warns that unless training is conducted externally as well as internally in small companies bad habits can be passed from one generation to the next. This can result

in an image problem for the plastics industry. "Training motivates employees and reduces costs," he says.

However, John Holton, strategy and operations director at Cogent, believes there has been a good take-up of apprenticeships by plastics companies. "SIP funding, which we manage on behalf of the life sciences industry, is available for this until 2016 and we believe that apprenticeships will go on after the life of the project," he says. "The government is supportive of us because we are providing apprenticeships employers really want."

The new apprenticeships Cogent has developed require apprentices not just to be continuously monitored but also sit a competence test at the end of the programme. Holton says: "The concept is that they are competent to do the job."

Steve Trillo, human resources operations director at Redcar-based Lotte Chemicals, is an advocate of participation in SIP. "The government has progressively moved responsibility of skills development to employees via Employer Ownership Pilots and supported this with funding," he says. "This has provided our industry with a great opportunity to take a lead through the SIP and drive the skills agenda that is required for the science-based industries."

He believes the SIP is a good opportunity for industries of all sizes to actively engage with the local community, schools and colleges while gaining funding to take on apprentices, graduates and develop their workforce to bridge the skills. "The support is there," he says. "Employers just need to get involved to make a difference and ensure we maintain a skilled workforce with a continuous pipeline of new talent to ensure we can continue to operate our businesses safely and competitively within a global market place."

Trillo says SIP programmes have helped enable his company to deliver on its organisational development and manpower strategy, which engages everyone in the company. "We have been able to increase the number of apprenticeships and graduate training programmes, whilst also increasing the level of training and development of our staff. It has also enabled us to take a holistic view on the skills landscape and deliver not only on what we require but help and support others so that between us we have coherent strategies that work in partnership, rather than in isolation."

Trillo adds Lotte is already seeing many benefits from being actively involved in the SIP. "Some are very tangible, such as structured up-skilling programmes, delivery of new skills, engagement with local schools and colleges via the ambassador programme and the ability to train, develop and deliver skilled staff through apprenticeship and graduate programmes."

He believes the ambassador programme also helps provide a positive work environment and feelgood factor, as like any business it is important that existing employees can transfer their skills and expertise to the next generation of workers and employees. "They enjoy their role in supporting, training and mentoring of apprentices and graduates, who bring fresh ideas and knowledge into the company," Trillo says.

"We are also starting the reap the rewards on being actively involved in the SIP programmes, with increased staff training and development leading to new opportunities within the company and increased apprenticeships and graduate programmes leading to real jobs."

The Science Industry Partnership aims to deliver:

- 1,360 apprenticeships based on a new, simple employer-owned system delivering work-ready apprentices
- 240 Traineeships incorporating a new work experience programme for young people pursuing science-based careers
- 150 industry degrees with a new approach to graduate development, focused on employer skills needs and graduate employability
- 230 Modular Masters modules providing a new modular route to deliver high tech post-graduate skills in the workplace
- 5,900 Workforce Development opportunities to increase technical and management capability of the workforce
- Science, technology, engineering and maths careers: A cross-sectoral proposal to attract young people into STEM jobs

Source : Plastics & Rubber Weekly

PETROCHEM MAKERS IN ASIA TO TAKE UP LPG IN JUNE AMID SHARP PRICES FALL :

Buyers in Asia's petrochemical sector are likely to start taking up liquefied petroleum gas again in June due to a sharp fall in prices for the fuel, after shunning LPG as a feedstock for several months in favour of naphtha, as per Reuters. Some 200,000 tons of naphtha could be replaced in June by LPG, traders estimated, and this could quicken the drop in naphtha prices as supplies balloon.

"The current price spread between naphtha and LPG is about US$50-60/ton, making it quite workable to do a switch," said a Singapore-based trader. For substitution to take place, LPG prices have to be at least US$50/ton lower than naphtha. The expected LPG volumes would be only about half the record quantities used in June a year ago. But they would be up significantly from

negligible usage in January through May this year due to an unexpected cold snap in Europe and North America that kept LPG prices high, the sources said. Asia's petrochemical units are able to replace up to 15 percent of naphtha with LPG to produce products such as ethylene and propylene, which are used mainly for making plastics.

Naphtha sellers, who until recently were cashing in on strong spot prices, could be hard hit. The sudden LPG influx is coming at a time when more European naphtha cargoes are streaming to Asia and as cracker maintenance is set to pull down Asian naphtha demand. Additionally, Abu Dhabi National Oil Co will raise its naphtha exports as soon as it ramps up its expanded Ruwais refinery to about 90% in June.

Source : Plastics News

BHARAT PETROLEUM CORPORATION LTD (BPCL) RECEIVES APPROVAL FROM ENVIRONMENT MINISTRY FOR PETROCHEMICALS EXPANSION

State run Bharat Petroleum Corporation Ltd (BPCL) has received Environment Ministry approval for a Rs 4,588 crore expansion at its refinery facility at Kochi. Theoil and petrochem major can now plan to produce some niche petrochemicals that are mostly imported. The proposed Propylene Derivatives Petrochemical Project (PDPP) consists of three major process units -- acrylic acid, oxo-alcohol and acrylates. Land has been acquired for the project. The project is expected to achieve mechanical completion in Q1-2018.

"About 329 KTPA of products will be manufactured from 250 KTPA of Propylene feed stock in the PDPP complex. Matching Utilities and off-site facilities are also envisaged as part of the project," the company said. PDPP complex will be set up close to the refinery to achieve integration of feedstock supply, utilities, offsites and other facilities.

Source : Plastics News

THE INDIAN SUB-CONTINENT : THE WORLD'S FASTEST GROWING REGIONAL POLYMER MARKET

The Indian sub-continent has established itself as the most exciting and dynamic emerging market in the world and is one full of potential and investment opportunities. The region is expected to enjoy the fastest growth in polymer demand anywhere in the world over the next five years outstripping China and other emerging economies. According to a recently published study by leading industry consultants, Applied Market Information Ltd (AMI Consulting), there is now massive investment occurring in the region's petrochemical, polymer production and downstream plastic processing industries, driving strong growth in polymer demand - AMI forecasts that at the region's current rate of growth its thermoplastics market will surpass 20 mln tons by 2020.

The market in the region is dominated by India on account of its huge population and high GDP. However, growth in the region on the whole is driven by its increasingly globally-minded governments that are introducing policies to encourage foreign direct investment and facilitate closer integration with the worldwide economy, helping to drive investment in petrochemicals, polymer production and downstream plastic processing. Growth in the region is not only fuelled by such policy relaxations but also by rising urbanisation of a large, youthful, population, leading to greater consumer spending for items that require plastics - from packaged goods to mobile phones and automobiles. While much of these products are still imported, there is now considerable investment taking place in plastics processing operations to support manufacturing investments, driving growth in polymer demand; those that understand and participate in this market now will reap the benefit of future growth. Although rapidly developing, the region does face substantial challenges. For example, lack of sufficient local polymer production is a major obstacle faced by many plastics processors in the region with each country besides India being heavily or even entirely reliant on resin imports depending on the country in question; these imports are mainly sourced from India, the Middle East and South East Asia. Exchange rate fluctuations of local currencies against the dollar add further uncertainty to the market, making it harder to compete against cheaper Chinese imports of finished goods. In general, power supply in the sub-continent is tight but also erratic and unreliable in many regions, which can dramatically reduce effective utilisation. However, in India in particular, the government is seeking to address these issues by implementing strategies to tackle infrastructural and power limitations. In addition, in September 2014, it announced its "Make in India" initiative, designed to catalyse Indian manufacturing to make the country a globally recognised manufacturing hub for years to come. It is clear that plastics will be called on to play a vital role in this changing region and the plastics industry will benefit from national efforts to encourage and improve manufacturing. In its report, AMI forecasts 8% per year average increases in the Indian sub-continent over the next five years, with

levels of annual growth varying from 5% in Sri Lanka to up to over 8% in India.

Source : Plastics News

HOW DID MAJOR PLASTICS MACHINERY MARKETS PERFORM IN 2014?

Global sales of plastics and rubber machinery is expected to increase by an average of 3% a year during the period from 2014 to 2016, according to a trend report commissioned for the first time by the VDMA Plastics and Rubber Machinery Association. The article looks at how major machinery markets in the world performed in 2014.

Chinese machines welcomed in global markets

In terms of volume, China is the world's largest plastics machinery supplier. In 2014, there were 397 machinery makers above designated size, up 5.6% compared with 2013. Export values, major income and profits of the industry increased by 23%, 7% and 7% respectively.

Last year, China exported 230,584 units of plastics machines, up 71% Year on Year (YOY). Total shipment value was US$1.85 billion, rose 7% over 2013.

Export of injection molding machines and bridge-die-forming machines enjoyed a steady growth. Extruders shipment volume rose by a staggering 141% while value increased 6%.

Despite export volume of blow molding machinery dropped 86%, its total value was able to achieve a slight growth of 2%.

In 2014, the trading of 3D printers was being counted separately in China, with 53,800 units being shipped out as US$24.61 million. Growth rate was exponential in the second half of the year, in which 42,000 units were exported at US$17.7 million. Both figures climbed 260% and 155% respectively compared with the first half of 2014.

In terms of export destinations, Vietnam, the US, Turkey and Iran were the most active markets. Thailand, Indonesia, Brazil, India, Russia and Malaysia slowed down, however.

As for plastics machinery imports, China bought 21,734 machines from abroad, which represented an enormous growth of 116%. Import values totaled US$1.98 billion, up 9% compared with 2013.

Injection molding machine was the major target of imports, with 7,380 units being shipped to China last year, a YOY increase of 29%. Total import value amounted to US$750 million, rose 9%.

Imports of pelletizers also increased significantly, as 214 units were shipped to China at US$215 million, up 16% and 62% respectively.

From a regional perspective, imports from Germany remained steady; there were more interests in machines from Taiwan, Italy, the US and Austria. Imports from Japan, France and Switzerland were down by 10% in value respectively, but none posted a bigger drop than Korea (-40%).

Germany's domestic orders grew significantly

From a 6% growth predicted in 2013 to revising the expectation to 3% in the middle of the year, Germany's plastics machinery industry can only settle for a 1% decline in 2014.

The industry expects total sales of €6.7 billion in 2014, just short of the previous year's record, according to VDMA Plastics and Rubber Machinery Association.

"German deliveries abroad have decelerated sharply, falling by 5.3% in the first half of the year," explained Thorsten Kühmann, the Association's Managing Director. "The export picture is dominated by negative trends in demand from and exports to Brazil, Russia, India as well as Turkey and Mexico. China, too, is weakening."

Mr Kühmann has already warned that the political crisis surrounding Ukraine and Russia might have a negative impact on the industry. Russia was the third largest export destination of German plastics machinery in the past few years.

Ulrich Reifenhäuser, the Association's Chairman, admitted that "the global crises are also increasingly affecting sentiment in the firms concerned."

Nevertheless, VDMA is predicting a 4% increase in sales in 2015, based on strong domestic demand and the active European Union (EU) market.

Despite a 3% decrease of orders from abroad, orders within Germany rallied strongly in the period from January to August in 2014, up 20% compared with the same period last year.

In particular, there was a 10% increase generated in the countries of the EU 28 area. "The increase in demand is making up for the sharp fall in Russia. Growth has come from our East European neighbors in particular, but also from Italy, Spain and Portugal," said Mr Kühmann.

Overall, incoming orders for German plastics machinery in 2014 were 2% higher than the previous year.

The optimistic forecast for 2015 assumes that capital investment in Germany will continue to grow and that the trend in the top sales markets of China and the US will remain positive. Large increases in the consumption of plastics are predicted for China in particular, bringing rising demand for high quality machinery.

Exports lead the line for Italian machinery

According to Assocomaplast, the Italian trade association belonging to CONFINDUSTRIA, exports of Italy's plastics machinery rose by 8%.

Progress in exports maintained a constant pace to the end of 2014, sustaining Italian machinery manufacturers in a period where the domestic market showed only timid signs of recovery in the very recent months.

In fact, despite an 8% increase on the orders from abroad, the propensity towards investment by domestic converters remained limited into the final quarter of 2014.

Assocomaplast, according to surveys among its members, estimated a value of production that again touched the threshold of €4 billion. The trade balance has further increased in a positive direction, going well beyond the €2 billion threshold, with the domestic market just under that level.

The most recent survey ran by the association also highlighted a generally optimistic outlook among approximately one third of the interviewed companies, who expect further increases in orders and turnover in the first half of 2015. A similar percentage also expects the export share to increase.

Regarding the destinations for foreign sales of Italian machinery, a clear and progressive increase is noted for European countries - within the EU, while the total trade with extra-EU countries has fallen off, dragged down by the negative performance in Russia (-11.9%) partially as a result of the sanctions applied in response to the Ukraine crisis and the collapse of the ruble.

Enjoying the North American Free Trade Agreement (NAFTA), exports to the US also increased in 2014.

The lackluster trend in sales to Brazil (-11% with respect to 2013) conditioned the overall performance in South America.

Exports to Asia was supported by an upswing in demand from China, as well as to Vietnam, Indonesia and India, to name but a few. It compensated a slow-down to South Korea, Japan and Thailand.

The US, with a 21.5% increase, overtook France (-10.4%) as the second largest exports destinations of Italy's plastics machinery. Germany, meanwhile, remained in first place by a wide margin.

In terms of machinery types, positive performance was again shown in blow molding machines and flexographic printing machines, up 11.6% and 11.1% respectively. The export value of extruders remained stable with respect to the previous year but injection molding machines showed a clear downturn (-16%).

The molds sector also performed well (especially injection types), representing over 28% of total Italian machinery exports.

US continues strong revival

The US plastics machinery industry is enjoying a period of robust revival, according to statistics and report compiled by SPI: the Plastics Industry Trade Association's Committee on Equipment Statistics (CES).

"Annual shipments of plastics machinery increased for the fifth straight year in 2014, and the economic fundamentals that favor continued investment in capital equipment are expected to persist through 2015 as well," said Bill Wood, the plastics market economist who analyzes and reports on the plastics machinery market sector for the CES.

For full year 2014, the total value of US primary equipment export grew 7.6% compared with the previous year.

Shipments of primary plastics equipment (injection molding, extrusion and blow molding equipment) for reporting companies totaled US$346.1 million in the fourth quarter, 9.8% higher than the total of US$315.1 million in the third quarter. Year on Year (YOY) speaking, the figure rose by 8%.

Specifically, export value of US injection molding machinery increased by 5.3% over 2013.

For single screw extruders, shipments were down 3% in 2014. It was a different story for twin-screw extruders (which include both co-rotating and counter-rotating machines) though, as export values jumped 26.3%.

Meanwhile, shipment of blow molding machinery spiked up by a staggering 38.1% compared with 2013.

The CES also compiled data on the auxiliary equipment segment (robotics, temperature control, materials handling, etc.) of the US plastics machinery industry. New bookings of auxiliary equipment for reporting companies totaled US$103.5 million dollars in 2014 fourth quarter. For the whole year, bookings of auxiliary equipment were up 9.2%.

The upward trend corresponded with the long term trends in the two major data series compiled by the US government that measure overall demand for industrial machinery, said SPI.

According to the US Bureau of Economic Analysis, business investment in industrial equipment escalated by 16% (seasonally-adjusted, annualized rate) in 2014 fourth quarter when compared to the same period in 2013, and the annual total for investment in 2014 was up 13%.

The other important machinery market indicator, compiled by the US Census Bureau, showed that the total value of new orders of industrial machinery jumped 30% last year.

"The short term problems caused by a stronger dollar and a downsized oil patch notwithstanding, the recovery in the US economy will continue through 2015," Mr Wood analyzed. "And as I have said before, the three main trends that will drive the economy over the coming months are already well-established. They are: low interest rates, low energy

prices, and rising wages and household incomes resulting from stronger employment."

The CES also conducts a quarterly survey of plastics machinery suppliers that asks about present market conditions and expectations for the future. The responses from the 2014 fourth quarter survey indicated that machinery suppliers remain optimistic about the market demand for their products in the coming months.

When asked about expectations for future market conditions, 94% expect them to hold steady or get better during the next 12 months.

From a regional perspective, North America is seen as one of the most promising markets for machinery suppliers, followed by Mexico. Expectations for Latin America call for mostly steady market conditions, while comments on Asia and Europe were unchanged from the third quarter survey, which called for demand to hold steady.

In terms of end markets, the respondents expected that automotive and medical will remain strong in terms of demand for plastics products and equipment.

Source : China Plastic & Rubber

HOW WILL LSR INJECTIONMOLDING BE TRANSFORMED?

Liquid silicone rubber (LSR) is extremely elastic, odorless, chemical and temperature resistant. It is acknowledged as high performance for use in aggressive environments. Numerous fields of application are opened up and the corresponding markets are expected to continue growing in the coming years.

Nevertheless, as LSR has fussy properties, the development of its molding technology requires a mindset change for those accustomed to molding thermoplastics. Chemical companies, machinery and mold makers are beefing up their efforts to master the processing of this niche thermoset and address its benefits to the industry.

Just simply process LSR as another resin is not a good plan. LSR injection molding requires unique set up and process engineering, such as specialized injection molds, cold deck and machinery with specific injector technology.

To address what the next evolution might be for LSR, a seminar focused on LSR was organized in China by Engel in partnership with Dow Corning and Elmet.

At the seminar, Gero Willmeroth, Sales and Service President at Engel Machinery Shanghai emphasized the importance of upgrading the processing technology for LSR.

"The percentage of high-end applications is growing considerably," said Mr Willmeroth. "It is also essential in the area of mass products to adapt production lines individually to the products, the quantities, and the materials, in order to be able to keep production competitive in the long term."

Since LSR is a non-recyclable material, it is important to achieve waste-free production. As Leopold Praher, Global Sales Manager LSR/LIM from Engel commenting on the technology trend, the industry is calling for a fully automated production that is free of burrs, requires no reworking and produces no waste.

This trend was proved at various recent tradeshows, as injection molding machines with similar features for LSR processing were on display by different leading manufacturers.

Injection molding with advanced multi-technology machines

According to Engel, the processing of LSR poses high demands on the parallelism of the mold mounting platens because of its extremely low viscosity, and in this respect, the tie-bar-less machines from the Engel e-victory series have an advantage, producing with few burrs and no reworking required.

The construction of the tie-bar-less machines achieves a greater platen parallelism than injection molding machines with tie bars. The central flexible element enables the moving mold mounting platen to follow the mold exactly while clamping force is being built up, thereby achieving high precision.

Force is being applied evenly over the entire platen face, which is guaranteed by the patented force divider. The cavities that lie near the outer edge of the platen are closed with exactly the same clamping force as the ones in the middle. This also increases product quality and reduces wear on the mold.

At Interplastica 2015 held in Moscow in January, an Engel e-victory 120 combi that was automated with an Engel viper 20 linear robot produced housings for flow-measurement sensors with an integrated silicon seal.

Because there were no tie bars to get in the way, the robot could access the mold area directly from the side, which allows optimal automation of the injection molding process even in production halls with low ceilings.

At Medtec Europe 2015 held in Stuttgart, Arburg presented an electric Allrounder 470 A with a clamping force of 1,000kN and a size 170 injection unit specially equipped for processing LSR.

Bellows used as a valve in medical test devices with a weight of 3g were produced using a four-cavity mold manufactured by the company Rico. Four parts were produced in a cycle time of 40s with "free falling" demolding.

The mold featured open cold runner technology for direct injection, ensuring the production of flash-free and therefore rework-free parts. Demolding of the item was performed automatically via an

innovative pneumatically actuated wiper unit.

The machine is specially equipped for production in a clean environment. The direct-acting servo-electric drives on it are encapsulated and liquid cooled as standard to ensure clean and low-emission production.

At Taipei Plas 2014, the German injection molding machine manufacturer also highlighted its LSR technology to achieve waste-free production, with a hydraulic Allrounder 370 S, which has a clamping force of 700kN and a size 290 injection unit. The machine manufactured in a cycle time of 50s per four bottle openers.

At Arburg, experts are continuing to see the trend of two material molding, which means combining LSR with thermoplastic or another grade of LSR. This presents challenge in marrying the material combinations and is often overcome through mechanical interlocks or surface treatment of the substrate.

SmartPower, the youngest member of the PowerSeries from Wittmann Battenfeld, was on show for the first time at the Fakuma last year.

The SmartPower 120/350 demonstrated the production of penholders produced from LSR in a 4-cavity mold supplied by Elasmo Systems. The mold technology used allows molded parts to be manufactured from liquid silicone without sprue, virtually free of ridges, without waste and fully automatic.

Thanks to their special design, the penholders adhered automatically by suction to any smooth surface when a light pressure was applied. The penholders were removed, deposited on a conveyor belt and filled automatically by a W818T robot from Wittmann.

Opportunities begin to unfold for molders

With regard to mold building, there have been more attempts to get a single part to perform numerous functions so that fewer number of parts in an assembly would be required, which has brought design challenges. Automation and flashless molding continue to be technological evolutions.

Especially in the medical device market, medical device manufacturers are seeking to integrate more functions in ever more compact devices. The demand for automation for micromolding is on the rise as medical silicone component continue to get smaller and smaller.

Now many custom molders typically add dedicated experts and equipment to expand operations, and do not mold LSR at the same time within the same machine cells which process thermoplastics. Thus, new opportunities begin to unfold for those molders who can innovate to well adapt the processing of thermoplastics and LSRs in the same machine cell.

In the US market, there has been a growth of molding with automation and two-shot molding in past few years. Two-shot molding is identified as using one machine to inject two different materials. It may be a thermoset onto a thermoplastic or a thermoset onto a thermoset.

Source : China Plastic & Rubber

IPF PARTICIPATION ON WASTE TO WEALTH PROGRAMME

A programme on Waste Management was organised at Adarsh Hindi High School, Kolkata on 7th May 2015 Shri Jayanta Bandyopadhyay, Executive Secretary, attended the programme on behalf of Indian Plastics Federation (IPF) and also made a presentation on source segregation using separate bins for dry waste and wet waste, and how to convert waste into wealth. The target audience was essentially school students. However, both teachers and non-teaching staff of the school were present during the programme. A snap shot of the programme is given.

Innovating in Forests and Fields

Dr. Devdutt Pattanaik

In the new world order, every Brahmin functions like a trader and every trader functions like a Brahmin. The lines are blurred. Innovation is not its own reward; the money matters.

In the Sama Veda, all the hymns of the Rig Veda are given melodies. These melodies are classified into two: the grama-geya-gana, that which must be sung in settlements, and aranya-geya-gana, that which must be sung in forests. The former is more accessible and popular while the latter is complex and distant, considered to be much more powerful. The settlement refers to familiar, predictable, domesticated spaces. But the forest evokes mystery, fear and the unknown. Corporations are settlements, functioning to a rhythm and a goal. Start-ups function outside corporations, in the forest, with no guarantee of success: it is a space of anxiety, and innovation.

Start-ups can turn into large corporations but can corporations create ecosystems that breed innovation? Corporations want to: the upside is great. But the shareholder is vary: for the down-side is much greater. How much do you invest? In whom do you invest? When do you decide enough is enough? When do you close shop? How do you measure success?

In a start-up, the risk is taken by an individual or perhaps a bunch of individuals, who stake their career and comfort to take a risk and are answerable to no one but themselves. In a corporation, there is a whole bunch of shareholders who want quarter by quarter success, and have hawkeyed auditors and regulators checking if their investment is safe. The two ecosystems are very different. How does one create a forest within the settlement? Is it possible? Or will the forest turn out to be just another garden, well maintained by the management that expects predictable results?

We are always told successful stories of start-ups and innovators. No one really tells us the failure rates, the hundreds and thousands of 'garage enterprises' that failed despite promising starts and great investments. We are charmed by the 'success' of innovation, but few are warned of the failures of experimentation. Star-ups can handle the failure. But in corporations, someone needs to be held responsible for the loss of shareholder money. Who will it be? The CEO? Will he sacrifice his bonus if the innovations do not manifest, or fail to deliver a promise?

An innovator usually innovates so that he can benefit from the innovation, all talk of helping the market and providing customer value notwithstanding. He is spellbound by the glamour associated with innovation: the millions of dollars, the invitation to give talks at entrepreneur summits, the standard talk of hard work and risk taking and perseverance, and the denial of luck as a factor, which meets with standing ovation! In a corporation, who will benefit from the innovation? The individual, the team, or will they get just a sliver of the profit with the larger lion share going to the investor-shareholder?

In India, the 'Brahmin' was expected to stay poor in the pursuit of knowledge, and the 'trader was expected to stay rich in the pursuit of wealth. However, in the new world order, every Brahmin functions like a trader and every trader functions like a Brahmin. The lines are blurred. Innovation is not its own reward; the money matters. And the developer is constantly afraid if the large corporation will appropriate his idea and he will be left with the scraps. It's a real fear that makes many smart developers want to leave and start their own start-ups.

In ancient India, in many villages, there were sacred groves of the snake-goddess. The idea, we now realize, was to ensure biodiversity in the region, a place where the forest thrives, for the forest is where all seeds, not just profitable ones, can germinate without being discarded as weed. These were outside the settlement, not inside. Aranya is always outside, not inside the grama. So perhaps corporations can use a share of their wealth to support start-ups outside their controlled ecosystem. To support forests inside the settlement requires a great deal of courage. Google is striding forth in that direction and Apple too, though some people have doubts, despite rich profit-harvests. But it requires courage on the part of the shareholders, and the willingness to gamble, and even fail. Failure is something few Board of Directors would approve.

CIRCULAR

TO ALL MEMBERS OF THE FEDERATION

MEMBERS ARE REQUESTED TO SEND THEIR GRIEVANCES / PROBLEMS FACED ON VAT / CST / ENTRY TAX ETC. IN DETAILS ALONGWITH SUPPORTING DOCUMENTS TO THE IPF SECRETARIAT SO THAT WE CAN PUT THE SAME TO THE CONCERNED AUTHORITY.

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8B, ROYD STREET, 1ST FLOOR, KOLKATA – 700 016.
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IPF WELCOMES TO NEW MEMBERS TO ITS FAMILY APPROVED IN THE EXECUTIVE COMMITTEE MEETING HELD ON 24/04/2015

Name of the Company	Class of Membership	Membership No.
M/s Servo Plastics Pvt. Ltd.,	Life Producer member	LP 006
M/s Servo Plastichem Pvt. Ltd.,	Life Manufacturer member	LM 352
M/s Neo Essel Dispoware Pvt. Ltd.,	Manufacturer member	M 300
M/s MM Viniyog Pvt. Ltd.,	Life Distributor member	LDS 014

CIRCULAR NO. 36/2015 **20th May 2015**

The Federation has received the following applications for membership of the Federation :

1. a) Name & Address of the Applicant Firm : **M/S. MUTHA BROTHERS**
146/2, Old China Bazar Street
Bothra Market, 1st Floor
Kolkata – 700 001.
   b) Class of membership : **Life Manufacturer member**
   c) Proposed by : M/s Kumar Engineering Works.
   d) Seconded by : M/s Prakrit Impex Pvt. Ltd.
   e) Name of Representatives : 1. Mr. Jayantilal Jain – Partner
2. Mr. Kantilal Jain – Partner
   f) Items of manufacture : Manufacturer & Exporter of Ball pens, Refills, Sketch pens and recycled plastic granules of SAN, ABS & PP.

2. a) Name & Address of the Applicant Firm : **M/S. CROWN INDUSTRIES**
136A, Balaram Dey Street,
Kolkata – 700 006.
   b) Class of membership : **Life Manufacturer member**
   c) Proposed by : M/s Endurra Polymers Pvt. Ltd.
   d) Seconded by : M/s Sanchar Polytubes
   e) Name of Representatives : 1. Mr. Sanjeev Agarwal - Partner
2. Mr. Dinesh Agarwal – Partner
3. Mr. Satyanarayan Agarwal - Partner
   f) Items of manufacture : Manufacturer of Rope

3. a) Name & Address of the Applicant Firm : **M/S. K. SARAF & SONS**
AC – 67, Salt Lake City
Kolkata – 700 064.
   b) Class of membership : **Life Manufacturer member**
   c) Proposed by : M/s Sea International
   d) Seconded by : M/s Plastic Plaza & Co.
   e) Name of Representative : Mr. Kishor Kr. Saraf - Proprietor
   f) Items of manufacture : Manufacturer of Plastic Pipes and Tubes.

4. a) Name & Address of the Applicant Firm : **M/S. VISHAL ENTERPRISE**
4/A, Kali Prasanna Sinha Street
Kolkata – 700 002.
   b) Class of membership : **Life Manufacturer member**
   c) Proposed by : M/s Sea International
   d) Seconded by : M/s Plastic Plaza & Co.
   e) Name of Representative : Smt. Manju Saraogi - Proprietor
   f) Items of manufacture : Manufacturer of Plastic Goods.

CIRCULAR

5.	a) Name & Address of the Applicant Firm	:	**M/S. MANNA TRADERS** 208/D, Raja Rammohan Roy Road Kolkata – 700 008.
	b) Class of membership	:	**Life Dealer member**
	c) Proposed by	:	M/s Gautam Plastics
	d) Seconded by	:	M/s Plastic Plaza & Co.
	e) Name of Representative	:	Mr. Manik Lal Manna - Proprietor
	f) Items dealt in	:	Dealer of Plastic Goods.
6.	a) Name & Address of the Applicant Firm	:	**M/S. SARASWATI TRADING CO.** 478, Raja Rammohan Roy Road Kolkata – 700 008.
	b) Class of membership	:	**Life Dealer Member**
	c) Proposed by	:	M/s Gautam Plastic
	d) Seconded by	:	M/s Plastic Plaza & Co.
	e) Name of Representative	:	Mr. Pradip Ghosh - Proprietor
	f) Items dealt in	:	Dealer of Plastic Goods.
7.	a) Name & Address of the Applicant Firm	:	**M/S. A. B. ENTERPRISES** 196/A, C. R. Avenue, 4th Floor Kolkata – 700 007.
	b) Class of membership	:	**Life Dealer Member**
	c) Proposed by	:	M/s Sea International
	d) Seconded by	:	M/s Plastic Plaza & Co.
	e) Name of Representative	:	Mr. Santosh Kr. Todi - Proprietor
	f) Items dealt in	:	Dealer of Packaging materials.

(Circulated in terms of Article 15 of the Articles of Association of the Federation)

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