As we enter 2014, we look back on a year which had a challenging business environment, especially over the last 6 months. The polymer processing industry has had to grapple with poor demand, high costs, a very volatile exchange rate and an extremely tight money market. The last quarter of the fiscal year, however, promises to bring better tidings with the first ‘green shoots’ of a demand recovery already apparent.

Reliance Polymers participated in many events to promote the breakthrough concepts related to the polymer industry with the highlight being our participation in the world’s biggest plastic and rubber exposition K 2013 in Düsseldorf, Germany. Participation in Plastivision India also provided us with an excellent platform to interact with our existing and potential customers.

Meanwhile, we have continued our efforts to create new business opportunities in Polypropylene by conducting 31 events/exhibitions in this quarter. This issue of Repol Konnect focuses on Rigid Packaging and the upcoming concepts in the same. Hope all of you enjoy reading the newsletter!

Introducing Global Standards in Geosynthetics

Reliance Polymers has taken an initiative to incorporate Geosynthetics in Indian Standards. Currently it is in the process of developing 5 case studies to facilitate the same.

K 2013

Reliance Polymers successfully exhibited its products in World’s biggest Plastic and Rubber exposition - K 2013, Düsseldorf, Germany. Trade visitors from across the world as well as dignitaries from India and Germany visited the stand for scheduled meetings and enquiries on products throughout the event.

Plastivision 2013

The 9th edition of Plastivision, organized by the AIPMA, was held in Mumbai from 12th - 16th December. This was one of the largest Indian plastics exposition which spread over 70,000 sqm and covered 6 halls and 2 hangars. Reliance was present at Hall 5 and won the creative exhibitor award. With participation from over 46 countries and a visitor base covering 61 countries, this exhibition turned out to be a very good platform for Reliance Polymers team to interact with its existing and potential customers.

CSR initiative: Free distribution of Silage bags to the Warli Tribal Community

Reliance Polymers conducted a live demonstration of Silage preparation and the use of PP FIBC Silage bags, they distributed free samples of Silage bags to the Warli tribal community of Waliv village in Vasai. The initiative was attended by more than 100 Warli tribal farmers of which 70% were women.
Graham Blowpack Pvt. Limited

Graham Blowpack is a joint venture firm between PPI Blow Pack Pvt. Limited, India (Part of Deoras Group) and Graham Packaging Company, USA. Both companies came together as they share the same vision and complement each other in every aspect. Graham presently has a sales turnover of more than $3 billion and 90% of its sales come from the markets No. 1 position. Globally Graham has more than 90 manufacturing plants and approx 35% of the plant are on the site with customers. Graham Blowpack, in India, manufactures rigid plastic containers from various plastic resins like HDPE, PP, PET, PES, etc. to suit the requirements of agrochemicals, chemicals, automotive lube oil, cosmetics, edible oil, cooking oil and pharmaceuticals Industries. It specializes in innovative rigid container solutions such as plastic container with view strip, multilayer barrier containers, Hot filled PET container, re-tort-able grade container. It has major interests in setting up captive packaging plants for the large users of these containers.

Graham Blowpack has been at the forefront of innovation when it comes to rigid packaging with its innovative three layers UV resistant and six layers barrier packaging wheel type blow molding machine installations. With printing and decorations such as UV printing, in-mold labelling, automated labelling and shrink sleeving Graham Blowpack is providing one-stop solutions to all its customers post molding requirements. The Haridwar unit of Graham Blowpack has been certified for BRC, IOP and SEDEX which is fast becoming a norm by the food manufacturing industries. They have been working actively with Reliance India Limited for introduction of new polymers and serving new markets. Together the primary focus of both Graham Blowpack and Reliance, is customer satisfaction and value addition at an affordable cost.

BERICAP entered India over a decade ago through joint venture route. In 2008 BERICAP established independent subsidiary at Talegaon, on the outskirts of Pune. Today BERICAP India is equipped with state-of-the-art equipment and is an ISO Certified facility. BERICAP INDIA caters not only to the domestic requirements but also exports closures to other regions of the world. BERICAP concentrates on the manufacturing and sales of plastic caps and closures for beverage, food and non-food markets. BERICAP runs 21 factories in 19 countries worldwide, covering Europe, Middle East, Africa, Asia and North and South America. They offer a wide range of products for beverages, food and non-food industries. BERICAP solutions for the beverage market are of interest for bottlers of carbonated soft drinks, water, beer, juices, energy drinks, teas, syrups, milk and large volume containers for home and office delivery. The solutions encompass 1-piece or 2-piece tamper evidence screw caps, sports caps and accessories suitable for cold, cold aseptic and hot filling. BERICAP has been the inventor of the Double Seal system which consists of an inner and an outer seal providing superior sealing performance for 1-piece closures.

BERICAP offers closures for aseptic and hot filling for the diameters 28, 33 and 38mm. BERICAP closure technology provides weight reduced closure and neck solutions providing superior safety for product integrity. They offer, within the food industry, solutions for the edible oil, sauces and dressings industry. Offer ranges from simple 1-piece closures, 2-piece closures, hinge closures to customer designed solutions and bi-injected closures. For sauces and ketchups BERICAP offers closures with customized design and optional TPE-valve for easy dispensing. BERICAP runs four major R&D centres in Germany, France, Spain and Turkey each being specialized in certain fields of closure technology and runs its own manufacturing site for production of injection molds in Hungary.
Interview with Dr. K.E. Lawande, Vice Chancellor of Dapoli University

“Polypropylene Silage Bag a Breakthrough in Tackling Animal Feed Shortage”

Q1> What do you have to say about the Agriculture Industry in India is it seeing great dependence of our GDP?

A1> In today’s context, although a higher GDP is due to the service and industry sectors, the contribution of Agriculture is very important. The agricultural sector with more investment, infrastructure development and good research and development can ensure a stable economy for the nation.

Q2> What is the role of the Research Organization like Agriculture University and Centre for Excellence in growth of Agriculture?

A2> Whatever growth in Agriculture is visualized since independence is only because of research in agriculture. Technologies and varieties developed by research organizations and farmer efforts have made this country as surplus state. Every single rupee invested in crop research gives Rs. 60 to Rs.155 in return.

Q3> We have done trial on Alphonso Mangoes with PP non-woven bags, results speaks but would like to know your opinion on the future of this application general for fruits?

A3> Skirting bags in banana helped a lot in producing cleaner fruits. It is helping in mango also. But application of bags at high fruiting area is a problem. Low canopy management will only help this technology adoption.

Q4> How do you think PP Jumbo Bags for Silage help the Diary Industry?

A4> Animal feed in the form of roughage is major component. Enrichment of green fodder through silage is a proven technology. However, this is not being adopted due to old technology of silage making which involves high cost on silage towers. Silage bags of appropriate sizes will be a breakthrough in this technology. There would be greater adoption through effective demonstration.

Q5> What role has Plasticulture played in promoting advanced farming technology?

A5> Plasticulture in irrigation, protected cultivation and packing of farm produce has made a dent in enhancing productivity. Water saving and reduction of post-harvest losses, has become much easier.

Q6> How do you see the growth of packaging technologies help reduce the wastage in farm produces; what role has polymer played in it?

A6> Post-harvest losses are being reduced tremendously by polymer technology. Biodegradable polymer films would be the need of the day.

Q7> As an ICAR and NCPAH member, how can the Agriculture Industry benefit with plasticulture?

A7> Second green and everlasting revolution will be possible with plasticulture besides high yielding and genotypes.
Tell us something about Machinfabrik?

Machinfabrik Industries Pvt. Ltd. helps enhance the quality of life. Our products are used in the Pharmaceutical Industry, Hospitals, Food Industry, and Research Establishments and Biotechnology. Machinfabrik is committed to lead from the front. This means satisfying the need of all those involved with our products - Patients, Healthcare, Professionals and other equipment users. To ensure this, we carried out a continuous program for improvement of the product performance by research and development, quality control and education.

Q1 > What is your product range?

A1 > Our Product ranges are as follows:
  1. Steam Sterilizers
  2. Superheated water spray sterilizer
  3. Dry Heat Sterilizers
  4. Closure Processing System
  5. Ventilator Autoclave
  6. Multiple effect Distillation still
  7. Pure steam Generator
  8. EO Gas Sterilizer
  10. Aquclave
  11. Auraclave

Q2 > What are the different machines Machinfabrik offers for the milk and food sector?

A2 > We have a number of machines.

AQUACLAVE is the machine used for sterilization of beverages which is normally used for polypropylene bottles/containers. This machine ensures complete sterility and its products have 6 months of shelf life without refrigeration.

AURACLAVE, is the machine for pasteurization of solid and relatively dry goods like spices, nuts, seeds, herbs and agro material like psyllium husk etc. This machine ensures pasteurization and brings down the bio-burden within expectable levels. The products have necessary shelf life.

Apart from flavoured milk, there a 100% reliable process for sterilizing fresh milk (while milk) is being developed. After processing this milk it will have a shelf life of 30 days without refrigeration. The process will not affect the original colour or taste of the milk. Polypropylene also can be useful for filling fresh milk.

Q3 > How do you see polypropylene as a packing material with respect to other plastic alternatives?

A3 > Polypropylene has the necessary compatibility with products. It is able to with stand processes of 120° C and it can be transparent. Sometimes HDPE can be used for plastic bottles but it does not have transparency and hence its appeal to the end user is questionable. Polypropylene containers can also be useful for baby foods and a variety of ready to eat foods which are processed and which have long shelf life. The containers could be tubs or trays.

Q4 > What are your future plans?

A4 > Aquaclace processing will encourage manufactures to come out with many more products with the use of polypropylene packaging.
Optimization of Product Designs and Manufacturability through Simulation Software

CoreTech System Co., Ltd. (Moldex3D) was founded in 1995, it has provided the professional plastic injection moulding simulation solution ‘Moldex’ a series of plastic injections for the moulding industry. Its current product ‘Moldex3D’ is marketed worldwide. It helps customers to troubleshoot from product design to development, optimize design pattern, shorten time-to-market and maximize product return on investment (ROI).

Mold Filling Simulation

In the past, mold filling simulation in automotive applications was only used for verifying a gate or runner design. However, with more understanding of plastic processing theories and powerful simulation tools such as Moldex3D, the process of mold filling integrated the Product Lifecycle Management (PLM) approach. It can be realized to solve important issues encountered during the production, designing and usability stages of a product.

Design stage

The biggest challenge facing automotive part makers is to enhance saving fuel in the economy through a weight reduction process. Using new materials including long fiber-reinforced plastics and microcellular foams, opens up new possibilities but at the same time creates safety issues. This poses design challenges due to the engineering unique material microstructures resulting in anisotropic properties. Through mold-filling analysis, one can

- Prove the metal-replacement design concept
- Predict the microstructure and avoid process induced defects
- Conduct structural analysis considering material anisotropy and process induced defects such as weld line.

Part performance difference considering material anisotropy

- False deformation (over-estimated)
- Correct deformation

Visualizing sink mark improvement through filling analysis

- Sinkmark problem eliminated

Production stage

The feel of driving comes from the inside the vehicle. While designers search for the correct combination of colours, texture and gloss, the accompanying process must express a flawless nature of the design. However, if the surface defects are always hard to predict and can’t get resolved, this easily leads to excessive rework and long production lead time. Through mold-filling analysis, one can

- Pinpoint weld line (location, temperature), sink marks, and warpage
- Locate potential defects such as stripping, haze, gate marks based on the melt quality
- Suggest and validate gate locations during part design phases for a balanced melt flow

Usability stage

The demand for under-the-hood applications is high even though engineering plastics are used, structural and electrical components are subjected to prolonged heat, stress and constant vibration causing thermal and vibration-induced deformation and loss of mechanical strength. This leads to uncertainty of assessing the design’s reliability. Through mold-filling analysis, one can

- Provide anisotropic properties for vibration studies
- Predict heat, long term dimensional change, stress based on materials viscoelastic and creep behaviour of the part
K, the world’s biggest Plastics and Rubber exposition, with over 3,000 exhibitors, was held at Düsseldorf, Germany from 16th – 23rd October, 2013. Spread over a net exhibition space of 1,68,000 sqm with 19 exhibition halls, K turned out to be the ideal business and contact platform for inspirational ideas and forward-looking decisions. Leading companies of the plastic and rubber industries were presenting everything the industry has to offer on the highest international level.

Reliance, with a stand area of 450 sqm, was present in the prestigious Hall 6 amongst other global majors like Dupont, SABIC, LyondellBasell, Borealis, Bayer, Lanxess etc.

RIL showcased its products and capabilities in the Plastics and Rubber Sector, executives from various businesses visited the stand. Trade visitors from across the world as well as dignitaries from India and Germany visited the stand for scheduled meetings and enquiries on products throughout the event.

Once again, Reliance participation at K was well appreciated and successful.
Reliance Polymers exhibited PP FIBC Silage bags, PP Bottles and explained Silage preparation to all the visitors through video display and demonstration at the Dairy Expo in Chennai. Participating dairies showed keen interest in the products and requested for promotional activities at their regions. Additionally around 60 companies representing dairy farmers, milk processors, dairy farm input/service companies and government organisations presented, exhibited and participated in the meet.

ICAR Agricultural Summit at IIVR - Varanasi

Reliance Polymers made a presentation about the ‘Application of polymers in agriculture for safe and quality production’ to more than 45 agricultural scientists and teachers of ICAR institutes and directors of different KVK’s. In focus, was the use of PP non-woven as agro textile, crop and fruit covers and its use in enhancing F&V quality.

Repol Non-woven Fabric in Medical Applications

The event was conducted by the Kanpur Regional Office at the GSVM College auditorium, to create awareness about the use of Repol Non-woven Fabrics in medical applications. More than 1,700 doctors and their families from Kanpur and nearby areas actively participated in this program, where non-woven samples and its quality checks were demonstrated by the Kanpur based local fabricator.

International Krishi Mela, Bangalore

Inaugurated by Honorable Chief Minister of Karnataka, Shri Siddaramiah, International Krishi Mela was organized by the University Of Agriculture Sciences, Bangalore had to communicate the latest technologies and practices to the farmers. Reliance Polymers took an active participation in the event to displayed and communicated the innovative concepts of PP FIBC Silage bags, Leno bags and non-woven fruit and crop covers.

Repol Polypropylene ‘Silage Trial’ by Reliance Polymers Team

The Reliance Polymer team organized a live demonstration of Silage preparation using Repol Silage bags and Relene liners to progressive farmers of Valsad and Kapada districts. Its efforts were highly appreciated by participating dairies and local farmers.

Viraat Kisa Mela, UP

Viraat Kisan Mela, was a platform to create awareness about new concepts in the field of agriculture, health, farm animals. The mela was attended by over 50,000 farmers and was a huge success. Reliance Polymers highlighted the innovative role of polymers in agricultural field and presented audio visuals in the theater during the event. Sample of Leno Bags and Non-woven fruit cover/ crop covers, one pager leaflets on Silage, Mango, Banana, Grapes and Pomegranate fruit cover leaflets were distributed to create awareness about the new concepts in agriculture.
Reliance Polymers is working actively to promote the use of Geosynthetics by approaching central authorities like NRRDA, PMGSY, IRC, NHAI, CWC and Railways boards for incorporation of Geosynthetics in Indian standards.

For rural roads, we are working for incorporating Geosynthetics in a ‘Standard book of guidelines’ issued by NRRDA, so that those guidelines can be followed in the PMGSY scheme. We are following the procedure suggested by NRRDA by developing 5 case studies in different states. We have already got the DPR’s with Geosynthetics approved in Maharashtra and Gujarat while work is under progress in Madhya Pradesh, Orissa and Rajasthan. As per global standards, laying will be followed by performance monitoring for a period of 2 years minimum by the specially appointed consultant. Subsequently the report will be sent to NRRDA and IRC for the approval.

We are planning to start the same process in National Highways and State Highways and hope for the same success there. Also, our efforts to promote the use of Geosynthetics in Coastal Protection work is bearing fruit with many tenders inviting quotes for Geobags and Geotubes. We hope that the use of Geosynthetics takes off in Railways and Landfills as well.

Repol SRM250NC is re-introduced in domestic markets and is available from the Nagothane Plant. Repol SRM250NC is a Polypropylene Random Copolymer grade which is recommended for use in injection molding and in injection stretch blow molding processes. With its excellent clarity, high flow, good chemical resistance, balance of rigidity and impact performance this grade is suitable for a variety of injection molding applications. Potential end products include food containers, TWIM, houseware appliances applications and ISBM. Repol SRM250NC contains clarifier and antistatic agent that reduces static charge build-up on products.

Mr. Tsuguya Nagaki, Managing Director of Mytex Polymer, a major Japanese automotive compounder, along with his 23 member team from production made a visit to the world class facilities at our Hazira. Fruitful discussions were also held regarding replacement of their existing imports with Repol grades.

- Kisaan Vikas, Indore: 14th - 16th February, 2014
- Chinaplast 2014, Shanghai: 23rd – 26th April, 2014

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