REPOL POLYPROPYLENE A Reliance Polymers product

REPOL KONNECT

Reliance POLYMERS

Repol Newsletter Issue 3/2012-13

From the Editor's Desk

At the outset we wish you a very happy & prosperous 2013!

Growth in Polypropylene demand continues through third quarter and has recorded a growth of 16% by the end of Q3. The growth has been noticed in all major sectors Raffia, Impact Copolymer, BOPP and others. Another 100KT capacity addition happened in Q3 of FY 12-13, spread across various segments of Polypropylene.

Based on your valuable feedback we are introducing two new sections. The first being Guest Speaker's column. This time we are covering "New developments in Injection Moudling & Blow Moulding machines" by Sh. N K Balgi, Director, Ferromatic Milacron. We also plan to introduce "Sector Focus" of Polypropylene starting with Bulk Packaging - Raffia in this issue.

Happy Reading!

C. Paparao

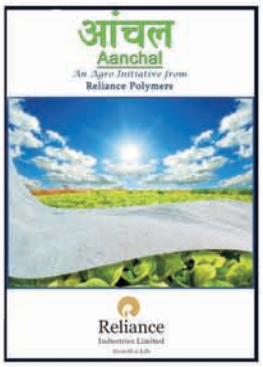
Jamnagar SEZ Refinery wins coveted British Safety Council's Globe of Honors Award

Reliance Industries Limited (RIL)'s SEZ Refinery at Jamnagar has won the prestigious 'Globe of Honor Award' for the excellence in Environmental management by the British Safety Council, London. RIL's Jamnagar SEZ Refinery is the only Indian entity to make it to the elite list. In all, there were 13 applicants and 9 received the Globe of Honor. All applications for the Globe of honor were marked by an independent adjudicator and SEZ Refinery received 68 marks out of 72.

To be eligible for the award which is a five star environment audit, the applicant organizations should demonstrate a culture of best practice for health and safety throughout the business – from the boardroom to the shop floor.

A film of Polypropylene Applications in Agriculture

Reliance Polymer team has developed an 8 minute Audio Visual kit to bring awareness on emerging applications of Polypropylene in Agriculture. The film depicts the potential use of Polypropylene during Pre-harvest, Cultivation & Post-harvest in Indian Agriculture Sector.



To get a copy of CD of the film please write to pp_businessdevelopment@ril.com

Jamnagar and Hazira Plant visit by Karnataka and Andhra Pradesh customers

We organised visit of our major customers from Karnataka & Andhra Pradesh to Jamnagar complex & Hazira site as part of our Customer Relationship Program

Customers had an opportunity to get a feel of the scale, complexity and the efficiency of operations that can only be seen in few complexes worldwide. Customers were taken around to the Refinery section, Polypropylene plant, Jetty and Control rooms to understand operational areas of the complex. They also had the opportunity to interact with senior members of the site management and exchange views with them. A visit around the township gave customers an idea about the enormous size & gigantic efforts that had gone into environment planning by turning an arid area into a huge acreage of green belt. A drive past the Horticulture farm was an amazing experience that reinforced the uniqueness of the complex in all respects.

Priyadarshini Polysacks Ltd.

Sh. Shital N. Sanghvi,
Sh. N.C. Sanghvi,
Sh. Pritam N. Sanghvi (L to R)

Priyadarshini Polysacks Ltd. is one of the largest plastic woven sacks company in India, we are proud to have completed nearly two decades of services to the nation and our esteemed customers.

The family business runs, under the leadership of the founders **Sh. N.C. Sanghvi** and his two sons **Sh. Shital N. Sanghvi (Executive Director)** and **Sh.Pritam N. Sanghvi. (Director Operations).** The company has a polymer processing capacity of 20000 MTA (25 Cr Bags) of woven sacks, Leno; spread over two locations, Kolhapur in Maharashtra & Abu Road in Rajasthan.

Head quartered in Kolhapur, Maharashtra India, **Priyadarshini Polysacks Ltd.** is vertically integrated manufacturers of Woven Sacks, in India.

Company is certified with ISO 9000, 14000, 18000, 22000 Certification.

We appreciate the co-operation of Reliance Polymer team, who have been supporting us for development of newer applications for Raffia & Leno.

We have built our reputation on a commitment to quality, service and reliability with our comprehensive product range and ability to respond quickly and efficiently to meet all types of packaging requirements.

Sathe Synthetics

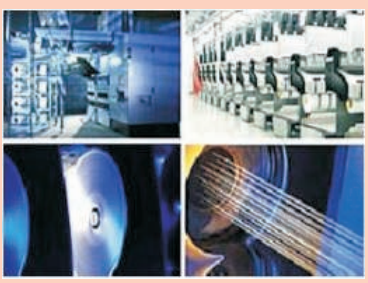
Sathe Synthetics, a Delhi based Company, is one of the leading Manufacturers catering to demands of varied fabrics and yarns. Established in 1995, we have an extensive experience that has helped us in delivering good quality products using optimum quality raw material and high technology based manufacturing techniques for meeting the requirements of various industries.

Sh. Ravi Mohan,
Sh. Rajiv Mohan, Sh. Rakesh Mohan (L to R)

Mr. Rajiv Mohan has been our continuous inspiration & guide to become one of the largest manufacturers of Fibre & Filament in North India having total capacity of 15KTA.

Our range of products includes Nonwoven Packaging Fabric, Spunbond Non-Woven Fabrics, Hydrophilic Non-Woven Fabrics, Polypropylene Spun Bonded Non-Woven Fabrics, PP FDY Yarn, PP Multifilament Yarn, and PP Non-Woven Fabric.

Our products are predominantly used in the manufacturing of narrow fabrics and webbings that are required in the making of Belts, Bags, Tapes, Sofas, Ropes, socks, hosiery, Carry Bags, Rice Packing, Medical, Agriculture etc.



We are highly conscious in offering quality products and all our products are checked on various parameters in our fully equipped laboratory to ensure quality products.

We appreciate efforts & support being extended from Reliance Polymer team.

Apart from polymers we have ventured into other businesses as well like engineering products, education and lighting products.

FERROMATIK MILACRON India

Latest Trend & Developments in thin wall Injection Moudling & Blow Moulding Machinery

Author : Sh. Narasinh K. Balgi
Director,
Ferromatic Milacron

Thin-wall injection molding has received increasing attention over the past few years due to economic and environmental concerns. The reason is that thin-wall molded parts could be made lighter, more compact, less expensive, and quicker because of fast cooling. Thin-wall injection molding (TWIM) is a viable option for reducing the weight and size of plastic components.

Thin-wall injection molding (TWIM) is conventionally defined as molding parts that have a nominal wall thickness of 1 mm or less. Thin wall is relative, however. It also can be named "thin-wall" as the flow length/thickness ratio is above 200.

Thin-wall injection molding parts are having flow channel is very narrow and thus flow resistance is very high in TWIM. Reducing flow resistance can be reached by increasing the melt or mold temperature, reducing melt viscosity and increasing injection pressure, or injection speed. However, high melt temperature may cause degradation and increases cooling time which are unacceptable. A rise in melt index shows a decrease in physical properties. Therefore, high injection speed is preferred, and high injection pressure is required. Due to the thin part, cooling is fast. Thus the combination of the fast cooling and short fill time significantly reduces the cycle time. The typical cycle time of TWIM is 3- 6 seconds while the cycle time for conventional injection molding is 15-30 seconds. The shrinkage is also low because of the reduced part thickness. TWIM is characterized as high flow rate, high pressure, high shear rate, fast cooling and fast shrinkage.

However, TWIM has some challenges. Due to the rapid cooling of the polymer melt, the operating window becomes narrower as the part becomes thinner. Specialized material is also required to balance the trade-off between processability and physical properties, which means material should both flow easily (high flow index) and retain good physical properties. TWIM also makes design and process control more complicated. It is a big challenge to fill the mold with a high flow length/thickness ratio at a high speed under high pressure. For example, an additional accumulator is needed to maintain high pressure at a short fill time. More robust control systems are required to control the molding precisely and with a short response time.

Furthermore, the combination of materials, complex molding geometry and cyclic processing conditions has generated some challenges, such as flow marks, high residual stress, sink marks and warpage, under high-speed, high-pressure injection molding. So it is very important to design, operate and control thin-wall molding optimally to guarantee part quality as well as reduce cost. To fill the mold with a high flow length/thickness ratio at a high speed under high pressure, to have more robust control system, to have short response time & to overcome said challenges, Ferromatik Milacron India (FMI) has developed Accumulator assisted special machine "Thin Wall Injection Moulding Machine (TWIM)", which offers higher injection rate & plasticizing rate, High performance Barrier Screw - delivers better melt homogeneity and Parallel plasticizing i.e. E-drive as an optional feature.

Latest trend & development in Extrusion Blow Moulding Machines is RECIP – Reciprocating Screw Type Blow Moulding Machine, which offers Aseptic Blowing System for Longer Shelf Life, Neck to Neck Blowing for Higher Output & Clean Blow System to fulfill the key requirements of Dairy & Food Industry to cater Low Weight Bottles Manufacturing mainly from Polypropylene (PP) or High Density Polyethylene (HDPE) which include applications like milk bottles, flavored milk bottles, juice bottles, to name a few.

Other developments in Extrusion Blow Moulding Machinery Segment are Multi Cavitations Machine with Auto Deflash used to cater the higher output requirements, mainly for Fast Moving Consumer Goods (FMCG) & Lubricant Oil Containers and View Strip Technology used to ensure content level in bottles or container, mainly for Lube Oil Industry & Edible Oil Industry. Thus, the Domestic Injection Molding & Blow Moulding Machinery Segment has kept up the advancements of Global peers as well as environmental compliances demanded by industry.

ANTEC, Mumbai

The Society of Plastic Engineers organized the prestigious ANTEC conference in Mumbai, India on December 6 & 7, 2012 at Mumbai. This Plastics & Polymers conference has been the largest ever conference for the Industry with a 2 day event where 178 papers were presented across 7 parallel tracks. Dr. Ajit Sapre, Group President, Research & Technology, Reliance Industries Ltd gave an insight of various innovations in commodity plastics which will improve quality of life for common people. In addition to above 8 more paper were presented by Reliance Polymers in the conference. The conference also hosted a special Plenary session where Sh. Manohar Parrikar, Hon'ble Chief Minister of Goa and a Materials Science Engineer from IIT Mumbai was the Guest of Honor.

Automotive Conference 2012, Mumbai

2nd International Conference on Automotive Plastics was held on 1st November, 2012 at the Hotel Trident organized by ElitePlus and CPMA. It attracted over 350 delegates from India and abroad covering all segments of the industry related to the use of plastics in automobiles. Outstanding Achievement Awards were presented to Mutual Industries and APPL Industries who have made an enduring mark in the industry.

Indplas Exhibition 2012

6th International Exhibition on Plastics in Kolkata Indplas 2012 was organized jointly by Indian Plastic Federation and Plastindia Foundation. Our stall received a large number of polymer processors and new entrepreneurs from all over India as well as neighboring countries.

Packplus 2012, New Delhi

A trade event dedicated to packaging industry which has achieved prominence in last 3 years. The event was held in New Delhi (NOIDA) between 7 and 10 December 2012. RIL participated in the exhibition and displayed various new initiatives in rigid, flexible and bulk packaging, covering all polymers.

8 CRMs were organized on Agro textiles, Geotextiles & Rigid Packaging on Pan India basis reaching out to 700 stakeholders. We had good support from Indian Technical Textiles Association (ITTA), Reliance Retail team, Textile Commissioner, Govt of India and Bombay Textile Research Association (BTRA).

Reifenhäuser: Polyolefin Wood plastic composite

Constant research and development of Reifenhäuser's line concepts are the focus of the leading manufacturer of high performance extrusion systems. The resulting innovations ensure the company's competitive edge worldwide. The use of new raw materials, in particular, and the associated changes in process technology require ever new solutions.

The benefit of its customers is always given the highest priority in all actions and considerations of Reifenhäuser Extrusion Technology. Competitive advantages are generated from its employees' creativity, from superior and economically efficient technology, from speediness and convincing customer service.

The comprehensive portfolio includes extrusion lines for thermoforming sheet, cast film and WPC in addition to extruders and components. Future-oriented products, market-driven strategies and direct relationship with customers are ideal prerequisites that allow rapid and direct response to changes in the marketplaces.

Since many years, Reifenhäuser began to focus on the extrusion of wood fibre reinforced plastics. Depending on the requirements, different types of extruder-systems are used.

The basic component of Reifenhäuser WPC production lines are "Bitruder" twin-screw extruders. Available in market-conforming sizes from 65 to 135 mm screw diameter and provided with parallel, counter-rotating intermeshing screws they offer ideal prerequisites for the processing of wood fibers and thermoplastic materials such as PE, PP and PVC. Beside compound extrusion, Reifenhäuser is increasingly placing the future-oriented, flexible direct extrusion process. This technology combines mixing, melting and direct processing of the individual components into the final product (profiles, pellets) in a single operation.

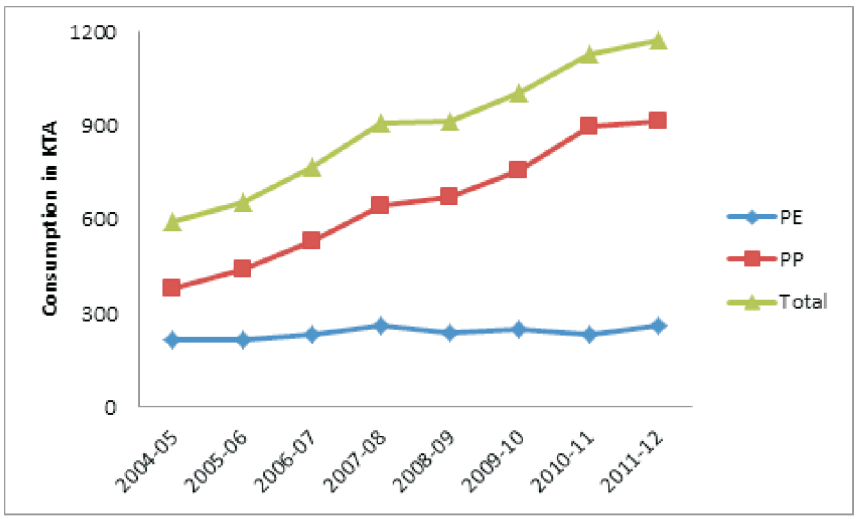
The latest developments in direct extrusion enable higher extrusion capacities than common compound extrusion systems. The "Bitrudex" direct extrusion technology is the basis of such an efficient WPC-production-process. Key components are a single-screw extruder and a counter-rotating twin-screw extruder combined to form a cascade-like assembly. This design enables fibres to be processed with about 10 % humidity at speeds at a broad recipe variation. Up to 80% wood are extruded at high output rates. In addition, this process allows the production of high-strength, UV-stable WPC profiles with PMMA as polymer matrix. The Bitrudex-system itself requires less space and has lower energy consumption than comparable compound extrusion system.

The WPC-portfolio includes an in house tooling-design, broad research and development experience, a lab-line for trials as well as world-wide-service.

Bulk Packaging – Evergreen sector of Polypropylene

Bulk Packaging covers primary / secondary packaging of commodities, industrial products & foods in the form of small retail packs of 10 kg to large Jumbo / FIBC bags of 2500 Kg. This is the single plastic largest packaging segment (1176 KT PP & HDPE consumption) having functional as well as technical advantage over other competing bulk packaging material with clear cost advantage.

India is the 2nd largest raffia producing country in the world with a 15% share. Raffia Industry employs over 7.2 lac manpower with a gross turnover of 12350 Crs. India being amongst the top three producers of cement, fertilizers, food grains, vegetables and sugar in the world, growth in bulk packaging in the form of raffia has been phenomenal over the last 5 years with a CAGR of 12%.



Source : Industry

Advantage of woven sacks over alternate traditional packaging is multifold & life cycle study by IIT – Delhi confirms the same.

Major applications for bulk packaging are:

Cement

Fertiliser

FIBC

Chemicals

Food grains

Wrapping fabrics

Fruits & vegetable packaging

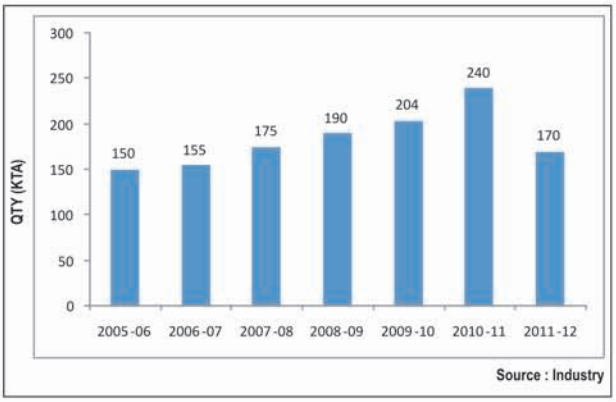
Export of woven sacks from India

Life Cycle Analysis, IIT Delhi Outcome

Analysis of the comparable Life Cycle with jute, paper clearly indicates that plastics are economically affordable, socially acceptable and environmentally effective. Health hazards for workers in jute & paper industry are higher than for people employed in plastics. Study on effect of weight of jute & paper vs plastic woven sacks reveals overall loss to environment through transportation of commodities. Proper waste management helps to produce more from fewer resources, while generating less pollution and waste. Plastic woven sack is a vehicle for sustainable development, fully renewable and amenable to recycling.

Growth:
Indian Bulk Packaging sector, 2nd largest in the world, offers significant growth opportunities & the sector has grown at CAGR of 13% in polypropylene over past 7 years. Key business development initiatives by Reliance Polymer partnering with stakeholders like processors, machinery manufactures, end users resulted new applications areas & penetration in food packaging.

Exports:
The sector is also huge foreign exchange earner as India is one of the preferred global supplier of FIBC, woven sacks & other value added products over 180 KTA & growing at a faster rate of ~ 20% CAGR over last 5 years.



Investments:
Rapidly growing domestic demand resulted flurry of investment in this segment with ~ 1.50 MnT capacity added in last 7 years with 500 extruders & investment in machinery of ~ Rs.3300 Cr. Reliance Polymer Business Development team has played significant role in assisting entrepreneurs with project feasibility reports, market survey report, machinery selection, product mix.

Opportunities:
Woven sacks offer diverse opportunities for investors, entrepreneurs, traders in the form of modern packaging applications; i.e.

- Block bottom bags for chemicals & food grain packaging
- FIBC's for cost effective / efficient large volume packaging
- Geotextiles for road / river protection
- Leno for fruits & vegetable packaging
- BOPP reverse printed bags for value added products

Opportunities in Block Bottom Bags

Branded Packaging & Automation is the Need of the Hour- Solution- Block Bottom Bags!

Woven Sack Industry has witnessed unprecedented growth over the years in India with innovation, competitiveness, and product quality & technology upgradation.

Yet, one of the key concerns is scarcity of trained manpower & low value addition.

Automation offers a potential solution in the form of 8 corner block bottom bags.

- 50% less manpower requirement*
- 30% Higher value addition*
- Aesthetically superior with branding & printing
- No seepage of product & temper proof packaging
- Better stacking & handling of bags

Indian Cement manufacturers themselves installed 3 complete Box Bottom Bag Projects in 2010. Very few box bottom projects have come all over the country. Several lines have been successfully operating in our neighboring countries.

Over next couple of years, this project is expected to be the norm & viable solution to woven sack industry to meet the challenges.

To explore the Opportunities in PP Box Bottom Project & complete financial project report you may please contact us at pp_businessdevelopment@ril.com

* Estimate based on standard 600 kg per hour line for block bottom bags at present market value.

RANDOM MUSINGS

New Grade from Repol basket-
High Crystalline PP ICP – REPOL B300MN

High crystalline B300MN has been launched by Reliance Polymers for the growing need of automotive and appliance sector. It's an ideal material for manufacturing engineering components where large surface area combined with high stiffness, surface esthetics and dimensional stability are prime requirement.

The excellent combination of all above properties makes it suitable for PP compounding applications like Dash Board, Pillar Trim, Door Trim & Console. The high tensile strength also enables to reduce part weight by reducing inorganic filler content in compounding formulation. Apart from compounding, B300MN can also be successfully used for direct injection moulded parts for thin wall components having longer flow path.

Repol B300MN meets the requirements stipulated in IS 10910 on "Specification for Polypropylene and its copolymers for safe use in contact with foodstuffs, pharmaceuticals, and drinking water". Additives incorporated in this grade conform to the positive list of constituents as prescribed in IS-10909. The grade and the additives incorporated in it also comply with the FDA:CFR Title 21,177.1520, Olefin polymers.

Navsari farmers visit to Jamnagar Farms

Navsari farmers visited Jamnagar Farms & witnessed dense planting of Mango for the first time. Visit was coordinated by Krishi Vigyan Kendra, Navsari & Reliance Polymer Business Development team.

INDUSTRY EVENTS

Plexpo India, Ahmedabad, 8-13th January
Medical Devices & Disposables, Ahmedabad, 12-13th January
Technotex, Delhi 17-19th January
Acetech, Bangalore, 18-20th January
Geotextile Conference, 24th January
India Pack, Mumbai 28-31st January
Plastasia, Delhi, 15-18th February

Reliance Industries Limited
Growth is Life

For queries please contact Polypropylene Business Group, Reliance Industries Limited, Reliance Corporate Park, Building 8A, First Floor, Thane-Belapur Road, Ghansoli, Navi Mumbai - 400701. Tel.: 022-44770000 e-mail: repol.newsletter@ril.com