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An interview with Mrunal Joshi of Nichrome India



Key takeaways from Manish Kapoor's LMAI Conference talk



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ADVANCING SUSTAINABILITY

Ashok Chaturvedi urges integration of AI and enzyme-based technologies

At a keynote address at the 10th Speciality Films & Flexible Packaging Global Summit 2023, Ashok Chaturvedi, founder, chairman and managing director, UFlex Group, highlighted how technologies like artificial intelligence, machine learning, and enzymatic processing can accelerate sustainable innovation in flexible packaging.

The Elite Global Summit, being held at the Reliance Jio World Convention Centre in Mumbai, India, began on 31 August 2023 and features discussions on the Indian economic landscape, current trends in the FMCG sector, and the impact on packaging.

Chaturvedi, delivered a thought-provoking keynote address at the inaugural session. He reflected on the evolution of the plastics industry, stating, "Back in the 1960s, when chemical companies were developing large-scale plastic production facilities, they coined the slogan: If you want to save the planet, use plastic. We truly believe that today, if producers can reach consumers globally, it is possible only because of flexible packaging. Historically, when chemical companies were producing plastic in the 60s, they had to struggle with their selling proposition, and the production size used to be 1500 tons per year. Today, the production size has increased to a million tons per year. Multi-layer plastic (MLP) as opposed to mono-material packaging, coupled with a robust recycling ecosystem and bio-enzyme technology will propel the industry to the next phase of growth.

"Today, whatever we are producing needs to be recycled. At UFlex, we have made significant investments in industrial and MLP waste recycling facilities across our global locations and very recently, in enzyme-based delamination and recycling technology for aseptic packaging. We should continue to focus on mechanical recycling. Chemical recycling may not be happening today but will happen in the future."

Chaturvedi reiterated the need to use machinery



Ashok Chaturvedi at the 10th Speciality Films & Flexible Packaging Global Summit 2023

and AI to collect and sort waste rather than allowing waste workers to do that manually. "That is not the most effective or sustainable way of creating employment for the marginalized waste workers," he emphasized. "Waste collection and adequate access to post-consumer waste is one of the biggest problems that we face in India. It is critical to recognize that it is not the process of recycling that presents the most significant hurdle in addressing plastic pollution. Rather, it is the efficient and holistic collection and management of plastic waste that emerges as the cornerstone of our battle."

The event features specialized sessions dedicated to sustainability with panel discussions on the critical issues facing the industry with eminent speakers from

the Central Pollution Control Board of India (CPCB), the Ministry of Environment and Forests (MOEF), and the Central Pollution Control Board (CPCB) of the Government of India.

The 10th Speciality Films & Flexible Packaging Global Summit 2023 included keynote addresses by Ashok Chaturvedi, Founder, chairman & managing director, UFlex Group; Nilesh Shah, group president and MD, Kotak Mahindra Asset Management; Prabh Das, managing director and CEO, HPCL-Mittal Energy; Prabha Narasimhan, managing director and CEO, Colgate-Palmolive (India); and Harsh Mariwala, founder and chairman, Marico. It also showcases more than 100 exhibitors and a strong presence of brand owners. ■

10th Elite Global Summit highlights collaboration as key to sustainable packaging solutions



MAHAN HAZARIKA

On 31 August 2023, amidst a gathering of prominent figures from the Indian and global plastic and flexible packaging community, the 10th Speciality Films & Flexible Packaging Global Summit 2023 kicked off in Mumbai. The first day of the Elite conference featured multiple presentations that persistently tackled the complexities of plastic waste within packaging and the proactive measures undertaken in India and across Asia. The event commenced with keynote speakers praising the present and anticipated robustness of the Indian economy while also delving into technical insights concerning the growing reliance on plastic materials and the urgent need for recyclability.

In his keynote address, CK Mishra, retired Ministry of

Environment and Forests secretary, boldly declared that the era of finger-pointing and whatabouttry has come to an end. He urged that the time for action is at hand, emphasizing that the conference held the knowledge, talent, and resources necessary to make a significant impact. Mishra dismissed wishful thinking about improvements in municipal waste collection as unrealistic in the near future. His call to action underscored not only the industry's responsibility to lead in finding comprehensive solutions for plastic waste handling and recycling but also highlighted the potential for substantial profits from the investments required to achieve this goal. Mishra concluded his powerful presentation by invoking the concept of return on investment (ROI), hoping that this would ignite and motivate the entrepreneurial instincts of the participants more than any other well-intentioned pursuits.

During his keynote address at the summit, Ashok Chaturvedi, the founder, chairman, and managing

The first day of the Elite conference featured multiple presentations that persistently tackled the complexities of plastic waste within packaging and the proactive measures undertaken in India and across Asia

director of UFlex Group, emphasized the role of cutting-edge technologies such as artificial intelligence, machine learning, and enzymatic processing in expediting sustainable advancements in flexible packaging. He took a moment to reflect on the transformation of the plastics industry, noting that in the 1960s, as chemical companies were establishing large-scale plastic production facilities, they coined the slogan: "If you want to save the planet, use plastic." Chaturvedi expressed a firm belief that today, the global reach between producers and consumers is made possible primarily through flexible packaging.

Prabha Narasimhan, chairman and managing director of Colgate-Palmolive India, pointed out the growing affluence of Indian households and the subsequent increase in consumption, particularly in relation to plastic packaging. She stressed the necessity for packaging to undergo a transformation, stating that it should be designed to engage and excite consumers. Narasimhan emphasized that packaging should go beyond its conventional role and facilitate accessibility by introducing sustainable small-sized options at affordable price points. She acknowledged that sustainability often comes with a higher cost, saying, "Sustainability is expensive."

Drawing attention to her own company's involvement in the Accelerator +100 program, Narasimhan posed a critical question: "How can we foster partnerships and collaborations?" This challenge reflects the need

for the industry to work together to find innovative solutions to sustainability and accessibility concerns in packaging.

Harsh Mariwala, founder chairman and managing director, Marico, discussed the remarkable achievements of the Marico Indian Foundation over the past two years since its inception. He highlighted the foundation's multifaceted approach, starting with its efforts to scientifically quantify the problem, which culminated in the publication of their findings, widely available for reference several months ago. Additionally, the foundation has been actively involved in identifying, nurturing, and investing in Indian startups that have devised innovative solutions.

As of the beginning of 2023, the Marico India Foundation had identified and acknowledged 15

startups and small companies with practical and viable solutions. Mariwala mentioned three of these noteworthy initiatives. Firstly, he introduced Ishitva Robotic Systems, which has developed an automated system capable of sorting six tonnes of plastic waste per hour, all at half the cost of imported systems. Next, he discussed Lucro, a company specializing in post-consumer resins. Lastly, Mariwala highlighted Zero Circle, a company that has successfully created bio-compostable and water-dissolving plastics derived from seaweed.

Mariwala also articulated the foundation's future plans, which involve adopting a non-metro city and assisting it in implementing waste sorting at the source. The aim is to transform this city into a zero-landfill pioneer, serving as both an example and a case study for similar initiatives. ■

10TH SPECIALITY FILMS & FLEXIBLE PACKAGING GLOBAL SUMMIT 2023

Biaxially oriented film – a journey from manual adjustments to digital precision

During a panel discussion about disruptive technologies on the second day of the 10th Speciality Films & Flexible Packaging Global Summit 2023, Sanjay Chincholikar, business head, technical films and rigid packaging, Cosmo Films, shared his extensive experience in the biaxially oriented film industry, spanning nearly 37 years, beginning with the inception of the first polyester line in 1960. He reminisced about the early days when the line was a modest three meters wide, producing a meager 150 to 200 kilos per hour. Fast-forward to today, significant progress has been made, with the industry achieving an impressive output of up to 10 tonnes per hour, reaching speeds of 600 meters. Remarkably, 10.5-meter machines are currently in operation, and they are in the process of collaborating with partners to develop the world's largest 12-meter line, a remarkable feat indeed.

Chincholikar attributed these advancements in the packaging film industry to its evolution. As packaging film shifted into a commodity in the late 1990s, the

demand for wider lines and increased speed grew. Consequently, the focus shifted to productivity, prompting innovations in various aspects of the industry.

He emphasized that when people typically think of disruption, it often carries a negative connotation, suggesting disturbances or impending problems. However, he pointed out that disruption has also been a catalyst for innovation in their field. Technological advancements have significantly improved productivity and efficiency. Modern design has evolved from merely controlling machine parameters to a more comprehensive process control approach.

Chincholikar illustrated this point by discussing film temperature regulation. In the past, manual adjustments to machine parameters were necessary to achieve the desired film temperature, resulting in variable quality due to seasonal temperature fluctuations. Today, technology enables precise control of parameters such as film temperature, ensuring consistent quality.

Moreover, dosing and feeding systems, as well as thickness control systems, have become exceptionally reliable, eliminating the need for manual measurements of film thickness, which used to involve checking nearly 100 points on a 6-meter array. Quality, efficiency, and productivity have undergone a significant transformation.

Chincholikar highlighted the fortunate aspect that most machines can be upgraded and modified to keep up with these advancements, ensuring that the industry remains at the forefront. Looking ahead, he emphasized that the future of the industry revolves around artificial intelligence and machine learning. Processes are becoming increasingly streamlined, safety measures are on the rise, and both product reliability and quality are improving, making digitization the next frontier.

However, as machines become wider and production output increases, the design of these machines must be exceptionally robust. This underscores the



Sanjay Chincholikar, business head, technical films and rigid packaging, Cosmo Films, at the 10th Speciality Films & Flexible Packaging Global Summit 2023. Photo: The Packman

importance of involving engineers, not limited to digital experts alone, in overseeing manufacturing processes.

Shifting focus to products, within the realm of biaxial orientation, Chincholikar noted that traditionally there are typically three main types – BOPP (Biaxially Oriented Polypropylene), polyester, and nylon

films. Chincholikar expressed his belief that in the near future, through collaborative efforts between equipment manufacturers and raw material producers, HDPE-based BOPP will gain prominence. This shift is primarily driven by sustainability considerations, circular economy principles, and the market's preference for monolayer structures. Consequently,

approximately 40 to 50% of applications are likely to transition to HDPE-based BOPP. Simultaneously, equipment manufacturers will ensure that their machines are versatile enough to handle both polypropylene and polyethylene, adapting to the evolving industry landscape. ■

– Mahan Hazarika

HARI K SINGH UNVEILS FUTURE OF PACKAGING

Evolution of flexible packaging – from visual appeal to barrier properties

At the 10th Speciality Films & Flexible Packaging Global Summit 2023 in Mumbai, Hari K Singh, who serves as the executive vice president overseeing global operations and strategy in India, Thailand, and South Africa, in addition to his role as the country head for Thailand at SRF, offered his perspective on disruptive

technologies. He delved into the future direction of disruption and its implications for sustainable packaging, particularly in terms of substrate performance. Singh cited Professor Clayton Magleby Christensen's book, *The Innovator's Dilemma*, highlighting that disruptive technology surpasses traditional processes, products, and established practices.

Singh expanded on the idea that for numerous decades, packaging has primarily centered around its aesthetic appeal, a trend that persists even today. However, he highlighted that over time, there has been a significant shift in focus, particularly towards the barrier properties of packaging materials. Additionally, Singh pointed out that as we delve into the realm of



Hari K Singh at the 10th Speciality Films & Flexible Packaging Global Summit 2023 in Mumbai.
Photo. The Packman

sustainable packaging, new materials are continually emerging within the industry.

Before Singh's presentation, the 10th Elite Plus Conference had already featured several discussions centered on materials such as monolayers and the integration of paper into sustainable packaging. Singh highlighted that this change in focus underscores the industry's growing emphasis on improving the barrier properties of both existing and newly introduced materials in the flexible packaging industry.

As Singh expounded on his perspective regarding disruption, he remarked, "Three to four decades ago, rigid packaging dominated, with glass, tin, aluminum containers, and the like. However, due to factors such as high energy costs, the expense of rigid packaging, and unmet customer requirements like aesthetics, ease of handling, transport, and storage, the packaging industry gradually shifted to flexible packaging. This transition introduced new products and substrates like polyester film, BOPP film, and CPP. This shift from rigid to flexible packaging can be considered one of the most significant disruptions in the industry."

Expanding further on his insights into the evolving landscape of disruption, Singh discussed the progress

in barrier properties. He detailed how within the realm of flexible packaging, there has been a multitude of innovations and transformative changes. Initially, advancements in barrier properties, seal strength, and bond strength were driven by developments in extrusion technology. Following this, metallization techniques made significant strides in enhancing barrier properties, subsequently leading to the emergence of in-line coating processes that utilized various types of coatings. Concurrently, offline coating methods also surfaced, including water-based, solvent-based, and solvent-less coatings such as PVDC and Alox coatings. According to Singh, one of the pivotal disruptions occurred through metallization, which replaced a significant array of products with metallized alternatives and consequently diminished the industry's dependence on aluminum foil.

Singh also emphasized how disruptions can permanently alter people's habits and behaviors. To illustrate this point, he mentioned, "Another disruption, in my opinion, was the introduction of sachet packaging, exemplified by products like Chik velvet sachets. Before this innovation, shampoo was typically packaged in large containers. The introduction of small sachets revolutionized the way shampooing is done across India, changing consumer habits and behaviors significantly."

During his discussion, Singh also highlighted the potential adverse effects of disruption. He illustrated this point with an instance of technological disruption that came close to causing candies to vanish from the Indian market. Until just a few years ago, small shopkeepers in India would routinely offer candies as a form of change or when they were unable to provide precise change. However, the introduction of technologies like UPI and Paytm disrupted this customary practice, underscoring how advancements can, at times, inadvertently influence long-standing traditions and behaviors.

Singh wrapped up his discussion by emphasizing the industry's growing commitment to environmentally friendly, sustainable, and recyclable solutions, particularly underscoring the significance of mono-family and single-family products such as polyolefins. He pointed out that this transition towards eco-conscious alternatives is poised to be the next major disruption in the field, with numerous companies actively involved in pioneering these innovations. "Consequently, we can anticipate a multitude of mono-family and single-family products to emerge in the near future," he said. ■

– Mahan Hazarika

SUSTAINABLE BOPET AND CPP FILMS AT HIPLEX EXHIBITION

UFlex's Dharwad plant inauguration marks a new era for packaging films in South India

MAHAN HAZARIKA

UFlex Packaging Films Business presented its comprehensive range of BOPET and CPP films at the Hipler exhibition. Noteworthy among them is a PET film containing recycled content, reflecting its commitment to sustainability by incorporating post-consumer recycled PET. Additionally, the company introduced a biodegradable film leveraging the power of enzyme technology.

Another pivotal motive for UFlex's participation in the exhibition was to highlight its newly inaugurated facility in Dharwad, Karnataka, in the southern part of the country. This strategic expansion empowers UFlex to effectively address the needs of South India and further reinforces its market presence.

"The Dharwad plant was commissioned in March 2023 and has a state-of-the-art 10.6-meter BOPET line, capable of yielding an annual output of 45,000 metric tonnes. Additionally, a six-meter CPP line is also established, facilitating the production of films amounting to 18,000 tonnes per year," said Ashish Saxena, joint president, UFlex Films Business. The introduction of the new CPP and BOPET lines in Dharwad has contributed to a notable 22% YoY surge in sales volume in Q1 2023.

During the exhibition, the company also showcased its latest advancement in transparent barrier films called the ECOPEL, ULP and XLP range where it is using a proprietary coating technology. Utilizing an exclusive coating technology, UFlex has achieved the creation of transparent barriers that match or even surpass alternatives like ALOx, EVOH or PVDC coating. This in-



Ashish Saxena, joint president, Packaging Films Business, UFlex with the packaging films team at Hipler International Plastics Expo 2023

novation enables numerous food companies to exhibit their products in transparent packaging, ensuring excellent visibility while delivering exceptional oxygen barrier properties for extended shelf life. In addition, the company also showcased its environmentally friendly and recyclable heat-sealable and peelable film. This heat-sealable and peelable film (F-WSP) is an excellent mono-material solution (PET based) for use as a lidding film on APET & RPET containers. It is sealed using heat and can be effortlessly peeled open without facing the hassles of spillage of food contents.

Speaking about UFlex's unmatched R&D infrastructure to fulfill unique requirements, Saxena said, "Our strong enthusiasm for research and development, coupled with substantial investments, is at the disposal of our customers. If they are seeking novel applications or have specific needs, our exceptional infrastructure, and cutting-edge R&D resources, including pilot lines, are at their service. With a three-layer pilot line, a biodegradability lab, and our polymer compounding facility, we can explore diverse resin combinations and alloys. Our extensive infrastructure is primed to

provide robust support for fostering innovation through research and development."

NET-ZERO EMISSIONS BY 2035

"We have seamlessly integrated sustainability into our corporate strategy at UFlex, driven by an ambitious target of achieving net-zero emissions by 2035. Working toward this goal, we are actively striving to enhance the incorporation of recycled content in our production processes. Our portfolio proudly encompasses a robust selection of sustainable films, a notable example being the Asclepius brand, which features a film comprising up to 100% recycled content.

"Furthermore, our ongoing efforts extend to the establishment of recycling infrastructure. Notably, we have had a recycling plant at our Noida facility for close to three decades, adept at recycling both rigid plastics and laminate waste from both consumers and industrial processes. We have further expanded this initiative to Poland and Mexico, where we have set up similar post-consumer recycled units," said Saxena. ■

GAME-CHANGING PACKAGING SOLUTIONS

Packaging redefined – UFlex Tube Division takes the lead

MAHAN HAZARIKA

During the Cosmohome Tech Expo 2023 held at Pragati Maidan, New Delhi from 19 to 21 July 2023, UFlex presented an impressive array of innovative and sustainable packaging solutions for beauty and cosmetics brands. The company highlighted its cutting-edge products, including the popular eco-friendly tube series – Remika, Kraftika, and Earthika. Alongside, UFlex also showcased various anti-counterfeit, brand enhancement, and other packaging solutions at the event.

Speaking about UFlex FlexiTubes at Cosmohome Tech Expo 2023, Venkatesh Rajagopalan, business head, Tube Division, UFlex, said, “The unique features of our tubes are noteworthy. Unlike traditional tubes from manufacturers in India or globally, which are predominantly white tubes with simple printing, our shelves are a striking array of brilliantly colored and intricately decorated tubes. We pride ourselves in offering a wide selection of tubes that cater to various branding preferences.”

ROTOGRAVURE REVERSE PRINTING

UFlex’s ability to achieve such a high level of uniqueness in its tube solutions is primarily attributed to its specialized production process. “We take pride in being the sole tube producer in the world that follows this distinct approach. Our expertise and specialization lie in design and enhancement, which stems from our unparalleled technical proficiency in flexible packaging. We exclusively utilize rotogravure reverse printing for all our tubes, making it a remarkable and unparalleled product in the industry. This particular printing technique, followed by a combination of lamination and extrusion processes, sets us apart and enables us to offer our customers a



Venkatesh Rajagopalan, business head, Tube Division, UFlex, at Cosmohome Tech Expo 2023. Photo: The Packman

wide range of options that are truly one-of-a-kind,” said Rajagopalan.

Indeed, being the only company in the world using rotogravure reverse printing with printing also on side seam tubes gives UFlex a significant advantage of providing tubes with 360-degree printing. This unique approach allows it to cater to any brand’s specific design needs effectively. By printing first and then laminating, UFlex can offer something truly distinct compared to other players in the industry who produce commoditized laminate first and then surface print on top of it.

The disadvantage of surface printing lies in the limitation it imposes on tube formation where printing inks cannot be present on the side seam. This can create challenges due to the constraints of tubing technology. “However, our method overcomes this issue by placing the inks underneath the laminate, enabling us to have a 360-degree ink coverage on the tube’s surface. As a result, we can seamlessly decorate tubes with inks

on the side seal, crimp area, and up to the shoulder without any complications,” said Rajagopalan.

HOLOGRAPHY AS A THEME

“In addition to offering exceptional barrier properties comparable to or even better than others in the industry, we have a unique offering that sets us apart. Between the barrier layer and the decorative printing layer, we provide an additional design film layer, which includes metallization and/or holography. This innovative feature adds a touch of sophistication and elegance to the tubes,” he added.

Holography, in particular, is a popular choice, and approximately 60 to 65% of the tubes produced by UFlex feature holography as a theme. The holographic effect serves two significant purposes. Firstly, it enhances the overall aesthetics of the tube, giving the brand a premium and luxurious appearance. Secondly, holography serves as an anti-counterfeiting measure for products that face significant challenges from fake

manufacturers. By incorporating holographic elements into the design, UFlex provides an added layer of security and authenticity verification for customers and brand owners.

“With these unique selling points, we have established a strong foothold in the very high-end cosmetic segment. Our ability to combine top-notch barrier properties with striking holographic designs has made us stand out in the industry, ensuring we stay ahead of the competition. Brands that seek premium packaging solutions with anti-counterfeiting features find our offerings highly appealing, making us a preferred choice in the market,” said Rajagopalan.

LEADING PHARMA BRAND – A SUCCESS STORY

“Our success story with a leading global pharma brand is truly remarkable and a testament to the value of our packaging solutions. When this brand approached us, they faced a significant problem with counterfeiting and were using aluminum tubes at the time. Counterfeiting not only impacted their reputation but also posed risks to their customers who unknowingly bought fake products,” said Rajagopalan.

In response to the brand’s unique challenge, UFlex provided them with a solution that incorporated holography and a holographic strip near the side seam on the tubes. This strategic implementation made their brand instantly recognizable as the original, setting it apart from counterfeit products. The holographic features served as powerful anti-counterfeiting measures, assuring customers that any tube without the holographic elements was not genuine.

The impact of UFlex’s packaging solution was substantial. Since switching to UFlex tubes, this leading pharma brand witnessed a complete resolution of its counterfeiting issue. Counterfeiters were no longer able to deceive customers, and the authentic brand was clearly distinguishable in the market. As a result, the brand experienced significant growth of approximately 25 to 30%.

“This success story exemplifies how innovative and effective packaging solutions can not only address specific challenges but also contribute to brand growth and success. Our ability to understand and cater to the unique needs of our clients, like this global pharma brand, reinforces our position as a leading provider of high-end cosmetic packaging solutions,” said Rajagopalan.



SUSTAINABILITY – THREE SOLUTIONS BY UFLEX TUBE DIVISION

“In the past 2-3 years, the industry has been buzzing with the concept of sustainability, and it has become a significant demand from various sectors. We have dedicated a lot of effort to address sustainability concerns and have come up with three solutions for this purpose,” said Rajagopalan.

“We have made substantial progress in terms of reduction. Our key achievement is the introduction of a new product – the paper tube. By incorporating a paper layer into the tube design, we have successfully reduced the amount of plastic used. Currently, our paper tubes allow for a remarkable 45 to 50% reduction in plastic components. These tubes are already being used for cosmetics, and there’s potential for them to be utilized in other applications like toothpaste in the future,” he said.

The second sustainability solution involves the development of a recyclable tube. “When discussing recyclable tubes, the industry often focuses on using a mono polymer family for making its laminate. We have managed to create specialized films and an entire laminate structure based on a mono polymer. What sets our recyclable tube apart is the use of a top layer made from a highly specialized and premium product called MDO polyethylene,” said Rajagopalan.

In India, only a few manufacturers possess the capability to produce MDO polyethylene. “It allows us to reduce the thickness of the material while maintaining the same level of resilience and texture, providing an adequate ‘bounce back’ feel. The tube becomes slightly more rigid, enhancing its overall quality and user experience. This innovation brings us closer to achieving a sustainable packaging solution that not

only benefits the environment but also maintains the desired product attributes,” said Rajagopalan.

Rajagopalan explained another significant advantage of MDO Poly, which is its exceptional clarity. Unlike the regular blown film polyethylene prevalent in the industry, MDO Poly has very little haze value when reverse printed. “This exceptional clarity enables us to continue promoting reverse printing techniques while maintaining high visibility and visual appeal,” he said. “Another crucial aspect of MOD Poly is its compatibility with existing laminate structures. It seamlessly integrates with other polyethylene layers, and when necessary, it can incorporate barrier properties to create a complete family of recyclable laminates. This compatibility ensures that we can produce sustainable packaging solutions without compromising on performance or functionality.”

UFlex’s third sustainability solution is a biodegradable tube. “By providing biodegradable tubes, we are actively contributing to the reduction of plastic waste and promoting a more eco-friendly approach to packaging.

“Our approach involves incorporating proprietary and confidential enzymes into the manufacturing process, viz each individual layer of film in the tube structure as well as the cap and shoulder. These enzymes enable polymer-eating microbes to latch onto the substrate when the used tube packing material comes in contact with the soil. These microbes gradually biodegrade the packing material within a reasonable time frame depending on the geographical conditions of the soil. Certification of our biodegradable solution is under process with various competent authorities, both in India and globally. This biodegradable tube solution offers an interim answer until India is fully prepared to effectively recycle plastic waste,” concluded Rajagopalan. ■



UFlex Limited
India's largest
multinational flexible
packaging and solutions
company



Packaging films business

BOPET films, BOPP films, CPP films, high barrier metalized films, Asclepius™ PCR films, Alox coated films and specialty films



Chemicals business

Printing inks, ink binders, waterbased, solvent based & solvent free laminating adhesives, UV & LED inks and coatings, specialty chemicals as polyols, primers and special effect coatings



Aseptic liquid packaging business

Innovation packs with holography and foil stamping, packaging materials for base/slim/ultra lean/crown/leaf/pillow/trio/wedge/spectra, aseptic filling lines 'Flexpress 10000', Asepto Pro technical services and ASip - u shape paper straw



Holography business

Holograms, security documents, holographic films, holographic aluminum lidding foil, holographic PVC blister, paper & board transfer, holographic thermal films, sequins films, glitter films, hot melt foil films, hot stamping foils and registered lens technology

Flexible packaging business

Flexible packaging laminates, pre-fabricated pouches, easy-tear sachets, big bags, block bottom bags, premium shower-proof bags, pharmaceutical packaging, Flexi Tubes and FlexFresh™ modified atmospheric packaging



Printing cylinders business

Electromechanically & laser engraved rotogravure cylinders for printing, laser engraved coating cylinders for extreme high & low gsm, embossing cylinders, robotic laser engraved specialized rotogravure cylinders, flexographic polymer printing plates and flexographic elastomer printing plates



Engineering business

Packaging machines, converting machines, recycling machines, specialty product machines and aseptic liquid filling machines



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