



PLEXCONCIL - The Plastics Export Promotion Council

# PLEXCONNECT<sup>®</sup>

Edition 36, June 2022



**Product Design in the Automotive Industry -  
Interview with Mr. B Thej Kumar**

**Product of the Month –  
Rigid Tubes, Pipes, and Hoses of PE**

**Adding Value to the Devalued –  
Interview with Dr. Amiya Chandra**

**Countryside –  
Republic of S. Korea**

**75**  
  
**Azadi Ka  
Amrit Mahotsav**

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### Plexconnect is published by:

The Plastics Export Promotion Council

**Editor:** Sribash Dasmohapatra,  
Executive Director, Plexconcil

**Associate Editor:** Sangita Iyengar

Send in your feedback, comments,  
suggestions to [editor@plexconcil.org](mailto:editor@plexconcil.org)

### Head Office (Head Office)

B-Wing, Dynasty Business Park, Unit No. 2, Ground  
Floor, Andheri-Kurla Road, Chakala, Andheri East,  
Mumbai - 400059, Maharashtra  
Tel: 022 - 40170000

### Delhi - Northern Regional (Regional Office)

319, 3rd Floor, Block - E, International Trade Tower 99,  
Nehru Place  
New Delhi - 110019  
Tel: 91-11-26478817 / 26478819  
Fax: 91-11-26478821  
Email: [plexnr@plexconcil.org](mailto:plexnr@plexconcil.org)  
[ashutosh.kumar@plexconcil.org](mailto:ashutosh.kumar@plexconcil.org)

### Chennai - Southern (Regional Office)

No: 5 | Ground Floor | Vivekananda Road  
|Off Spur Tank Road  
Chetpet | Chennai 600 031 | Tamil Nadu | INDIA  
Tel : +91 44 2829 2620 | 2829 2625 (D)  
M: +91 98400 53930  
Email : [ruban.hobday@plexconcil.org](mailto:ruban.hobday@plexconcil.org)

### Kolkata - Eastern Regional (Regional Office)

Vanijya Bhavan, 1/1 Wood Street  
Kolkata - 700016  
Tel: 91-33-22834497 / 22834498  
Fax: 91-33-22834289  
Email: [nilotpal@plexconcil.org](mailto:nilotpal@plexconcil.org)

### Ahmedabad - Gujarat Region (Regional Office)

A-1001, Titanium Heights,  
Nr. Vodafone House,  
Corporate Road,  
Prahladnagar, Makarba,  
Ahmedabad- 380015 (Gujarat)  
Tel: 079-48010103  
Email: [naman@plexconcil.org](mailto:naman@plexconcil.org)

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As you may all be well aware by the time of the release of this magazine edition, taking into consideration the critical aspect of input cost, the GOI recently announced cuts in excise duty on petrol and diesel and rationalisation of customs duties on polymer raw materials and intermediates. This significant move will help reduce logistics cost, promote competitiveness of manufacturing and exports of value-added goods. It will enhance the manufacturing competitiveness, boost value-added exports, and ease logistics pressures. We sincerely thank the Hon'ble PM Shri. Narendra Modiji as well as the Hon'ble CIM, Shri Piyush Goyal and FM, Smt Nir-mala Sitharaman for these landmark measures that are a crucial turning point for our industry. With Polymer consumption growing at a faster rate than the country's GDP, India needs several new petrochemical complexes to achieve atma nirbharta. However, what is important is that the proposed reduction in custom duty should not dissuade polymer producers from expanding capacity.

During April 2022, India exported plastics worth USD 1,100 million, up 11.5% from USD 987 million in April 2021. In the last financial year i.e. April 2021 to March 2022, India witnessed plastics exports of USD 13.4 billion and encouraged by the stellar performance in the last fiscal, Plexconcil has set a target of USD 16.7 billion in exports for the financial year April 2022 to March 2023.

During this past month, Plexconcil had a meeting with Ms. Arti Ahuja, Secretary, Department of Chemicals and Petrochemicals, and Mr. Manish Chadha, Joint Secretary, Department of Commerce, to discuss various issues face by the industry and the strategy for boosting exports in continuation of the Council's efforts to further strengthen efforts towards achieving its goals.

One of the fastest growing industries, although the Automotive industry did take a hit during the pandemic, it has bounced back with flourish. Technological upgrades, new product developments and the spurring rise in the OEMs and aftermarkets are significant tailwinds benefitting the automotive industry's growth. In this issue, we spoke to Mr. B Thejkumar, an automotive and plastics expert with several qualifications and vast experience in the segment about the need and significance of design in the business.

We also had a very interesting conversation with Dr. Amiya Chandra, ITS (1989) who is presently Additional DGFT and Development Commissioner, Adani Ports & Special Economic Zone. In this issue, he talks about the extensive opportunities for Plastics Recyclers in SEZs, their challenges and need to streamline the segment keeping in mind the future.

Under Product of the Month, our Panel Chairman, Mr. P Mohan talks about the phenomenal growth of the segment in the past fiscal & emerging opportunities in Rigid Pipes, Tubes & Hoses that can further propel growth of the segment. Korea is one of our important trade partners and despite trade agreements with the country, Indian plastics has much room for growth. We explore Korea as our focus country in this edition, in addition to an interesting round up of news and articles.

Industry veteran, Mr. Narinderjit Singh Batra of Redilens Optics under the brand name Davish is a true representation of India's technological prowess. His story speaks of great challenges faced in developing their highly advanced, niche products and his company today is one of only about 4 companies in India and a handful globally to manufacture specialized polycarbonate safety eyewear for industrial and defence applications. Read his story here.

On a closing note, Plexconnect celebrates its 3rd Anniversary this month and what a fabulous journey it has been! Knowledge is key to growth and as we continue our endeavour to share industry information and knowledge with you; we express sincere gratitude for your inputs, support and encouragement and hope to deliver better quality information in times to come. So, a big thank you to all members and moreover, all our contributors who have shared their valuable knowledge and experience with us.

**Warm regards,**

**Arvind Goenka**  
**Chairman**

## Meeting on Modalities for Implementation of Tariff Rate Quotas under India-UAE Comprehensive Economic Partnership Agreement (CEPA) – 6th April 2022 | Eastern Region

An initial meeting on the above subject held (in Hybrid Format) under the chairmanship of Shri (Dr.) Srikar K Reddy, Joint Secretary (WANA), Department of Commerce. Mr. Nilotpal Biswas, regional Director & Mr Manish Tulsian, Assistant Director, Plexconcil joined the meeting. The Council gave its suggestions w.r.t maximum quantity of import to one IEC holder under TRQ; validity of TRQ; eligibility criteria of participants for TRQ; and the preferred method for TRQ.

## Meeting of Expert Committee of 11th National Petrochemicals Awards on 7th & 8th April-2022 at CIPET – H.O., Chennai | Southern Region:

The Expert Committee meeting for “11th National Petrochemicals Awards” was held on 7th & 8th April 2022 at CIPET, Head Office, Chennai. The Expert Committee meet was held to screen, evaluate and shortlist the nominations for the respective Awards Categories.

On behalf of Plexconcil, Mr. Ruban Hobday, Regional Director – South was invited as part of the Expert Committee Meeting.

## Virtual Meeting on the Export Opportunity in Russian Market – 8th April 2022

Above meeting held under the Chairmanship of Shri. Manish Chadha, Joint Secretary to the Govt. of India, on the export opportunities in Russian market and the issues being faced by Indian exporters. Mr. Nilotpal Biswas, Regional Director & Mr Manish Tulsian, Assistant Director, Plexconcil joined the meeting from PLEXCONCIL.

## Inauguration Program of Milan Mela Complex (Eastern India's International Standard Exhibition Venue) – 11th April 2022 | Eastern Region

Hon'ble Chief Minister, West Bengal Mamata Banerjee in the august presence of Dr. Partha Chatterjee, Minister-in-charge, Industry Commerce and Enterprises Department inaugurated the above Mela complex. Mr Nilotpal Biswas, RD attended the program.

## PTFC Meeting (Virtual) organised by Chennai Exports Commissionerate on 12th April 2022 | Southern Region

The monthly PTFC Meeting (Virtual) organised by Chennai Exports Commissionerate was held on 12th April 2022 to address the grievances with regard to exim logistics at the Chennai Port. The Council was represented by Mr. Ruban Hobday, Regional Director – South.

## Foreign Trade Committee of SICCI Meeting on 13th & 29th April 2022 | Southern Region



The Foreign Trade Committee meeting of SICCI was organized on 13th & 29th April 2022 through a video conference to discuss the recent economy downturn due to Russia-Ukraine crisis. The meeting was chaired by Mr. Raja Vaidyanathan and Co-Chaired by Mr. Irshad Ahmed, Regional Chairman, FIEO. Mr. Ruban Hobday, Regional Director, Plexconcil being part of FT Committee gave his inputs and guidance for the betterment of trade and industry.

## PLEXCONCIL's Export Excellence Awards Function – 16th April 2022

The Council successfully hosted the Export Excellence Awards for the period 2017-2021 on the 16th April, 2022 at the Taj President, Cuffe Parade, Mumbai to felicitate the stupendous achievements of our exporters during the said period. The event was graced by Shri. Piyush Goyal, Hon'ble Minister of Commerce & Industry, Consumer Affairs, Food & Public Distribution and Textiles, Govt of India, as Chief Guest. Addressing the 'Export Excellence Awards 2017-2021' of apex plastics industry trade body The Plastics Export Promotion Council (PLEXCONCIL) in Mumbai today, the Union Minister said that he sees the industry as one which gives lot of impetus for job creation, especially in MSME sector.

## Welcome Dinner Function for marking the Beginning of the 6th edition of the Bengal Global Business Summit on 19th April 2022 | Eastern Region

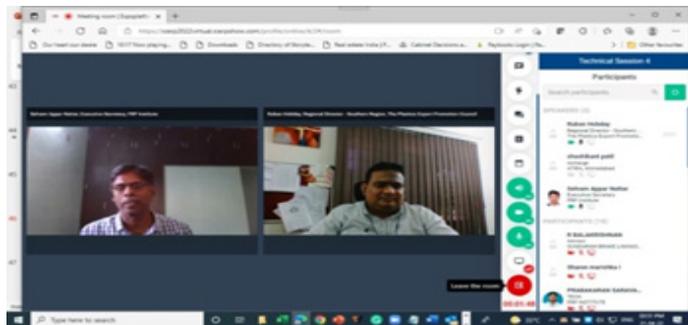
Shri Jagdeep Dhankar, Hon'ble Governor of West Bengal and Chief Minister, West Bengal Mamata Banerjee had graced the occasion. Mr Nilotpal Biswas, RD attended the program.

## Bengal Global Business Summit – 20-21 April 2022 | Eastern Region

6th Bengal Global Business Summit held on 20-21 April at the Biswa Bangla convention Centre, New Town, Kolkata. Inaugural session held on 20th April 2022. In the Inaugural Plenary session, Shri Jagdeep Dhankar, Hon'ble Governor of West Bengal had graced the

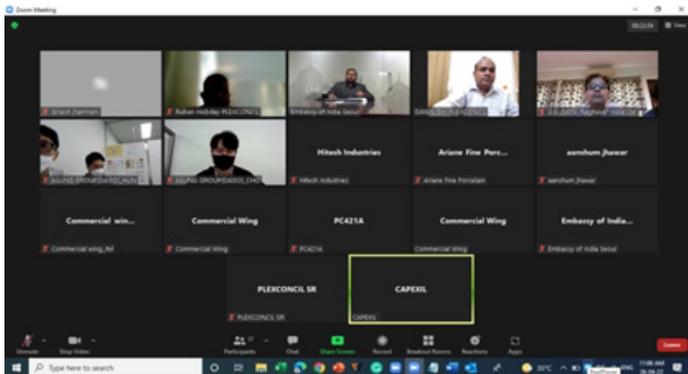
occasion as Guest of Honor. Hon'ble Chief Minister of West Bengal Mamata Banerjee presided over the business summit. On 21st April 2022, there were different sectoral sessions which includes 'Industries including MSME' and International Trade. Mr Nilotpal Biswas, RD attended the program.

## International Conference and Exhibition on Reinforced Plastics event (ICERP 2022) in virtual mode held on 20th to 22nd April 2022 | Southern Region



Plexconcil Southern Region was invited to address on the Opportunities & Benefits of Exports during the three day FRP Composite Virtual Event held on 21st April 2022. Mr. Ruban Hobday, Regional Director made detailed presentation of Opportunities & Benefits of Exports, which was well received by the entrepreneurs and the industry.

## South Korea VBSM with M/s. Daiso Co, Ltd, South Korea organized by the Embassy of India, Seoul, South Korea with the Short Listed Indian Companies on 26th April 2022 | Southern Region



Plexconcil organized the VBSM with short-listed (16) companies with the South Korean Buyer M/s. Daiso Co, Ltd, South Korea on 26th April 2022 providing each company a time slot to meet the buyer in a separate virtual room providing access for the Indian Seller to share the screen to promote their company profile and products. The Embassy of India, Tokyo was represented by Mr. Swapnil Thorrat, Attache Commercial and Mr. Ruban-Hobday, Regional Director-South & Mr. R. Dayanidhi, Assistant Director representing the Council.

The entire BSM was organized by the Southern Regional Office. The buyer will be sending more details and the Plexconcil will be hand holding until the buyer is able to directly place orders with the Indian companies.

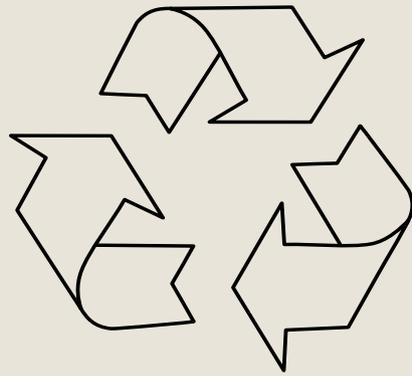
## B2B(Virtual) Meeting held with an Importer of Guatemala – 26th April 2022 (8.30 am IST onwards) | Eastern Region

Embassy of India, Guatemala jointly with the Council organized the above B2B Meeting in virtual mode. Guatemalan Importer had the opportunity to discuss with the Indian suppliers during the one to one meeting.



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## B. Thej Kumar

**AVP – Operations, Product Development and Quality, Toyota Gosei South India Pvt Ltd**

### Product Design in the Automotive Industry

Changes in a product design are necessary to guarantee high quality product and to remain competitive in the market. In many areas, product development in terms of speed, processes, and methods has changed in recent years and while product development cycles are becoming shorter and shorter, the number of product variations is increasing.

The reasons for evolving designs and the trends in the automotive industry nowadays are clear and unquestionable. With greater pressure on environmental compliance, need for increased fuel efficiencies, light weighting, stronger competition, ever faster and further development of technological inventions and growing customer demand for customer-specific and individual solutions, the industry has had no choice but to speed up their product development cycle.

In an interview with Mr. B Thej Kumar, AVP – Operations, Product Development and Quality, Toyota Gosei South India Pvt Ltd, Plexconnect aims to shed some light on the need and process involved in product design in the automotive industry.

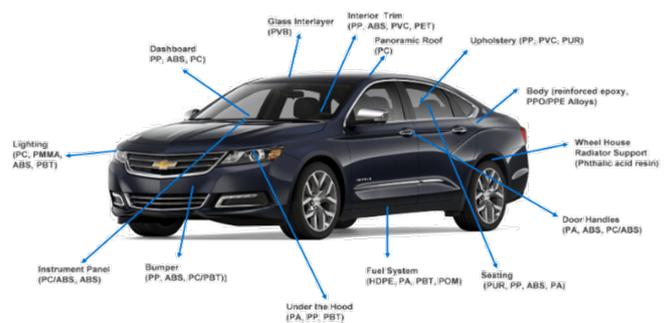
(excerpts)

**How have auto component designs evolved over the decades? What has been the impact of Plastics/ Composites in the segment?**

The influence of dynamic shift in the automotive industry is evident with more OEM's introducing products with more infotainment, digital modes and connected mobility. This apart from the shift towards EV's have resulted in significant changes in the component design and materials to meet the power, aesthetics, performance, as well regulatory requirements.

Plastics and composites are the preferred choices and applications of speciality polymers and long fibre reinforced plastics are finding acceptance, with key applications where cellulose fibre (natural) plastics are also being tried for injection molded products.

Plastics Applications in Automotive Parts



## What is the significance of light-weighting in the Auto industry? What are the economic and environmental benefits?

Plastics and light weighting are synonymous. Over the years the cars have seen an increase in consumption of plastics (engineering plastics, composites, foams etc) from about 10% to 20%, weighing almost 300kgs and expected to reach about 350kgs/ car. Lightweight plastic and polymer composites have improved design flexibility, enabled driver assistance and improved autonomous technology.

Primarily plastics have helped reducing fatalities in accidents, as high-end polymers/ composites used in front end applications have high energy absorption and reduce fatalities and injuries. Plastics provide superior advantage in design flexibility leading to development of safety systems (airbags and associated components) enhancing vehicle safety.

Reduction of weight enhances the fuel efficiency of the vehicle and thereby strengthens reduced carbon footprints.

With more emphasis on circular economy, plastics are a perfect fit with 100% recycling and reuse capability. Majority of plastics / polymers are recyclable which results in significant reduction of raw material resources and reduce the impact on environment.

## What are the key factors that drive innovation in designs of auto components?

For automakers to meet the new stringent environmental policies, new customer requirements and to improve fuel efficiency of their vehicles, change of design are being made to improve aerodynamics, to downsize the vehicle sizes, reduction of the engine size as well, and to increase the level of the electrification (partial or full electrification) of the fleet vehicles.

Lightweight design is widely used strategy to improve fuel economy of automobiles.

Similarly, EVs, driver less cars throw ample opportunities for innovative designs and also materials (plastics, metals, alloys etc) in terms of the under-bonnet applications as well interior parts applications.

## How do manufacturers approach new design? What are the key considerations?

Increased expectations of vehicle quality, reliability, safety and utility and survive the hyper-competitive business environment, the auto industry is determined to ensure developing the right product and technology options that are designed on the basis of the company's approach of where the market is headed.



The change in market dynamics are the focal points of considerations for bringing new design concepts. The changes could be associated to regulatory requirements of the local market, customer preferences, changes in technology, environmental challenges, economic situation of the buyers' market form the base for disruptive and innovative designs.

Design thinking and keeping the customer in mind all the time drives innovations which are technologically feasible and economically viable. Manufacturers around the world have drawn their attention to design thinking as a concept of innovation management as the organizations have opened their minds to learn from designers in being creative and innovative.

From the appearance, function, comfort, safety design changes are proposed which could also drive changes in the materials used (metals to plastics, SS to Aluminium etc), process changes (from machining to moulding) which all are a result of innovative thinking by the designers.

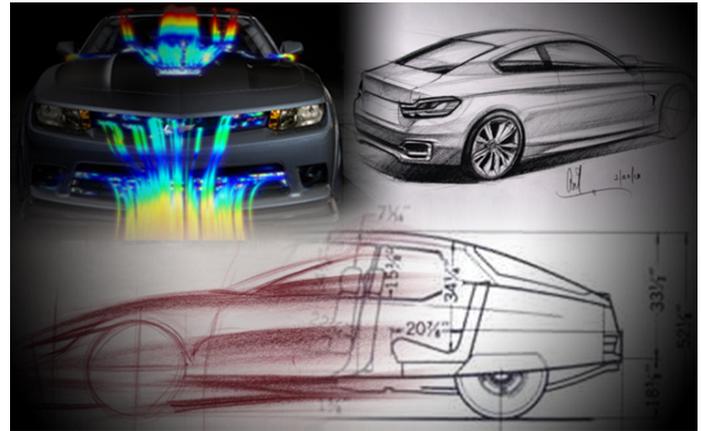
## Metal (Magnesium, Titanium, Aluminium) alloys Vs. Composites/ Plastics – what is the growing preference in light weighting in the auto segment and why?

The competition between plastics and metals are reaching greater heights, with the need for new design concepts based on several market requirements. The choice of the BEST materials comes with the economic consideration. More luxury vehicles and racing car makers (BMW, JLR etc) opt for highly expensive materials like Magnesium, aluminium alloys as against similar components made of plastic in normal passenger cars. Weight reduction to the tune of 30% in front end vehicles and seat assemblies have been good examples.



The car interiors, like the instrument panel, door trims etc always are the first choice of automakers for the light weight, design flexibility and appearance. However, the structural beams, metal cross-car beams have excellent crash resistance, but are traditionally heavier and require a lot of welding and joining applications to bring the various sub-components together. The usage of lighter metals, such as aluminium and magnesium, brings in additional costs and is not economical for mass segment vehicles. Therefore, vendors are working on hybrid and new-material cross-car beams that not only cut off weight but are easily implementable on a greater scale. One of auto component supplier has come up with a hybrid cross-car beam made up of metals, composites, and glass fibers that weigh about 3.5 kg, compared with over 7 kg for a regular complete metal beam. The hybrid structure is a combination steel beam and integrated glass fibre composites.

To conclude the choice of metal and plastics depends on the segment (mass segment, premium, racing.) of the car and the volume projections.



## What are the top design trends prevalent in today's automotive segment?

The car of the future is expected to offer something for everyone and keep the excitement up. It should be compact enough for city driving, but spacious enough for a family of four (six to seven in South Asian countries) to sit comfortably inside. Also, luxury car growth in India is growing at an average rate of about 6%. Cars are also expected to be sporty, yet efficient, and designed in a manner that attracts drivers of different age groups, genders and personalities.

Some of the happening trends can be classified as below:

1. Design: Lower, longer and wider, light weight body with high performance and efficiency
2. Environmental: Focus on hybrid and plug in electric cars associated design concepts. Fuel cells vehicles and associated components like hydrogen cell tank
3. Comfort and luxury: Panoramic sunroof in all segments, particularly in India
4. Appeal and safety: Highly functional head lights providing sharper visions, use of LED dynamic night spot vision etc
5. Appearance and Function: High illumination radiator grille and emblems with millimeter wave radar technology, as developed by Toyota Gosei Co Ltd, Japan.
6. Natural Fibers: Significant use of Natural fibers in the product applications along with plastics and composites.
7. Safety and convenience: Extensive use of cameras and sensors in grille, headlights, bumpers, rear view mirrors, rear end of the car.
8. Convenience: Head Up Display (HUD), voice activated cars

9. Safety and Wellness aspects: Interior air quality improvement aspects, mandatory airbags, pedestrian safety airbags, roof airbags etc. Also, driver alert steering wheels cautioning any lane changes through vibration and heat sensing concepts. Human Interface steering wheels also been undergoing trials.

The automotive industry is on the cusp of an unprecedented transformation characterized by autonomous driving, electrification and the increased demands for personalized products and enhanced safety features.

Innovation and technology in areas of materials engineering, design concepts and the speed of market response shall be crucial for success of any automotive manufacturer to stay ahead of the competition.

*About the Author: Mr B Thejkumar, is a plastics professional with a solid experience of 25 years. He presently with Toyoda Gosei South India Pvt Ltd, a Toyota group company, globally known under the umbrella of Toyoda Gosei Company, Japan in area of automotive plastics and LED.*

*He holds an MBA in operations management and Post Graduate in Plastics Engineering from CIPET emerging in Top 5 across All India exams. He also holds an Engineering degree in Polymer Science and Technology from University of Mysore in addition to several other certifications.*

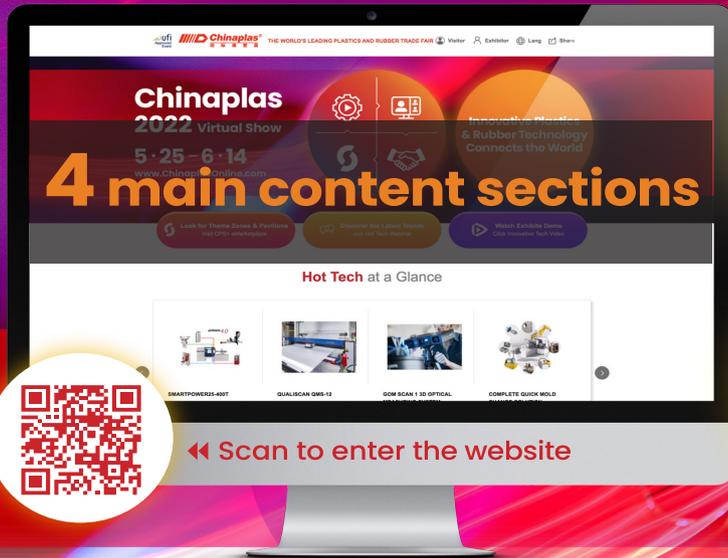
*He is a certified GLOBAL QUALITY DENDOUSHI leader appointed by Toyoda Gosei, Japan for Safety Systems and Quality Promotion with specialization in Kaizen, 2S and 1Y, TPS, Plastics Engineering, best manufacturing practices and Toyota concepts, Quality & Production management, Lean Manufacturing etc. across various industries and institutes. He has also served as a Panel Speaker in many International Conferences on Plastics, Automotive and Tooling industry, Smart manufacturing, Management functions has been appreciated by industries and professional bodies.*

*To connect with him, click on <https://www.linkedin.com/in/thej-kumar-aba4589>*

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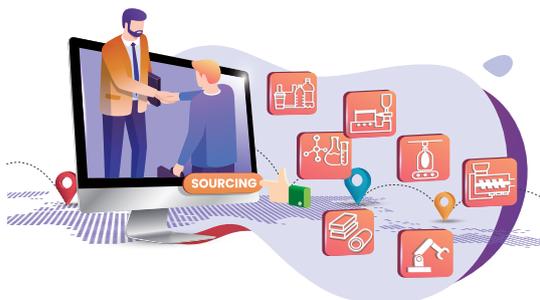


### CPS+ eMarketplace "Live Chat" function

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## Export Performance – April 2022

### TREND IN OVERALL EXPORTS

India reported merchandise exports of USD 40.2 billion in April 2022, up 30.7% from USD 30.8 billion in April 2021. In the last financial year i.e. April 2021 to March 2022, India witnessed merchandise exports of USD 421.9 billion – its highest ever annual tally.

**Exhibit 1: Trend in overall merchandise exports from India**



### TREND IN PLASTICS EXPORT

During April 2022, India exported plastics worth USD 1,100 million, up 11.5% from USD 987 million in April 2021. In the last financial year i.e. April 2021 to March 2022, India witnessed plastics exports of USD 13.4 billion. The council has set a target of USD 16.7 billion in exports during the financial year i.e. April 2022 to March 2023.

Exhibit 2: Trend in plastics export by India



## PLASTICS EXPORT, BY PANEL

In April 2022, most of the product panels, especially Writing instruments & stationery; Medical items of plastics; Plastic pipes & fittings; Cordage, fishnets & monofilaments; Plastic films and sheets; Consumer & houseware products; Packaging items - flexible, rigid; and Miscellaneous products reported a strong positive growth in exports. Export of Human hair & related products and Plastic raw materials, however, were in the negative.

Exhibit 3: Panel-wise % growth in plastics export by India

Panel	Apr-21 (USD Mn)	Apr-22 (USD Mn)	Growth (%)
Consumer & houseware products	59.2	69.5	+17.5%
Cordage, fishnets & monofilaments	19.3	24.1	+24.9%
FIBC, woven sacks, woven fabrics, & tarpaulin	129.3	141.6	+9.6%
Floorcoverings, leathercloth & laminates	49.5	55.4	+12.1%
FRP & Composites	33.3	40.9	+23.0%
Human hair & related products	60.5	53.3	-11.9%
Medical items of plastics	30.7	39.8	+29.8%
Miscellaneous products & items nes	58.5	83.9	+43.3%
Packaging items - flexible, rigid	47.7	55.6	+16.5%
Plastic films & sheets	158.4	189.5	+19.7%
Plastic pipes & fittings	21.8	27.3	+25.2%
Plastic raw materials	302.9	293.0	-3.3%
Writing instruments & stationery	15.7	26.0	+65.0%
	986.7	1,099.9	+11.5%

Source: Ministry of Commerce & Industry, Government of India

Export of **Consumer & house ware products** increased by 17.5% in April 2022 due to higher shipment of Tableware and kitchenware, and other hygienic and toilet articles of plastics (HS code 3924); Plastic moulded suit cases (HS code 42021220); Switches of plastic (HS code 85365020); and Plastic tooth brushes (HS code 96032100).

**Cordage, fishnets & monofilaments** exports were also up by 24.9% in April 2022 aided by improved sales of Other twine of polyethylene or polypropylene (HS code 56074900); and Made up fishing nets (HS code 560811).

In case of **FIBC, woven sacks, woven fabrics, & tarpaulin**, exports in April 2022 were higher by 9.6% as Indian exporters reported increased sales of Other sacks and bags of plastics (HS code 39232990); and Flexible Intermediate Bulk Containers or FIBCs (HS code 63053200).

Export of **Floor coverings, leather cloth & laminates** gained 12.1% during April 2022 on account of higher sales of PVC floor coverings (HS code 391810) and Decorative laminates (HS code 48239019).

Export of **FRP & Composites** was up by 23.0% due to increased sales of Articles of plastics and articles of other materials of heading 3901 to 3914, n.e.s (HS code 39269099).

Export of **Human hair & related products** was lower by 11.9% due to a decline in sales of Human hair, dressed, thinned, bleached or otherwise worked (HS code 67030010). Although a sizeable amount of sales of Human hair, unworked; whether or not washed or scoured (HS code 05010010) did take place during April 2022.

Export of **Medical items of plastics** witnessed an increase of 29.8% in April 2022 due to higher sales of Catheters (HS code 90183910); Cannulae (HS code 90183930); and Blood transfusion apparatus (HS code 90189032).

Export of **Miscellaneous products & items nes** increased by 43.3% in April 2022 due to higher sales of Polypropylene articles nes (HS code 39269080); and Optical fibres, optical fibres bundles and cables (HS code 90011000).

**Packaging items - flexible, rigid** export increased by 16.5% on higher sales of Sacks and bags of polymers of ethylene (HS code 39232100); Stoppers, lids, caps and other closures (HS code 39235010); and Other articles for conveyance or packing of goods (HS code 39239090).

**Plastic films & sheets** witnessed an increase of 19.7% in exports during April 2022 due to higher shipments of Self-adhesive films and sheets of plastics, whether or not in rolls (HS code 3919); Plates and sheets of polyethylene (HS code 392010); Sheets and films of polymers of propylene (HS code 392020); Flexible films and sheets of polyethylene terephthalate (HS code 39206220); Other sun and/or dust control film (HS code 39206929); Plates and sheets of cellular polymers of vinyl chloride (HS code 392112); and other flexible, metallised films and sheets (HS code 39219094).

Export of **Plastic pipes & fittings** witnessed a growth of 25.2% due to improved sales of Other tubes of polymers of ethylene (HS code 39172190); Rigid tubes, pipes and hoses of polymers of vinyl chloride (HS code 391723); Flexible tubes, pipes and hoses, having a minimum burst pressure of 27.6 MPa (HS code 39173100); and Other fittings (HS code 39174000).

**Plastics raw materials** export was lower by 3.3% in April 2022 due to a decline in sales of Linear low-density polyethylene (HS code 39011010, 39014010); Polyethylene having a specific gravity of 0.94 or more (HS code 390120); Polypropylene (HS code 390210); and Polyethylene terephthalate in various forms (HS code 390761 and 390769).

Export of **Writing instruments & stationery** witnessed an increase of 65.0% in April 2022. The product segment, especially Ball point pens (HS code 960810) and Other office and school supplies (HS code 39261099) did quite well.

# Export Performance

Exhibit 4: Details of % change seen in top 50 items of export

HS Code	Description	Apr-21 (USD Mn)	Apr-22 (USD Mn)	Growth (%)
63053200	Flexible intermediate bulk containers	72.0	86.0	+19.5%
39076190	Polyethylene terephthalate: Other primary form	64.4	44.5	-30.9%
39021000	Polypropylene, in primary forms	46.6	34.9	-25.2%
67030010	Human hair, dressed, thinned, bleached or otherwise worked	59.1	40.5	-31.5%
39232990	Other sacks and bags, incl. cones, of plastics	37.1	40.8	+9.9%
90011000	Optical fibres, optical fibre bundles and cables	28.9	48.7	+68.7%
39269099	Articles of plastics and articles of other materials of heading 3901 to 3914, n.e.s: Other	32.9	40.3	+22.3%
39202020	Plates, sheets, film, foil and strip, of non-cellular polymers of ethylene: Flexible, plain	26.9	32.0	+19.1%
39076990	Polyethylene terephthalate: Other primary form	27.0	22.7	-15.9%
39269080	Articles of plastics and articles of other materials of heading 3901 to 3914, n.e.s: Polypropylene articles, not elsewhere	20.2	23.4	+15.7%
48239019	Decorative laminates	18.8	23.2	+23.3%
39069090	Acrylic polymers, in primary forms (excl. polymethyl methacrylate): Other	17.0	18.2	+7.1%
39014010	Linear low density polyethylene (LLDPE), in which ethylene monomer unit contributes less than 95 % by weight of the total polymer content	18.9	8.8	-53.5%
39206220	Plates, sheets, film, foil and strip, of non-cellular polyethylene terephthalate: Flexible, plain	21.1	24.2	+15.0%
39232100	Sacks and bags, incl. cones, of polymers of ethylene	15.5	20.0	+29.0%
39012000	Polyethylene with a specific gravity of $\geq 0,94$ , in primary forms	10.0	3.8	-61.8%
59039090	Textile fabrics impregnated, coated, covered or laminated with plastics other than polyvinyl chloride or polyurethane: Other	17.5	16.9	-3.5%
39202090	Plates, sheets, film, foil and strip, of non-cellular polymers of ethylene, not reinforced, laminated, supported or similarly combined with other materials, without backing, unworked or merely surface-worked or merely cut into squares or rectangles: Other	14.2	15.4	+8.8%
39239090	Articles for the conveyance or packaging of goods, of plastics: Other	14.6	15.6	+6.7%
39046100	Polytetrafluoroethylene, in primary forms	10.9	11.8	+8.6%
05010010	Human hair, unworked; whether or not washed or scoured	0.6	11.5	+1813.3%
54072090	Woven fabrics of strip or the like, of synthetic filament, incl. monofilament of $\geq 67$ decitex and with a cross sectional dimension of $\leq 1$ mm: Other	12.1	12.0	-1.3%
56074900	Twine, cordage, ropes and cables of polyethylene or polypropylene	8.9	11.5	+28.8%
90015000	Spectacle lenses of materials other than glass	11.0	11.0	-0.5%

## Export Performance

39219099	Plates, sheets, film, foil and strip, of plastics, reinforced, laminated, supported or similarly combined with other materials, unworked or merely surface-worked or merely cut into squares or rectangles: Other	8.6	10.3	+19.8%
39073010	Epoxide resins, in primary forms: Epoxy resins	4.1	7.4	+81.7%
39206290	Plates, sheets, film, foil and strip, of non-cellular polyethylene terephthalate, not reinforced, laminated, supported or similarly combined with other materials, without backing, unworked or merely surface-worked or merely cut into squares or rectangles: Other	12.8	9.4	-26.5%
90183930	Cannulae	7.0	11.9	+70.3%
96081019	Ball-point pens	7.5	12.1	+60.9%
39219094	Plates, sheets, film, foil and strip, of plastics, reinforced, laminated, supported or similarly combined with other materials, unworked or merely surface-worked or merely cut into squares or rectangles: Flexible, metallised	7.7	11.1	+45.4%
39199090	Self-adhesive plates, sheets, film, foil, tape, strip and other flat shapes, of plastics, whether or not in rolls > 20 cm wide: Other	6.6	8.5	+28.8%
95030030	Toys of plastics	6.3	6.2	-1.6%
39241090	Tableware and kitchenware, of plastics: Other	7.4	7.9	+6.2%
39206919	Plates, sheets, film, foil and strip, of non-cellular polyesters, not reinforced, laminated, supported or similarly combined with other materials, not worked or only surface-worked, or only cut to rectangular, incl. square, shapes: Other	7.4	9.3	+25.6%
96032100	Tooth brushes	7.3	8.3	+14.3%
39011090	Polyethylene with a specific gravity of < 0,94, in primary forms: Other	5.2	10.2	+96.9%
39011010	Linear low density polyethylene (LLDPE), in which ethylene monomer unit contributes 95% or more by weight of the total polymer content	8.0	3.5	-56.3%
39219096	Plates, sheets, film, foil and strip, of plastics, reinforced, laminated, supported or similarly combined with other materials: Flexible, laminated	7.0	8.2	+17.1%
39095000	Polyurethanes, in primary forms	5.6	8.1	+45.4%
39119090	Polysulphides, polysulphones and other polymers and pre-polymers produced by chemical synthesis, n.e.s., in primary forms: Other	5.2	8.8	+70.1%
39140020	Ion-exchangers based on polymers of heading 3901 to 3913, in primary forms	6.5	6.0	-8.5%
39129090	Cellulose and chemical derivatives thereof, n.e.s., in primary forms: Other	5.5	7.0	+28.3%
39241010	Insulated tableware and kitchenware of plastics	5.7	6.0	+4.2%
39204900	Plates, sheets, film, foil and strip, of non-cellular polymers of vinyl chloride, containing by weight < 6% of plasticisers	5.1	6.7	+32.3%
59031090	Textile fabrics impregnated, coated, covered or laminated with polyvinyl chloride: Other	6.3	6.7	+7.2%

## Export Performance

39181090	Floor coverings, whether or not self-adhesive, in rolls or in the form of tiles, and wall or ceiling coverings in rolls with a width of $\geq 45$ cm, consisting of a layer of plastic fixed permanently on a backing of any material other than paper, the face side of which is grained, embossed, coloured, design-printed or otherwise decorated, of polymers of vinyl chloride: Other	5.3	6.0	+12.2%
39206929	Plates, sheets, film, foil and strip, of non-cellular polyesters, not reinforced, laminated, supported or similarly combined with other materials, not worked or only surface-worked, or only cut to rectangular, incl. square, shapes: Other	5.9	8.1	+36.5%
39235010	Stoppers, lids, caps and other closures, of plastics	5.6	5.9	+5.4%
39191000	Self-adhesive plates, sheets, film, foil, tape, strip and other flat shapes, of plastics, in rolls $\leq 20$ cm wide	4.6	7.5	+64.2%
39201019	Plates, sheets, film, foil and strip, of non-cellular plastics, not reinforced, laminated, supported or similarly combined with other materials, without backing, unworked or merely surface-worked or merely cut into squares or rectangles: Other	4.9	7.6	+56.5%

Source: Ministry of Commerce & Industry, Government of India

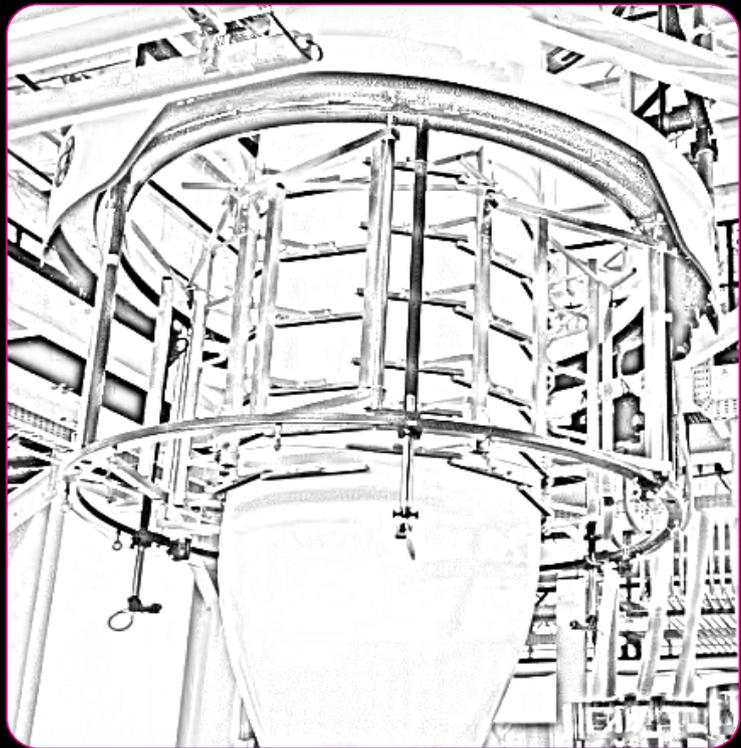


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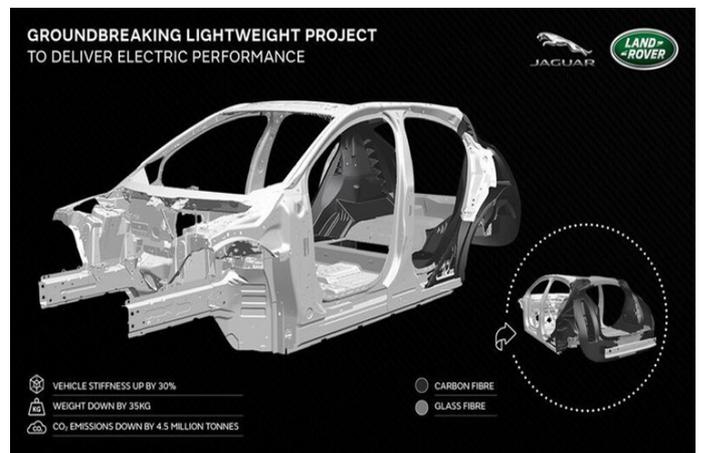
## Jaguar Land Rover: Composites Instead of Aluminum and Steel

Jaguar Land Rover is preparing for future electric vehicles with advanced lightweight composite research that will help deliver increased range, greater performance and a more dynamic drive. The project aims to prevent 4.5 million t of CO2 emissions between 2023 and 2032.

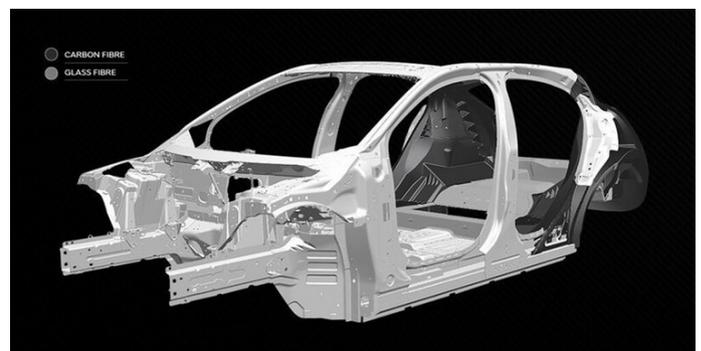
Tucana consortium will allow Jaguar Land Rover to make future electric vehicles go further using advanced composites such as carbon fibre.

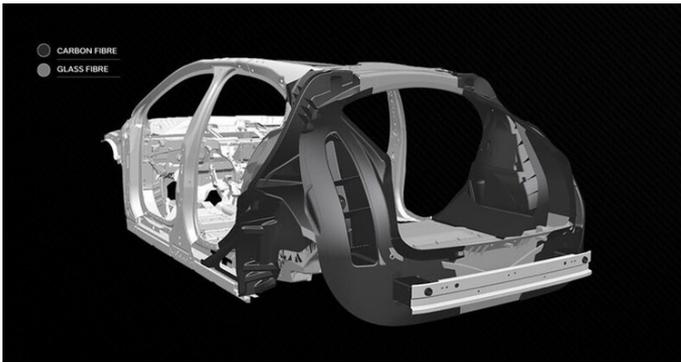
The Tucana project is a four year program to make the UK a world leader in low-carbon technology, helping prevent 4.5 million t of CO2 emissions between 2023 and 2032 by accelerating mainstream use of electric vehicles and making vehicles lighter to both decrease tailpipe emissions and reduce energy consumption of electrified powertrains.

The research will allow Jaguar Land Rover to develop lightweight vehicle and powertrain structures by replacing aluminium and steel with composites capable of handling the increased torque generated by high-performance batteries, while improving efficiency and reducing CO2 impact.

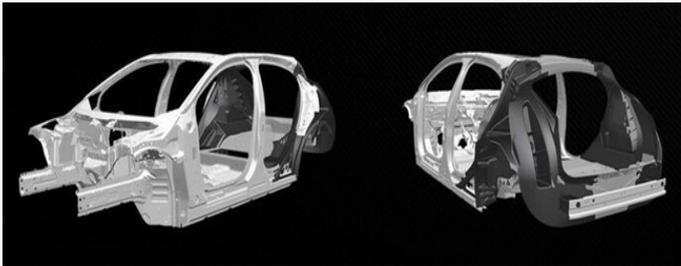


Jaguar Land Rover aims to increase vehicle stiffness by 30 %, cut weight by 35 kg and further refine the crash safety structure through the strategic use of tailored composites, such as carbon fibre.





Lightweight projecting



Lightweight projecting

Jaguar Land Rover aims to increase vehicle stiffness by 30 %, cut weight by 35 kg and further refine the crash safety structure through the strategic use of tailored composites, such as carbon fibre. Reducing the vehicle body weight will allow the fitting of larger batteries with increased range – without impacting CO2 emissions.

Advanced composites offer significant reductions in vehicle weight, and by 2022, Jaguar Land Rover expects to have developed a fleet of prototype Tucana test vehicles.

The consortium, led by Jaguar Land Rover, brings together world-leading academic and industry partners including the Warwick Manufacturing Group (WMG), Expert Tooling & Automation, Broetje-Automation UK, Toray International UK, CCP Gransden and The Centre for Modelling & Simulation (CFMS).

Marcus Henry, Research Manager at Jaguar Land Rover said: “The development of new lightweight body structures to complement the latest zero-emissions powertrains will be key as the electrification of our vehicle range continues. This project will allow the true environmental credentials of electric vehicles to be realized by enabling wider adoption of the technology and will propel Jaguar Land Rover and the UK supply chain into a world-leading position in low-carbon technology.”

The BMW i3's passenger compartment is made of carbon fiber. Thanks to its high strength, the lightweight material offers passengers the best possible protection in the event of accidents and is also light enough to compensate for the additional weight of the HV battery.

Ian Risk, Chief Technology Officer at CFMS, said: “Tucana shows how new technology development can be optimized and accelerated with digital engineering. Using new digital design, development and manufacturing tools helps to deliver emissions reduction faster, so the UK economy can reach zero emissions quicker.”

The continued electrification of Jaguar and Land Rover vehicles is part of a commitment to make societies safer and healthier through innovative technology. Jaguar has completed the electrification of its PACE family with the P300e plug-in hybrid powertrain offered on the new Jaguar E-PACE and P400e for Jaguar F-PACE alongside the all-electric Jaguar I-PACE. Similarly, the new Range Rover Velar is now offered with the P400e, completing the hybrid options available across the Range Rover family.

Source: Spotlightmetal



## POLYMER PRICE TRACKER (DOMESTIC MARKET) April 2022

<b>High Density Polyethylene (HDPE)</b>			<ul style="list-style-type: none"> <li>• HDPE prices increased by Rs 4000 per MT in April 2022 after moving up by Rs 14000 per MT in March 2022 and Rs 4500 per MT in February 2022.</li> <li>• In April 2022, HDPE prices were increased by Rs 4000 per MT in the first week. Thereafter no changes were announced.</li> </ul>
Feb-22	Mar-22	Apr-22	
<b>Linear Low-Density Polyethylene (LLDPE)</b>			<ul style="list-style-type: none"> <li>• LLDPE prices inched up by Rs 2000 per MT in April 2022 after an increase of Rs 14000 per MT in March 2022 and Rs 6500 per MT in February 2022.</li> <li>• In April 2022, LLDPE prices were increased by Rs 2000 per MT in the first week. Thereafter no changes were announced.</li> </ul>
Feb-22	Mar-22	Apr-22	
<b>Low Density Polyethylene (LDPE)</b>			<ul style="list-style-type: none"> <li>• LDPE prices dropped by Rs 1500 per MT in April 2022 after an increase of Rs 12000 per MT in March 2022 and Rs 4000 in February 2022.</li> <li>• In April 2022, LDPE prices did not witness much change in the beginning until the third week when prices were lowered by Rs 1500 per MT.</li> </ul>
Feb-22	Mar-22	Apr-22	
<b>Polypropylene (PP)</b>			<ul style="list-style-type: none"> <li>• PP prices fell by Rs 3000 per MT in April 2022. Prices had moved up by Rs 6000 per MT in March 2022 and Rs 9500 per MT in February 2022.</li> <li>• In April 2022, PP prices were reduced by Rs 3000 per MT around mid-month. Thereafter no changes were announced.</li> </ul>
Feb-22	Mar-22	Apr-22	
<b>Polyvinyl Chloride (PVC)</b>			<ul style="list-style-type: none"> <li>• PVC prices were lower by Rs 4000 per MT in April 2022 after an increase of Rs 7000 per MT in March 2022 and Rs 2000 in February 2022.</li> <li>• In April 2022, PVC prices were increased by Rs 2000 per MT in the first week and then lowered by Rs 6000 per MT in the third week.</li> </ul>
Feb-22	Mar-22	Apr-22	

Source: Industry, Plexconcil Research



# Dr. Amiya Chandra,

**Additional DGFT & Development  
Commissioner, Adani Ports and Special  
Economic Zone**

## Adding Value to the Devalued Turning Challenges to Opportunities

Not every plastic is single use, nor every single use plastic is bad.

Recycling is often a complicated system dictated by market demand, price determinations, local regulations; the success of which is contingent upon everyone, from the product-designer to the consumer, to the waste collector, to the recycling factory worker. The process involves recovering or reusing scrap or waste plastic and reprocessing the material into useful products or to something else which can sometimes be completely different from their original state.

Most plastics in use today originate from fossil fuels or non-renewable sources, and such plastics which make up the vast majority of plastics used today eventually end up in the oceans or landfills, making Recycling an integral part of global efforts to reduce plastic in the waste stream.

### Migrating Waste

Plastics today is a part of almost every aspect of daily life. While benefits of using plastics across industries cannot be denied, the impact of misusing plastics and poor post consumer waste management cannot be ignored any longer. Availability of resources, economic progress and cheaper products has led to grave impact of plastic waste on our environment and communities.

With growing awareness of the economic value of plastic waste, segregation, categorising and sorting material separately, led to trading of such sorted material and this became an easy source of raw material. International trade evolved and became an easy way for many developed nations to collect their waste and dump it into developing or poor nations, converting them to dumping grounds of the developed nations. As a result, international communities as well as domestic compulsions led to enforcing restrictions on international trading or all together banning it in plastic waste.

### Plastic Recycling at SEZ

Since 1997, about 20 units in Kandla SEZ have been manufacturing recycled plastic raw material from the imported plastic scrap in the zone. Permission to each petitioner was granted for establishing the units on certain terms and conditions.



The units which were in existence in Special Economic Zone in Nov-2000 were to be a positive Net Foreign Exchange earner within a period of 3 years as well as permitted to sell manufactured goods under Domestic Tariff Area (DTA) on payment of full custom duty subject to import policy in force.

The Parliament of India enacted SEZ Act in the year 2005 and most of the provisions of the SEZ Act and SEZ Rules came into force in Feb 2006. The units in the SEZ were treated as existing units as per Section 2 (I) of the SEZ Act and, therefore, the SEZ Act and the SEZ Rules were applicable.

As per Section 8 of SEZ Act, a meeting of Board of Approval was held in Feb-2006 under the Chairmanship of the Special Secretary, Department of Commerce, and found that the manufacturers of recycled plastic units have no more export potential and, therefore, it was decided that no such new units should be allowed to set up in this zone.

It was observed that the units are paying full duty on clearance of DTA. The letters of approval were granted for a period of five years subject to the provisions of SEZ Act and SEZ Rules and particularly, Rule 53 of the said Rules which compels a unit to achieve positive Net Foreign Exchange (for short 'NFE'). The units continued to manufacture the plastic raw material and did follow the conditions imposed by the letter of approval in accordance with Act and Rules and always maintained the positive NFE.

In 2013 the Ministry of Commerce and Industry, Development of Commerce (SEZ Division) issued instructions wherein, all the units were restrained from carrying out any broad band activity with regard to unrelated products. It also stated that,

- all the manufactured goods are required to be physically exported out of country
- gradually from second year onwards
- 100% of goods manufactured in the SEZ is to be physically exported by 5th year.
- Some penal actions have also been referred in the Policy for breach of any conditions.

However, there have been continuous tussle between the Unit holders and the GOI since 2006 till date, often, resulting in court litigations.



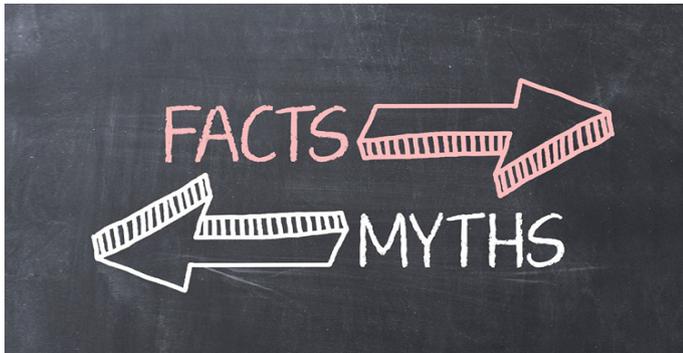
## Recycling Challenges

Only 9% of plastic waste is recycled globally. And while with growing consumer awareness and global efforts in full steam to reduce the environmental impact of plastics, there is huge potential for recycling, there are many challenges that confront the recycling industry.

To begin with, we need to foremost understand that the negative sentiment against Plastics is resultant of many myths around recycling plastic. This ranges from the false perception that recycled materials are somehow inferior to virgin materials to archaic laws and regulations that never contemplated the possibility of recycling plastics.

- Today, despite numerous global brands and processors are consciously adopting PCR, manufacturers of recycled plastics operate in the same market as traditional (virgin) plastics producers that are price takers in that market.
- The gap in the collection, sorting and segregation process is further accentuated by patchwork state laws and a lack of direction from industry stakeholders, making collection and recycling of scrap plastic efficient across the board.
- There is wider concern that while the quality, performance characteristics, and near-term availability of virgin plastics are largely assured, there may be uncertainty about the same characteristics of recycled plastics. Hence a status quo bias hinders switching, even in situations where recycled plastics are cost competitive and of comparable quality to their virgin equivalents.
- Attempts by some legislators, pseudo-environmentalists to categorise and regulate recyclables as 'waste' have been particularly detrimental for the international recycling industry.
- Various international and national associations campaign extensively before the UN and other supranational bodies to remove the 'waste' label from the products generated by the recycling industry.
- The monopolistic attitude of large domestic manufacturers of polymers (the entire industry is dominated by not more than 10 large producers) and their attempt to control the Indian market is a big deterrent for providing a cheaper, sustainable and viable option to Indian market.
- The myth and false perceptions are not being countered by the Government, at the cost of encouraging false propaganda against trading in recycled plastics. In absence of any campaign to educate the consumers both domestically as well as globally, many consumers are still reluctant to buy certain items containing recycled materials.
- Plastics waste has been effectively upcycled to create premium packaging, especially seen in the Cos-

metics, Sports and Fashion industries. Attaching a “Premium” label to such products makes them inaccessible to public at large and the industry remains a niche segment. Such products should be made a norm.



## India's Plastics Recycling Industry - Facts

The average Indian's per capita plastic consumption in India is about 8-10 kg per person compared with about 90-100 kg in the US and 50 kg in Europe.

India is overall deficit in virgin polymer raw material supply and continues to be largely import dependent, despite having one of the highest plastics recycling rates in the world (an estimated 47% of all plastics is recycled).

Plastic recycling units in SEZs were approved during 1995 to 1998 with objective of import substitution and employment generation; at present they are reducing large scale of import of plastic materials to fulfil the growing needs of domestic industry.

Recycling brings economic benefits, as it provides cheaper source of material for production of new products. The segment provides employment opportunities directly and indirectly nationally to approximately 2 million people.

There are about 5,000 people directly employed and another 50,000 indirect engaged by SEZ units from nearby areas of Kutch region, which is a backward region with lowest rate of literacy. These units employ a very high number of unskilled or low skilled employees including a large number of women.



Plastics are often recycled by small and predominately regional facilities, and more scale and standardisation would support smoother market operation. There is an urgent need for Standardisation of sorted plastic waste and recycled plastics.

The Basel convention does not put any kind of embargo on trade in solid plastic waste except for that of post-consumer wastes, which is not imported by the unit holders in the SEZ. The unit holders import only virgin pre-consumer waste which is in total compliance with the Basel Convention and is not hazardous, thus does not pose any risk.

The plastic recycling units in SEZ do not sell imported scrap directly to DTA, as its not permitted and till date there is no substantial documentary proof of same. The agglomerate / granules are cleared in Domestic Tariff Area (DTA) on payment of appropriate Customs Duty. The plastic scrap or waste (in form of compressed bales) are tested at CIPET, Ahmedabad as per Public Notice no. 392(PN)/92-97 dated 01/01/1997. Only after getting confirmative test report, such plastic waste and scrap is allowed to be utilised for production of agglomerates and granules.

Recycled plastic raw material manufactured by the SEZ units are used by thousands of small scale manufacturing of essential items like irrigation pipes, water storage tanks, tarpaulins, footwear, etc., which are used by farmers and common people of India, as cost of such items are low in comparison to imported plastic raw materials (imported virgin granules) are used for manufacturing of such items.

Upon persuasion and direction of the Government, the unit holders in SEZ have installed additional Plant and Machinery to produce value added finished products and articles for exports like garbage bags, ropes, strapping, granules, etc. which are physically exported.

## Opportunities for Indian Plastic Recycling Units in SEZ

- Agriculture and Plasticsulture
- Rail Pads & Coaches
- Automotive
- Building & Construction
- Bricks, Bitumen, Landscaping
- Textiles and fabrics
- And much more



## The Five Ss – Way Forward

### Scalability

There is a need for consolidation within the industry to achieve a sense of scale as currently the plastic recycling & processing units are too fragmented and too miniscule in size and capacity to make any major impact globally or even domestically. Most of them can be equated with SSI and a few to MSME that too ridden with further limitations. Thus, Scale is the first factor that shall be addressed.

This can be achieved a first step, through amendment of imports limits of Virgin scrap or Pre-consumer plastic waste, upwards to two times of the existing limits imposed. This upward revision can be linked 100% towards exports for revised limits in addition to 35% export limits already set by the Government and agreed by the unit holders.

It is recommended that the Government shall establish at least one such industrial park in a SEZ solely focussed on recycled plastic, ensure uniformity as well monitoring of all norms by providing requisite infrastructure. The units would also gain by sharing latest revolutionary technologies, collaborate better, establish R&D centres, Design Banks for products developed from recycled plastics etc.

### Stability

Presently due to continuous policy fluctuations recycling units are surviving on year-to-year letter of extensions (LOA), making their true potential arbitrary. The plastic recycling units in SEZ should be given minimum of 5years of extension and adhering units, should get automatic system driven five year extensions. The unit holders as well as Government can monitor the progress or compliance status on-line, in real time & transparent manner.

### Standardization

The global recycled plastics market is witnessing significant growth. However, parity between the virgin plastic and the recycled plastic needs to be defined conclusively so that the users of recycled plastics can determine if it can be adopted for use or not. An attempt has to be made to bridge this understanding gap so that all stake holders are on the same page and misconceptions and myths around Basel convention can be substantiated appropriately.

The processes, interpretation of policy guidelines, operational timelines, monitoring, security, customs etc. are at variance across different SEZs in India. Bringing uniformity in them would foster ease of doing business & reduce the number of litigations.

### Support

The Indian plastic recycling and processing industry is highly fragmented and face tough competition both domestically as well as internationally from manufacturers of Virgin plastic. Providing testing and certifying laboratory within SEZs will ensure that the units import virgin scrap and certify quality and composition of the scrap. Processors must encourage innovation in product design for reuse and recycling. MNCs could also establish long term purchase contracts with the Recycling units in the SEZ

Support for R&D for improved plastics management systems & sustainable design of plastics (recyclable), will help move away from single use plastics and use recycled plastic as the source material.

### Study

Research studies are essential for devising strategies to overcome challenges, identify and prepare for new opportunities. Associations in consultation and guidance from the Government should form a research and study group to help plastic recycling units to export their products by identifying and understanding global demand trends, market forecasts, competitive landscapes, etc. There is tremendous exports potential in recycled plastics for recycling units based in SEZs and the need is to look outside the box!

**About the Author:** *Dr. Amiya Chandra, Additional DGFT & Development Commissioner, Adani Ports and Special Economic Zone is an experienced leader with 30 years of experience in government affairs and policy guidelines. Reputed in the government / administrative circles as a creative, dynamic & professional administrator, he has had varied exposure in several areas of government project policy framing and implementation. He*

*has served three Union Ministers as Private Secretary as an interface between constituency and the Government Departments for projects progress monitoring and resolving problems of the constituencies. He has authored several books and contributed articles in leading journals & books in Central Asia. He has also presented several papers/ delivered lectures at Rajiv Gandhi Foundation, Indian Institute of Foreign Trade, Institute of Defense Studies and Analysis and the University of Ashgabat(Turkmenistan) on affairs related to Central Asia.*

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## Rigid Tubes, Pipes and Hoses of Polyethylene

Rigid tubes, pipes and hoses of polyethylene typically find use in water supply and distribution, irrigation and bore-well applications as they are durable and cost-effective. The product is classified under Subheading 391721 of the Harmonized System (HS) of Coding. World-wide import of Rigid tubes, pipes and hoses of polyethylene is valued between USD 2.0 to 2.2 billion per year approximately.

- In 2020, top-5 exporting countries of Rigid tubes, pipes and hoses of polyethylene were: Germany (14.2%), Italy (11.6%), China (8.4%), United Kingdom (6.3%), and the United States of America (5.7%).
- Likewise, top-5 importing countries of Rigid tubes, pipes and hoses of polyethylene were: Germany (9.9%), France (5.8%), Netherlands (5.3%), United States of America (4.6%), and Canada (3.9%).

India is a net exporter of Rigid tubes, pipes and hoses of polyethylene. In 2021, India exported 17,490 tonnes of Rigid tubes, pipes and hoses of polyethylene valued at USD 37.9 million to the world. While Nigeria was the top export destination in terms of value, Sri Lanka was the top destination in terms of volume.

Destination Country	Value (USD Mn)	Destination Country	Qty. (Tonnes)
Nigeria	5.05	Sri Lanka	3,115
Sri Lanka	5.00	Nigeria	2,929
Canada	4.24	Tanzania	2,343
United States of America	4.07	Nepal	1,697
Tanzania	4.01	Canada	1,497
Nepal	3.70	United States of America	1,440
Bhutan	2.96	Bhutan	1,326
Philippines	1.07	Philippines	375
United Kingdom	0.83	United Kingdom	339
United Arab Emirates	0.64	Maldives	228

Source: Department of Commerce, Govt. of India, Plexconcil Research



In 2021, India imported 2,630 tonnes of Rigid tubes, pipes and hoses of polyethylene valued at USD 14.1 million from the world. Taiwan was the major supplier in terms of value, while China was the top supplier in terms of volume.

Source Country	Value (USD Mn)	Source Country	Qty. (Tonnes)
Taiwan	2.05	China	631
China	1.89	Italy	447
Italy	1.46	Bahrain	435
Bahrain	1.32	Taiwan	340
Thailand	1.31	Saudi Arabia	166
Germany	0.99	Germany	116
United States of America	0.68	Sweden	90
Sweden	0.66	South Korea	52
United Kingdom	0.66	Nepal	47
Japan	0.65	Kuwait	45

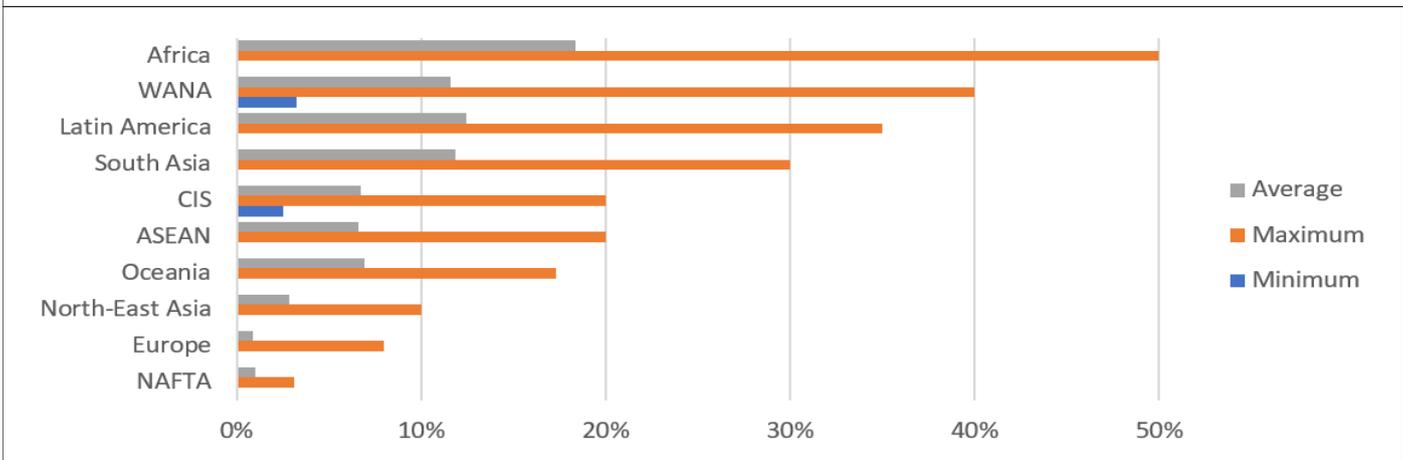
Source: Department of Commerce, Govt. of India, Plexconcil Research

Indian firms dealing in Rigid tubes, pipes and hoses of polyethylene, have immense potential to export to destinations like Germany, France, Netherlands, United States of America, Canada, Philippines, Denmark, Belgium, United Kingdom, and Iraq.

Import of Rigid tubes, pipes and hoses of polyethylene from India by the European Union countries is eligible for zero customs duty due to Generalised Scheme of Preferences Scheme. There is zero duty applicable on import of Rigid tubes, pipes and hoses of polyethylene, from India in Republic of Korea under India-Korea Comprehensive Economic Partnership Agreement; and in Japan due to India-Japan Comprehensive Economic Partnership Agreement. In fact, few of the ASEAN countries like Cambodia, Myanmar, and Thailand also allow zero duty imports of Rigid tubes, pipes and hoses of polyethylene under the ASEAN-India Free Trade Agreement. Import of Rigid tubes, pipes and hoses of polyethylene is eligible for zero customs duty in Canada, Mexico and the United Kingdom.

Unfortunately, several countries in Africa, WANA, Latin America, South Asia, and CIS do not accord any preferential treatment to Rigid tubes, pipes and hoses of polyethylene exported from India due to which the average customs duty faced on this product is high.

Effective tariff applied by various regions on import of Rigid tubes, pipes and hoses of polyethylene from India



Source: Market Access Map, [Plexconcil Research](#)

## Industry Speak

**P. Mohan, Plexconcil Panel Chairman, Pipes & Fittings**

**Pipes and Fittings were among the top export segments in FY21-22 with 53.5% growth. What are the emerging opportunities/ key growth drivers for the segment globally?**

Post pandemic, globally there has been a resumption and increase in numerous infrastructure activities resulting in an increase in demand for better water and water management across all major industry sectors. Overall, there has also been an increase in demand for better quality Pipes & fittings and newer materials that are also factors driving growth of our industry. Opportunities especially exist in Special pipes and fittings, OPVC piping systems, High pressure and more tensile strength piping systems.



Emerging opportunities are also seen in Electrofusion fittings, drip irrigation systems, sprinkler irrigation systems and composite pipes. In many cases the exported products have international approvals with high quality and reliability.



The infrastructure projects are on track after Covid in terms of procurement and execution. The government initiatives for supporting infrastructure and agriculture demonstrated effectiveness in terms of procurement. The Oil and Gas pipeline infrastructure is also leading growth while increasing building construction activities are fuelling demand for household piping.

**Despite huge processing capacities, why do we continue to import the products, especially from Taiwan and China?**

The products imported from China and Taiwan have better cost position due to economy of scale and good and fast product innovation. The critical input as semi-finished product is still a constraint.

Having said that, one of the key challenges faced by our industry today is the shortage in Resin supply. We continue to rely on import of PVC compounds and resins, which is further exacerbated by price volatility of raw material and higher logistics cost, a factor that has been acutely felt since the pandemic began.

Government initiative like Removal of ADD on PVC resin imports and reduction of import duty from 10% to 7.5% on PVC resin and compounds will be good support in terms of Raw materials availability and better price. This is great support to exporters to compete with international market.

### **What are the new manufacturing technologies and/or product innovation that we see in the segment today? (In India and globally)**

New product / manufacturing technologies prevalent today include Silent pipes, flame retardant / glass fibre filled pipes, push fit fittings, pipes and fittings for oil and gas applications, reinforced pipes, pipes for extreme temperature (high and low) and extra-large diameter pipes (> 2 m dia)



Within PE, biaxially oriented pipes have gained much interest. It could reduce 30% of materials cost due to thinner wall. Also, biaxially oriented pipes increase slow-crack growth resistance.

The other development is Internet of Things (IoT). These are basically embedded sensors, software etc. Essentially, resource reduction. IoT is important for productivity as well as safety.

On materials side, molecular architecture and additives are keys to PE pipe compounds. Developments are continuing as applications broaden. Settings manufacturing specially SWR and electrofusion is in upswing.

### **What are the challenges faced by the segment? Especially since and post pandemic and what measures are needed to overcome them?**

On the export front, while the Govt's efforts to enter into new FTAs and renegotiate existing agreements will be a huge boost to exports, I believe that the Govt also needs to look beyond geographies presently identified. There are numerous lucrative opportunities in countries in the African Continent and LATAM countries for instance. As greater opportunities exist with countries such as Algeria, Egypt, Morocco, Tunisia, Kenya, Ethiopia, South Africa, Nigeria etc. in Africa and Chile, Brazil, Mexico, Argentina etc in LATAM countries, a trade tariff relief will reduce import duties in respective countries and increase exports as well as foreign exchange earnings. Currently, the Indian Govt. has trade agreements with ASEAN (AIFTA) / Europe (REX) / SAARC (SAFTA)

Furthermore, we need to also consider easing the issue of business visas and issuing long term / yearly visas (or) making E-Visa or On-arrival visa for the above-mentioned countries. This will facilitate faster business travel and encourage a greater number of buyers to visit India.



The Plastics Export  
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# Narinderjit Singh Batra,

Director, Redilens Optics Pvt Ltd.

## It's all about Vision

REDILENS OPTICS PVT. LTD under the DAVISH brand specializes in the manufacture of Protective Eyewear. Established since the year 2001 today, Redilens is a leading manufacturer of premium protective eye and face products that have set the standards for the design and production of comfortable, high-quality protection at work. With an in-house manufacturing and testing lab, the company ensures stringent quality checks and are certified as per IS 5983 and other International norms.

As the most important sensory organ, eyes are prone to irreparable damage especially in industrial environments. The simplest safety measure would mean well-fitting, stable safety eyewear which offers effective eye protection against potential injury. Whether in the laboratory or when doing grinding or painting work, Davish protective eyewear are designed to meet standards for impact, penetration resistance and optical performance and are available with UV protection, tinted (variety), with lens coatings (anti-fog / anti-scratch). Safety eyewear may include glasses, goggles, and face shields with or without a prescription lens component. Carving a niche for himself, Redilens, which was established under the visionary leadership of Mr. N S Batra and led by his son, Mr. Purveet Singh Batra, it is one of four companies in India to manufacture polycarbonate safety or protective eyewear in the country. The father-son duo are both mechanical engineers, with a combined experience of over 6 decades are intrinsically involved with the business and its pursuit of its goals. With clear and distinct responsibilities in the organisation, N.S. Batra, remains the technical brain behind the operation, mostly spending his time in R&D and new product development. At any given time, he works on 4 to 5 new projects applying his years of experience and

is the go-to man for any technical difficulties. Purveet focuses on day to operations, customer development & interaction and finances, ensuring the company operations are in complete sync.



**Purveet Singh Batra, Director**

Today, the company, with its unique and technologically advanced product basket, is also among a few leading global players operating within the segment and aims to fulfil the requirements of the defence and aerospace industry segments. Redilens is a shining example of and truly embodies the spirit of "Make in India". As an indigenous company, every aspect, from raw material to finished product, concept design to quality control to process, is testimony to India's advanced technological leadership and capabilities across the globe.

*Plexconnect in conversation with Mr. N S Batra*

**Your company has been pioneering innovation since decades. Tell us about your journey.**

We started our journey with tool making over 45 years ago and ventured into custom moulding, becoming OEM's to companies like Philips, ABB, Nelco, Videocon, Murphy, Bush. In the year 1995, polycarbonate optical lenses were becoming popular globally and realising the need to develop unique products, we undertook extensive R&D into the manufacture of these Optical lenses. However, it was only when the R&D began that we realised that every stage of manufacture was a challenge, right from lens mould making, the optical polish-

ing, sourcing of optical raw materials and quality control lab test equipment, coatings like anti-scratch, anti-fog, moulding of optically clear materials. Every step was a challenge. However, without losing hope we decided to navigate through one problem at a time and after 5 years of dedicated efforts, we were able to overcome most of the challenges and production of standard powered Ophthalmic lenses began in 2001.



**What does the company's present product basket look like? How has the product offering evolved over time?**

Today, we are proud to state that Redilens, under Davish is among the most recognized and respected names in the Safety Eyewear segment that has been gaining much momentum in the industrial sphere. Growing awareness for work safety, workers' protection, industrialization has propelled the growth of our product segment and that has driven our goal to constantly pursue product innovation.

While we started with the product of standard powered ophthalmic lenses, we have diversified into manufacturing lenses for LED lighting applications, polycarbonate visors for the helmet industry and industrial protective eyewear. Having said that, we do believe that there are still many uncharted territories and continue to focus on our R&D. We hope to launch some new specialized products in the coming future.



**What have been some of your milestone achievements?**

Our entire company has been built on the firm foundation of design, innovation, research and development. While our company has been no stranger to challenges, we have had many achievements that we are especially proud of. We have done a lot of development work with DRDO and have successfully developed many first in India with products like Polycarbonate visors for the Air crew helmet for the pilots of the Indian Air force, Dazzler laser protection visors for the pilot helmets, Extreme cold weather goggles for the soldiers of the Indian Army for use in extreme conditions of Siachen at minus 40 degrees Centigrade, among others. Our recent achievement has been the development of Impact resistant ballistic goggles as per MIL standards, and we believe that we are the only manufacturer in India holding this certification. We also believe that we are one of India's largest manufacturers of Industrial protective eyewear under standards like ANSI, EN & BIS, with an installed capacity of half a million units per month or 6 million units per year. This capacity was put to full use for the manufacture of medical protective goggles during the Covid 19 pandemic.

**Davish RediLens Davish**

REDILENS IS A COMPLETE, TURN-KEY PROVIDER OF OPTICAL QUALITY MOLD DESIGN, TOOLING, MOLDING, AND COATING OF POLYCARBONATE AND ACRYLIC PARTS. WE CONCENTRATE ON MEETING STRINGENT OPTICAL PERFORMANCE REQUIREMENTS FOR A BROAD SPECTRUM OF CUSTOMERS. WHAT DIFFERENTIATES REDILENS FROM OTHER MANUFACTURERS IS OUR DISCIPLINED FOCUS ON A PARTICULAR SEGMENT OF THE MARKET. WE PROACTIVELY PURSUE BUSINESS WITH CUSTOMERS THAT REQUIRE HIGH QUALITY AND PRECISE OPTICS.

**ONLY MANUFACTURER IN INDIA HAVING CERTIFICATION FOR BALLISTIC GOGGLES AS PER MIL-PRF-32432 (GL)**  
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- POLYCARBONATE VISORS FOR AIR CREW
- Industrial Protective Eyewear
- ASPHERIC LENSES
- TWO WHEELER HELMETS & VISORS
- LASER & WELDING PROTECTION
- OPTICAL MOULDS
- ANTI SCRATCH COATING
- ANTI FOG COATING
- IRIDIUM COATING
- ANSI STANDARD
- MIL STANDARD
- BIS STANDARD

IN HOUSE LENS PRODUCTION  
 IN HOUSE COATING LINE  
 IN HOUSE TEST LAB

### **What gives your company an edge over competitors, domestic and international?**

The initial years spent in R&D over every aspect of the manufacturing stage has given us the expertise and the edge over our competitors. We are not dependent on any external service provider for any critical manufacturing stage as everything is in house. This has also given us a cost benefit even against international competitors.

### **What were/are the key challenges to your industry? What are your learnings from these challenges?**

The optical industry in India is fairly small, which means that the support infrastructure like raw material suppliers, test equipment suppliers, external accredited test labs are non-existent. So development of new products and getting them certified becomes difficult and takes more time than it normally would in other countries with an established optical manufacturing base. Furthermore, many clients, whether Indian and global, do not easily accept our internal test lab reports, despite us following the highest quality and safety standards. To overcome these, we have had to establish connect and source from global RM & test lab equipment suppliers and labs. It is our belief that considering the vast and growing opportunities in the country and globally, especially with few players, our industry has great potential, and it certainly needs support for testing and standardization. While there are many large players polarizing the global market, there are also numerous spurious products in the market. This needs to be streamlined for growth.

### **What are the emerging opportunities for your products, both in India and globally?**

So far, we have primarily been focussed on the Indian market. The export market holds good promise for our existing product portfolio and the conscious effort has been made to get these products certified by an internationally accredited lab as per global standards. Customers globally are looking for alternate suppliers to reduce their dependency on one or two manufacturers, especially now because of the supply chain disruptions brought about by Covid. This presents us with an opportunity to capitalise on this need. The challenge at our end of course being to scale up and establish a manufacturing facility as per global standards.

### **In your opinion, what are measures needed or support required to globally promote the niche product manufacturing segments in India?**

We have had tremendous support from the Government during Covid to scale up operations to meet the demand of protective eyewear for PPE kits. Other schemes like procurement under Make in India and Start up India are also providing the manufacturers with many incentives. However, I believe more focus has to be given to domestic manufacturing infrastructure, power, logistics and ease of compliance to make us more competitive globally.

### **What does the future hold for Redilens?**

Scaling up, adding more products to existing portfolio and also applying technology to expand into new product verticals. The plan is to expand to a million units per month within the next two years and explore more export opportunities.



## REPUBLIC OF KOREA

### Economic overview

The Republic of Korea (South Korea) is located in Eastern Asia, near Japan. It has an area of 99,720 square kilometres and a population of 52 million. South Korea has successfully transformed itself into a highly industrialised and high-income economy. This remarkably high level of economic growth achieved by South Korea has primarily been driven by export of electronic goods and telecom equipment, which has earned the country a reputation as a global leader in innovation and technology.



As of May 11, 2022, the S&P's rating for South Korea is AA (Stable); Moody's rating stands at Aa2 (Stable); and Fitch has a reported rating of AA- (Stable).

Economic indicators		2019	2020	2021
Nominal GDP	USD Billion	1,651	1,638	1,799
Nominal GDP per capita	USD	31,937	31,638	34,801
Real GDP growth	%	2.2	-0.9	4.0
Total population	Million	51.7	51.8	51.7
Average inflation	%	0.4	0.5	2.5
Total merchandise exports	USD Billion	542.3	512.8	644.4
Total merchandise imports	USD Billion	503.3	467.5	615.0

Source: IMF, TradeMap

South Korea has trade agreements with all the countries in Association of Southeast Asian Nations (ASEAN) and the European Union including the United Kingdom. It has trade agreements with several countries in South Asia, Latin America, and Central America. South Korea has a separate trade agreement with European Free Trade Association (EFTA), Australia, New Zealand, Canada, and the United States of America.

South Korea and India are members of Asia Pacific Trade Agreement (APTA); and signatories to a Comprehensive Economic Partnership Agreement (CEPA) between the two countries which came into effect on 1st January, 2010.

## Trade overview

India and South Korea enjoy cordial trade relations. South Korea is among the top-10 trade partners of India. In 2021, India and South Korea engaged in bilateral trade worth USD 17.5 billion. During the year, India's exports to South Korea were valued at USD 4.68 billion while India's imports from South Korea were valued at USD 12.77 billion.

The major items of export (2-digit HS) from India to South Korea are aluminium and articles thereof (USD 1074 million), mineral fuels (USD 788 million), organic chemicals (USD 432 million), iron and steel (USD 237 million), and cotton (USD 195 million). Likewise, major items of export (2-digit HS) from South Korea to India are electrical machinery and equipment (USD 2394 million), iron and steel (USD 1677 million), and machinery and mechanical appliances (USD 1611 million).



Within plastics, the trade is in favour of South Korea with exports of USD 1557 million to India and a trade surplus of USD 1499 million. India's plastics exports to South Korea primarily comprise of the following:

- Plastic raw materials (36.4%)
- Plastic films & sheets & (31.9%), and
- Consumer & houseware products (10.5%)

While South Korea's plastics exports to India primarily comprises of:

- Plastic raw materials (80.4%)

South Korea's annual plastics imports are valued at USD 21 billion approx. Its plastic imports are largely catered to, by China (30%), Japan (22%) and the United States of America (13%).

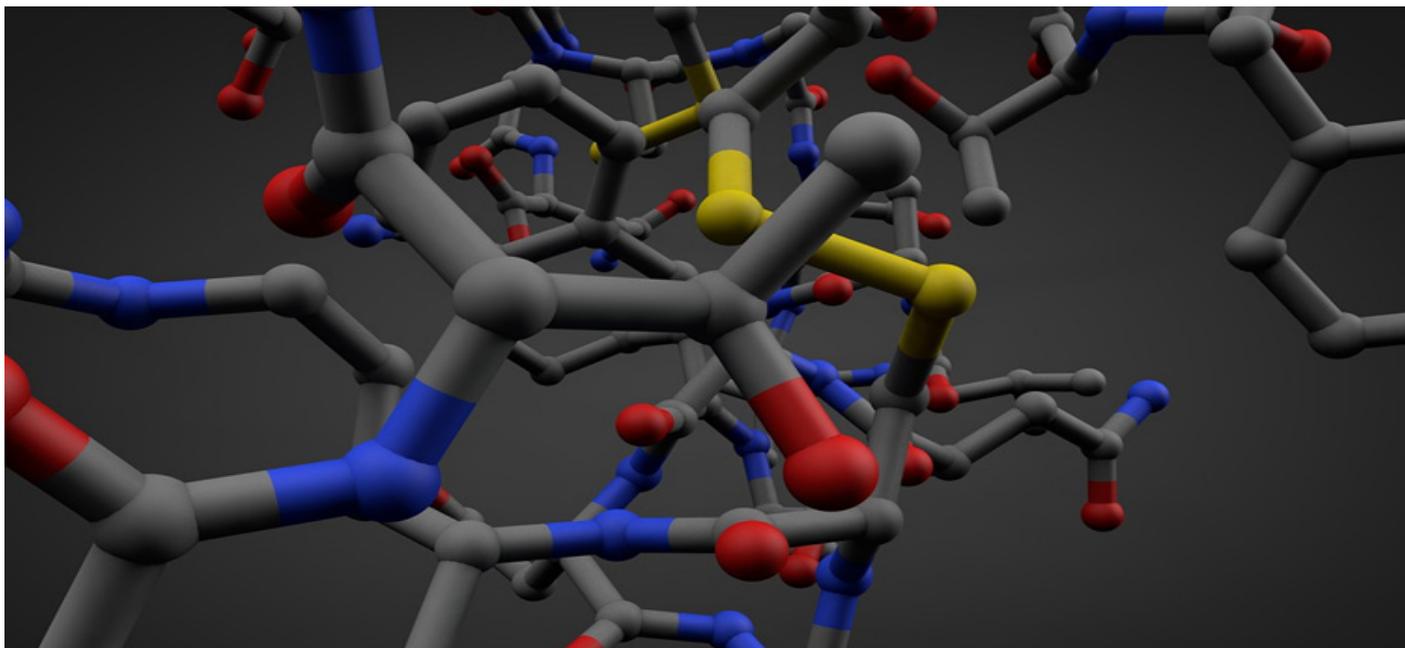
## Export potential for India

Our internal research indicates that India's export of plastics to South Korea has the potential to grow by over USD 6.0 billion. Details of product panels and their export potential to South Korea are provided below:

Product panel	S. Korea's import from India	S. Korea's import from world	India's export to world	Export potential for India
	USD Million	USD Million	USD Million	USD Million
Plastic raw materials	20.0	5,122.2	3,312.8	1,719.8
Plastic films and sheets	14.4	3,843.6	1,451.7	1,154.0
Consumer & houseware products	8.1	4,183.1	1,034.6	1,014.3
Medical items of plastics	4.7	1,875.4	776.8	762.5
Miscellaneous products and items	4.8	3,540.0	755.9	579.6
Packaging items - flexible, rigid	3.6	957.7	462.7	355.4
FIBC, Woven sacks, Woven fabrics, Tarpaulin	1.3	366.1	1,209.8	282.5
Floorcoverings, leathercloth & laminates	0.8	216.0	554.6	146.6
Cordage, fishnets & monofilaments	1.9	148.8	200.3	129.8
Writing instruments & stationery	0.3	153.8	173.5	117.1

Source: TradeMap, Plexconcil Research





## A New lightweight material is stronger than steel

The new substance is the result of a feat thought to be impossible: polymerizing a material in two dimensions. Using a novel polymerization process, MIT chemical engineers have created a new material that is stronger than steel and as light as plastic, and can be easily manufactured in large quantities.

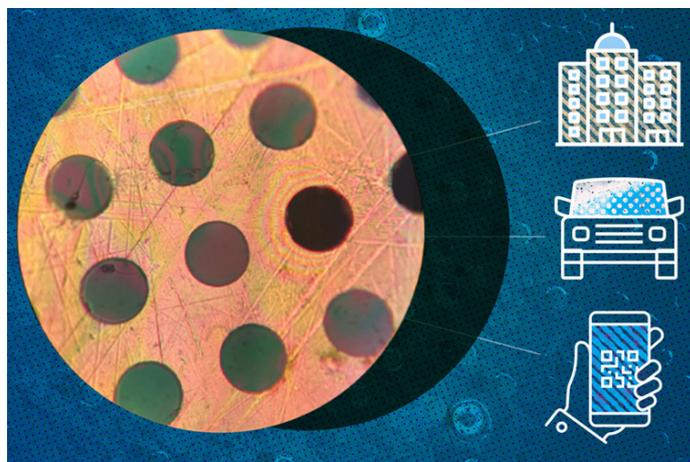
The new material is a two-dimensional polymer that self-assembles into sheets, unlike all other polymers, which form one-dimensional, spaghetti-like chains. Until now, scientists had believed it was impossible to induce polymers to form 2D sheets.

Such a material could be used as a lightweight, durable coating for car parts or cell phones, or as a building material for bridges or other structures, says Michael Strano, the Carbon P. Dubbs Professor of Chemical Engineering at MIT and the senior author of the new study. “We don’t usually think of plastics as being something that you could use to support a building, but with this material, you can enable new things,” he says. “It has very unusual properties and we’re very excited about that.”

The researchers have filed for two patents on the process they used to generate the material, which they describe in a paper appearing today in *Nature*. MIT postdoc Yuwen Zeng is the lead author of the study.

### Two dimensions

Polymers, which include all plastics, consist of chains of building blocks called monomers. These chains grow by adding new molecules onto their ends. Once formed, polymers can be shaped into three-dimensional objects, such as water bottles, using injection molding.



Polymer scientists have long hypothesized that if polymers could be induced to grow into a two-dimensional sheet, they should form extremely strong, lightweight materials. However, many decades of work in this field led to the conclusion that it was impossible to create such sheets. One reason for this was that if just one monomer rotates up or down, out of the plane of the growing sheet, the material will begin expanding in three dimensions and the sheet-like structure will be lost.

However, in the new study, Strano and his colleagues came up with a new polymerization process that allows them to generate a two-dimensional sheet called a polyaramide. For the monomer building blocks, they use

a compound called melamine, which contains a ring of carbon and nitrogen atoms. Under the right conditions, these monomers can grow in two dimensions, forming disks. These disks stack on top of each other, held together by hydrogen bonds between the layers, which make the structure very stable and strong.

“Instead of making a spaghetti-like molecule, we can make a sheet-like molecular plane, where we get molecules to hook themselves together in two dimensions,” Strano says. “This mechanism happens spontaneously in solution, and after we synthesize the material, we can easily spin-coat thin films that are extraordinarily strong.”

Because the material self-assembles in solution, it can be made in large quantities by simply increasing the quantity of the starting materials. The researchers showed that they could coat surfaces with films of the material, which they call 2DPA-1.

“With this advance, we have planar molecules that are going to be much easier to fashion into a very strong, but extremely thin material,” Strano says.

## Light but strong

The researchers found that the new material's elastic modulus — a measure of how much force it takes to deform a material — is between four and six times greater than that of bulletproof glass. They also found that its yield strength, or how much force it takes to break the material, is twice that of steel, even though the material has only about one-sixth the density of steel.

Matthew Tirrell, dean of the Pritzker School of Molecular Engineering at the University of Chicago, says that the new technique “embodies some very creative chemistry to make these bonded 2D polymers.”



“An important aspect of these new polymers is that they are readily processable in solution, which will facilitate numerous new applications where high strength to weight ratio is important, such as new composite or diffusion barrier materials,” says Tirrell, who was not involved in the study.

Another key feature of 2DPA-1 is that it is impermeable to gases. While other polymers are made from coiled chains with gaps that allow gases to seep through, the new material is made from monomers that lock together like LEGOs, and molecules cannot get between them.

“This could allow us to create ultrathin coatings that can completely prevent water or gases from getting through,” Strano says. “This kind of barrier coating could be used to protect metal in cars and other vehicles, or steel structures.”

Strano and his students are now studying in more detail how this particular polymer is able to form 2D sheets, and they are experimenting with changing its molecular makeup to create other types of novel materials.

The research was funded by the Center for Enhanced Nanofluidic Transport (CENT) an Energy Frontier Research Center sponsored by the U.S. Department of Energy Office of Science, and the Army Research Laboratory.

Source: [news.mit.edu](http://news.mit.edu)



## International News

### **BASF launches new polybutylene terephthalate material**

BASF has developed a material polybutylene terephthalate (PBT) Ultradur B4335G3 HR HSP which protects sensitive electronics which are critical in driving situations such as an emergency break.

The PBT is equipped with highly effective additives that greatly delay hydrolytic degradation which makes the material resistant to damage by water at elevated temperatures. At the same time, the standard low moisture absorption of 0.2% is retained, which gives the PBT excellent electrical insulation properties and good dimensional stability. It is also resistant to stress cracking caused by alkaline media. Making the component more durable and reliable, which increases the safety standard.

The grade also benefits from being a high-speed product (HSP). This reduces the melt viscosity, which enables the production of thin-walled components. “Ultradur B4335G3 HR HSP combines a number of strong properties into a unique profile. This makes it ideal for use in extremely challenging environments which sets Ultradur apart from comparable materials that are currently used,” said Andreas Fay, Global Key Account Manager Transportation in BASF’s Performance Materials division.

The new product grade represents a significant expansion of the Ultradur HR portfolio, with which BASF is successfully meeting the increasing demands placed on plastics in critical applications.

Source: Indian Chemical News

### **Software Doubles 3D-Printing Speeds**

Software invented by University of Michigan (U-M) researchers could double 3D printing speeds without adversely affecting printing accuracy. Spinoff company Ulendo presented the technology at last week’s Rapid + TCT event in Detroit.

Accelerating 3D-printing speed typically causes vibrations that affect the quality of the finished part. The software, designed for printers that operate with a printhead that moves back and forth mechanically, essentially tricks the 3D printer into compensating for real-word vibrations.



Ulendo's software is called FBS, which stands for Filtered B Splines. The technical name refers to the mathematical function that Chinedum Okwudire, associate professor of mechanical engineering and founder of Ulendo, and his team used to translate the machine commands from the ideal expectation to commands that would compensate for vibration in the 3D printer. "Say you want a 3D printer to travel straight, but due to vibration, the motion travels upward. The FBS algorithm tricks the machine by telling it to follow a path downward, and when it tries to follow that path, it travels straight," Okwudire said. "Our solution allows you to print fast without sacrificing quality."

Machine vibration has been a focus for Okwudire for many years, starting when he was working in industry and wrestled with a high-precision milling machine. His team wasn't successful at stiffening the machine to prevent vibrations, so they were forced to slow it down.

After joining U-M as a professor in 2011, Okwudire followed his muse and designed software that could overcome machine vibrations. In 2017, a mechanical engineering graduate student from Okwudire's lab implemented the software on a 3D printer. When the research was highlighted in a YouTube video, thought leaders took notice, and Ulendo was born.

"Members of the 3D printing industry have the same jaw-dropping reaction I had when I first heard about how this technology results in a printer operating at two times the speed and 10 times the acceleration," said Ulendo CEO Brenda Jones.

Okwudire and his team intend to expand the algorithm to other kinds of machines, including robots, machine tools, and more types of 3D printers. At RAPID + TCT, he also presented his lab's latest technology, SmartScan. The software intelligently moves a laser beam around to prevent warping caused by heat buildup in parts printed via powder bed fusion.

Ulendo was established through Innovation Partnerships at U-M. Much of the commercial development was funded through a grant from the Michigan Economic Development Corp. and a Small Business Innovation Research grant from the National Science Foundation.

Source: Plastics Today

### PU Insulation Foam Enables Thinner, More-Flexible Pipes

In collaboration with Switzerland-based Brugg Pipes, chemicals company Huntsman has developed a polyurethane (PU) foam with insulation properties that enables the production of highly flexible pre-insulated pipes suitable for connecting ground-source heat pumps and local heating units to domestic and commercial buildings. Brugg Pipes has applied the Suprasec Daltofoam TE system from Huntsman in its Flexstar products launched in January 2022.



The Suprasec Daltofoam TE system produces foam with better insulation properties (low lambda value) than polyethylene (PE), according to Huntsman, which has its European headquarters near Brussels. The insulation layer is thinner than PE but still delivers good overall insulation performance (low U-value). In addition, thinner, lighter pipes are more flexible, meaning they are quicker and easier to transport and install.

Demand for ground-source heat pumps that capture warm air outside and move it indoors is expanding in North America, Europe, and North Asia because it has a lower carbon footprint than alternative technologies, said Huntsman.

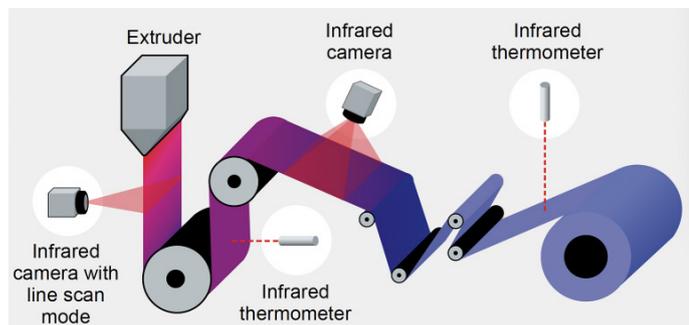
"We'd been wanting to enter the heat-pump market for a while and needed a competitive insulation solution that would enable us to quickly gain ground in this market," said Bora Yayla, Head of Marketing at Brugg Pipes. "Key to our success was achieving a good degree of flex in our pre-insulated pipes to ensure ease of handling without compromising insulation performance. Pipes that are more flexible have a smaller winding radius, meaning they are easier to transport and quicker for heating engineers and installers to lay in confined spaces or where there are tight bends and building entry points to navigate. Working with Huntsman, we've achieved all of our project objectives, and orders for Flexstar are now being placed around the world," said Yayla.

Flexstar pre-insulated pipes are designed specifically for use in local heat-pump systems and are made via a patented production process (according to DIN EN 15632-2 and DIN 4726) that ensures excellent bonding and longitudinal water tightness and a good oxygen diffusion barrier, said Brugg.

Source: Plastics Today

## Using Non-Contact IR Sensing to Overcome Plastics Processing Challenges

A lot can go wrong with temperature measurement during plastics processing and, by extension, the quality of your finished product. Even if you do everything by the book, errors can originate from ambient conditions. A new white paper from Optris explains how non-contact infrared (IR) temperature measurement technology can help to overcome these challenges.



Plastics processors make products in various dimensions, thicknesses, textures, colors, and embossed patterns, notes the white paper. Manufacturing is subject to numerous thermal processes that must be continually and rigorously checked at various critical points. The paper provides in-depth explanations of how IR temperature sensing can benefit flat film and sheet extrusion, injection molding, rotational molding, extrusion and stretch blow molding, and thermoforming. A particular focus is improved measurement of thin-film plastics.

The white paper, “Non-Contact IR Temperature Measurement Applications for Plastics Challenges,” is available as a free download (registration required).

Source: Plastics Today

## TotalEnergies partners with Vanheede to boost circular polymers manufacturing

TotalEnergies and Vanheede Environment Group have signed a long-term commercial agreement for the supply of post-consumer recycled (PCR) raw material to be used as feedstock in the production of circular polymers. Under this agreement, Vanheede Polymers & Compounds will supply PCR raw material coming from sites in France and Belgium, which will then be used as feedstock by TotalEnergies to produce circular polymers for durable applications in, for example, the automotive and construction sectors.

The agreement, the beginning of a strategic partnership supporting both companies’ commitment to plastics recycling and the circular economy, is expected to support TotalEnergies’ growing sales of mechanically recycled polymers, including at its Synova subsidiary which manufactures recycled polypropylene for the automotive sector.

Valérie Goff, Senior Vice President, Polymers at TotalEnergies, said: “This new agreement is an important step in securing high quality post-consumer raw materials. It will allow us to accelerate our growth in recycled polymers and develop new projects to reach our ambition of producing 30 per cent circular polymers by 2030.”

TotalEnergies appears to have embraced the challenge of achieving a circular economy for plastics, as well as the widely acknowledged necessity of establishing robust partnerships with value chain stakeholders in order to do so. This new agreement with Vanheede is the latest in a raft of partnership announced by TotalEnergies in recent months, including a US-based partnership with New Hope Energy, which will establish an advanced recycling plant in Texas, and a Spain-based agreement with Honeywell, which will see the latter supply a recycled polymer feedstock at the Honeywell and Sacyr advanced recycling plant in Andalucía.

Source: Interplas Insights

## INEOS Styrolution Introduces New Styrolution® PS ECO Grade in Asia

INEOS Styrolution, the global leader in styrenics, has today announced the introduction of its new Styrolution® PS ECO 260 MR85 grade containing mechanically recycled post-consumer waste. This grade is available across markets in Asia at commercial scale with immediate effect.

The new Styrolution PS ECO 260 MR85 contains 85 percent recycled post-consumer content from waste electrical and electronic equipment (WEEE). It offers identical mechanical properties as virgin HIPS equivalent, including very good mechanical performance, consistency and high fluidity, making it an excellent drop-in solution for application developers in the household and electronics industries.



Produced at INEOS Styrolution's Foshan site in China, this new grade is currently available in standard black and grey, and in commercial quantities to customers across Asia.

HyoungJoon Kim, Polystyrene Business Director APAC, comments: "We are very pleased to be able to offer our high-quality recycled PS grade to our customers in Asia, helping them reduce their carbon footprint and achieving their sustainability goals."

Johnson Lin, Research Development Centre & Technical Service Director APAC, adds: "We are very excited to introduce our first recycled PS grade produced here in Asia. This new grade can be used without any change in our customers' processes or equipment, making it a convenient drop-in solution for our customers."

Source: Packaging 360

## Designed for Recycling: Henkel Launches New Solutions and Receives RecyClass Certification

Successfully creating sustainable and recyclable packaging starts during the design phase: The right choice of adhesive significantly influences what can be done with the package at the end of its primary use. With its RE range of adhesives and coatings designed for recycling, Henkel enables packaging to go beyond current functionalities – to create flexible packaging that has recyclability "built in". Products in this range must fulfill stringent external testing requirements for sustainability.

"The use of certified adhesives according to recognized test protocols is extremely important, as there are differences in the recycled materials in terms of their processability as well as their physical properties," says Guilherme Fernandes, Senior Manager Product Development Polyurethanes for Henkel Packaging Adhesives. "Ensuring our customers can reach their sustainability goals is one of our top priorities, which is why we work together with independent testing institutions to certify our solutions."



## RE Range expanded with two RecyClass-recognized systems for flexible packaging

Henkel has now expanded the RE Range with two new solvent-free, two-component polyurethane systems. Loctite Liofol LA 7818 RE / 6231 RE and Loctite Liofol LA 7102 RE / 6902 RE, have been designed for use in flexible packaging. The systems have also been recently recognized for recyclability by RecyClass, a comprehensive cross-industry initiative that advances plastic packaging recyclability and ensures traceability and transparency of recycled plastic content in Europe. The organization aims to establish a harmonized approach towards recycled content calculation through activities such as the rigorous scientific testing and certification of innovative materials.

"To receive the RecyClass approval, our innovative solvent-free adhesives were extensively tested in accordance with strict scientific protocols that have confirmed their suitability for the packaging recycling process," explains Fernandes. "The systems are considered to be fully compatible with polyethylene recycling according to RecyClass laboratory tests conducted by Aimplas in accordance with the Recyclability Evaluation Protocol for PE films."

## Sustainability Meets Efficiency

The latest additions to the RE range ensure improved packaging integrity due to the excellent adhesion to metalized substrates. In addition, both adhesive systems deliver very good performance at the highest machine speeds. Thanks to their easy handling and optimal cleaning possibilities, there are fewer production downtimes. The faster PAA decay ensures a shorter storage time and a reduced risk of complaints compared to conventional adhesives in this segment. In addition to Henkel's own internal testing and certification capabilities, all applications have been tested by external testing protocols with regards to sustainability.

The two new RE solutions differ primarily in their scope of application. Loctite Liofol LA 7818 RE / 6231 RE has been developed for standard applications, such as dry food, snacks, and confectionery. The solution offers excellent adhesion to metalized substrates. By contrast, Loctite Liofol LA 7102 RE / 6902 RE has been developed for medium performance and barrier films that can endure pasteurization. The product stands out for its versatility, in terms of the different areas of application, which can range from dried food to cheese packaging.

### Henkel is the partner for recyclable design

The key to designing sustainable packaging is making sure each component positively contributes to the whole. The selection of adhesives and coatings while creating the design opens up a whole new world of possibilities for brands and packaging designers.

“Adhesives aren’t just adhesives,” says Alexander Bockisch, Head of Market Strategy for Flexible Laminates. “At Henkel, we are a comprehensive design partner with product solutions, technology know-how and deep design expertise. Additionally, Henkel offers testing & certification capabilities in-house and has been building up a team of experts exclusively dedicated to sustainability in Packaging and Consumer Goods Adhesives.”

As a brand owner itself, Henkel has both the breadth of technical know-how and the knowledge of where needs exist. Bockisch explains: “Involving material science experts in packaging design delivers huge benefits, especially when it comes to sustainability and recyclability. Henkel is well-known to protect consumers and brands with food safe packaging solutions and continues to build specific know-how when it comes to testing and certification of recyclability.”

Even with this comprehensive in-house industry expertise, Henkel places a high value on cross-functional collaboration as being essential to delivering meaningful results.

“We can only achieve sustainability and a circular economy by working together across the entire packaging value chain. Henkel is committed to actively supporting a circular economy by making it possible to return high-quality materials into the loop after use – turning waste back into valuable resources. While the adhesives used in packages typically only make up no more than 5 percent of the total weight, their properties can actually be a decisive factor when it comes to the overall recyclability of the material.”

Source: Packaging 360



## India News

### **Cut in India's PVC import duty to weigh on domestic prices**

India's decision to reduce the import duty on polyvinyl chloride to 7.5% from 10%, effective May 22, was expected to weigh on prices in an already weak market, sources said May 23.

"We are ... reducing the customs duty on raw materials and intermediaries for plastic products where our import dependence is high. This will result in reduction in cost of final products," finance minister Nirmala Sitharaman said when announcing the reduction, aimed at cooling inflation.

India's retail inflation based on the consumer price index hit an eight-year high 7.79% in April.

PVC CFR India was assessed by Platts at \$1,400/mt on May 18, down 26% from a peak at \$1,900/mt last October to the lowest level since July 2021, according to S&P Global Commodity Insights data. "Prices were already bearish due to high imports from China. The reduction in duty will send them into a tail-spin," a buyer said.

India had in February allowed an anti-dumping duty on PVC imports from China and US to lapse, leading to a surge in imports from China that sent prices lower. According to Chinese customs data, the country exported more than 99,000 mt PVC to India in April alone, accounting for nearly a third of China's total PVC exports of 278,376 mt during the month.

Sources said India's PVC imports from China were expected to account for more than half of its imports in April. In 2021, India imported 1.7 million mt PVC resin, of which imports from China accounted for 17%. Domestic production was around 1.6 million mt.

Following the news of the duty reduction, India's domestic PVC resin prices fell Rupees 2/kg (2.6 cents/kg) to Rupees 119-120/kg ex-Mundra, sources said.

Though converters of PVC resin to plastic compounds were happy with the reduction in input costs, domestic PVC producers said it would crimp margins and affect capacity addition in the long run. "Cheaper imports will reduce attractiveness for new investment in PVC, where capital costs are already very high for integrated producers," a source said.

Though PVC demand in India was expected to grow at a compound annual growth rate of about 7% over the next 7-8 years, domestic production capacity has been stagnant at around 1.6 million mt for more than a decade.

Source: spglobal.com

### **Piyush Goyal meets global leaders, pitches India among best investment destinations**

Pitching India as one of the best investment destinations globally, Union Minister Piyush Goyal on Tuesday asked global business leaders at the World Economic Forum Annual Meeting to "come to India and grow with India".

Goyal, who has been meeting a host of global leaders here since Saturday, reiterated India's position as one of the world's most preferred investment destinations and told them about the massive scope and range of opportunities it presents to investors globally.



The Commerce and Industry Minister, who addressed a breakfast session on Tuesday morning, said there was so much interest in India among those present here that he was finding it hard to adjust his calendar, but was trying to accommodate everyone as all of them are important and are keen to make large investments.

In his meeting with Deutsche Bank chairman-elect Alexander R Wynaendts, he discussed how the financial institution can further complement the Indian government's sustainable growth agenda. The two leaders also explored how digitisation can aid businesses pursue environment, social and governance-linked goals.

His other meetings included those with Standard Chartered Bank Group CEO Bill Winters, Micron Technology CEO Sanjay Mehrotra and Brookfield Asset Management CEO Bruce Flatt.

Source: ET

## **Excise duty cut to help reduce logistics cost; promote exports: Exporters**

Excise duty cut on petrol and diesel and rationalisation of customs duties on goods such as raw material for plastic and steel will help reduce logistics cost, promote competitiveness of manufacturing and exports of value-added goods, exporters said on Sunday.

The government announced reduction in excise duty on petrol by a record Rs 8 per litre and that on diesel by Rs 6 per litre. It also cut import duty on raw material of steel and plastic and increased export duty on iron ore and steel intermediates.

Federation of Indian Export Organisations (FIEO) President A Sakhivel said these measures will bring down the domestic prices of key inputs thereby softening inflation. "This will also add to the competitiveness of the manufacturing and export sector and will further push value-added exports from the country. These proactive measures will also ease the logistics pressure and bring down the freight bill of the country as in some cases the same raw material was being exported from the country and subsequently being imported by the downstream users," he said.

Sharing similar views, leading Mumbai-based exporter and Chairman of Technocraft Industries NSE 1.34 %, Sharad Kumar Saraf said reduction in excise duty on petrol and diesel will reduce logistics costs and will support exports particularly of commodities which are freight sensitive.

Plastics Export Promotion Council Chairman Arvind Goenka said it is a welcome move that will help the plastic processors be more competitive in the domestic market for sure. "India's polymer production is much lower than consumption leading to polymer imports worth USD 15 billion in FY 2021. Polymer consumption is growing at a faster rate than the country's GDP and India needs several new petrochemical complexes to achieve atma nirbharta but what is important is that the proposed reduction in custom duty should not dissuade polymer producers from expanding capacity," he said.

On the other hand, he said, plastic processors are working on a low profit margin due to imports of finished plastics (nearly USD 6 billion in FY 2021) at very low rates. "The delta between polymers & finished plastics currently is 2.5 per cent or nil in a few cases. Finished plastics imports under India-ASEAN trade agreement from Thailand and Vietnam are at inverted rates. If custom duty is increased on finished plastics as well, it will improve margins of processors thereby encouraging them to add capacity and produce quality goods using the latest technology," Goenka added.

Source: ET

## Indian companies show resilience despite short-term disruption due to COVID: EY India CEO Survey 2022

As many as 50 per cent of Indian CEOs acknowledge that COVID pandemic has caused short-term disruption to their industry, but Indian companies have continued to demonstrate resilience as economy rebounds, a survey said on Tuesday.

The EY India CEO Survey 2022 has found that merger and acquisitions (M&A) is a key strategic lever for Indian CEOs as they look to buy versus build to achieve their transformation ambitions.



“Today, amidst challenges of inflationary pressures, supply chain issues, and increasing geopolitical conflicts, CEOs in India are resetting their risk radar and reframing their investment strategy for reshaped future, with transformation and sustainability increasingly driving the M&A agenda,” the survey said.

According to the EY 2022 CEO Outlook Survey, 50 per cent of Indian CEOs acknowledge the pandemic caused short-term disruption to their industry. Geopolitical challenges have further exacerbated a tumultuous period and created additional risks to business operations. “However, Indian companies have continued to demonstrate resilience, on Indian economic rebound,” it added. As many as 80 per cent of Indian CEOs also acknowledge making adjustments to their global operations and supply chains. For 63 per cent, the purpose has been to reduce logistics costs and increase resilience.

“This said, Indian CEOs recognize that increasing geopolitical tensions, trade conflicts and protectionism, along with increasing competition from non-traditional competitors and the acceleration of climate change impacts will pose the greatest risks to their future growth strategy,” the survey said.

EY India Chairman Rajiv Memani said, “There is no doubt that Indian CEOs are leading from the front to combat the challenges emanating from the pandemic and geopolitical tensions ... They are increasingly looking at M&As as a lever for accelerating business transformation and long-term value creation.”

Source: FE

## Technology key to building MSMEs’ competitiveness; need to identify ‘sectors of excellence’ for growth: Experts

Indian micro, small and medium enterprises (MSMEs) have arguably got a long road ahead to become globally competitive. The scope of improvement in international markets is vast given their contribution to Indian exports at nearly 50 per cent and around 30 per cent share in the gross domestic product. Hence, MSMEs are critical to India’s overall ability to be a dominant player in global trade. In 2021, India was ranked 43rd among 64 nations on the annual World Competitiveness Index compiled by the Institute for Management Development (IMD). However, the country has been ranked at that position for three years consecutively. To improve the competitiveness of Indian businesses, experts believed technology to be the key enabler.



During a panel discussion on building competitiveness of MSMEs at Financial Express Online’s SMExports Summit 2022 on Friday, Ajay Sahai, Director General and CEO, Federation of Indian Export Organisations (FIEO) complimented the government for reclassification of MSMEs based on turnover instead of investment in plant and machinery in erstwhile definition as it would help in ‘internationalisation’ of MSMEs. However, if MSMEs want to increase their share in total GDP, they will have to focus on technology, he said.

“Global trade is driven by technology sectors like machinery, electronics, automobile sector. The combined share of these three sectors comes to roughly 35 per cent of global imports worth around \$7 trillion and here our share is less than 0.9 per cent. Hence, when we talk about MSMEs, technology is very important. I’m happy that some new emerging sectors like hi-end engineering and electronics are seeing new technology coming in,” Sahai added. The session was moderated by Soumyadeep Ganguly, Partner at McKinsey & Company.

Importantly, the government had discontinued the Credit Linked Capital Subsidy Scheme for Technology Upgradation through a circular last year and formulated the MSME Champions scheme for small businesses to become sustainable, competitive, and innovative through financial assistance.

Among the key reasons for the lack of investment in technology by MSMEs have largely been the compliance burden, which though has been reduced over the past few years, but gaps still exist such as liquidity. Sahai said while banks claim there is no dearth of funds on their part and they don't reject any worthy proposal, MSMEs have always been struggling to get funds from banks. Hence, the government would have to look into why can't there be end-to-end digitisation of entire credit process right from filing application to disbursement, he said.

Another reason for low investment in technology by MSMEs has been a lack of funds as a sizeable chunk of their funds go into the purchase of land or building. Here, Sahai suggested providing MSMEs with a plug-and-play facility in excess lands of SEZs and industrial zones. "We also have to look at providing marketing platforms to MSMEs and a planned scheme with a very detailed mapping of what we need to be doing five-10 years down the line (in exports) and a sizeable fund should be available," he added.

Source: FE

## German wind turbine major Enercon returns to India handholding MSMEs for production

Enercon GmbH, one of the top onshore wind turbine makers in the world, is making a comeback to India and plans to make the country a hub for global exports. "We are concentrating only on exports and by next year plan to launch a wind turbine in India, suiting India's lower wind speeds," PKC Bose, vice-chairman and managing director at Enercon Windenergy, tells Fortune India.



In the second innings, Enercon, the second-biggest wind turbine maker in Europe behind Vestas, is following a contract manufacturing model as part of the process to make its supply chain international. Enercon has tied up with three MSMEs for producing critical parts. Coral Manufacturing Works (CMW) of Erode, Tamil Nadu is making Enercon's E-138, EP3 and E2 WEC generators. Production has started and about 20 generators have been exported to South Korea since April. A 60,000

square metre manufacturing facility was set up in Erode last year and plans are to make about 200 units a year. Enercon hopes to earn export revenues of ₹800 crore from the first year of operations, going up progressively 20-25% every year.

Another MSME, Toolfab of Trichy in Tamil Nadu will make 138-150 metre sized towers. These will be modular towers, which can be easily transported in trucks and get installed at locations quickly, unlike concrete tubular towers which require about six months for installation. Blades will be made by MSME Indutch Composites, at its plant in Sullurpet in north of Chennai near Andhra Pradesh. Plans are to make 140 blades this year and trial production will begin by June-July.

Bose says these MSMEs had no prior experience of manufacturing wind turbine's critical machines, but Enercon's technical experts from Germany and India are working with them, besides helping them set up the facilities. Enercon has its corporate office and an R&D Centre based in Bangalore.

Privately held Enercon, founded by Aloys Wobben in Aurich, Germany in 1984, has revenues in excess of \$4 billion and is one of the world's largest producers of wind turbines. It is not active in the U.S. market. In 1992, Enercon introduced the first gearless wind turbines in the world.

Sources said Enercon came to India in 1994, in a joint venture with the Ajay and Yogesh Mehra family and with Yogesh Mehra as the managing director. The JV ran smoothly for 12 years till 2006, when differences cropped up between the partners. Mehras accused Enercon of trying to take control and denying them technology and components. Enercon accused the Mehras of stealing technology and siphoning off funds. The JV broke, triggering a protracted legal battle in various courts, which ended only a few years ago in Enercon's favour. In 2019, the Bombay High Court upheld an arbitral award directing Mehra's to pay over ₹675 crore to Enercon, for breaches in the joint venture contract and ruled Enercon was entitled to get royalty for technical know-how since 2007 from the Mehras, said sources.

Bose says though India has huge potential in wind energy and as per the government's plan of having 500 gigawatt (GW) renewables by 2030, share of wind energy has to be 150 GW. This means we need to add 18 GW a year from now on (total installed capacity of wind power in the country is still less than 50 GW). But the problem is at the current bid tariff rates, it will be unviable for most project developers.

Source: Fortune India

### Reliance brands limited inks a JV with PLASTIC LEGNO SPA to strengthen toy manufacturing ecosystem in india

RELIANCE BRANDS LIMITED (RBL) and Plastic Legno SPA have signed a joint venture arrangement through which RBL will acquire a 40% stake in Plastic Legno SPA's toy manufacturing business in India. This investment by RBL serves a dual purpose, bringing in vertical integration for RBL's toy business and helping diversify the supply chain with a long-term strategic interest in building toy manufacturing in India.

Plastic Legno SPA is owned by the Sunino group that boasts of more than 25 years of toy production experience in Europe. The group started its India business in 2009 out of a need to develop a strong production hub that would cater to global markets, but more importantly to the fast evolving and growing Indian market.

*"Keeping with our honourable Prime Minister's vision of Atmanirbhar India, this collaboration with Plastic Legno's deep experience in world-class toy manufacturing coupled with our strong footing in the global toy retail industry would open new doors and unparalleled opportunities for toys manufactured in India. It is imperative for RBL to build design to shelf capability for a strategic advantage over the competition and to be an accelerator in building a robust toy manufacturing ecosystem in India not only for domestic consumption but also for global markets."* said the **spokesperson of Reliance Brands Limited.**

RBL has a strong play in the Toy industry with its portfolio of Hamleys, the British toy retailer and homegrown toy brand – Rowan, making RBL one of the leading toy distributors. Hamleys currently has a global footprint across 15 countries with 213 doors and is India's largest chain of toy stores.

*"We are very privileged to have RBL as a partner in this Joint Venture. We are confident that Plastic Legno's experience in Toys production and Hamley's commercial outreach, will complement one another to enable the JV Company to achieve greater heights and successes. We have important development plans to implement, always in the spirit of creating a cultural background in this specific sector in India. We are ready for the challenges of the future, but when there is a group like RBL alongside, we are sure that together we can do a great development."* said **Paolo Sunino, Co-owner, Sunino Group.**

## Why become a Plexconcil Member?

Established since 1955, the Plastics Export Promotion Council, PLEXCONCIL, is sponsored by the Ministry of Commerce and Industry, Department of Commerce, Government of India. PLEXCONCIL is a non-profit organization representing exporters from the Indian plastics industry and is engaged in promoting the industry exports.

The Council is focused on achieving excellence in exports by undertaking various activities and initiatives to promote the industry. The Council undertakes activities such as participation at international trade fairs, sponsoring delegations to target markets, inviting foreign business delegations to India, organising buyer-seller meets both in India and the overseas etc.,

The Council also routinely undertakes research and surveys, organizes the Annual Awards to recognize top performing exporters, monitors the development of new technology and shares the same with members, facilitates joint ventures and collaboration with foreign companies and trade associations as well as represents the issues and concerns to the relevant Government bodies.

The Council represents a wide variety of plastics products including – Plastics Raw Materials, Packaging Materials, Films, Consumer Goods, Writing Instruments, Travel ware, Plastic Sheets, Leather Cloth, Vinyl Floor Coverings, Pipes and Fittings, Water Storage Tanks, Custom made plastic Items from a range of plastic materials including Engineered Plastics, Electrical Accessories, FRP/GRP Products, Sanitary Fittings, Tarpaulins, Laminates, Fishing Lines/Fishnets, Cordage/Ropes/Twines, Laboratory Ware; Eye Ware, Surgical/Medical Disposables.

### Membership Benefits

- Discounted fees at International Trade Fairs and Exhibitions
- Financial benefits to exporters, as available through Government of India
- Disseminating trade enquiries/trade leads
- Instituting Export Awards in recognition of outstanding export performance
- Assistance on export financing with various institutions and banks
- Networking opportunities within the plastics industry
- Listing in PLEXCONCIL member's directory
- Special price for Dun & Bradstreet's D-U-N-S® REGISTERED™ SOLUTION (Plus Variant)
- Basic Website Development Assistance \*

\*Nominal Charges Applicable

## New Members

**The Plastics Export Promotion Council added the following companies/firms as new members during April 2022. We would like to welcome them aboard!**

Sr.No	Name Of The Company	Address	City	Pin	State	Director Name	Email
1	Aakash Poly Plast	8 9 10 Komal Industrail Complex, Bh Kachigam Power House Nani Daman Nani Daman	Nani Daman	396210	Dadra & Nagar Haveli And Daman & Diu	Aakash Mittal	i@aakash-hpolyplast.com
2	Asb Enterprise	Vill-Dayanagar P.O-Sujapur Beldanga, Murshidabad	Murshidabad	742134	West Bengal	Amzad Ali	arushempire@gmail.com
3	Balaji Poly Udyog	Howrah Amta Road Vill-Katalia, P.O-Nibra, Opp- Bhole Baba Kata Howrah	Howrah	711409	West Bengal	Anup Garg	balaji-polyudyog@gmail.com
4	Ddev Plastiks Industries Ltd	2b, Pretoria Street, Ground Floor	Kolkata	700071	West Bengal	Ddev Surana	nginoria@kka-pana.co.in
5	Elevar Polytech Private Limited	Survey No 291,At & Post- Chandrala, Ta-Gandhinagar,Gujarat	Chanrala	382320	Gujarat	Babubhai Amabhai Patel	elevarpolytechprivatelimited@gmail.com
6	Ever Bags Packaging Private Limited	378 A E, Scheme No. 74 C, Sent Arnold Ke Pass	Indore	452010	Madhya Pradesh	Vinita Agarwal	v.verma@tirupatibalajee.com
7	Hillsilver Textile	No :Ep20, Sidco Industrial Complex,	Maraimalnagar	603209	Tamil Nadu	Nelaraj Sankaranaryanan	hillsilvertextile@gmail.com
8	Ibrahim Hair Enterprise	Kazisaha, Mondal Para, Beldanga Murs- hidabad	Murshidabad	742133	West Bengal	Ibrahim Sk	arushempire@gmail.com
9	International Plastic Sourcing Private Limited	City Survey No 3320 E Plot No 3, B-1, Doshi Corporate Park, Opp Ambedkar Bhavan, Akshar Road	Rajkot	360001	Gujarat	Vipul Joshi	sales.ips21@gmail.com
10	J P Polymers Private Limited	B-301, The Western Edge li Premises Co -Op Soc Ltd; Off Western Express Highway, Borivali East Mumbai	Mumbai	40066	Maharashtra	Jiten Prataprai Mathuria	hitesh.jain@jppolymers.in
11	Karu Udyog Private Limited	5-43/5, Vivekananda Nagar Colony,Opposite Lane Andhra Bank Kukatpally,	Hyderabad	500072	Telengana	Usha Rani Kaja	karuudyogindia@gmail.com
12	Knack Flexipack Llp	203 Everest Empire, 80ft Road, Nr. Kalhar Exotica, Science City Road, Sola	Ahmedabad	380060	Gujarat	Tulsibhai Kes- havlal Patel	ragesh_nayak@yahoo.in
13	Multi Sales Corporation	# 329, Fort Albert Victor Road Cross	Banglore	560002	Karnataka	Suresh Kumar Bhansali	skb@multisales.in
14	N K Rathi Medical & Equipments Private Limited	H.No. 65/1 Block-X Loha Mandi Naraina Industrial Area	Delhi	110028	Delhi	Sumit Rathi	rajepundir@gmail.com
15	Namo Industries	A-108/2 Paithan Industrial Area Paithan Industrial Area Mud- halwadi	Paithan	431148	Maharashtra	Pratik Pahade	namoindpait- han@gmail.com
16	Nirav Packaging	193/21-22 Natraj Ind Estate, Viramgam Highway Sanand,	Ahmedabad	382170	Gujarat	Nirav Patel	niravpacka- ging15@gmail.com

## New Members

17	Om Plasto Industries	Plot No 1/1, Sur No. 989/P, Motibnaugar, Motibanugar,	Jamnagar	361120	Gujarat	Gaurav Ashvinbhai Bhatt	gaurav@omp-plasto.com
18	Raaj Medisafe India Limited	106, Sector-III, Industrial Area,	Pithampur	454774	Madhya Pradesh	Arpit Bagur	rajesh.daga@yahoo.com
19	Sajjala Woven Sacks Private Limited	Survey No. P No. 413p, 414, Near Hi-Tech School, Athvelly, Medchal,	Hyderabad	501401	Andhra Pradesh(New)	Anil Kumar Jain	sajjalasacks@gmail.com
20	Shalin Composites (India) Private Limited	Plot No 10, Survey No 32, Village Vevoor, Near Everlite Palghar East	Palghar	401404	Maharashtra	Parag Patil	ceo@dmeng-gco.com
21	Shree Maruti Bulk Packaging Private Limited	11, Shanay 2, Near Hemkut Building, Gandhigram Railway Station, Ashram Road	Ahmedabad	380009	Gujarat	Kruti Vishal Patel	accounts@xpressshipping.in
22	Sivandana Commercial Company Private Limited	H-52, 1b-1, Street No-4, Tank Road, Karol Bagh, Central Delhi,	New Delhi	110005	Delhi	Mahesh Kumar Solanki	sivacoco@yahoo.co.in
23	Sun Pro-Pack Pvt Ltd	Gp-12, 2nd Floor, Raghuleela Mega Mall, Behind Poisar Bus Depot, Kandivali West,	Mumbai	400067	Maharashtra	Rachana Viral Chandarana	ho@sunpro-pack.com
24	Surya Masterbatches Private Limited	C-582, Dsiidc Narela Ind. Area, North West	Delhi	110040	Delhi	Rachit Bansal	rachit@suryamb.com
25	Tomson Medicare Private Limited	House No. 166, Behind Gayatri Geeta Mandi Sector 40,	Gurgaon	122001	Haryana	Rajni Tomar	tomsonmedicare@gmail.com
26	Uwon Packaging Private Limited	48 Shanti Colony Kankroli	Rajsamand	313324	Rajasthan	Amit Jain	brijgopalmalu@yahoo.com
27	Veeyor Polymers Private Limited	161, 4th Main, 2nd Stage, Peenya Indl. Estate,	Bangalore	560058	Karnataka	Lakshmi Gopalakrishnan	lakshmi@veeyorpolymers.com
28	Vinyl Pipes Private Limited	N 29 Green Park Extension New Delh	Delhi	110016	Delhi	Sarth Jain	prabhu.vinyl@gmail.com