

PLEXCONCIL- The Plastics Export Promotion Council

PLEXCONNECT

Edition 2, August 2019

UNION BUDGET 2019 - PLASTICS INDUSTRY REACTS

AUSTRALIA,
TRADE AT A
GLANCE

3D PRINTING
TECHNOLOGY IN
PLASTICS - THE
NEXT BIG WAVE

8 STEPS TO OPTIMIZE
INJECTION MOLDING
PROCESS



A very warm Welcome to the esteemed members of our Editorial Advisory Board.

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ALOK Masterbatches

Member - Mr. Manoj Agarwal,
Kanpur Plastipack

Member - Ms. Kantha A, Farcom Cables

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Chairman's Message

I want to begin by extending my heartfelt thanks to all our COA members, members of our trade fraternity and all our readers for the immense support that you have shown towards the First Issue of PlexConnect. Please keep your suggestions and feedback coming as that would be the one true measure of our success in serving as the mouthpiece for our industry.

I take this opportunity to also welcome our Editorial Advisory Board; Mr. Vikram Bhaduria, Alok Masterbatches, Mr. Manoj Agarwal, Kanpur PlastiPack, Ms. Kantha A, Farcom Cables, Mr. Amit Pal, Kolor Impex and Mr. Devang Sheth, Polycromax Industries. We are very grateful to our esteemed members of the Board for taking the time to help us further refine and enhance the quality of our magazine as well as help us extend its distribution to industry stakeholders. We are certain that with their wealth of knowledge, experience, guidance and support, Plexconnect will certainly achieve and surpass the goals that we have set for ourselves.

In the month of June, India exported plastics worth USD 733 million, down 4.7% from USD 769 million. However, cumulative value of plastics export during April 19 – June 19 was USD 2,266 million as against USD 2,253 million during the same period last year, registering a positive growth of 0.5%.

The past month has given us a lot to think about and even more to do. Rains notwithstanding and plastics being once again blamed for the chaos that it creates each monsoon, while it may be seemingly unfair that our industry is somehow treated as the cause on account of the more visible, single use plastics; there is little doubt that the benefits that plastics bring to especially food, beverage, pharmaceutical, medical and other industries, perhaps gives us a lot to be proud of. In this issue, we have tried to take a neutral view of the environmental

impact of plastics and focused on the need for a systematic approach from all stakeholders to cohesively address and resolve the issue we have at hand and affects us collectively as a society. Both, in environmental and economic terms.

On our part, this effort to influence change or progress must start from the root and perhaps even requires us to look at it from a fresh perspective. Our article on the need for rheological testing of polymers, gives us a valuable insight into its growing importance. Rheological testing helps us not only understand the composition and personality of raw material, but is equally important across the manufacturing cycle. Along with our feature on 8 step optimization of injection molding process, we have aimed to bring you information that will not just optimize your production cycles, but also help the industry move towards a more efficient, responsible and competitive future.

The Australian market is perhaps one of the most developed markets south of the equator and annually imports USD 11-12 billion worth of plastics. With our plastics exports at USD 108 million, India has only about 1.1 market share. Small though, it only demonstrates the immense export potential for our country. This issue takes a look at the economic and trade scenario in Australia and explores opportunities for our country within the plastics segment.

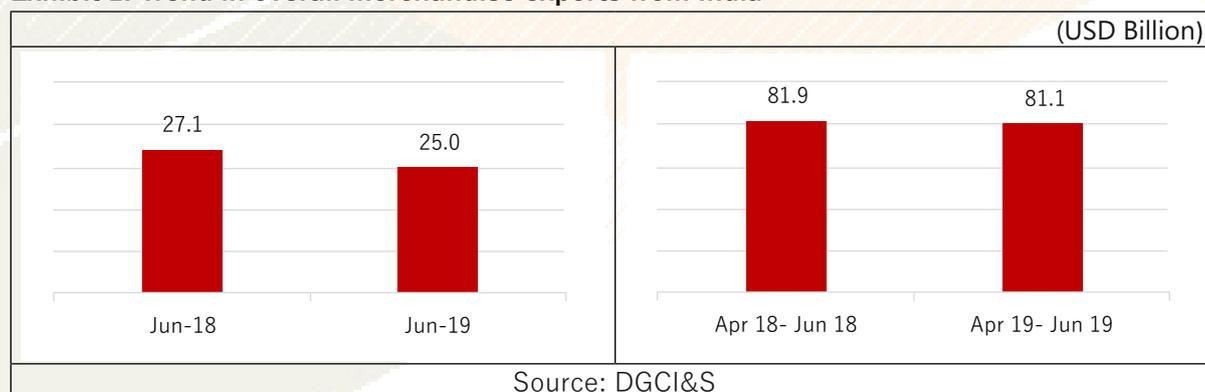
In this issue of the magazine, we have also focused on Writing instruments, under the section, Panel of the Month. A colossal market in India, writing instruments though is one of our smaller panels. However, despite its size, Writing instruments have earned immense repute for our industry globally and is renowned for its high quality products, ability to deliver large volume and all this at prices that compete with the likes of China. It is welcoming that Indian manufactured writing instru-

ANALYSIS OF INDIA'S PLASTICS EXPORT, JUNE 2019

TREND IN OVERALL EXPORTS

India reported merchandise exports of USD 25.0 billion in June 2019, down 7.9% from USD 27.2 billion in June 2018. Cumulative value of merchandise exports during April 19 – June 19 was USD 81.1 billion as against USD 81.9 billion during the same period last year, reflecting a decline of 1.0%.

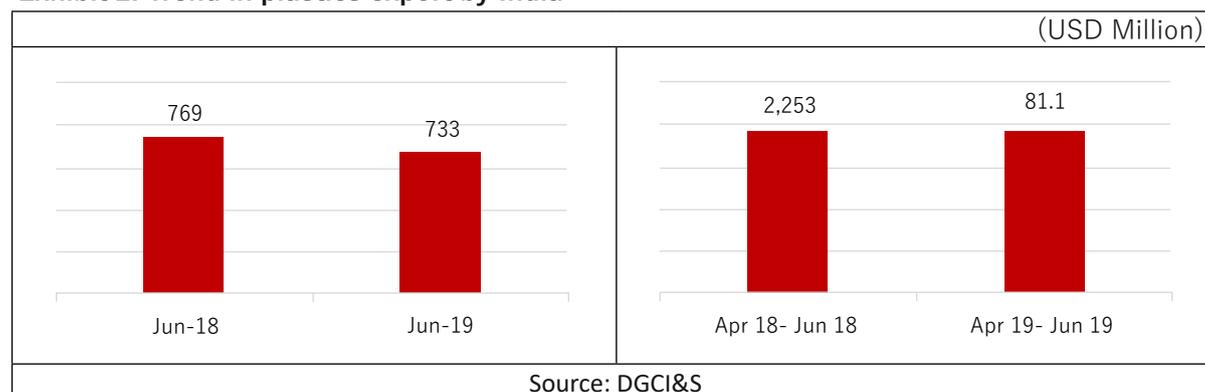
Exhibit 1: Trend in overall merchandise exports from India



TREND IN PLASTICS EXPORT

During June 2019, India exported plastics worth USD 733 million, down 4.7% from USD 769 million in June 2018. Cumulative value of plastics export during April 19 – June 19 was USD 2,266 million as against USD 2,253 million during the same period last year, registering a positive growth of 0.5%.

Exhibit 2: Trend in plastics export by India



- Plastics formed 2.79% of India's overall merchandise exports in April 2019 – June 2019
- India exported plastics to 203 countries in April 2019 – June 2019
- United States, China and United Arab Emirates were the top three buyers of plastics from India in April 2019 – June 2019

PLASTICS EXPORT, BY PANEL

In June 2019, some of the product groups that exhibited good performance were: human hair (up 102.9% year-on-year); moulded & extruded goods (+9.1%); plastic sheet, film, plates etc (+2.5%); and other plastic items (+1.7%). However, plastic raw materials witnessed year-on-year decline of 14.4%; along with optical items (-12.6%); stationery/office/school supply (-10.0%); and packaging materials (-1.9%).

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

Panel	Jun-18	Jun-19	Growth	Apr 18-Jun 18	Apr 19-Jun 19	Growth
	(USD Mn)	(USD Mn)	(%)	(USD Mn)	(USD Mn)	(%)
Plastic raw materials	376.37	322.05	-14.4%	1,081.65	956.48	-11.6%
Plastic sheet, film, plates etc	122.53	125.62	2.5%	366.60	387.14	5.6%
Moulded & extruded goods	91.29	99.57	9.1%	264.58	342.49	29.4%
Packaging materials	68.38	67.07	-1.9%	200.38	202.61	1.1%
Optical items (incl. lens etc)	42.60	37.22	-12.6%	122.11	119.99	-1.7%
Other plastic items	31.27	31.79	1.7%	90.67	120.98	33.4%
Stationery/Office/School Supply	22.28	20.05	-10.0%	66.41	64.60	-2.7%
Human hair, products thereof	14.38	29.18	102.9%	60.98	71.37	17.0%
	769.08	732.57	-4.7%	2,253.39	2,265.65	0.5%

Note: Plastics are segregated under eight panels by DGCI&S
Source: DGCI&S

Export growth in plastic sheet, film, plates etc and moulded & extruded goods was driven by higher shipments to the United States of America while that for human hair panel was on account of increased sales to China.

Exports of plastics raw material, however, witnessed a decline due to lower sales to countries like United Arab Emirates, Italy and Egypt. Likewise, export of optical items fell on account of reduced shipment to the United States of America and Hong Kong. Exports of Stationery/office/school supplies were found to be lower across various countries.



Export Performance

PLASTICS EXPORT, BY REGION

India's plastics export in June 2019 did well in regions like North-East Asia (up 20.4% year-on-year); Commonwealth of Independent States (+7.4%); and North America (+5.6%). Export growth was negative in territories like Latin America & Caribbean (-16.4%); Africa (-16.0%); ASEAN + 2 (-14.3%); South Asia (-11.3%); Middle East (-9.4%); and European Union (-4.7%).

Exhibit 4: Region-wise trend in plastics export by India

Region	Jun-18	Jun-19	Growth	Apr 18-Jun 18	Apr 19-Jun 19	Growth
	(USD Mn)	(USD Mn)	(%)	(USD Mn)	(USD Mn)	(%)
European Union (EU)	156.38	149.03	-4.7%	453.56	446.74	-1.5%
Middle East	129.40	117.24	-9.4%	365.73	374.19	2.3%
North-East Asia	95.26	114.88	20.6%	319.26	328.68	3.0%
North America	103.91	109.70	5.6%	302.32	361.31	19.5%
Africa	102.37	86.03	-16.0%	279.52	278.00	-0.5%
South Asia	72.22	64.04	-11.3%	223.74	202.55	-9.5%
ASEAN + 2	57.02	48.85	-14.3%	158.77	146.57	-7.7%
Latin America & Caribbean (LAC)	39.41	32.94	-16.4%	117.51	91.51	-22.1%
CIS	6.81	7.31	7.4%	19.61	28.66	46.2%
Others	6.31	2.55	-59.6%	13.39	7.45	-44.4%
	769.08	732.57	-4.7%	2,253.39	2,265.65	0.5%

Source: DGCIS

Within North-East Asia, India's plastics exports found great support in China (+36%) and South Korea (+34%) while exports to Commonwealth of Independent States did particularly well in Ukraine (+75%) and Russia (+31%). As far as North America is concerned, plastics exports were higher to destinations like Canada (+34%) and United States (+7%).

However, India's plastics exports were hurt by lower demand in European Union, particularly, Italy (-21%) and France (-8%). Growth in the Middle East was negatively affected due to a decline in sales to Egypt (-58%), Turkey (-19%) and the United Arab Emirates (-16%). Major destinations in Latin America & Caribbean that witnessed a decline in plastics exports from India were Uruguay (-56%) and Colombia (-38%). Plastics exports were also lower to Africa, South Asia and ASEAN, particularly, Pakistan and Nigeria.

PLASTICS EXPORT, BY DESTINATION COUNTRY

During June 2019, nine out of the top 25 destination countries recorded year-on-year growth in plastics export from India. Exports to China and Canada witnessed high growth rates ranging between 30-40%, during the period.

On a cumulative basis, during April 19 – June 19, 11 out of the top 25 destination countries recorded year-on-year growth in plastics export from India. Exports to South Africa, Saudi Arabia and Canada witnessed high growth rates ranging between 30-70%, during the above period.

Exhibit 5: Top 25 destinations of plastics exported by India

Country	Jun-18	Jun-19	Growth	Apr 18-Jun 18	Apr 19-Jun 19	Growth
	(USD Mn)	(USD Mn)	(%)	(USD Mn)	(USD Mn)	(%)
China	71.22	96.70	35.8%	261.05	266.26	2.0%
United States	83.85	90.03	7.4%	242.79	301.00	24.0%
United Arab Emirates	44.53	37.19	-16.5%	118.32	137.99	16.6%
Italy	33.55	26.34	-21.5%	97.65	81.77	-16.3%
Germany	26.31	25.03	-4.8%	79.33	77.55	-2.2%
Bangladesh	23.48	21.63	-7.9%	88.56	75.72	-14.5%
Turkey	28.37	22.97	-19.0%	81.21	52.84	-34.9%
United Kingdom	21.49	23.00	7.1%	61.90	69.93	13.0%
Nepal	19.63	21.30	8.5%	58.36	62.38	6.9%
Vietnam	15.17	13.07	-13.8%	43.33	36.02	-16.9%
France	16.28	14.94	-8.2%	45.10	47.17	4.6%
Indonesia	12.07	9.20	-23.8%	30.72	21.61	-29.6%
Egypt	15.65	6.59	-57.9%	39.01	28.08	-28.0%
Belgium	11.89	11.54	-2.9%	33.63	33.59	-0.1%
Japan	13.98	8.09	-42.1%	31.17	27.09	-13.1%
Nigeria	15.45	9.29	-39.9%	42.79	24.76	-42.1%
Pakistan	14.52	7.02	-51.7%	38.68	28.45	-26.5%
South Africa	10.13	11.79	16.4%	26.74	44.28	65.6%
Israel	8.97	10.05	12.0%	26.10	26.72	2.4%
Mexico	13.01	10.25	-21.3%	36.01	29.16	-19.0%
Kenya	11.56	11.63	0.6%	33.16	34.73	4.7%
Spain	11.85	10.57	-10.8%	32.21	30.21	-6.2%
Sri Lanka	11.45	9.27	-19.0%	27.99	23.88	-14.7%
Canada	7.04	9.42	33.8%	23.52	31.14	32.4%
Saudi Arabia	9.13	10.68	16.9%	24.60	33.92	37.9%

Note: Top 25 destinations based on 2018-19 plastic exports by India

Source: DGCI&S

India exported plastics to 189 countries in June 2019 as compared to 181 countries in June 2018.

Export Performance

Exhibit 6: Panels with details of % growth seen in top 10 export destinations

Panel	Country	Apr 18-Jun 18	Apr 19-Jun 19	Growth
		(USD Mn)	(USD Mn)	(%)
Plastic raw materials	China	204.25	197.68	-3.2%
	Italy	68.88	48.57	-29.5%
	Turkey	68.58	46.88	-31.6%
	Bangladesh	64.75	53.02	-18.1%
	United Arab Emirates	59.74	51.33	-14.1%
	United States	39.61	39.05	-1.4%
	Vietnam	37.20	29.81	-19.9%
	Nepal	34.24	38.72	13.1%
	Indonesia	23.17	12.17	-47.5%
	Pakistan	36.43	26.01	-28.6%
Plastic sheet, film, plates etc	United States	54.03	67.24	24.4%
	United Arab Emirates	14.66	18.79	28.2%
	Germany	17.07	17.13	0.3%
	South Africa	16.04	17.04	6.2%
	Nigeria	23.12	7.88	-65.9%
	Italy	14.34	13.15	-8.3%
	United Kingdom	11.60	14.46	24.6%
	Bangladesh	11.16	8.51	-23.7%
	Mexico	10.85	9.08	-16.3%
	Spain	9.04	11.13	23.2%
Moulded & extruded goods	United States	57.65	103.10	78.9%
	United Arab Emirates	15.94	33.97	113.1%
	United Kingdom	14.11	15.89	12.7%
	Germany	14.33	11.94	-16.7%
	Canada	10.79	15.12	40.2%
	Sri Lanka	5.54	3.00	-45.8%
	Spain	6.11	5.14	-15.8%
	Nigeria	4.91	5.24	6.6%
	Saudi Arabia	4.58	5.86	27.9%
	Brazil	3.90	5.71	46.6%
Packaging materials	United States	34.63	42.89	23.9%
	United Kingdom	16.61	16.35	-1.6%
	United Arab Emirates	10.93	11.65	6.6%
	Netherlands	7.32	6.95	-5.1%
	Germany	6.61	5.05	-23.5%
	Belgium	5.86	2.09	-64.3%
	France	4.54	4.52	-0.5%
	Spain	4.53	3.93	-13.4%
	Djibouti	8.11	4.94	-39.0%
	Nepal	5.25	3.62	-31.1%

Note: Top 10 destinations based on India's 2018-19 exports under the eight plastic product panels
Source: DGCI&S

Export Performance

Panel	Country	Apr 18-Jun 18	Apr 19-Jun 19	Growth
		(USD Mn)	(USD Mn)	(%)
Optical items (incl. lens etc)	France	27.63	32.79	18.6%
	Germany	13.02	12.58	-3.4%
	United Kingdom	9.30	10.37	11.5%
	United States	9.52	3.00	-68.5%
	United Arab Emirates	4.69	5.41	15.4%
	Netherland	5.91	5.08	-14.2%
	Poland	4.97	3.17	-36.2%
	Italy	2.87	7.94	176.9%
	Russia	0.29	5.25	1716.9%
	Israel	1.67	2.51	50.2%
Other plastic items	United States	22.02	20.28	-7.9%
	Belgium	8.80	6.28	-28.6%
	United Arab Emirates	7.95	13.25	66.6%
	South Africa	2.34	16.52	606.6%
	United Kingdom	1.94	4.51	132.4%
	Italy	2.44	3.74	52.8%
	Germany	2.89	4.68	62.0%
	Poland	1.38	2.27	64.8%
	Nepal	2.08	2.22	7.1%
	Saudi Arabia	2.15	2.47	14.6%
Human hair, products thereof	China	37.59	48.79	29.8%
	Myanmar	4.31	2.77	-35.6%
	United States	4.33	4.18	-3.6%
	Tunisia	2.73	3.76	37.5%
	Hong Kong	2.24	3.34	49.1%
	Bangladesh	1.80	1.10	-38.8%
	United Arab Emirates	1.58	1.10	-30.7%
	Vietnam	0.58	1.31	125.2%
	Indonesia	0.66	0.52	-22.0%
	Italy	1.00	0.61	-39.5%
Stationery/Office/School Supply	United States	21.00	21.26	1.3%
	United Arab Emirates	2.83	2.48	-12.3%
	United Kingdom	3.84	3.48	-9.4%
	Thailand	3.09	2.50	-19.0%
	Algeria	1.36	2.15	57.7%
	Bangladesh	1.34	1.72	29.1%
	Germany	1.42	1.38	-2.4%
	Mexico	1.70	1.20	-29.8%
	Latvia	1.29	0.70	-45.2%
	Nepal	1.01	1.24	22.5%

Note: Top 10 destinations based on India's 2018-19 exports under the eight plastic product panels
Source: DGCI&S

Export Performance

ANNEXURE I

Trend in overall exports by India

Month	2018-19	2019-20	Growth
	(USD Bn)	(USD Bn)	(%)
April	25.95	26.07	0.5%
May	28.78	30.01	4.3%
June	27.15	25.01	-7.9%
	81.88	81.09	-1.0%

Source: DGCI&S

ANNEXURE II

Trend in plastics export by India

Month	2018-19	2019-20	Growth
	(USD Mn)	(USD Mn)	(%)
April	742.66	702.53	-5.4%
May	741.65	830.55	12.0%
June	769.08	732.57	-4.7%
	2,253.39	2,265.65	0.5%

Source: DGCI&S

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UNION BUDGET 2019

Plastics Industry Reacts

After its populist pre-election budget in February 2019, the Union Budget presented by Smt. Nirmala Sitharaman, Hon'ble Finance Minister, Government of India, on 5th July, 2019 is a forward looking and inclusive one. Aimed at boosting investment at a time when the economy is showing signs of slowdown, the Budget takes a pragmatic approach, while seeking to spur growth across economic sectors.

Plastics Industry – Current Scenario

A significant contributor to the country's economic development, Plastics industry's application has diversified to include a variety of key segments such as automotive, construction, electronics, healthcare, textiles, FMCG, and more. Of India's total merchandise exports in 2018-19 of USD 331 billion, Plastics exports was USD 10.89 billion (up 24% from exports in 2017 -18 of USD 8.85 billion).

Globally plastics is a 1 trillion-dollar economy and this is just enough to demonstrate the vast potential that the segment holds for our fraternity.

The Plastics industry manufactures and exports a variety of raw materials, laminates, electronic accessories, medical ware, and India is exporting to more than 210 countries, across the Globe. Employing over 5 million people and comprising over 50,000 manufacturing units,

Indian plastics exports have excellent prospects to meet the high global demand for plastics and its derivatives.

Over 75% of the industry comprises the MSME sector, and despite numerous schemes and initiatives offered by the Ministry of Commerce, Ministry of MSME, DGFT, etc., the industry believes that in order to enhance ease of doing business and grow Indian exports, much still needs to be done.

“Our Hon'ble Union Commerce & Industry Minister, Shri. Piyush Goyal has set a target to triple India's exports from USD 331 billion to USD 1 trillion within a short span of 5 years and he has promised that all support will be extended to boost manufacturing & increase exports from India.”

As a trade body representing the concerns of plastics exporters, Plexconcil continues to highlight the issues of the trade and bridge the gap between the Government's policies and on-ground reality. Reacting to the Budget presented in July, given below is the submission made by the Council on behalf of the industry to the Finance Ministry.

- The announcement of an increase in Basic Customs Duty of Poly Vinyl Chloride (PVC) falling under heading 3904 from 7.5% to 10% and reduction in Basic Customs Duty of Ethylene Dichloride (EDC) falling under tariff item 29031500 from 2% to nil will help the domestic polymer manufacturers who were demanding these as an incentive to enhance domestic production capacity. However, Plexconcil along with other plastics associations across the country

feel that the increase in PVC import duty would help polymer manufacturers, but will play spoilsport in the plastic processing sector. PVC imports into India attracts Anti-Dumping Duty on imports from certain countries, resulting in increased cost for the plastics processors. The local supply is catering to less than 50% of the total production and hence the processing industry by and large remains with import as substituent. With this increase in import duty, the cost of production will be higher and this directly hampers the export potential of PVC finished products in the international market, making us less competent amongst the global players. Hence, this increase in import duty of PVC will directly affect the domestic and as well as the export market for our plastic processing sector.

- The announcement of an increase in Basic Customs Duty of Vinyl Flooring falling under heading 3918, from 10% to 15%, shall help in curbing imports from South Korea, China and the ASEAN countries, as it will encourage consumption of Vinyl flooring produced domestically, and boost production by the domestic industry, that in turn, will boost employment, in our labour-intensive sector.
- Likewise, the announcement of an increase in Basic Customs Duty of plastics products falling under tariff items 39269091 and 39269099 from 10% to 15% shall help in curbing imports, and encourage domestic manufacturing, thus boosting employment.
- We are happy to note the reduced corporate tax rate of 25% for companies with an annual turnover of Rs 400 crore in FY 2017-18. Previously this was limited to companies with an annual turnover of Rs 250 crore. As 75% of the plastics processing companies are MSMEs, this is a welcome move for them.
- The government's proposal to streamline multiple labour laws into a set of four labour codes shall also help in the ease of doing business for plastics processors.
- Amnesty scheme for past disputes in the form of Sabka Vishwas Legacy Dispute Resolution Scheme, is another positive move designed to help resolve pending cases related to service tax and excise duty. It is believed that Rs 3.75 lakh crore remains blocked in litigations in service tax and excise.
- Further simplification of the GST process, the proposal to launch a fully automated GST refund model, and the filing of returns on a quarterly basis for companies having a turnover less than Rs 5 crores, will enhance the ease of doing business for plastics processors.

In a recent announcement, the government has merged the Council of Trade Development and Promotion with the Board of Trade to bring greater coherence in consultation process with all stakeholders for promoting exports and imports.

According to a notification of the Directorate General of Foreign Trade (DGFT), the new forum will remain as Board of Trade and will work with ten terms of references. The new board would provide a platform to states and union territories for articulating their perspectives on trade policy and help states to develop and pursue export strategies in line with the national foreign trade policy as well as advise the government on policy measures for preparation and implementation of short and long term plans.

It would also review export performances of various sectors, identify constraints and suggest industry specific measures to optimise export earnings and to examine existing institutional framework for imports and exports.

Backed by the Government's recent policies and developments, the industry is seemingly set to move along in the right directions. Nevertheless, it remains to be seen if the winds of real change are yet to blow over our industry.

“While the Budget has announced some incentive that come as a relief to the industry; there is little doubt that challenges remain in the form of infrastructure and logistical issues, especially in clusters that are far from ports, high cost of finance, delayed GST refunds, fluctuating polymers pricing, amongst others.”

Meeting on boosting exports to China & USA in view of USA – China Trade War held with stakeholders of identified tariff lines on June 7, 2019 at Udyog Bhawan, New Delhi

A meeting chaired by the Commerce Secretary (CS) was attended by the Embassy of India (EOI), Beijing through Video Conferencing to stress the need for EPCs need to be proactive and urge their member exporters to exploit the opportunities resulting from the USA – China trade war. In case of the plastics sector, opportunities had arisen in 53 tariff lines where USA had imposed increased tariffs on China, and 44 tariff lines where China had imposed a tariff of 25% on USA. CS urged EPCs to study these tariff lines and consider the prospects of increasing exports on these tariff lines. Stakeholders present requested the Embassy in Beijing to provide them with details of Chinese importers of the identified tariff lines who were importing from USA. The EOI, Beijing also emphasized the importance of Indian exporters' participation at the China International Import Expo to held in November 2019 in China.

Regional Committee Meeting of the Eastern Region held on June 07, 2019 at Kolkata

The second Regional Committee Meeting of the Eastern Region was held on June 07, 2019 and chaired by Mr. Prasan Lohia, Regional Chairman, Eastern Region. The Regional Committee reviewed the membership position of the Eastern Region as on 31st May 2019 as well as the Export Statistics for the period April-March 2019. Suggestions for Export Promotion Activities to enhance exports from the Eastern Region by way of participation in Trade Fairs, BSMs, Seminars/Others etc., were also discussed. It was decided to organize Members outreach seminar at Bhubaneswar, Patna, Ranchi, Balasore and Guwahati.

The Regional Committee also discussed the issues faced by exporters from the East to be addressed at appropriate forums.

- Interest subvention scheme as all banks do not accept CA certificate for MSME limit.
- Concerns due to auto cautioned listing of shipping bills by EDPMS system since in many cases where full export realization has been made, exporters were still being cautioned by the Authority despite e-BRCs having been uploaded on the DGFT server.

Interaction with stakeholders / exporters of Chemicals, Plastics & allied products sectors to identify initiatives to boost exports and to reduce imports held on June 11, 2019 at Udyog Bhawan, New Delhi

The Joint Secretary (JS), Mr. Shyamal Misra, IAS held

a meeting with industry members and urged all present to take advantage of new opportunities to boost exports both to USA and China in view of their ongoing trade war. He also stressed the need to reduce imports, through import substitution and curbing of non-essential imports. He also stressed upon the need to alert the Government on any large surge in imports, particularly from any of the FTA countries, and to report imposition of any new Anti Dumping Duties by any of the countries on exports from India.

Other matters discussed included:

1. Issues concerning the increase in import duty on PVC Resin was also discussed light of the potential harm it could result in the downstream processors of PVC products and Council was advised to address the concern directly with the Ministry of Finance.
2. A representative from Luxor Writing Instruments explained that export of Writing Instruments from India faced high tariffs in some of the potential countries, as compared to our competitors, and this needed to be addressed through FTAs.
3. A representative from the Human Hair sector highlighted the issue of illegal trade of Human Hair from the North – East to China, via Myanmar, and the issue of under invoicing. He was requested the Ministry's intervention in pursuing the matter with the CBIC/Customs.

COMPLAST MYANMAR 2019 Exhibition, Yangon held from June 14-16, 2019 at Yangon, Myanmar



Dr. Sumit Seth - Chief of Mission, Embassy of India, Myanmar with Regional Director Mr. Jaswanth

The Council organized the India Pavilion at the COM-PLAST MYANMAR 2019 Trade Fair, the 5th Edition of the Complete Plastics Exhibition, organized by M/s Smart Expos and Fairs (India) Pvt. Ltd., and co-organized by the Myanmar Plastic Industries Association (MPIA), the apex body of the Plastics Industry in Myanmar, and supported by our Council. This event was held from June 14-16, 2019, at the Tatmadaw Hall in Yangon,

Council Activities June 2019

Myanmar. Twenty Seven Exhibitors participated in this event under the Council's umbrella in an area spanning over 550 sqm.

The Deputy Chief of Mission, Embassy of India, Yangon, Dr. Sumit Seth, IFS, inaugurated the Exhibition and delivered the Inaugural Address. Mr U Zaw Win Min, President of the Union of Myanmar Federation of the Chambers of Commerce & Industry (UMFCCI), and Mr U Kyaw Min, Secretary of the Myanmar Plastic Industries Association (MPIA) also spoke on the occasion.

The Plastics Industry in Myanmar is poised for positive growth and the rising recognition of COMPLAST MYANMAR Exhibition holds much promise for the Indian industry. Some of the exhibitors reported that they will be firming up new businesses in the next 3 to 6 months.

MSME Trade & investment Promotion Bureau (M-TIPB) Brainstorming Meeting with Export Promotion Councils in Chennai held on June 14, 2019 at TANSIDCO Office, Chennai

The Tamil Nadu Small Industries Development Corporation Ltd. (TANSIDCO), a Government of Tamil Nadu Undertaking, invited the Plexconcil for an initial Brainstorming Meeting on suggestions for the action plan to be carried out by the newly formed MSME Trade & investment Promotion Bureau (M-TIPB) under MSME Department, Government of Tamil Nadu. The main emphasis on the session was on employment generation and growth of the MSME sector in Tamil Nadu through new Investments and Trade Promotion, and to identify areas of co-operation with the various EPCs.

The meeting was chaired by Mr. Hans Raj Verma I.A.S., Additional Chief Secretary to Govt. of Tamil Nadu, and co-chaired by Mr. T.P. Rajesh I.A.S., Managing Director, MSME Trade and Investment Promotion Bureau (M-TIPB), Government of Tamil Nadu, and officials from TANSIDCO and IC&DC. Apart from Plexconcil, the other EPCs and Trade Associations invited to participate in the meeting included FIEO, CLE, CAPEXIL, HEPC, APE-DA, MPEDA, GJEPC, Spices Board, Tamil Nadu Small and Tiny Industries Association (TANSTIA) and Ambattur Industrial Estate Manufacturers' Association (AIE-MA).

Meeting for logistic requirement for various chemical – handling facilities available at Indian Ports held on June 17, 2019 at Shastri Bhawan, New Delhi

The meeting chaired by Secretary (C&PC) was held to discuss present logistics/infrastructure available at different Indian Ports, and their future plans of expansion to handle increasing business in Chemicals & Petrochemicals.

Some of the issues highlighted at the meeting to improve the logistics/infrastructure at different Indian ports included:-

- Inadequate berthing availability for bulk vessels bringing or taking chemicals from ports. This results in high demurrage cost to chemical companies.
- Non availability of rail connectivity, inadequate berthing space (in terms of draft, width, number of berths) resulting in non utilisation of some ports.
- Lack of IT infrastructure for tracing container at Nava Shava, Kandla & Chennai ports.
- Delay in testing in Custom laboratories hampers early clearance of consignments.
- Delay in custom clearing due to repeated failure of ICEGATE system. If ICEGATE system is not working manual custom clearing should start immediately.



(Extreme Right) Regional Chairman (North), Mr. Vikram Bhaduria making a point on export opportunities in the Plastics sector during the International MSME Day organised by Ministry of MSME at Hotel EROS, NEW DELHI on 27th June, 2019.

Regional Committee Meeting of the Northern Region held on June 19, 2019 at the Council's Office, New Delhi

The Regional Committee Meeting of the Northern Region, chaired by the Regional Chairman (North), Mr. Vikram Bhaduria, was held to review the export performance of the major product categories exported from North India, discuss issues hampering exports from the Northern Region, increase membership base in the Northern Region and mobilising exhibitors for CAPINDIA 2019 from the Northern Region.

Some of the major issues hampering exports from the Northern region highlighted were as below:

- a) The Port Price Parity principle adopted in the pricing of plastic raw materials is a big disadvantage to units based in North India, which ended up paying a higher price for raw materials as compared to units located

near the port. Furthermore, it was mentioned that the high Inland Haulage rates charged by CONCOR was adversely affecting the export competitiveness of exporters in North India.

b) Polymer producers have been lobbying for the imposition of Non-Tariff Barriers (NTBs) on import of polymers by suggesting that BIS Standards be made mandatory on polymers being imported into the country. Hence there is a pressing need to effectively counter the same by plastic processors, whose raw material import will be adversely affected by the NTB.

Export Awareness Programme held on June 21, 2019 at CIPET IPT, Phase IV, Vatva, Ahmedabad



In picture from left to right – Mr. Sribash Dasmohapatra, ED, PLEXCONCIL, Mr. Vrajesh Parikh, President, GSPMA, Mr. J M Gupta, ITS, Addl DGFT, Mr. Arvind Goenka, Vice Chairman, PLEXCONCIL, Mr. P N Solanki, Asst Director, Ministry of MSME, Mr. Shyam Tibrewala, COA Member – Western Region, PLEXCONCIL, Mr. Gautam Rathod, ECGC and Dr. Ajay Nema, Manager-Testing, CIPET.

Under Government of India initiative to boost Export and Make India a 5 Trillion Economy, Plastics Export Promotion Council (PLEXCONCIL) organised an Export Awareness Programme Jointly with Union Ministry of MSME, Government of India, ECGC Ltd., and GSPMA on June 21, 2019 at CIPET IPT, Phase IV, Vatva, Ahmedabad. The event was supported by Directorate General of Foreign Trade and CIPET.

Over 200+ MSME industries comprising domestic manufacturers or traders and now willing to explore global market opportunities attended the Export Awareness Programme from across the Gujarat Region.

The objective of the Export Awareness Programme was to highlight the importance and benefits of exports; schemes & policies by Ministry of MSME & Department of Commerce benefitting exporters; understand the

process to avail subsidies provided by Government of India; Foreign Trade Policy, Benefits of Credit Insurance, process of enrolling for PLEXCONCIL memberships and seek Government benefits for exports; to understand the issues faced by the members while doing exports; to provide market intelligence; i.e., important export destination with product potential.

The Event concluded on a positive note and 21 MSME industry members enrolled into the Council's membership programme.

Interactive Meet chaired by Shri Som Parkash, Hon'ble MOS (C&I) with stakeholders/exporters of Chemicals, Plastics, Minor Forest produce & allied products Sectors of the EPCs along with concerned line Ministries/Departments on June 25, 2019 at Udyog Bhawan, New Delhi

The meeting chaired by the Hon'ble MOS (C&I), Shri . Som Parkash, was held to discuss the issues hampering growth in exports. Major issues highlighted by our COA members and member exporters included:

1. Permission to import virgin PVC industrial scrap, which was not forthcoming
2. Illegal trade and under invoicing in Human Hair which continues
3. The urgent need for Technology Upgradation in the plastics sector.
4. Other issues pertained to the HS Code mismatch in case of Masterbatches while exporting to Bangladesh, resulting in high import duty being imposed by Bangladesh and a request to address the GST issue on FIBC.

The Minister requested the concerned officials from the line Ministries that were present, to respond to the issues highlighted, at the earliest.

Interaction with Stakeholders of identified lines for boosting exports to USA held on June 25, 2019 at Udyog Bhawan, New Delhi

A meeting chaired by the Commerce Secretary (CS) and Embassy of India (EOI) Washington DC, via Video Conferencing was held and members were informed that 272 tariff lines had been identified where Indian plastics industry had good export potential, based on the 25% tariff imposed by USA on China.

The Indian embassy in Washington DC was requested to identify the relevant product specific Associations in USA, while EPCs were directed to identify the relevant exporters and organize BSMS in USA. EPCs were also advised to inform the embassy about the RBSMs organised in India to enable the embassy to send relevant buyers from USA for the RBSM.

Council Activities June 2019

Regional Chairman (North) also mentioned of the Council's plans to lead a delegation to USA in August for an RBSM, in particular for those items where opportunities had risen as a result of the increased tariffs imposed by USA on China. The embassy in turn cautioned the Council of the stringent standards followed by USA in terms of delivery and quality and advised exporters to take extreme care in these matters. They also expressed their support to the Indian exporters.

Workshop on “Key aspects of EDPMS, IGST refund, Interest subvention documentation & Export Financing” held on June 26, 2019 at Kolkata

A workshop was jointly organized by the Plastics Export Promotion Council, Indian Plastic Federation (IPF) & ICICI Bank in Kolkata on 26th June 2019 and presentations were made on IGST refund, EDPMS system and export finance. This was followed by an interactive session. 52 participants were present at the event.

Meeting regarding identification of Trade Barriers and Market Access Unfairness in Africa & WANA Region was held on June 27, 2019 at Udyog Bhawan, New Delhi

A meeting chaired by the Joint Secretary (Africa) was held to discuss the following issues:-

1. To understand if there exists any market access unfairness in Africa and WANA Region and deriving alternative methods to enhance the trade.
1. Identification of Trade barriers in the Africa and WANA region.

The meeting was held to specifically understand Non-Tariff Barriers (NTBs) that India faces in Africa and the WANA region, and all stakeholders present were requested to inform the Ministry about specific NTBs that impacted their respective sectors. In the case of the plastics sector, Plexconcil highlighted that the cost of the inspection certificate (SONCAP Certificate) being insisted upon by the local authorities in Nigeria, amounts to a minimum of USD 250 and is borne by the exporter. In response, the Council was advised to address the matter with the Nigerian authorities directly, and stress that the inspection certificates issued by Indian Inspection Agencies must be accepted.

First Quarterly Meeting of the Export Facilitation Cell of MSME-DI held on June 28, 2019 at Kolkata



MSME –DI has set up an Export Facilitation Cell (EFC) under the control of Development Commissioner (MSME), New Delhi. The main functions of the EFC are to explore the untapped potential of MSME sector to boost export from Domestic Tariff Area (DTA) and Special Economic Zones (SEZs) by promoting MSMEs and clusters in them. The EFC will facilitate existing and prospective MSMEs and clusters by providing handholding supports and mentoring. The EFC shall also work for developing mini clusters in SEZ particularly in West Bengal under MSE-CDP scheme of DC (MSME), New Delhi to establish common facility centres. National Resource Centre (NRC) established at MSME – DI, Nagpur will work as a Nodal support centre for EFC of this Institute.

As a part of an action plan for EFC in the year 2019-20, the Institute organized its quarterly meeting with Industry Associations, State Govt., Clusters, Development Commissioner (SEZ), EPCs, DGFT and others Stake holders to develop a sustainable ecosystem for handholding assistance to MSMEs to boost up Export growth in MSME sector in the state of West Bengal and U.T. of Andaman and Nicobar Island

A presentation by MSME-DI highlighted the export promotion schemes which includes trade fair participation, Mini Cluster in SEZ scheme, GST reimbursement scheme etc and the council was requested to promote these schemes amongst its members.

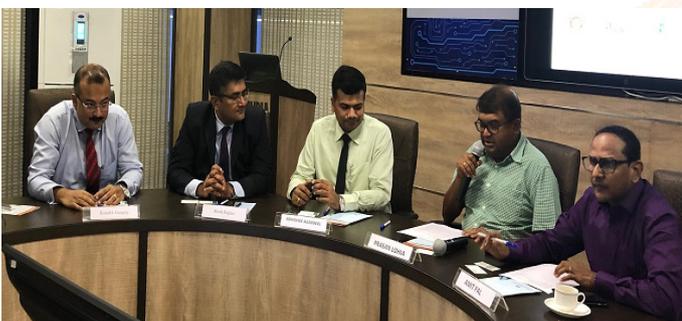
Other major Export Promotion / Trade Facilitation undertaken in the regions

- All Council offices provided assistance to members (who enquired) on various issues as sought, including advice on prospective markets, providing product-market configuration support, advice on MAI guidelines, Shipping logistics, Licensing etc, to facilitate their exports.
- Council offices also provided assistance and guidance to members as required on various policies and matters including, Exim Policy, liaison with Customs, DGFT, membership, endorsement / issue of RCMCs, issue of Certificate of Origin, Visa recommendation, following up on dues, short-payments,



Regional Chairman, Mr. Vikram Bhaduria receiving a Memento from the Joint Secretary (SME), Mrs. Alka Arora, on International MSME Day

Workshop on Key Aspects of EDPMS, IGST Refund, Interest Subvention Documentation & Export Financing held in Kolkata on 26th June 2019 organised by PLEXCONCIL, jointly with Indian Plastics Federation (IPF) and ICICI Bank



L-R: Mr Koushik Ganguly, Regional Head-East, ICICI Bank, Mr Akash Raghav, Zonal Head-Retail(deputy GM), Mr Abhishek Agarwal, GST Expert, Mr Prasan Lohia, Regional Chairman(Eastern Region)-PLEXCONCIL, Mr Amit Pal, COA Member – PLEXCONCIL

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Important Circulars and Notifications

a. Regarding CBIC - Simplified auto-registration of beneficiaries (IEC holders) on ICEGATE for eSanchit and other benefits

CBIC has issued circular no. 14/2019- Customs dated 03/06/2019 regarding Simplified auto-registration of beneficiaries (IEC holders) on ICEGATE for eSanchit and other benefits.

For details, log on to: <http://cbic.gov.in/htdocs-cbec/customs/cs-circulars/cs-circulars-2019/Circular-No-14-2019.pdf>

As per CBIC circular, the registration of importers and exporters will also enable direct access to information related to their consignments for which DG(Systems) has provision for several enquiries to be made through their login. The importers and exporters can obtain intimation about the status of their consignments and PDF copies of their declarations on their registered email ids. The option of replying to the queries raised by Customs officers, including those raised during post clearance audit has also been provided under the login of the IEC holders to avoid the necessity of submitting the same physically at the Service Centre.

The circular is available on: http://plexconcil.co.in/images/circulars/E_SANCHIT.pdf

b. Regarding reporting of Anti-Dumping cases/ non-tariff barriers faced by the Industry/ Exporters

Trade Defense Wing in Directorate General of Trade Remedies is in the process of analyzing the Anti-Dumping investigations conducted by different investigation Authorities against Indian Exporters/ Domestic Industry. The exercise is being undertaken to understand the procedures followed by the other Investigating Authorities and verify compliance with WTO norms.

Members are requested to keep the council informed of any Anti-Dumping investigations/ non-tariff barriers being faced by them on a regular basis so that the same may be shared with the Directorate General of Trade Remedies for timely redressal.

The said circular is available on: http://plexconcil.co.in/images/circulars/AD_Non_Tariff.pdf

c. Regarding opening of Call Centre in the office of Addl. DGFT Mumbai

Director General of Foreign Trade - Shri Alok Vardhan Chaturvedi inaugurated the Call Centre set up by the Mumbai office of the DGFT.

Silent features of the Call Centre are as follows:

- The Call Centre has been set up to address the doubts/queries/questions of exporters and importers.
- General information about foreign trade policy and international trade may also be asked.
- A specially trained dedicated staff has been appointed to handle all queries at the call centre.

The said circular is available on: http://plexconcil.co.in/images/circulars/call_center_DGFT.pdf



International News

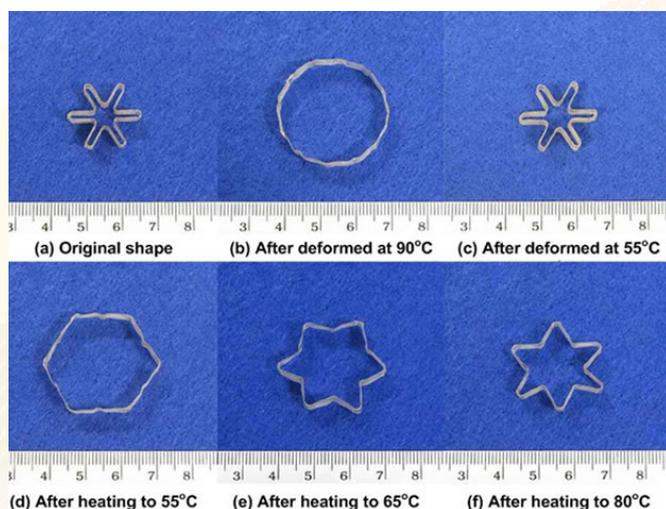
Drug delivery in cardiovascular stents, healthcare, splints, braces, catheters to steer growth of shape-memory polymer industry

The massive use of the product for efficient drug delivery in cardiovascular stents, healthcare, splints, orthopedic braces, catheters, and orthodontic braces will steer the growth of shape memory polymer industry over the years ahead, as per Zion Market Research. Apart from this, the market is likely to gain traction during the estimated timeline due to the massive product demand across the aerospace and automobile sectors. Furthermore, the product is also used in the construction of self-repairing concrete material, window sealants, and foams for insulating substances.

With shape memory ceramics & alloys gaining immense popularity across the globe, the industry is going to create lucrative growth opportunities for the key participants to expand their business as well as regional presence. Due to the non-toxic, non-mutagenic, and

biocompatible nature of the product, the market is slated to gain prominence in the near future.

Asia Pacific market is anticipated to make notable contributions toward shape memory polymer market size, owing to large-scale use of the product in the construction & healthcare activities in the countries such as India and China. With massive product applications in reconfigurable storage bins, airflow control systems, and seat assemblies and thriving vehicle manufacturing sector in countries such as Indonesia, Malaysia, South Korea, Thailand, India, and China, the industry is projected to witness lucrative growth during the upcoming years. Massive investments in aerospace & space exploration events along with large-scale biomedical equipment production will culminate in greater demand for the product across the region. Moreover, the presence of several product manufacturers in the countries such as the U.S. and Canada is predicted to contribute notably towards North American shape memory polymer market earnings. Furthermore, Europe and Latin American markets have huge growth potential and will contribute remarkably towards the overall market size in the coming years.



Shape memory polymers are smart materials that has the capability to come back to its original shape after temporary deformation that is triggered as a result of some external conditions like change in the weather or temperature. Shape memory polymers can maintain nearly two to three shapes, while the transition between these shapes can be caused due to temperature. The shape of the product can also be altered through either magnetic or electric field or a solution. Shape memory polymers include thermosets and thermoplastics.

Source: Plastemart

Global circular economy in plastic packaging waste recycling market to witness CAGR of over 9% till 2030

Innovative business models such as deposit return



schemes, disruptive applications like augmented reality (AR), composite plastic separation, plastic to fuel etc., will drive the circular economy in the plastic packaging recycling market in the future. The market revenue is estimated at US\$13.1 bln and an expected CAGR of 9.1% during the forecast period from 2019 to 2030, as per Reportlinker.

This study includes the revenue forecast for plastic packaging waste management. The study also elaborates on the volume forecast of 5 different kinds of plastics - PET, HDPE, LDPE, PVC, and PP-at both the regional and global levels.

Few critical trends like changes in consumer habits, increase in urbanization, increased use of plastic in food packaging, increased use of personal care products, rapid increase in the global bottled water hydration market, etc., have had a significant impact on the plastic packaging waste market.

There will be an increase in the number of countries introducing bans on single-use plastics due to various organizations stressing on the impacts of the same on marine life. Due to bigger recycling targets, especially in Europe, the recycling market is set to experience tremendous growth during the forecast period. As a result of stringent environmental regulations and a growing awareness of the environmental harm caused by the ocean dumping of plastic packaging waste, many corporates have vowed to make their plastic packaging recyclable in the coming years.

This commitment will drive the recycling market as well. Waste to fuel is becoming increasingly popular and is set to gain traction during the forecast period. Waste to energy plants will also see significant growth during the

forecast period, especially in the Asia-Pacific. Source: Plastemart

Global polycarbonate sheets market to register CAGR of 4.5% between 2019 and 2026

The global polycarbonate sheets market was approximately US\$1.68 bln in 2018 and is expected to reach around US\$2.39 bln by 2026, at a CAGR of 4.5% between 2019 and 2026, as per Zion Market Research.

Polycarbonate sheets are durable and lightweight along with possessing transparency. The growth of the global polycarbonate sheets market can be attributed to the worldwide technical advancements across its end-use industries. The global polycarbonate sheets market is driven by automotive, electrical and electronics, and construction industries. These sheets are widely used to manufacture headlights, as they are a better substitute for glass. The extensive polycarbonate sheets usage in the automotive industry is driving the polycarbonate sheets market sheet. These roof panels are primarily made of polycarbonate. Thus, it is a great opportunity that is expected to drive the polycarbonate sheets market in the future. The use of polycarbonate is also increasing in the medical industry to replace expensive resins, which is likely to further boost this market. However, the high risk of environmental degradation and pollution may restrain the polycarbonate sheets market growth globally.



The solid segment is expected to contribute the maximum market share both in terms of revenue and volume. Solid polycarbonate sheets are an excellent substitute to glass and are experiencing increased demand over the last few years.

Building and construction segment is expected to hold the maximum market share both in terms of volume and revenue. Polycarbonate sheets are extensively used in

the construction industry for making industrial roofing building systems, industrial construction, greenhouses, and manufacturing safety bars for doors and windows. The building and construction industry is experiencing notable global growth and increasing its applications of polycarbonate sheets for making outbuildings in barns and greenhouses.

Source: Plastemart

Capacity expansions in China to drive the global propylene industry growth from 2019 to 2030

China is expected to drive the global propylene industry growth from planned and announced plants between 2019 and 2030, contributing around 33% of the total propylene capacity additions, according to GlobalData. The report reveals that around 129 planned and announced plants are scheduled to come online, predominantly in Asia and the Middle East over the next 11 years. China is set to have large capacity additions of 13.24 million tpa by 2030. Among these, 8.88 million tpa is expected to come from planned plants while 4.36 million tpa as likely to come from the announced plants. The country is set to bring online 28 planned and 11 announced plants during the outlook period.

Dayanand Kharade, Oil and Gas Analyst at GlobalData, comments: "China will dominate the global propylene market in the mid-term with both the biggest number of new projects and the largest absolute capacity expansion driven by economic growth. The country is forecast to account for one-third of the global capacity addition during the outlook period."

GlobalData identifies India as the second highest country in terms of capacity additions. The country is set to add 5.09 million tpy of planned and announced propylene capacity from new-build and expansion plants by 2030. Among these, 130 000 tpy is about to come from planned plants and 4.96 million tpy from announced plants. Among the companies, Formosa Plastics Group, Dangote Industries Ltd and Haldia Petrochemicals Ltd are expected to lead globally with the highest propylene capacity additions of 1.85 million tpy, 1.70 million tpy and 1.52 million tpy, respectively in 2030.

Source: Plastemart

Growing need for weight reduction, fuel efficiency to drive automotive carbon thermoplastics market

The automotive carbon thermoplastics market is majorly driven by the increase in demand for lightweight and fuel efficient vehicles, as these composite is one of the effective ways of reducing vehicle weight, improving fuel economy, and decreasing emission levels, as per a report by Transparency Market Research. High manufacturing cost associated with automotive carbon

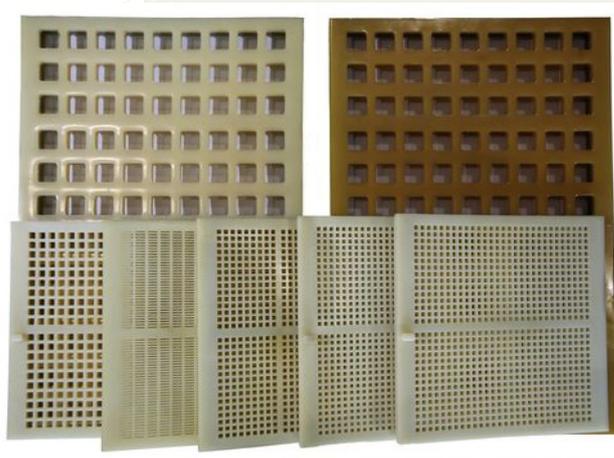
Thermoplastics is hampering its usage. High volume production of structural automotive components is estimated to create immense opportunities for the automotive carbon Thermoplastics market in the next few years. The automotive industry is focusing on reducing the weight of vehicles in order to improve their performance and efficiency, by replacing heavy metals with suitable lightweight materials, such as metal parts and welding with plastics and adhesives, respectively. Automotive carbon Thermoplastics, also termed as CF RTP composite, is used to manufacture lightweight durable automotive vehicles. It is a high cost product primarily used in the manufacture of premium and customized automotive vehicles. They are primarily employed in exterior automotive manufacturing parts such as hood, roofs, doors, body-in-white, and deck-lids. It provides properties such as toughness, strength, and lightness of weight to automotive manufacturing parts

Source: Plastemart

A 'cast PU elastomer' that can be injection moulded

Lanxess AG has developed a low free MDI-based cast urethane, which can be processed via injection moulding. Adiprene C930 is based on a low-free-monomer prepolymer, with viscosity lower than a conventional prepolymer, that delivers improved 'industrial hygiene,' Lanxess announced 4 June.

With high output rates and more complex geometries offered by injection moulding, Lanxess said the process was "highly efficient and cost-effective." The German materials supplier highlighted an application for the elastomer involving an injection moulding process developed by Autox.



The Korean company, it said, recently launched an injection-moulded vibrating screen for the mining industry, in which production time was cut to five minutes – from 35 minutes with pour casting.

The cast PU also offers “outstanding” abrasion resistance and rebounding properties, which will allow the screen to withstand highly demanding applications in mining, added Lanxess.

Citing field testing, Lanxess said its new cast PU can improve lifetime of the screen by up to three times than the market high quality reference.

Source: Plastics News Europe

Sibur, Gazprom acquire full ownership of PP producer



Russian giants Sibur and Gazprom Neft have acquired the full ownership of Omsk-based Poliom, one of the largest polypropylene manufacturers in the country.

Rated at 218 kilotonnes per annum, Poliom was co-owned by the Titan Group (50%) and a Sibur-Gazprom Nef 50:50 joint venture operation Sibgazpolimer. In a 19 July statement, Sibur said that Sibgazpolimer is now the sole owner of Poliom, which is to be operated jointly by Sibur and Gazprom Neft.

Launched in 2013, Poliom manufactures advanced products with a mix of some 100 grades. Gazprom Neft’s Omsk refinery supplies propane-propylene fraction to the plant, while Sibur helps distribute its end-products in Russia and the CIS. “Sibur is committed to developing its polymer business as the demand in Russia and all over the world keeps growing ahead of global economy,” said Sergey Komyshan, Sibur’s management board member and executive director

Following the build-up of its stake in Poliom, Sibur said it would focus on the development of the site as well as product distribution. “Sibur has a unique expertise to expand the facility’s polymer range and meet the demand of various processors through streamlined solutions,” added Komyshan.

The move is also an important milestone in Gazprom Neft’s long-term strategy, which is focused on developing petrochemical production, according to Levvan Kadagidze, head of the commercial directorate at Gazprom Neft. The integration of oil refining and petrochemical assets will help the company add value and boost its competitive edge, Kadagidze added. The Omsk polypropylene plant, according to the Titan Group, has “robust process control systems” with products that are ‘fully in line with world standards.’

Source: Plastics News Europe

LyondellBasell JV to add PP capacity in Thailand

LyondellBasell Industries plans to add more than a half-billion pounds of annual polypropylene resin production through a joint venture in Thailand.

LBI, based in Houston and London, will add about 550 million pounds of PP capacity through its HMC Polymers Co. Ltd. JV in Map Ta Phut. The line will be the fourth operated by HMC at the site. In a recent news release, LBI officials said that building the new unit will allow HMC to maintain domestic market share. The new line also aims to address projected 5-6 percent annual demand growth for polymers in Southeast Asia, they added. No date for the start of the new line was included in the release.

LBI owns 29% of HMC, with 41% owned by Thai petrochemicals maker PTT Global Chemical Public Co. Ltd. The remaining 30% is owned by independent Thai investors. PTT will provide most of the additional propylene feedstock that will be used by the new line.

Officials also said that the new unit will “be the most advanced unit in the world” using LBI’s Spherizone production technology. “Asia is one of the fastest growing regions in the world, with demand for polymers boosted by expanding populations, increasing individual wealth and urbanization,” Jim Seward, sustainability, technology and joint ventures vice president, said in the release. “Our technology provides solutions for the transportation of clean water through strong and long-lasting pipes and contributes to the preservation of food through packaging and films that improve portability, extend shelf-life and prevent contamination,” he added.

HMC President Martyn Tickner said in the release that the investment “will allow us to further develop our highly differentiated range of products, benefitting also from the innovation expertise of LyondellBasell as a joint venture partner.” HMC makes PP mainly for the domestic Thailand, China, Southeast Asia, Indian subcontinent and Australian markets.

Source: Plastics News Europe

The World's 2-Billion-Ton Trash Problem Just Got More Alarming

One by one, developing countries are refusing to import trash. Here are the ways the world is trying to deal with its waste. The stench of curdled milk wafted from a shipping container of waste at Malaysia's Port Klang as Environment Minister Yeo Bee Yin told a group of journalists in May she would send the maggot-infested rubbish back where it came from.



Yeo was voicing a concern that has spread across Southeast Asia, fueling a media storm over the dumping of rich countries' unwanted waste. About 5.8 million tons of trash was exported between January and November last year, led by shipments from the U.S., Japan and Germany, according to Greenpeace.

Now governments across Asia are saying no to the imports, which for decades fed mills that recycled waste plastic. As more and more waste came, the importing countries faced a mounting problem of how to deal with tainted garbage that couldn't be easily recycled.

"Typically, 70% of a shipment can be processed, and the other 30% is contaminated with food," said Thomas Wong, manager of Impetus Conceptus Pte, a Singaporean company that shreds locally produced plastic waste before sending it to recycling mills in Malaysia and Vietnam. Contaminated trash is sent to incinerators and landfills for a fee, but some recyclers "just find a corner and burn it," Wong said. "The smoke smells just like palm oil, so they hide in a plantation and light up at night."

Greenpeace investigations in Indonesia, Malaysia and Thailand revealed illegal recycling, open burning, water contamination and a rise in illnesses tied to pollution, the organization said in an April 23 report.

When China banned imports in January 2018, it started a domino effect. Shipments were diverted to Southeast Asia which soon became overwhelmed, forcing governments to take action. Malaysia announced a ban in October. Thailand stopped issuing import licences last year and will likely impose a ban in 2020, according to Yash Lohia, an executive director at Indorama Ventures Pcl, a Bangkok-based plastics producer and recycler. The Philippines said it is sending 69 containers of garbage back to Canada. Indonesia said it will tighten waste-import rules after discovering shipments containing toxic waste. India and Vietnam have also announced restrictions.

Malaysia's Yeo said garbage is still getting into the country in falsely declared cargoes, but the government hopes to stop the trade completely by the end of this year. As Southeast Asia stops accepting the material, companies will look somewhere else, said Wong at Impetus Conceptus. "I think Africa will be next."

Source: Bloomberg

Brückner Maschinenbau Technical innovations for the K 2019

New line concept for single-origin packaging solutions
Numerous new developments, also for speciality films

Innovations for the demands of a circular economy

Brückner Maschinenbau is working on a means to make films with the highest possible recycling capabilities producible on film stretching lines. The focus is on mono-material film with superior mechanical and optical properties, which will be able to substitute previous multi-layer films made from different materials. These are ideal for the use in new, single-origin packaging and guarantee good sortibility in waste separation and optimal recycling.



Combination of BOPE and BOPP production

For the K 2019 Brückner will introduce two completely new line concepts for the production of BOPE films (biaxially oriented polyethylene). Film producers can choose between a working width of 6.6 m and an output of 3 t/h, or a working width of 8.7 m and an output of 5 t/h. These are 5 layer concepts for an extended range of films.

The new lines also have the flexibility to produce BOPP films: Specialities such as UHB films and coated films for high-barrier uses alongside conventional packaging film. As the demand for innovative BOPE films is only now starting to develop, film producers will be able to react swiftly and flexibly to market trends.

New inline coater

Even if recycling stands at the forefront of a circular economy, new mono-material structures must fulfil the highest demands and must not be inferior to previous packaging films. This is why Brückner has developed a new inline coater for all BOPP and BOPE lines, installed in the line before the transversal stretching, it makes the production of extremely thin functional layers within the nano-range possible.



Due to the extreme thinness, the layers don't disrupt the sorting and recycling, but cater, for example, for an improved adherence during metallising and excellent barriers in combination with the equally thin but effective aluminium oxide coating.

The focus remains on raw material and energy saving. Despite all developments for the rapidly developing circular economy, Brückner Maschinenbau is keeping to its own ambitious objectives for a decreasing raw material usage and an increasingly minimal energy consumption during film production. Despite all legitimate demands

about recycling and reusability, the challenge of climate change and the reduction of the carbon footprint throughout the entire packaging production chain must not be forgotten. In the fight against climate change, we will still need plastic packaging that is produced in a resource-saving way.

Speciality film lines

Alongside stretching lines for the production of packaging films, machines for speciality films are becoming more important in Brückner's portfolio. The company will be presenting various innovations for the K 2019:

- New high-temperature concept for BOPP capacitor film – this is interesting, for example, for the use in electrical components installed near motors

- Lines for the production of stone paper based on BOPP or BOPE with a calcium carbonate proportion of over 60%: not only with good printability and waterproof, but also environmentally friendly in production
- Biaxially oriented polyester films (BOPET) for optical applications. Brückner's new, patent pending Relax System ensures homogenous film properties and thus high film quality and better processability
- BOPI (biaxially oriented polyamide) is perfect for flexible optical applications, e.g. flexible displays. The stretching ovens and systems need to be suitable for very high temperatures of up to 400° C, is in Brückner's new line concepts.

Battery separator films: New technologies for growing markets

In the field of battery separator film for lithium-ion batteries, Brückner Maschinenbau has made a good name for itself in the market with leading film manufacturers thanks to its successfully running lines. At the K they will be presenting:

- Optimised simultaneous LISIM technology
- For less edge trim and thus higher film gain
- For more flexibility in the stretching profile adjustment during operation: improved mechanical properties such as puncture resistance and optimised pore distribution for a longer lifespan
- Newly developed and patented relax chain for improved film properties in regard to battery safety
- 5.5 m line width – globally unique for higher efficiency
- Continued development of its own patented production process, the EVAPORE process, offering a more environmentally friendly alternative for the production of membrane films



India News

Industrial equipment maker Hillenbrand to buy Milacron in \$2 billion deal

Industrial equipment maker Hillenbrand Inc (HI.N) on Friday agreed to buy plastics-processing equipment maker Milacron Holdings Corp (MCRN.N) in a cash and stock deal valued at about \$2 billion, the companies said.

Hillenbrand's \$18.07 per share offer represents about 33.6% premium to Milacron's closing price on Thursday. Milacron shares jumped 23% to \$17.05 in before the opening bell. The acquisition expands Hillenbrand's portfolio into plastics technology and processing by adding technologies such as injection molding and extrusion, the company said. The deal will also expand Hillenbrand's reach in markets including construction, consumer packaging, automotive, electronics, medical and recycling.

The combined company is expected to generate annual revenue of about \$3 billion and free cash flow of more than \$325 million by 2021.

The deal, which is expected to close in the first quarter of 2020, includes net debt of about \$686 million. Milacron, which traces its history to 1860 as a screw shop, had filed for Chapter 11 bankruptcy protection of its businesses in 2009.

Source: Reuters

A professor made petrol from plastic and selling at half the price!

A mechanical engineer professor Satish Kumar aims to solve environment's biggest problem. He has converted 50 tonnes of non-biodegradable plastic into petrol. He is supplying this petrol to small and medium enterprises for Rs. 40 per liter which is almost half the price of the actual commercial petrol.

Though the product has not been tested for vehicles, it is used by industries for running the machines and that itself is a big success. Kumar claims that except for Polyvinyl Chloride (PVC) and Polyethylene Terephthalate (PET), all other kinds of plastics can be used to make petrol and no segregation.



He said that he made petrol with the help of a three step process known as plastic pyrolysis. "The process helps recycle plastic into diesel, aviation fuel and petrol. About 500-kg of non-recyclable plastic can produce 400 litres of fuel. It is a simple process which requires

no water and doesn't release wastewater. Neither does it pollute the air as the process happens in a vacuum," Kumar told a leading website.

Presently, his company is producing 200 litre of petrol a day out 200 kg of plastic and selling it to local industries for Rs 40 to 50 per liter.

Source: Times of India, Image Courtesy:
The Better India

Plastic industry urge govt to support MSMEs

The plastic industry, which is expected to touch Rs 5 lakh crore-mark by 2025, Wednesday urged the government to support the micro, small and medium enterprises (MSMEs) in the sector and not to increase import duty on raw materials.

The existing size of the plastic industry in the country is Rs 2.25 lakh crore employing 4.5 million people, All India Plastics Manufacturers' Association (AIPMA) said a release said here. The hike in import duty of raw materials will result in supply disruption and, in turn, will affect the cost competitiveness of 50,000 plastic processors in India.

AIPMA asked the government to increase the customs duty on finished goods to 20 per cent to stop the imports of cheap and unsafe materials to India.

Further, it said, there should be an imposition of anti-dumping or safeguard duty on import of cheap plastic finished goods and maintaining the minimum gap in customs duty between raw materials and finished goods at 12.5 per cent.

"The fast-growing plastics industry will help India become a USD 5 trillion economy, for which the government needs to support MSMEs in terms of good infrastructure, easy financing, and favorable regulatory policies," AIPMA President Meela Jayadev said. The industry experts also echoed the Association stands that the industry does not resist the government policy of environment protection, but firmly believed that the banning is not the solution.

The government has planned to ban single-use plastics by 2022, but phasing out and banning of specific products should be considered only after due process to understand 360-degree view has been completed, AIPMA said in its Budget proposal.

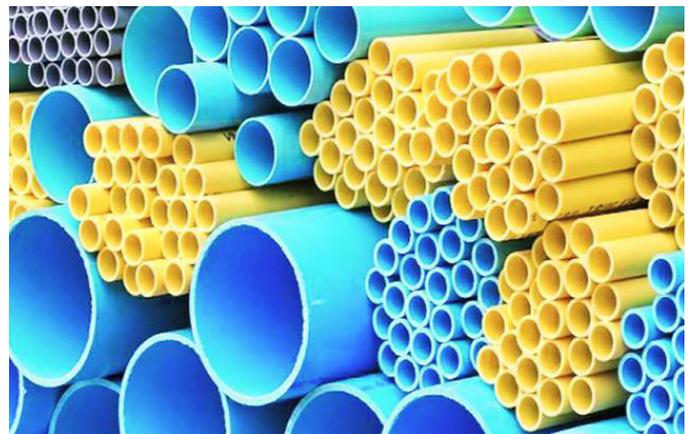
The emphasis should be on practical execution for solutions and contribution towards successful implementation by stakeholders across the value chain. Recycling facility should be at every district, while collection

should be done at Panchayat level. Similarly, municipal corporations should connect with PROs, while awareness programmes should be in place," AIPMA chairman environment committee Hiten Bheda added.

Source: Deccan Herald

Don't raise import duty on raw material: Plastic industry urges govt

The plastic industry, which is expected to touch Rs 5 lakh crore mark by 2025, from the existing size of Rs 2.25 lakh crore, has urged the government to support micro, small and medium enterprises (MSMEs) in the sector and not to increase import duty on raw materials. Industry leaders have strongly opposed the proposal of the Indian Chemical Council to hike import duty on raw material as it could lead to supply disruption and, in turn, will affect the cost competitiveness of 50,000 plastic processors in the country.



They have asked the Centre to increase the customs duty on finished goods to 20% to stop the imports of cheap and unsafe materials to the country. They have also demanded the imposition of anti-dumping or safeguard duty on import of cheap plastic finished goods and maintaining the minimum gap in customs duty between raw materials and finished goods at 12.5%. Increasing customs duty on raw material will lead to supply disruption and in turn affect cost competitiveness of 50,000 plastics processor in India.

According to AIPMA, the Extended Producers Responsibility (EPR) should not be imposed on processors manufacturing less than 1,000 metric tonne per annum and turnover of Rs 25 crore.

EPR contribution of processors should be in proportion to the value addition and MSME's should be absolved of all compliances since it is difficult for MSME's to comply with proposal drafted by MoEF. The industry strongly supports the TUF proposal submitted to GOI and cap-

ital investment subsidy of 10% for plastics processing machines and 30% for plastics recycling machines. The Government has proposed making BIS standards of certain items as mandatory, which are presently voluntary in nature. They propose to initiate action under section 16 of the BIS Act 2016 which empowers the Central Government to make BIS standard mandatory in the public interest. The association said that while the industry supports Government's concern of importing safe and quality material, the government should avoid mandatory specifications on raw material or fix them at wide tolerance after due consultation with the Indian plastic processing industry.

The government plans to ban Single Use Plastics by 2022. The industry is aligned towards Environment protection. Pointing out that banning is not the solution, the association suggested phasing out and banning of specific products/ group of products should be considered only after due process to understand 360 degree view. Source & Image Courtesy: Financial Express

IPMMI hosts seminar on packaging and sustainability

The Institute of Packaging Machinery Manufacturers of India (IPMMI) hosted a seminar on sustainability in packaging at Chembur Gymkhana, Mumbai recently. The event was attended by packaging industry professionals, including government officials, consultants, associations, and trade fair organisers. Samir Limaye,

president, IPMMI, welcomed to the members, guests, special invitees and speakers. Makdum Jahan, IPMMI committee compared the event.

The event provided vital insights for packaging machinery manufacturers and brands, to address the long-standing debate on plastic and its sustainable alternatives. Marzban Thanevala, former senior VP, business development and marketing, Huhtamaki PPL, raised an interesting point on the way plastics are portrayed. He said, "The optics around plastics and the images that flash around the world are demeaning the core properties of plastic. We must understand that, as of today, there is a huge momentum in terms of talking about regulations. As far as lawsuits are concerned, we cannot just say that we are all fine." He also spoke about the packaging regulations in India, which included that all flexible packaging laminates in India got under the 'recyclable' category in 2018.

Thanevala also highlighted the opportunities for FFS packaging machines with polymer laminates from the same family, and the new packaging machines to replace the current lines with retrofits and modifications. Highlighting the regulations regarding multilayer plastics he added, plastics are being directly or indirectly used in all forms of packaging.

According to Dr S Radhakrishnan, director - research development and Innovation, MIT, over 500-billion plastic bags are used per day worldwide, out of which, the



plastic generated in India is 15,342-tonnes per day. “The problem lies in segregation; a separate bin for compostable and recyclable waste is a must,” he said.

Radhakrishnan added, “Sustainability, green industry and green technology are concurring. If we go into the material aspect of all this, flexible packaging market is growing. And in fact, it is so much so that it is expected to reach 250-billion dollars by 2024 in the packaging sector alone.” He stated that India is the first country to use milk pouches, and the needs packaging of perishable requires development. “Over 40% of plastics are used in packaging and recyclability is the only choice,” he said.

Source: PrintWeek

Glass fiber PP composite sheet production starts in India

Renolit GOR S.p.A., a leading manufacturer of thermo-plastic and thermoformable materials for the global automotive market, has responded to the growing global demand for Renolit Tecnogor, a glass fiber-reinforced, polypropylene-based (GF-PP) lightweight thermoplastic composite material.

The company has added a new production line to the APPL GOR Plastics India Pvt. Ltd. plant to serve customers in India and the Asia Pacific region. The new extrusion line, located in Pune, near Mumbai, is the first facility outside of Europe able to produce Renolit Tecnogor thermoformable sheets and rolls, along with other lightweight products in the Renolit Composites range.

A key feature of the new production line design is the inclusion of Renolit’s patented extrusion processing technology for manufacturing what it describes as a 100% recyclable thermoplastic composite material. High-quality 3D trim parts can be consistently thermoformed in a high productivity ‘glue-free’ one-step-process, which reduces production costs.

Thanks to its unique production process, Renolit Tecnogor reportedly possesses superior stiffness and impact performance. The patented fiber embedding extrusion technique also makes Renolit Tecnogor a clean, very safe material to use on the shop floor and handle post molding. This is because all the glass fibers are completely encapsulated in the PP polymer matrix during extrusion, so there are no free-floating fibers in the air during lay-up or exposed on the molded part surface. This will be a major safety benefit to customers in the Indian market, which currently mainly uses glass fiber mats to produce composite molded parts.

The versatile new line can also produce Renolit Deep-Stock, Renolit Flexigor, plus Renolit Wood-Stock, a wood-fiber composite which was the only Renolit product manufactured in India until now. “For many years we could only offer the classic Renolit Wood-Stock sheet range. We are very pleased to be able to now offer our clients a wider range of sustainable products which offer solutions to real problems the market is facing using traditional glass fiber mats”, said Rahul Chivate, General Manager of APPL GOR Plastics India. The Renolit Composites products now being produced in India are primarily aimed at Tier 1 thermoformers supplying automotive OEMs in India and the Asia Pacific. They offer vehicle producers safer and more environmentally friendly material solutions to cost-effectively fabricate, automotive trim parts.

Source: Plastics Today



Australia

Trade At a Glance

Economic overview

Australia is ranked among the strongest of advanced economies in the OECD and 13th largest in the world. The country enjoys low unemployment, low inflation & a highly educated and skilled workforce. Australian economy is well diversified and draws strength from agriculture, mining, energy and services. The country is in its 27th year of consecutive annual economic growth.

2018 was a tale of two halves for Australia's economy. While the economy grew at an annualised rate of 3.8 per cent over the first six months of 2018, which is well above average, buoyed by strong contributions from the household sector and net exports, growth slowed significantly over the second half of the year, falling to an annualised rate of 0.9 per cent, the lowest rate since the second half of 2008, amid the global financial crisis.

However, increased government spending on transport and other infrastructure across Australia's fast-growing cities, as well as the ongoing rollout of a disability support programme is expected to support growth in addition to one-off factors like the devastating drought conditions that stifled net exports, to recede, and increasing production from a number of new LNG processing facilities, which will support future export growth.

As of July 12, 2019, the S&P's rating for Australia is AAA; Moody's rating stands at AAA; and Fitch has a reported rating of AAA.



Trade Agreements

Australia currently has ten FTAs in force, with New Zealand, Singapore, Thailand, US, Chile, the Association of South East Asian Nations (ASEAN) (with New Zealand), Malaysia, Korea, Japan and China.

India has been negotiating a bilateral Free Trade Agreement, officially known as a Comprehensive Economic Cooperation Agreement (CECA), covering trade in goods, services, investment and related issues. The Australian Government has also been putting its weight behind enhancing economic ties with India once the proposed CECA comes into force, it could pave the way for strengthening trade relations between the two countries.

Trade overview

India and Australia share cordial trade relations and engaged in bilateral merchandise trade worth USD 17.9 billion in 2018. During the year, India's exports to Australia were valued at USD 3.7 billion in comparison to India's imports worth USD 14.2 billion resulting in a trade deficit of USD 10.5 billion to India.

Source: IMF, TradeMap

Economic Indicators		2016	2017	2018
Nominal GDP	USD Billion	1,268	1,386	1,418
Nominal GDP per capita	USD	51,983	55,958	56,352
Real GDP growth	%	2.8	2.4	2.8
Total population	Million	24.4	24.8	25.2
Average inflation	%	1.3	2.0	2.0
Total merchandise exports	USD Billion	189.6	229.7	253.8
Total merchandise imports	USD Billion	189.3	221.4	227.3

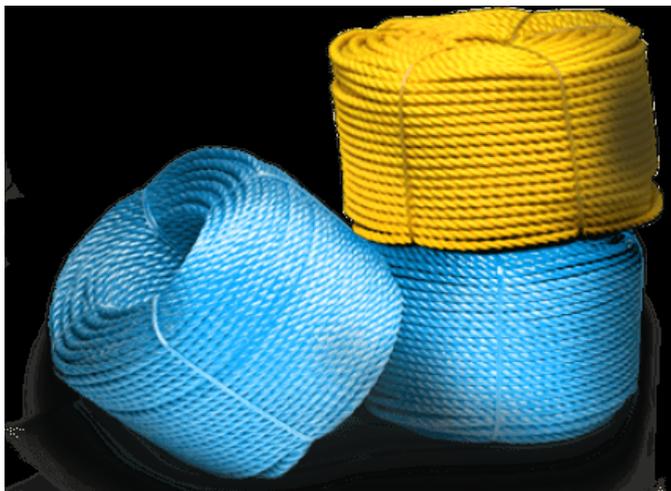
Within plastics, India's position is seemingly strong with plastics exports worth USD 108 million to Australia and a trade surplus of USD 88 million to India.

India's plastics exports to Australia largely comprise of:

- Woven Sacks/FIBCs (22.5%)
- Plastic sheets, films, plates etc. (17.4%)
- Raw materials (14.9%)
- Packaging items (9.7%)



Australia's annual plastics imports are valued between USD 11-12 billion. Plastics imports in Australia are largely catered to, by China (38.7%), United States (12.3%), Thailand (4.2%) and Germany (3.9%). India meets 1.1% of all plastic imports of Australia.



India, however, enjoys a good standing in the import of some of the plastic products including:

- Woven sacks FIBC-Market share of 23.3% share (Rank 2)
- Ropes, twines, cordage - Market share of 10.5% share (Rank 3)
- Nets - Market share of 5.2% share (Rank 3)
- Writing Instruments - Market share of 2.4% share (Rank 8)

High Commission of India, Canberra

“ Australian market for imported manufactured products is significant. However, it is also worth noting that a few supply-chains dominate Australian market for almost all products. The key to entering the Australian market meaningfully, would be to engage these dominant market players. This is true for all product lines, including plastic products.

Overall, Australia is a legalistic society, with substantial emphasis on processes, more so in business. Indian businesses will stand well to keep this aspect of the Australian society in view, should they choose to enter the Australian market.

Australia has very well developed institutions in place, with all the three rating agencies giving it AAA. The tradition of peaceful transition in political leadership of the country, combined with well planned exploitation of its immense natural resources endowment and effective management of human resources has resulted in 28th year of uninterrupted growth. This is a record of sorts for any developed nation over this period. It is also important to note that Australia's economy is much more broad based than we sometimes credit it for. We sometimes tend to oversimplify it as a Mining and Resources based economy. Given the contributions of Australia's financial services industry (9.5%), construction (8.1%), health care and social services (7.9%) and professional, scientific and technical services sectors (7.4%) to Australia's Gross Value Added are larger than the contributions from its mining and manufacturing industries (6.4% and 6.3% respectively), this oversimplification is misled.

Notwithstanding the current phase in the housing market, construction (both housing and infrastructure) and mining will remain major drivers of the economy. Indian suppliers of plastic products can also exploit the huge market offered by Australia in household goods segment. A concerted and sustained effort by Plexconcil and its members is the need of the hour for a visible improvement in India's market share in the sector.”

High Commissioner, Dr. A. M. Gondane
Canberra
July 24, 2019

Trade Potential

Our internal research indicates that India's plastics exports to Australia has the potential to grow to USD 5.0 billion. Product categories, within plastics, that have immense export potential to Australia include:

Product Category	Australia's import from India	Australia's import from world	India's export to world	Trade potential for India
	USD Million	USD Million	USD Million	USD Million
Plastic raw materials	16.34	1,838.39	4,498.11	1,207.74
Other moulded and extruded items	10.32	1,174.18	619.88	587.54
Plastic sheets, films, plates etc	19.52	936.47	1,344.62	553.32
Medical disposables	3.63	1,809.87	534.33	530.70
Packaging items	6.58	877.04	743.21	500.65
Other plastic items	22.45	2,033.39	434.12	293.87
Houseware	2.87	559.34	181.06	178.19
Electrical items	3.40	361.78	182.04	166.82
All types of optical items	1.28	764.49	472.15	163.02
Pipes, tubes, hoses and fittings	6.43	363.76	188.12	115.51

Source: TradeMap, Plexconcil Research

India's trade with Australia stood at \$ 30.4 billion in 2018 and that there is substantial potential for India to increase its merchandise export to Australia. The two countries enjoy excellent relations and there is a positive trajectory for growth across a wide spectrum of industries. The CECA presents an excellent potential for the two countries and one can expect increased cooperation in both, bilateral trade in goods and services; as well as investments.



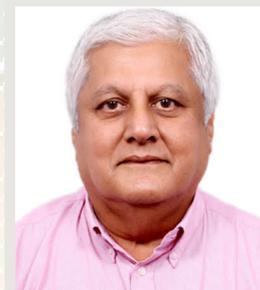


Ravish Kamath
CEO, Big Bags
International
Pvt. Ltd.

Exports to Australia is generally a very fine experience for the Indian exporters. Simple procedures, simple dealing as well as clear and prompt communication are factors most conducive to doing business with the country. India reported plastics exports worth USD 108 million to Australia in 2018 and major plastics exports to Australia during the year were Woven Sacks/FIBCs (22.5%) followed by Plastic sheets, films, plates etc. (17.4%); Raw materials (14.9%); and Packaging items (9.7%). India has a good standing in some of the plastic product imports by Australia and in the Woven sacks FIBC, our market share stands at 23.3% share ranking 2nd amongst countries exporting to Australia. Ropes, twines, cordage enjoy a market share of 10.5% share (Rank 3); Nets have a market share of 5.2% share (Rank 3); and Writing Instruments have a market share of 2.4% share (Rank 8).

As an export destination, Australia also has the distinction of being one of the safest in terms of payments that comes as a big relief for our exporters. Challenges that we face within the FIBC category, is largely due to the fact that Vietnam which is a major exporter to Australia for the category of products is able to offer much more competitive pricing than India. Hence, our export growth and realization of our trade potential becomes largely dependent on the ability of the Government to ensure better flow of credit, an increase in MEIS and greater support on logistical or transport costs to improve our competitiveness in the Australian market.

Our research indicates that India's plastics exports to Australia has the potential to grow to USD 5.0 billion and product categories, within plastics, that have immense export potential include Plastic raw materials, Other moulded and extruded items, Plastic sheets, films, plates etc., Medical disposables, packaging, etc.



S. Ramakrishnan
MD, BuildMet Fibres
Pvt. Ltd

India has been exporting to Australia FIBC bags and although the demand has not increased much, there has been a shift from Vietnam and China.

Like Europe, the market is very organized and business is conducted with complete transparency and utmost professionalism. Australian importers are very particular about quality and delivery commitment. This makes it especially good for exporters who are able to meet the required standards of the market as well as have the right infrastructure in place to ensure that orders are promptly met. There is little space for players who may be unable to keep their commitments to quality and service and hence it is an open playing field for exporters with the experience in servicing developed markets or those with a complete professional outlook to business.

With growing plastic waste in Australia, the country is becoming increasingly stringent with the practice of plastics waste disposal. There is a nearly 80% ban on single use plastics in Australia and importers and industries are urged to avoid blatant imports or use of plastics without a firm plan in place for its disposal. As currently, FIBC bags are buried in landfills, it is a cause of immense environmental problems, and if a solution is not found at the source itself; being raw material inputs and manufacturing, such anti-plastic policies may actually be counter-productive to our efforts to increase exports to Australia. In the long term, it is imperative that, we as manufacturers, find ways to tackle the issue at the root in order for us to sustain our exports and increase our export volumes. The need to tackle the issue of creating environmentally safe plastics applies to our own country as well, which in itself is a huge market for our industry.

On the domestic front, in the Southern region particularly, power outages are a common occurrence in the industrial zone and we lack of government support to create world class infrastructure. This not only impacts our production but also our competitiveness. Logistical challenges, high inward costs and GST refunds continue to be a concern. Delayed refunds lock the crucial finance needed to service our businesses and immensely impacts capital movement. Lower cost of finance and availability of raw material at prices on par with international markets continues to dominate our wish list.



A lot can happen inside these three words!

By Maulik R Shah, Co-Founder & CEO
FX Advisory | Consulting | Outsourcing

Guess what is the common expectation people have from us as Forex advisor?

What is the view? What do you think rupee will be in next 1 year?

What do you think will happen to our currency by December?

Next 1 month "kya lag raha hai?" Will current government policies lead to currency appreciation? Or will global trade war lead to weaker currency?

We do understand the eagerness to know the market view from market experts and take actions accordingly. However, if you see three words on the wall "Forex Risk Management", there is too much focus on word "Forex", view on forex as compared to other two words i.e. "Risk and Management"

The risk management works on the following premises:

1. Understanding of the business risk holistically, interlinkage with global markets and other players in the industry
2. Identification of risk exposure in respect of both time and quantity
3. Management of the exposure with appropriate instruments
4. An executable framework and measurement of management actions

Let's now focus on other two words. To begin with, let's try and understand word "risk" from various dimension. Let me place a question here.

Who are exposed to Forex risk?

1. A standard reply will be – Importers, Exporters, Foreign Currency Borrowers and Investors in Foreign Currency.
2. Let me say that each and every company is directly or indirectly exposed to FX risk. And why just companies, even me and you are exposed.
3. We all drive a car (or car drives us). There is a liquid fuel on which a car drives. Fuel price is linked to International crude price and exchange rate. Fuel spent in a year may range from Rs 50,000 to 200,000 depending on car usage. That's an exposure on forex.
4. In addition, almost all of us are "consuming" mobiles (leave aside other electronics) and almost all good brands are imported. Consuming because we change mobile frequently. So add around Rs 50,000 every year towards electronics and with other miscellaneous items, total exposure on forex for an individual will come to whopping Rs 3 lacs.
5. In Mumbai, average cost of running a family of 4 is around Rs 10-15 lacs a year. So, 20-30% of your cost (Rs 3 Lacs) is exposed to exchange rate and when exchange rate moves by 10% which is quite normal, your expenditure can increase or decrease by 2-3%. That is impact on the bottom line.

The picture is no different for any firms irrespective of size. Because when currency moves by 10%, percentage impact on EBIDTA (profitability) is same.

So the key point to remember is that every single entity is directly or indirectly exposed to FX risk. It may be visible in some cases (like imports / exports) or it may not be visible like iceberg. It is therefore critical to assess risk in its entirety.

CASE STUDIES

Case Study 1

Company is a publishing house. The company receives export orders, to be delivered over next 1 years. Add credit term, so overall time from confirmed order to realisation can be 15-18 months. That's only sales side dynamic. Company was hedging to protect their sales realisation.

Whether company has exposure on purchases? The general understanding is "NO" because purchase is all from domestic market. When we studied their business and operation, it was observed that even on purchase side, company is exposed to FX risk.

How? Company buys raw materials from local mills. Local mills declare price based on international price and exchange rate. With any change in either international price and or exchange rate, local price will change.

Therefore, exposure on buys side can't be ignored even if its from local market.

Equally important is to identify "recognition date" for the exposure. The recognition date for exposure identification can defer from business to business. Unlike accounting standards, where recognition of revenue or income is linked with an "event" (for eg event of passing on title of goods), exposure recognition is linked with "business dealings". And dealing can defer from business to business.

Case Study 2

Company in an oil lubricant industry opens an Import LC for oil consignment. The shipping time is 1 month and credit period is 3 months. Since it's import LC, one may tempt to conclude that it is an exposure that needs to be recognised. Let's look at subsequent business dealings that may change recognition.

Post receiving the consignment, processing time is 1 week and then the product is sold in the local market. Sell in the local market is linked with international price and exchange rate. So when at the time of sell in local market if the prevailing exchange rate is say 69, company will derive price accordingly. This makes exchange rate at the time of LC opening irrelevant (though import is committed) because business design clearly indicates that there is no exchange rate risk till it is sold in the local market.

To summarise, all direct and indirect risk needs to be properly identified and needs to be recognised on "time" based on business dealings, well before we think of "managing".

Now let's come to the third most important word "Management". *"Management is the process of dealing with or controlling things or people."*

What is required for managing FX risk?

In above example, Authorised Dealer (AD) bank of a client without even understanding the business dealing, insisted client to hedge the exposure. Imagine at the time of opening import LC, the exchange rate was 71. Client is forced to hedge by their bank. After 1 month when shipment arrives, the rate is 69 when client sells in the local market, resulting into loss on hedge. Hedging at 71 was creating risk rather than managing risk. This was due to rigid guidelines of the AD bank.

That brings into highlight one key aspects of "management" i.e. banking relationship. Then there are other various factors like use of hedge instrument (forward, future, options) and selection of appropriate instrument to fulfil business objectives. In the entire management, it's important to define roles and responsibility, accountability of various process, internal control etc.

To conclude the discussion on the "three words", Forex Risk Management is less of forex and more of risk and management. It's less of art and more of science. Risk management as a function that relies on policy and process, has better chance of fulfilling business objective - stable (less volatile) EBIDTA, certainty of cash flow. For any company aspiring to grow, focus on policy & process creates a strong and deep routed foundation.



Maulik Shah, Co-Founder & CEO, Almus Risk Consulting, a qualified Chartered Accountant, Cost Accountant and Chartered Financial Analyst has over 22 years experience in the field of finance. He is a rank holder in Inter CA, Final CA and Final CFA exams. He has experience in various fields like Banking, Treasury, Risk Management, Project finance, Management Audit. He began his career in 1996 with Mahindra & Mahindra where he looked after the Cost & Financial aspect of SUV Scorpio. He was there for 5 years. Then he worked for Rosy Blue (India) Pvt Ltd, renowned company in Gems & Jewelry sector. He was CFO of the company till 2012. As CFO, he was accountable for managing finance, accounts function apart from risk management on currency, & commodity (gold) especially for its subsidiary companies in Jewelry sector.

Almus was started in August 2012. He is the Co-Founder & CEO of Almus, a company formed to offer advisory and outsourcing services in the field of financial risk management. Almus partners with corporate in sustaining their competitive advantage by managing currency, commodities & interest rate risks. As CEO, he is accountable for strategy, devising policy, & performance measurement.

He is on advisory panel of GJEPC (Gems & Jewelry Export Promotion Council) for Banking and Treasury. His article was a cover story in "Solitaire" July 2015 issue, one of the leading magazine in Gems & Jewelry industry. He has been a speaker on the subject of banking & foreign exchange risk management, in various forums namely Eurofinance, FICCI, iForex, CA Study Circle. Almus provides Complete FX Solution – From advisory to execution & measurement, From setting process to training team members.



Writing Instruments

The Writing Instruments sector today has become more of thinking process of new fads and development which are considered to be the key driver to its progress. A sector which was once a prerogative of a few major players, has today, become a highly cluttered market and even though in today's digital era where internet and cell phones dominate the market, there is no substitute for writing instruments. And as with many growing industries, the writing Instruments industry continues to flourish despite its highly competitive nature.

The Indian writing instruments industry presently consists of 15 large-scale, 100 midsize, and 900 small scale manufacturing units with a total production capacity of over 10 million units on a daily basis. In terms of exports, India was not considered a major export player until now because of high domestic demand. However, with the industry planning to expand in terms of manufacturing, supply and infrastructure, exports are set to become an important part of the industry.

Writing instruments panel is amongst the smaller product panels of the council and comprises of 27 commodities at 8-digit HS code level. Major product segments within this panel include – Ball point pens with liquid ink (for rolling ball point pen); Other ball point pens; & Felt tipped and other porous-tipped pens and markers, among others.

The worldwide import of Writing Instruments is estimated above USD 6 billion.

- In 2018, top-5 exporting countries of Writing instruments were: China (26.9%), Japan (13.8%), Germany (13.0%), France (6.2%), and Mexico (5.9%).
- Likewise, top-5 importing countries of these products were: United States (17.5%), France (6.2%), Germany (5.8%), Mexico (4.8%), and United Kingdom (4.4%).

India was ranked as the 7th largest exporter and the 28th largest importer of Writing Instruments in the world and major destination countries for export of Writing Instruments from India include, United States (20.1%), Thailand (5.8%), United Arab Emirates (4.9%), Bangladesh (3.0%) and Mexico (2.8%).

India's export of products under the Writing Instruments panel was valued at USD 209 million in 2018.



Panel of the Month

Product categories within the Writing Instruments panel that have contributed significantly to the panel's growth include:

HS Code	Product Description	2015	2016	2017	2018
		USD Mn	USD Mn	USD Mn	USD Mn
96081019	Other ball-point pens with liquid ink (for rolling ball pen)	111.1	122.1	102.8	120.2
96082000	Felt-tipped and other porous-tipped pens and markers	22.3	19.1	19.1	22.5
96089191	Other nib points of metal	2.2	6.6	13.2	12.0
96086090	Other refills for ball point pens	3.3	3.6	3.0	4.0
96086010	Refills with liquid ink (for rolling ball-pen)	0.3	0.3	0.3	1.4

Source: Ministry of Commerce & Industry, Plexconcil Research

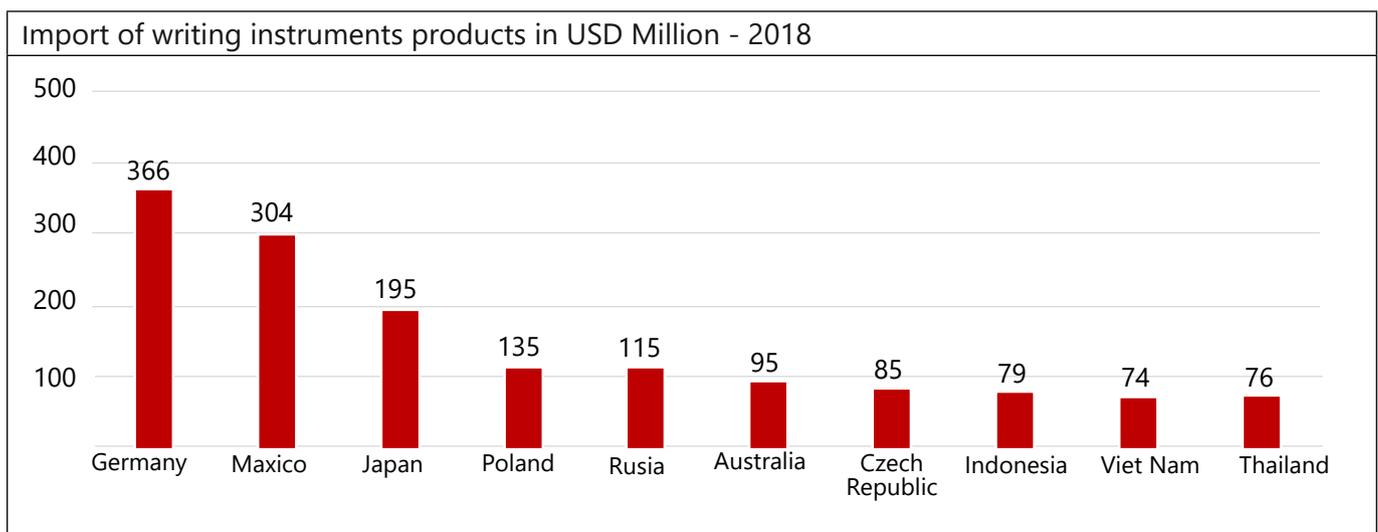
While India exported Writing Instruments worth USD 209 million to the world, its import in the same category stood at an estimated USD 72 million in 2018. China has been the major supplier of Writing Instruments to India supplying 46% of all such goods in 2018.

Product categories within the Writing Instruments panel that have contributed to the panel's import growth in India include:

HS Code	Product Description	2015	2016	2017	2018
		USD Mn	USD Mn	USD Mn	USD Mn
96089199	Other nib points of non-metal	11.4	11.3	13.0	16.6
96081099	Other ball-point pens without liquid ink (for rolling ball pen)	9.5	11.3	11.3	12.0
96086090	Other refills for ball point pens	3.5	4.0	3.9	6.4
96081019	Other ball-point pens with liquid ink (for rolling ball pen)	3.3	1.8	2.9	6.2
96082000	Felt-tipped and other porous-tipped pens and markers	1.8	1.9	2.6	3.5

Source: Trade Map, Plexconcil Research

Our internal research indicates that India's writing instruments have immense potential for growth in destinations such as Germany, Mexico, Japan, Poland, Russia, Australia, Czech Republic, Indonesia, Viet Nam, and Th



Major players in the segment in India include Linc pen & plastics, GM Pens International, Flair pen, today's writing products, Rotomac pens, Add pens India, Sheffield, Stic pens, Cello, Luxor writing instruments, Montex and Lexi international.

As global brands found their way into the Indian market either through distribution tie ups or have entered into manufacturing arrangements with Indian producers, the industry witnesses a big gain. Opening up of the market and product improvement including brand building have resulted in not only expansion in exports and growing domestic segment, but also the contraction of the small and informal producers which thrived under protection policy for the small scale sector and growth of the organized segment.

Industry Speak



Vimal Rathod
MD, Flair Writing
Industries Ltd.

In your opinion, how has the writing instrument export segment performed in the last year?

Given that the disposable ball pen industry is a low cost product, there is always a demand for the same. We have seen gradual growth of exports that albeit slow, continues to move in a positive direction.

Which international regions and/or countries have witnessed increased demand for these products from India in the past year? Which regions or countries, in your opinion demonstrate export growth potential?

The Middle East, USA and Latin America have witnessed a growth in writing instruments demand. Middle East especially is an important market for our products and while sanctions on some of the other countries in the region have had some impact, we expect good growth in the coming years as well. The primary reason being that the Middle East does not have any production facilities for our prod-



uct category and hence will continue with the import of writing instruments.

What are the main drivers for growth within the export segment in India?

Innovation, good quality and competitive pricing. Indian manufactured pens are considered far more reliable as we maintain the consistency in the quality of our product exports, unlike competitors from other countries. The standardization in the quality of our products is mainly what gives us a competitive advantage and drives our growth.

In your opinion, how has the digital writing instrument product segment impacted the traditional writing instruments?

Despite digitization in even more developed markets such as USA, Europe, Japan, etc, the use and hence export of traditional writing instruments has had almost no impact. Exports though slow, continues to grow as there still remains a huge demand for the product.

In your opinion, does India lag behind top exporters of writing instruments like China, Japan, Germany and France? Why?

Foremost, India lacks in terms of the scale of operations in comparison to countries like China. Despite our growing capacities, we still fall behind. As compared to European and other international markets, India does not have indigenous, internationally recognized or established brands. International brands demand a premium as they carry a brand value that our products do not. Due to densely populated nature of our market place, no Brand value is generated. Most JVs with international manufacturers in India continue to sell under the names of the international brands and not in any Indian brand name. We unfortunately lag in that space.

What do you think is the strength of Indian manufacturers of writing instruments?

Consistent quality and competitive pricing. We are able to constantly deliver the best quality products at very competitive prices. Only India and China have the capacities to provide products at the cost that we do. Our edge over China is definitely, the quality aspect.



Panel of the Month

What are the new innovations that one may expect from the segment in coming times?

The last breakthrough that our industry actually witnessed was the introduction of the Quick Dry Gel Pen technology. Since then we have continued to make some modifications and refinements to improve the quality and today, we have ball point pens with low viscosity inks that give the user the experience of gel pens. Besides this, so far there has been no major innovation in this segment.

What are the challenges faced by exporters in your category?

The withdrawal of GSP by USA has been one of the factors that has impacted our exports. Besides, sanctions levied on countries such as Iran, Yemen, Somalia, Cuba, etc, as well as Anti Dumping duties in Egypt, Turkey and Sri Lanka also challenge our exports today. Removal of these sanctions would definitely promote growth of our exports in these markets.



What is the kind of additional support, in terms of policies, infrastructure, etc. that you believe that the industry should receive from the Govt for the growth, expansion, and improvement of the segment?

Our industry is a labour oriented industry that provides employment to millions of people in India. We also have one of the largest female work force in the country. However, our industry is not given due recognition as a labour oriented industry like leather, handicrafts, etc which enjoy numerous Government benefits, but which we are denied. We believe that given the composition and type of work that our industry entails, we should be recognized as a labour intensive industry and accorded benefits accordingly.

What would be your recommendation for an accelerated growth of this industry?

Countries such as China have numerous benefits that empower the pens manufacturing and export segment and we believe that if our industry is to grow and compete with

China in terms of production and export capacities, we should have a similar framework for us in India too. Licenses, benefits for setting up manufacturing units and expansion of production facilities would prove very advantageous to our industry while also providing employment opportunities for more people.

In fact, the recent GST structure has brought the segment in the slab of 18% / 12%. However, as a tool for education that is significant to the country's growth, the segment has to be relooked at and needs to be considered under 5% slab.



**Amit Pal, Director
Kolor Impex**

In your opinion, how has the writing instrument export segment performed in the last year?

Despite the economic slow-down globally as well as varying holidays seasons across markets, the writing instruments exports experienced overall 7% growth in the last financial year. However, the Eastern region recorded negative growth of -4% for the Jan – March 2019 quarter. Political instability in countries in African regions is another

factor that has led to a slow progress. The overall exports have not been very different from FY 2017-18. Nevertheless, with educational institutions starting their semesters in the coming months, we expect exports to pick up again. Being a seasonal purchase, our shipments are closely linked to holiday seasons and school semesters.

Which international regions and/or countries have witnessed increased demand for these products from India in the past year? Which regions or countries, in your opinion, demonstrate export growth potential?

The top ten importing countries of Indian made Ball pens are - USA, THAILAND, UAE, ALGERIA, INDONESIA, MEXICO, MYANMAR, NEPAL, BRAZIL and GERMANY. As most Ball pens are a low cost commodity, we have seen much demand from Indonesia, which perhaps is also the 4th most populous country in the world with nearly 27-28 crore people. India is one of the largest exporters to Indonesia and our products enjoy excellent reputation in the country. Thailand, Vietnam, and countries in East & South East Asia are promising markets for our segment considering their proximity to India. This eases some of logistical issues as exports to the region costs less and we are respected for the quality and pricing of our products.

What are the main drivers for growth within the export segment in India?

Quality. Followed by Price. In the case of entry level pens, the Indian exporters have achieved a balance in the quality of products, especially with the tips and ink. We have achieved an attractive pricing that delivers the desired quality without any compromise.

In your opinion, how has the digital writing instrument product segment impacted the traditional writing instruments?

More developed countries such as Japan, Germany, Taiwan etc have replaced writing instruments with digital media pads and LED pads etc. However, globally this is still a relatively smaller segment and hence it has not had much impact on the entry level pens. The ball pens category continues to grow and there is always a demand for the same, especially from more traditional markets. Fancy pens that are typically exported by China have also been gaining popularity in South East Asia.

In your opinion, does India lag behind top exporters of writing instruments like China, Japan, Germany and France? Why?

Indian exports of entry level pens or ball pens is very well-respected world over for the quality that it offers. Our exports lag in the fancy pens category, which is primarily the domain of China which dominates the market by offering these fancy pens in fancier packaging. Our industry is yet to make inroads into this aspect. Broadly speaking our packaging is perceived as unattractive and this can make a difference amongst certain segment of buyers. Considering the high cost of packaging, our industry has, for obvious reasons, held back in this segment and we are unable to compete with the likes of China. With regard to Germany, Japan, etc. the focus is on better technologies and hence the products are quite high priced. In India, famous brands such as Flair, Linc, Cello do export the higher priced pens, and these are comparable to international standard



products.

What do you think is the strength of Indian manufacturers of writing instruments?

Value for Money. Pens manufactured in India boast very high quality tips and ink that are comparable to global standards. And yet, we have maintained very competitive pricing that makes our products very popular and are placed even much ahead of China in many regions across the globe.

What are the new innovations that one may expect from the segment in coming times?

The industry has been actively pursuing R&D especially in the tips and ink segment. Manufacturers of inks and tips have been working on production of low viscosity inks with aim to bring down the cost of inks. Our Gel inks are at par with German inks today. Tip manufacturers have also adopted latest technologies and Swiss machines to further enhance the quality of tips and consistency in the quality of products. The industry segment has been working cohesively to improve the sync between the metal element of the tip and chemical elements of the ink to ensure that the final product delivers a smoother writing experience.

What are the challenges faced by exporters in your category?

- Unlike luxury pens that are high priced, disposable ball pens and common ball pens that are much lower priced are dependent on large volume orders. This can be a challenge many a times as revenues much justify quantity and cost of exports.
- Polymer pricing is volatile and the fluctuating pricing of PP (RAFIA), ABS/SAN and raw materials have a large impact on our businesses.
- The largely scattered nature of the industry, absence of a manufacturing cluster in the Eastern region, lack of State Government incentives to boost our industry are also factors that impact exporters.
- Lack of proper infrastructure and logistical challenges result in exporters having to bear higher cost of shipment that ultimately impacts our bottom lines.



Panel of the Month

Despite these challenges, the Eastern region continues to be most competitive supplier of ball pens in the country.

What is the kind of additional support, in terms of policies, infrastructure, etc. that you believe that the industry should receive from the Govt for the growth, expansion, and improvement of the segment?

- Establishing better infrastructure, including roadways is very critical to our industry. Widening of roads for movement of large containers is as critical to our industry as is the greater leniency in the hours for loading of trucks. Currently, the restrictions on timings causes for a slowdown of the process, causing unnecessary delays.
- We also hope to have greater incentives from the State Government considering that our industry comprises largely of MSME businesses which is amongst the largest employment generators in the country.
- Absence of simplified procedure for availing working capital loan from Public sector Banks. These procedures need to be simplified and made accessible the MSME businesses.
- EPZs that have been established are not always accessible to especially smaller businesses who may not meet the required criteria to have their set up in the EPZs. Hence it is necessary to take into account the plight of

smaller businesses and perhaps provide incentives such as subsidized electricity to businesses in the segment, even if they do not have their set up in the EPZs.

- Labour laws should be made more dynamic and proactive, keeping in mind employee welfare and requirements of the trade. Especially in the case of timinas.



What would be your recommendation for an accelerated growth of this industry?

There must be some mechanism by way of which the price of raw material (PP) supply can be stabilized and volatility in pricing controlled as this has a major impact on our product segment, more so on the smaller businesses. Furthermore, schemes such as Duty Drawback and MEIS must be continued to previous levels as these are critical to the growth of our segment.



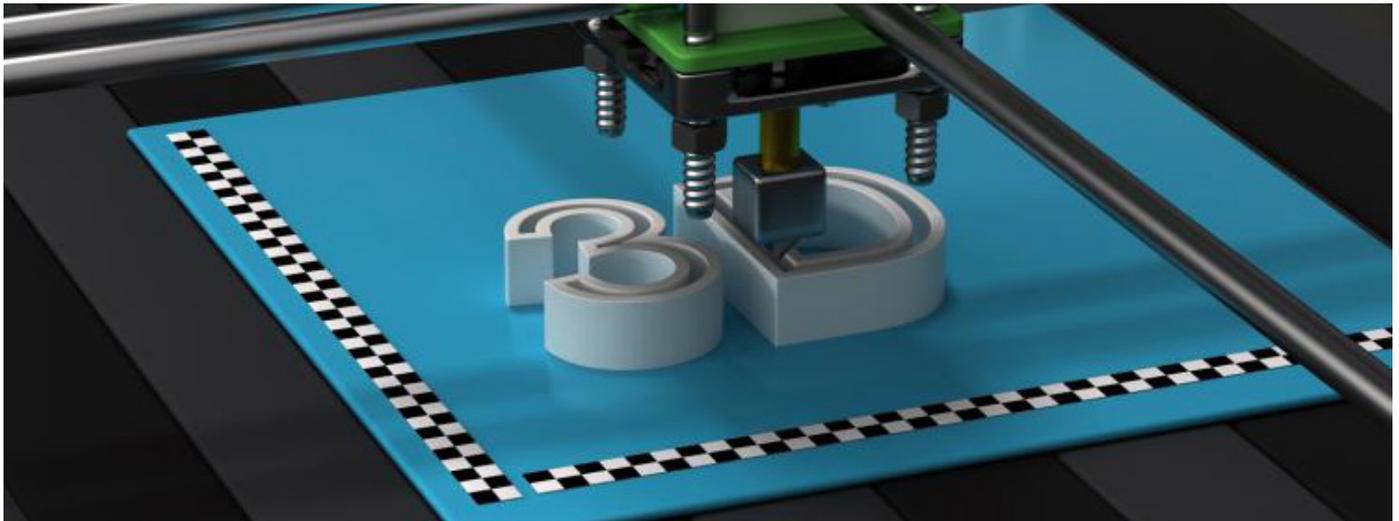
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3D Printing in Plastics

Ushering in a New Era

The 3D printing industry has grown enormously over the past few years. Several sectors such as aeronautics, engineering, fashion design, education, healthcare and fast-moving consumer goods (FMCG) are already adapting 3D printing in their production process as repeatability, choosing the right type of 3D printing technology for the right type of application and use become key considerations for business leaders.

Providing business value, as the technology continues to mature, manufacturing segments will witness increased build speeds, use of alternate energy sources, raw materials and build techniques with a fair degree of democratization as opposed to a limited number of OEMs (Original Equipment Manufacturer) providers that one sees today.

A High Growth Segment

The global 3D Printing Plastics market is estimated to reach US\$2,419 million by 2024, as per a report by Zion Market Research, from approximately US\$486million in 2017. The market is expected grow at a CAGR of around 25.75% between 2018 and 2024 and this is largely attributed to factors such as the increased focus on efficiency and cost of production, growth in adoption of robotics for industrial automation, and growing need to automate post-processing. However, the high cost of installation of automation equipment can be expected to restrict the growth of the market.

However, growth and continuous investments made by leading organizations towards the 3D printing technology

and their equipment is one of the factors have primarily been driving the growth of the market thus far. Ongoing investments have led to the development of low-cost devices and materials, making not only prototyping and sampling but product designing and product formation also possible across industry segments.

3D printing technology in the 80s was in its embryonic stage and the materials in 3D printing used were simple thermoplastics and wax since its role was restricted only for sampling and prototyping. Today however, with technological advancements, 3D printing has progressed beyond prototyping. The increasing demand from end-use industries for production activities and the ongoing expansion of application-specific plastic products coupled with government initiatives across the globe has been driving demand and will influence the segment's growth over the forecast period.

Understanding 3D Printing Growth Segments

According to a recent research by Global Market Insights, the 3D printing material & equipment market in the Asia Pacific is predicted to witness high growth in the coming years, owing to the substantial growth of manufacturing in sectors like automotive and the rapid technological advancements. This surge in 3D printing will create a whole new category of new jobs and investment opportunities.

- The 3D printing plastics market can be segmented on the basis of type including, polymers, metals, ceramics, and others. The polymer type segment is expected to dominate the market in the upcoming years and its growth is attributed to the low production expense of polymers.
- Also, polymers are reliable as compared to the metal and hence has been gaining significance across the globe.

- Based on the form, the 3D printing plastics market is segmented into powder, filament, and liquid. Filament sub-segment is expected to dominate given its diverse application in medical, healthcare, aerospace, automobile, and food industries.
- Based on the end-use, 3D printing plastics market can be segmented into healthcare, consumer products, aerospace & defense, industrial, automotive, education & research, and others. The Healthcare sub-segment is expected to dominate with significant applications in dental surgery, replacement of burnt skin, and airway splints for babies with Tracheobronchomalacia(TBM), and many others.



Adoption of 3D Technology across Geographies

North America has witnessed the highest growth rate in the global 3D printing plastics market and the region is likely to continue its domination over the forecast period. The growth of this regional market is attributed to rapid technological advancements across the region and high adoption rate across various industries.

Europe is predicted to have a substantial revenue share in the global 3D printing plastics market as it is considered as diverse and developed. The rising demand for automotive 3D printing materials for luxury cars and sports cars will fuel the market growth in the region.

Asia Pacific 3D printing plastics market is anticipated to provide significant growth opportunities for the players during the forecast timeframe. The growth can be attributed to the increasing usage of polymers for the mass production and tooling operations such as such as thermoplastics, ABS, bio-plastics, and resins in automobile and aerospace industry. With the presence of technologically strong countries such as China/ Taiwan and Japan these markets are expected to facilitate the transformation of the small batch production capabilities into large batch production capabilities in APAC.

Apart from mature markets like US and Europe, specific geographies in Asia like China is gaining a lot of momentum in terms of 3D printing ecosystem, while India continues to catch up.

Disruption In India's Manufacturing Industry

3D printing is set to localize manufacturing and contribute to the Make in India movement considering it makes such fast iteration-based product development possible in the manufacturing space.

As India transitions from a service-based economy to a product based economy and the focus moves towards creating jobs in the manufacturing sector and 3D printing technology plays a key role in aiding this transition and help compete with established manufacturing based economies like China.

Revolutionizing the conventional manufacturing industry, the technology allows printing with suitable range of materials in lesser time. Unlike conventional methods which are used to develop models, prototypes or direct parts making them costlier and time consuming, heavy weighted components can now be 3D printed with lighter materials.

Global 3D Printing Plastic Market by End-Use, 2014-2025 (in Million USD)



Attribute	Details
Base Year	2017
Historic Analysis	2014-2016
Forecast	2018 to 2025
Complete Free Customization*	Equivalent to 50 analyst hours

While the Indian market can be still considered as being at a nascent stage, it is gradually paving its way towards continuous growth. Even though the printer costs are relatively high, the advancement in new technologies, readily available materials, rise of new start-ups and governmental support are some of the driving factors towards market growth. The government also has rightly initiated action through special budgetary allocation on exploring the immense possibilities that 3D printing technology offers, and which would eventually enable the industry to leapfrog growth in terms of size, scale, scope and complexity. In addition, 3D printing would also have far reaching benefits such as upskilling the workforce and efficient inventory management.

Given the industry's inherent ability to drive mass personalization, the technology has the potential to usher in the industrial revolution 4.0, aiding reduced costs and production lead time and immensely help the country's endeavor to position itself as the global manufacturing hub.

Industry Speak



Aditya Kumar
Managing Director
Marco Polo Products
Pvt. Ltd.

How does 3D Printing technology differ from traditional plastics manufacturing?

Traditional Plastics manufacturing consists of primarily Injection Moulding, Blow Moulding and Extrusion. All these 3 techniques require a mould/die to be manufactured to give a final shape to the intended product. Small quantity of plastic components could also be manufactured using machining on plastic blocks/sheets/rods etc.

3D Printing or additive manufacturing primarily consists of manufacturing parts that primarily simulate injection and blow moulded components and short sections of extruded profiles all made without the manufacture of a mould or die. These are manufactured using Computer Aided Manufacturing (CAM), where the plastic material is added/solidified/cured layer by layer based on a design created by the user. The CAD design created by the user is sliced into very small layers of approximately 0.1 mm thick and using different techniques and materials for 3D printing, these components can be created.

How does the technology help improve efficiencies and processes in plastics manufacturing?

3D Printing technology gives freedom of design and can also help manufacture designs that were not possible to make using conventional traditional techniques. For example, undercut designs which would require very complex tooling,

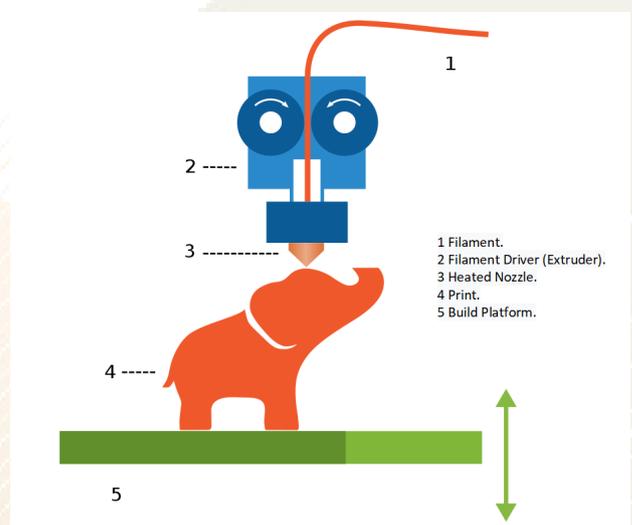
can be manufactured easily layer by layer using additive manufacturing. Further these parts do not require any tooling to be made. Parts can also be made in an assembly if needed, thus eliminating the need to manufacture components separately and then assembling them as per specification. Finally, the design can be optimized to reduce the weight and increase strength by including complex shapes/lattices to improve the final performance of the product.

Which product segments have particularly seen most traction in its application/ usage? Why?

3D Printing technology has been around for the last 30 years. What initially began as an experiment and wide use in prototyping applications has blossomed into a recognized process for prototyping products during new product development – These are primarily used for simulating Injection Moulded and Blow moulded applications. These result in many more design iterations resulting in better products and also being able to identify potential design related issues early on in the product development cycle and thus reducing costly rework and project delays.

The technology is also useful where extremely low volume of components is needed and the cost of tooling cannot be justified – primarily in aviation and aerospace/defense applications.

Finally, the technology of 3D printing for plastic components has found use in various medical applications for pre surgical models and several aspects of dentistry.



What are the typical challenges faced by the industry in implementing 3D technology?

The primary challenge is the slow speed of the technology compared to conventional techniques. It is significantly slower negating the time/cost saved in eliminating the tooling. The second challenge is in the lack of a variety of materials in which 3D printing can be done. For Example – Injection Moulding can be done in probably ½ a million difference grades of plastics – whereas the variety of materials and required properties is very much limited in 3D printing and this prevents the use for wide applications. Finally, because the layers are joined one above the other, the strength of parts along the Z direction is not as high as that in the X and Y direction and it also tends to be lower than Injection Moulding.

In your opinion, today, where does our industry stand on Product Design Development?

The plastics industry has come a long way from the early 1980's and now it is at the forefront in innovation and new product development using all the most recent advance in technology including the use of Computer Aided Design (CAD), Computer aided Manufacturing (CAM) and Computer Aided Analysis (CAE) for high level simulations based on application and end use.

What, in your opinion, are the key drivers for the growth of 3D Printing technology in India?

I would like to think that 3D printing technology is driven primarily by the wish of people to be associated with cutting edge technology. Since the intellectual properties

of most technologies developed in the 1990's expired, it saw the advent of these technologies at significantly lower costs and allowed wider usage of the same. Gradual adoption of the technology as a mainstream requirement in product development, dentistry, aerospace applications has been a shot in the arm for the technology in India.

Start-up enterprises are usually known for experimenting and innovating using 3D Printing technologies. How can these enterprises upscale their set up and increase output?

These start up enterprises are primarily prototyping their devices and products using 3D printing. The final manufacturing would still be done using conventional and traditional methods of Plastics Injection Moulding

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Optimizing Injection Molding Process

Key to creating a Circular Economy

Designing for recycling means that the subsequent recycling process is anticipated as early as in the development of a new product as well as new product design itself. This is based on the requirements of a circular economy and maintaining the sustainability of plastics in the long run. Today, increased use of recycled materials in injection molding applications has thrown up numerous challenges for vendors of injection molding machines, especially on how to ensure process stability with a raw material feed whose properties might vary over time. In the endeavour to create a circular economy, the focus is on processing recycled material, improving process stability. And the trend towards designing for recycling and stability of the injection molding processes is key to using recycled materials to produce higher quality products as recycled material is naturally subject to greater batch variations than virgin material.

What is injection molding?

Injection molding is a plastic manufacturing process used to achieve a high production rate. During injection molding molten thermoplastic is injected into a mold and high pressure is applied. As a result, the desired plastic shape is achieved inside the mold. After solidification of molten plastic, the finished part is injected out of mold.

What are the applications of Plastic Injection Molding?

- Industrial
- Automotive
- Electronics
- Medical
- Consumerware
- Packaging
- Others

What are the advantages of injection molding compared to other plastic manufacturing process?

- High Efficiency
- Complex Part Design
- Design Flexibility
- Ability to use multiple Plastic Materials
- Ability to use multiple colors
- Reduced Waste
- Dimensional Accuracy

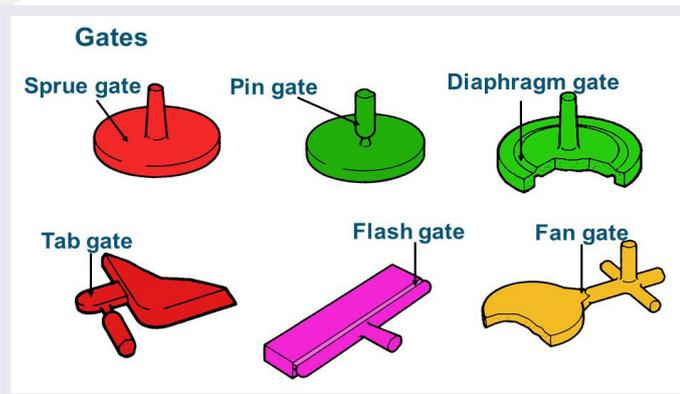


What are the advantages of plastics tools/ components compared to metals?

- Higher strength to weight ratio
- Lighter weight and improved ease of use.
- Low manufacturing costs for high production rate.
- Increased corrosion resistance
- Consolidation of multiple metal parts into a single plastic part
- Higher toughness compared to metal parts
- High structural strength

What are the types of gates used in injection molds?

- Sprue gate: Used for large components. In this, gate mark is visible on component and runner is not required. For example bucket molding.
- Edge gate: Suitable for square and rectangular components
- Ring gate: Suitable for cylindrical components to eliminate weld line defect.
- Diaphragm gate: Suitable for hollow and cylindrical components.
- Tab Gate: Suitable for solid, thick components
- Submarine Gate: Used for auto de-gating to reduce cycle time
- Reverse taper sprue Gate (Pin Gate): Used in three plate molds.



What are some commonly found Injection Molding defects?

Commonly found injection molding defects are Short shot, Flow marks, Flow lines, Sink Marks, Warpage, Voids, Flash, Knit lines and Burn marks.

8 Steps to Optimizing the Injection Molding Process

The complexities of engineering an injection molded plastic component or part for a complex application must translate to moldability. If a molder is inexperienced in tool design and process optimization, there's a good chance they won't be familiar with methodologies essential for creating a highly efficient production process such as sci-

entific molding and, more specifically Design of Experiments (DOE) within scientific molding.

In broad terms, the injection molding process can be broken into three steps:

1. Product Design

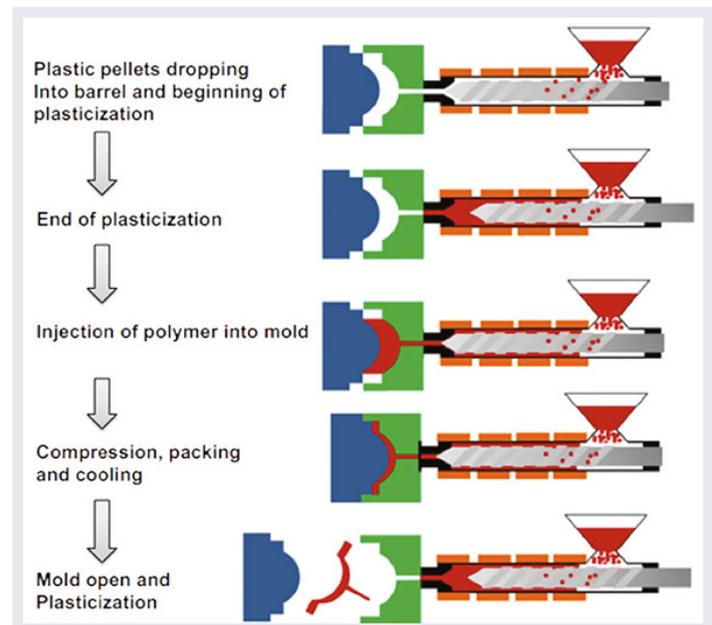
Determining product objectives such as function, aesthetics, assembly, etc., and the requirements for accomplishing the objectives. A team of engineers trained in advanced methodologies typically identify and improve upon solutions to meet the particular project requirements — including the selection of materials for the final complex injection molded part and tool.

2. Tool Design

Like product design, a thoughtful approach to tooling proves valuable. In addition to choosing the appropriate material for tool construction — hardened steel, pre-hardened steel, or aluminum — designing for proper gate location, draft, etc., is necessary to prevent costly project missteps.

3. Manufacturing

Production is the obvious goal of the step-by-step injection molding process. Achieving successful outcomes brings together the product and tool designs with resins that deliver to project needs (such as strength, heat tolerances, sterility, etc.) and moldability requirements including tight tolerances, uniform wall thickness, heating, cooling, and consistent repeatable cycling.



Why does the process matter?

Scientific molding and DOE are important to any injection molding project as they take the injection molding process to a much higher level of precision, helping to lower costs in the long run by allowing for identification and correction of tooling problems prior to production.

Experienced injection molders use scientific molding and DOE as the foundation for a robust and optimized injection molding process that leads to the successful manufacture of critical-use plastic parts and components by introducing a series of progressive checks and balances.

8 Steps to Process Optimization

When making decisions about process optimization, tool engineers and process engineers work together to proactively identify and correct any tooling weaknesses, following these 8 steps:

1. Tool Functionality Examination

Every aspect of the tool's mechanical functionality is assessed to make sure everything works as designed, using the material settings provided by the supplier of the material to be molded.

2. Short Shot Testing

Dynamic pressure loss and, in a multiple-cavity tool, cavity imbalance are determined and documented using sample parts. Also, the rheology curve (or viscosity curve) is established to indicate the best fill rate and pattern.

3. Gate Seal Studies

Both the pressure curve and weight of the sample parts are observed to see if the gates fully seal and at what point sealing occurs.

4. Sample Parts Evaluation/Data Recording

All defects are examined and recorded, along with recommendations for any adjustments in the process or the tool in order to correct the defects. Likewise, data is recorded with regard to melt temperature, fill time, tool temperature, coolant flow, cycle time and pressure curves.

5. Quality Control

The sample parts go to quality control for examination and documentation of their measurements, shot-to-shot consistencies and overall quality.

6. Tool Adjustments

Based on information gathered during quality control, necessary tool adjustments are made, and new sample parts are made.

7. New Sample Creation/Quality Control Testing

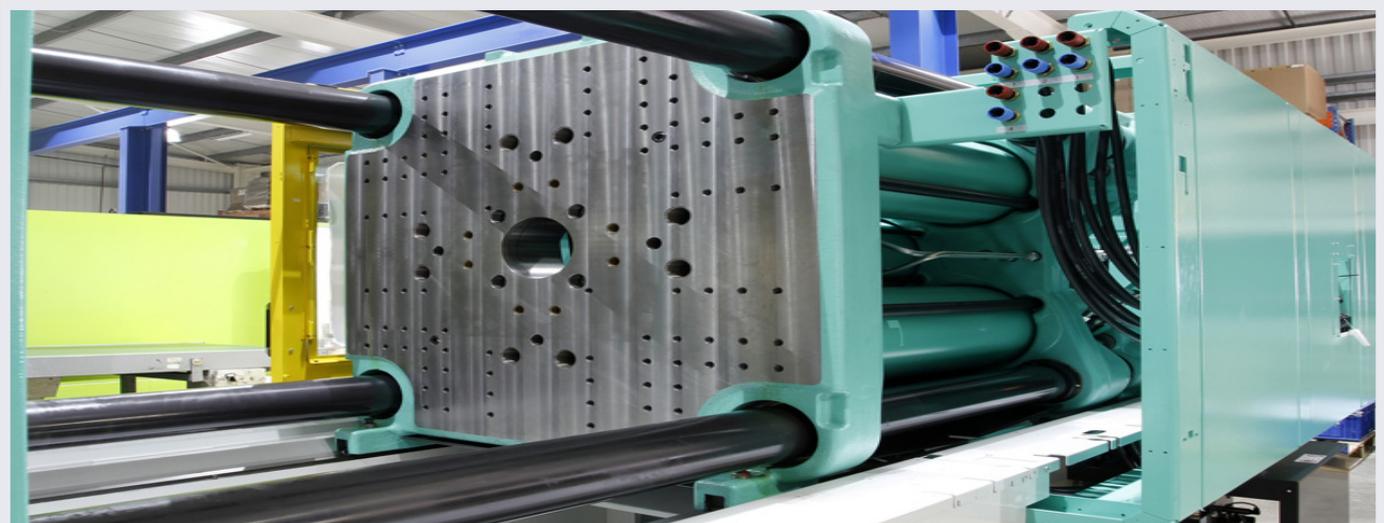
The new sample parts are subjected to the same quality testing and more adjustments are made, if necessary.

8. Process Parameter/Performance Ranges Verification

The quality testing and adjustments continue until all process parameters meet their performance ranges. Once verified, the tool is ready for use and the process is deemed optimized.

By leveraging scientific molding and DOE, experienced custom injection molding engineers understand each phase of development — from tool design and mold fill analysis to process monitoring and quality control. The result? The most efficient and robust process possible for manufacturing the complex injection molded plastic parts and products you need for complex applications from medical devices to automotive parts.

Source: www.kaysun.com



The X Factor

By Manoj Agarwal

This editorial is the second part of the seven part series titled under the acronym "EXPORTS"

"To become "unique", the challenge is to fight the hardest battle which anyone can imagine until you reach your destination" - APJ Abdul Kalam

This is such a silly cliché that one may actually just want to run around it a bit. But yes, like in all activities in life even in business we do have that one single unique proposition that we like to call the X factor. What is that single unique proposition that we bring on the table to differentiate ourselves from all others?? Food for thought may be but extremely relevant.

On the other hand, it's now time to start rethinking on what hurts us more? The appreciation of the Rupee or the Global meltdown which is beginning to show its affects in India? If the June Export figures down by nearly 7 % were a shocker it is my estimate that the worst is yet to come. Each one of us is working on our own agenda and now more than ever is a need for a collective response to create an ecosystem which is sustainable. In my last article I talked about the need for Indians and exporters in particular to find an identity for themselves. To create and build a national ethos which makes Exports the fulcrum of our business model not merely a tool. Today I say that once we have that in place the answers to the above questions fall into place.

Exchange rates of currencies specially Emerging markets like ours are being determined by Market operators not the Central banks so when we seek help from the Government what can it do. Buy Dollars from the market swelling its reserves already full to the brim and earning us next to nothing! Our Forex reserves have gone up by almost 40 % in the last ten years and that too with a negative trade balance. The fact remains that Oil and Gold trades globally have volumes which are several times the actual production. AS a country we are net importers and my submission therefore is that it will always be in the Interest of the Ruling government to let the Rupee appreciate in the long term and it is no longer feasible to rely on this as a differentiator.

The current uncertainties in International trade and Geo political positioning of Nations is probably a fit case for discussion independently. But suffice it to say that in this

adversity we have light shining at the end of the tunnel.

This brings me back to my original submission in trying to find that X factor for our business. It has to be based on the principle of making your product offering unique and make yourself indispensable to your customer. He has to rely on you as an able supplier, trustworthy, reliable, willing to help in a crisis and create for yourself that unique Brand identity which will take you forward. That X factor friends is there and we need to find it for ourselves within.



Manoj Agarwal, Managing Director of Kanpur Plastipack Ltd is an industry expert with over 40 years of experience. A past Chairman and currently serving as a COA member of Plexconcil he is actively associated with a number of professional and trade bodies. He holds a Master's Degree in Management Studies from the Birla Institute of Technology and Science (BITS) Pilani.

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Understanding Rheological Properties to Optimize Polymer Product Performance

Polymer rheology testing is the study of how the stress in a material or force applied is related to deformation and flow of the material. The physical properties of polymer formulations can be described using a variety of rheological terms and as these properties can directly impact the performance of the product.

Understanding the rheological (flow) properties of a polymer helps obtain optimized material properties during the molding process. Rheology testing can determine if materials are processed properly with minimal product degradation as well as measure the viscosity of a polymer ranging from single point tests to variable shear-rate tests.

Rheological characterisation is accomplished using a wide range of shear, tensile, and extensional conditions and

data derived can be used for many purposes including: quality assurance, product development, and to better understand material performance. In addition, rheology testing can determine if materials are processed properly with minimal product degradation or to understand the flow properties that are critical in QA molding application, thereby saving costs and minimising potential waste.



In conversation with Dr. P. Poomalai Ph.D. LPRI (London). Dr. P. Poomalai has 35 years in the Plastics Technology and Testing field, and was Ex.Dy. Director, CIPET. He is a renowned polymer specialist, and is currently Senior Scientist, Maeon Laboratories.

What is the role of Rheological Testing (RT) in Polymers? Why is it important?

Polymer rheology testing is the study of how the stress in a material or force applied is related to deformation and flow of the material. Rheology tests are performed while the polymer is in the melt phase or while the polymer has been dissolved in a solvent for intrinsic viscosity and relative viscosity.

Rheological measurements are necessary for process equipment design which is normally provided by the polymers manufacturers. The flow characteristics of a polymer largely determine the type of machinery used for extru-

sion/molding and influence the choice of the process and processing conditions. Understanding the rheological properties of polymers through laboratory testing can help to optimize products and process conditions, thereby saving costs and minimizing potential waste.

The rheology test data can be used for many purposes including: mold/die design, quality assurance, product development, and to better understand material performance. In addition, rheology testing can determine if materials are processed properly with minimal product degradation or to understand the flow properties that are critical in Quality Assurance.

Polymer production processes such as injection molding and extrusion exploit deformation and flow in order to form useful products. A polymeric material often begins the conversion process as either a pellet or a powder, whereupon it is heated and deformed into a more useful shape—a product.

If we can understand the way in which the material deforms, or more importantly, resists deformation (viscosity), we can optimize the process.

Why perform rheology testing for polymers?
Optimizing polymer product performance through in-depth understanding of the rheological properties



How does RT help in the improvement of Product, Process, Recycling, Sustainability?

The physical properties of polymer formulations can be described using a variety of rheological terms and as these properties can directly impact the performance of the product, it is important to gain a full comprehensive understanding through laboratory testing.

Rheological data can help to optimize products and process conditions, thereby saving costs and minimizing potential waste. It can provide useful information right across the polymer product lifecycle from raw materials suppli-

ers through to end-of-life recycling and so is relevant to a range of stages of a stakeholders' supply chain including:

- Raw materials: It can be useful for materials quality testing and selection, and new materials development.
- Plastic resin manufacturing and compounding / processing: Rheology testing can give insight required for process development, optimization, problem solving and performance testing.
- Converting into finished products: Rheology testing helps to monitor quality control and optimizes the process for new materials or new applications.
- Market launch and ongoing use: Supporting post marketing launch rheology is useful for continuing performance monitoring, quality control and problem solving. It can also provide invaluable information in litigation or polymer failure issues.
- End-of-life recycling: Rheology aids development of the recycling process to help ensure that the polymer properties are retained during the reprocessing cycle.

Rheology tests are typically performed while the polymer is in the melt phase or while the polymer has been dissolved in a solvent for intrinsic viscosity and relative viscosity. Typical instrumentation includes capillary, rotational and controlled stress rheometers which can be used to measure various parameters of interest thus providing data which can help to solve many polymer-related problems, examples of which are given below:

Poor Surface Finish (films/moldings):

The possible rheological cause could be high elasticity or excessive shear and/or tension thinning behaviour; alternatively, an inappropriate MWD. To confirm the cause the following rheological measurements can be made: Capillary rheometry, Die Swell analysis, Rotational rheometry, Stress relaxation tests.

Tape/Fibre Breakages or Bubble bursts:

Indication - A potential rheological cause would be an inappropriate extensional viscosity behaviour.
Analytical approach - Capillary rheometry experiments at 2 or more temperatures can be conducted to confirm the cause.

Low Strength/Fibre Coalescence:

Indication - Viscosity too low.
Analytical approach - Capillary or Rotational rheometry can be carried out in to confirm the cause.
Edge Curl/Excessive shrinkage:
Indication - Melt memory. Excessive elasticity. MWD too broad.
Analytical approach -Rotational rheometry. Die Swell. Stress relaxation.

Film Splits/fibrillation:

Indication -Viscosity too low. Elasticity too high.
Analytical approach -Rotational rheometry. Die Swell.

Stress relaxation

Delamination on co-extrusion:

Indication - Mismatch in flow properties of components.

Analytical approach - Monitor temperature dependence of rheological properties

Uneven thickness (films/fibres):

Indication - Excessive tension thinning behaviour.

Analytical approach - Capillary rheometry experiments at 2 or more temperatures can be conducted in order to confirm the cause.

Die Drool/deposits:

Indication - MWD too narrow. Viscosity too low.

Analytical approach - Melt stability analysis can help to determine the cause of this problem.

To resolve processability problems it is critical to be able to 'home in' on the likely causes and therefore ensure that the correct approach is selected to make meaningful measurements – saving the customer both time and money. Extensive expertise and understanding of the chemistry of common synthetic polymers enables our experts to drive insight into the meaning behind the data which is invaluable to help solve the many varied polymer-processing related problems.

How prevalent is the practice of RT of Polymers in India?

Polymer melt rheology is a complex subject that requires careful experiment design in order to obtain the information needed to meet an investigator's requirements. Rotational rheometers are the preferred choice when the requirement is to obtain information concerning the molecular structure and how this affects processing characteristics.

In particular, the ability to easily extract information about the average molecular weight and molecular weight distribution via measurement of the viscoelastic properties makes the rotational rheometer a powerful tool. The capillary rheometer extends the shear rate range attainable in the laboratory beyond that available in a rotational instrument and allows the flow properties to be measured under typical processing conditions.

In addition, the ability to readily determine both the shear and extensional properties under real life conditions provide the polymer producer and processor with information that is vital to the successful use of a polymer melt. Finally, the capillary rheometer enables processing problems to be investigated in a controlled environment without the need to stop.

In our limited exposure and knowledge the facilities for Rheology Testing of Polymers are available in many labora-

tories, Institutions, R & D organizations, industries in India. Among the rheological testing methods, Melt Flow Index (MFI) is most commonly used one by all and especially the commercial laboratories on demand from the industries & customers and the other in-depth study test methods of rheological properties, availability is limited and is used mostly for basic characterization, research & development purposes. However, mention that there is no surveyed data available at our end.

What typically are the type of tests undertaken by labs in India?

Rheological characterization of materials includes polymers (elastomers, plastics, adhesives etc) using a wide range of shear, tensile and extensional conditions. Rheology labs determine rheology properties for degradation studies, determining molding parameters, materials performance, and other applications. Fluid Rheology tests are performed while the polymer is in the melt phase or while the polymer has been dissolved in a solvent for Intrinsic Viscosity and Relative Viscosity. Rheological tests can measure the viscosity of a polymer ranging from single point tests to variable shear-rate tests. Rheology tests include: Frequency sweeps, Temperature ramps, Intrinsic viscosity



and relative viscosity, Melt flow rate (MFR) and Melt Flow Index (MFI), Capillary Rheometry, Creep (flow under a given force or stress), Stress relaxation (change in force for a given deformation), Thermal stability, Melt viscosity etc. Among the rheological testing methods, Melt Flow Index (MFI) is most commonly used one by all & especially the commercial laboratories on demand from the industries & customers. In the case of, other in-depth study test methods of rheological properties, availability is limited and is

used for mostly for basic characterization, research & development purposes. Moreover, this information is generally, provided by the material manufacturers themselves.

Does RT of Polymers impact cost of manufacturing? How significant would it be?

Any testing for quality check/assurance definitely involve cost but which may be accommodated into the benefits derived out of it, particularly reducing waste through rejection on account of quality issues. The industry can realize the cost of rheological test results through better quality product. By providing insight into polymer's molecular architecture, morphology, chain branching, anisotropic microstructure development, temperature dependence, degradation and stability, elasticity, batch to batch variation, materials selection, matching the material to the process, die design, material modeling, data input for process simulation, effect of filler type, size, size distribution & aspect ratio ---- test it, understand it, solve the problem!

6. What measures need to be undertaken to increase awareness of the benefits of RT of Polymers in India?

Even though many organizations, associations, institutions emphasize the importance of quality assurance of polymeric products through various programs but still the quality consciousness is not catching up so well among many of the manufacturers of raw materials & products and products end users. Most probably some authoritative agencies may oversee and emphasize the effective coverage of this subject.

What are the typical roadblocks in the acceptance for the need and/ or implementation of RT of Polymers in India?

This issue may be due to the cost vs acceptable quality aspects. Many of the stakeholders are not really ready to bear the quality check costs unless otherwise it is mandatory. Hence some authorities may need to enforce strict measures to the industries as well as end users to follow the quality check measures in general & particular RT of polymers.

What are the kinds of Quality Assurances/ Certification that RT of Polymers provides?

Melt Flow Index/Rate (MFI/MFR)

- Typically used as a basic quality control tool.
- Useful for checking whether the polymer grade is as specified, especially if processing problems are occurring.

Rotational Rheometry

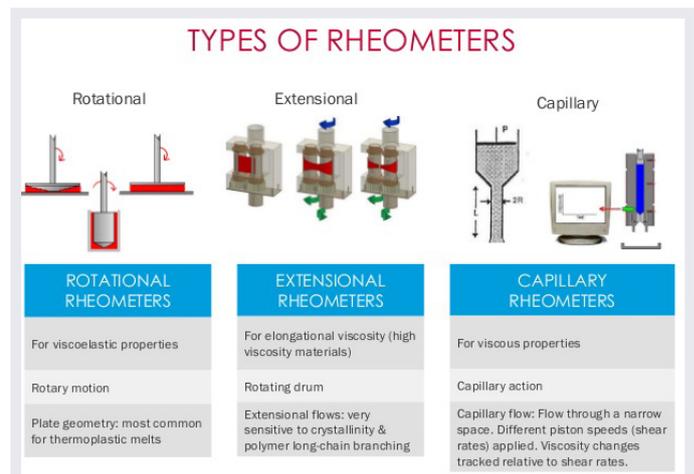
- Oscillating disc rheometry is a more powerful tech-

nique than MFI.

- It can provide information on molecular weight distribution that can be used for processing, thermal stability or degradation studies.
- Rotational rheometry is also used for the assessment of changes in viscosity as a function of temperature or shear rate.

Capillary Rheometry

- Measures viscosity at shear rates typical of those used in polymer processing, such as extrusion or injection moulding.
- Can show the difference between polymers with similar MFI's but different molecular weight distributions.
- Measures viscosity at a range of temperatures to help optimize processing conditions.



What are the various Polymers/ Plastic product groups that can be tested for rheological properties?

Nowadays, rheology includes a much wider range of materials but polymer-based ones still dominate this science, mostly in view of the variety and volume of applications. Rheological characterization of materials includes polymers (elastomers, plastics, adhesives etc). Essentially almost all thermoplastics used in production such as PE, LLDPE, LDPE, HDPE, PP, PC, PA, EPDM, PET, PS, PSU, polymer blends, polymer alloys, filled polymers, bio-polymers and many more including non-polymeric materials.

What, in your opinion, are the prospects for the future of RT of Polymers in India?

The measurement of rheological properties can help to develop an improved product, predict its end use performance and the physical properties of a product during and after processing. In our opinion the rheological testing is much needed in the present context as the vast majority of the huge quantity of polymers produced annually is thermoplastics, which are melted by heating, shaped by

flowing through dies or filling of molds, and subsequently solidified into final useful products. The melt processing of thermoplastics is, to a large extent, determined by flow behavior, which in turn depends on structure and the processing conditions of temperature and pressure. The relations of structure, processing, and properties of polymers are of paramount importance in all their applications as film, sheet, pipe, tubing, profiles, wire and cable coatings, containers, appliance housings, automotive, and aerospace parts and as numerous other products. Therefore rheological testing will continue to associate with polymer industry and immensely support producing quality products.

MAEON Laboratories is an independent testing laboratory for rubber and plastic products and materials, with accreditation by NABL, India for ISO17025 Laboratory Management System and is the latest of its kind in India. The company provides highly reliable testing services and is renowned as one of the best-equipped rubber and plastics lab with up-to-date facilities, run by highly qualified professionals with an experience of over 30 years in the field who understand your testing needs precisely.

All Testing at the lab are performed as per ASTM American Society for Testing and Materials Standards, ISO International Organization for Standardization Standards, Japanese Industrial Standards, BIS Bureau of Indian Standards, DIN etc. as well as other standards and specialised methods as applicable.

MAEON Laboratories provides a wide range of rubber and plastics testing and analytical services to industries where rubber, plastics, foam, sponge products are used for varied purposes such as, testing and evaluation of either the Product or the test specimen taken from the product, material testing and evaluation of prepared specimens, like test slabs, buttons etc., certification of material against customer specifications and failure analysis to determine root cause of product failures.

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From Waste to Wealth

Recycling and reusing waste plastic to develop alternate energy sources and plastics products through innovation

It is said that an average Indian uses only about one tenth the amount of plastics that an American does. Statistics apart, there is little doubt that plastics is an increasingly growing concern for all countries alike and even as increasing waste threatens our entire ecology, managing this urban problem requires a culmination of economic and development goals of the country, albeit with a fresh approach.

Since the advent of polymer science, the application of the polymers in packaging has been the greatest contribution to human health in last 5 decades. Plastics are lightweight, versatile and durable but in spite of their ubiquitous presence and critical role in many of our technological advancements – from automobiles and computers to replacement heart valves – they are now seen as a challenge to animals, marine life and future generations of humans. Plastics and microplastics pollution in even remote corners of the oceans has raised public awareness of the challenges posed by our increased use of synthetic plastics. In some cases, this has raised the call for more biodegradable plastics to replace synthetic plastics. However, a UN report in 2016 indicated that biodegradable plastics are not the panacea for the marine challenge of plastic litter in the ocean.

Plastics used packaging and especially single use plastics in the last many years, has been a boon as well as

mankind's biggest bane since being use. Plastic products, being mostly organic in nature, are always in the cleanest form with least possible damage of any type to human beings, when used as packaging material. Today we have healthy children, clean hospitals, clean food habits, clean drinking habits, clean toilets all because of use of plastics in packaging. We have tamperproof medicines, we have safe drinking water, we have food with proper shelf life, and above all we can trust what we consume. Plastic packaging shields us from virus or bacteria attacks, with packaging serving as the defense mechanism.

Scientists and labs around the have been constantly studying and testing the suitability of plastics for various packaging applications. Specifications have been made for kind of additives to be used. Billions of dollars have been spent to set up standards for plastics packaging application in a spectrum of forms like films, bottles, single layer or multi-layer, application in hot or cold conditions, application with pressure or under vacuum, etc. This industry is also one of the highest employment generators in the country with the maximum number of start-ups.

To Ban or Not to Ban?

With increasing urbanization and demand for hygienic and safe storage of food and pharmaceutical products, there is little doubt that vast scrutiny is needed before any packaging material is cleared for use in the food, beverage or pharmaceutical product segments. A "Ban" or "Partial Ban" or "Selective Ban" may not be the best solution and in the current context may perhaps even be considered myopic, especially since we are yet to find a suitable, versatile and universal replacement for the same. While it may be

argued that Bio-degradable plastics, eco-plastics or bio-plastics are the alternate solutions, even these come with their share of challenges and limitations. Some reports indicate that some of the additives present in these especially bio-degradable or eco-plastics that have been added to break it down, make it harder to recycle and at times may end up doing more harm than good to the environment. Nevertheless, polymer science continues to not only improve the quality of this group of plastics, but also find ways to extend its use to the entire spectrum of plastics products.

Finding the right balance



The critical question today however is how can we have efficient plastic waste recycling in the country with participation of people and Local urban bodies. The noise we hear today is more because of not having a systematic waste collection. It is definitely not because plastics are nuisance. Instead of thinking of banning plastics in packaging let us think of making our food, beverage, milk and Pharma products more and more safe with innovative packaging using plastics supported by systematic recycling network. Every industry is dependent of plastic industry to grow. Food & Beverage consume almost 40% of plastic as packaging and storage material. This is followed by automobile, white goods, electrical appliances, agricultural industry, construction industry, and toys for children, medical kits, medicine containers, educational instruments, recreation instruments and so on. When we use plastics we also generate waste after its usefulness is lost. And it is here that the real disconnect happens.

The urgency therefore lies in a systematic approach by all stakeholders and cohesive action towards waste collection and management if we are to effectively recycle or reuse the waste generated by the society. This necessitate that that we work faster on waste collection method than the manufacturing itself. We perhaps also need to lay emphasis on making it a formal employment generation sector and find applications for plastic waste that will find a suitable place in the industry and society.

The street picker-based recycling economy, along with

the various bans, have ensured India's continued efforts in battling plastic pollution. At the other end of the spectrum, the country is home to some of the most innovative thinking about plastics recycling. Today all municipal commissioners are gearing up to work on separation of solid waste and organic waste. The Plastic waste management policy PWM-2016 has become reality now. Role and responsibility of all stake holders are very well defined in the policy.

People, as individuals or collectively, need to spread awareness and manage plastics waste more responsibly too. Not only does this require ensuring proper disposal of household plastics waste including collecting, storing and disposing such waste at appropriate places and manner. Plastic waste can be used to make different products, both for engineering and non-engineering applications. Plastic waste can be used for energy generation. It can be reused for the same application after processing. All it takes is a fresh approach to changing the story of plastics.

What Plastics Are Recyclable?

There are six common types of plastics. And only 3 of these can be recycled effectively.

- PS (Polystyrene) – Example: foam hot drink cups, plastic cutlery, containers, and yogurt.
- PP (Polypropylene) – Example: lunch boxes, take-out food containers, ice cream containers.
- LDPE (Low-density polyethylene) – Example: garbage bins and bags.
- PVC (Plasticised Polyvinyl chloride or polyvinyl chloride)—Example: cordial, juice or squeeze bottles.
- HDPE (High-density polyethylene) – Example: shampoo containers or milk bottles.
- PET (Polyethylene terephthalate) – Example: fruit juice and soft drink bottles.



Currently, only PET, HDPE, and PVC plastic products are recycled under curbside recycling programs. PS, PP, and LDPE typically are not recycled because these plastic materials get stuck in the sorting equipment in recycling facil-

ities causing it to break or stop. Lids and bottle tops cannot be recycled as well. "To recycle or Not to Recycle" is a big question when it comes to plastic recycling. Some plastic types are not recycled because they are not economically feasible to do so.

Challenges for the Plastic Recycling Industry



Plastic recycling faces many challenges, ranging from mixed plastics to hard-to-remove residues. The cost-effective and efficient recycling of the mixed plastic stream is perhaps the biggest challenge facing the recycling industry. Experts believe that designing plastic packaging and other plastic products with recycling in mind can play a significant role in facing this challenge.

The recovery and recycling of post-consumer flexible packaging is a problem. Most material recovery facilities and local authorities do not actively collect it due to a lack of equipment that can efficiently and easily separate them.

Oceanic plastic pollution has become a recent flashpoint for public concern. Ocean plastic is expected to triple in the next decade, and public concern has prompted leading organizations around the world to take action towards better plastic resource management and pollution prevention.

Looking towards the future

Recycling is critical to effective end-of-life plastic management. Increasing recycling rates have resulted from greater public awareness and the increased effectiveness of recycling operations. With increased operational efficiency supported by ongoing investment in research and development, recycling of a greater range of post-consumer plastic products and packaging will help divert more end-of-life plastic wastes in landfills and water bodies. Industry and policymakers can also help stimulate recycling activity by requiring or incentivizing the use of recycled resin versus virgin plastics.

Effective Plastics Waste Management & Advancement in Recycling

Banyan Nation, a plastics recycling start-up from the Indian city of Hyderabad, stunned the world by winning the Dell People's Choice Award for Circular Economy Entrepreneur as part of the Circulars Awards at the World Economic Forum in Davos. The five-year-old company is known for its work with Tata Motors in recycling automotive bumpers and for working with the French cosmetics company L'Oréal to recycle shampoo bottles. But its true innovation lies in its efforts to address the three key challenges in plastics recycling in countries like India – addressing the "last-mile" of the waste through a digital network; developing a strategy for cleaning and sorting the plastic waste economically to ensure creation of a secondary-use pellet that was comparable to primary plastic; and lastly partnership with large state-wide entities and multi-national corporations towards the waste-to-product recycling for e-waste, automobile parts and consumer products packaging.

Deshmukh Research Institute demonstrated how coming from a small village patented application was developed for developing useful products from village waste. DRI has made bricks which is projected to be used for Army bunkers as it has ability to absorb the power of high intensity gun firing. This application alone can absorb large scale mixed plastic waste consumption. He has developed equipment which can process 50kgs of mixed plastic waste to tiles, bricks, paver blocks and mile stones. Normally a village has population of 10000 to 20000 and average plastic waste generated will not be more than 50Kgs per day. By having such equipment in every village, all plastic waste can be converted to useful products for villages.



Recykal is a company which developed digital platform to help people to get value to their plastic wastage. Highly successful in Hyderabad, it is likely to hit all major cities. The App-based waste collection and creation of value for the waste segregated has helped in cultural changes of people.

Gore Plastics and Carbouys, a Pune based company demonstrated with a glass reactor how plastic waste is converted to Diesel which can be used as fuel for vehicles or for energy generation. The company has successfully installed two 5 ton capacity plants in Southern India. This is useful in medium cities where collection of waste is higher. Worst of plastic waste mixed with even Tetra Pak cartons can be converted into useful fuel for tractors and energy generation.

A Pune based start-up company **PlusOne** has developed employment to thousands of people for making school bags out of Flex panels waste. Normally Flex panels which are used for advertisements are literally dumped for land filling. Such flex can be now made useful. It is a social enterprise, but having large impact on Swachh Bharat program. Flex are made from PVC and normally would have gone for land filling.

Such systems level approach is perhaps the only way we are going to address the challenge of plastics pollution and ensure their continued use to fuel life-changing innovation across the world.

Source: www.plastemart.com/ www.forbes.com

Industry Speak



Satyendra Sahai,
Head (Sustainable
Development), IOCL

What are the structural challenges that we face in the practical implementation of effective waste management in India?

Structural challenges lie in supply chain management of waste and recycled products. Effective waste management should ideally start from home or workplace. However, the indifferent behaviour of citizens, the opportunity to segregate ab-initio is lost. Lack of incentives to the

public-forums for waste management can be another reason for generating awareness.

Responsibility of waste management has been with civic authorities. The revenue generated from citizens by the departments did not create any technically effective infrastructure/ procedure. Consequently, employed primitive methods are over loaded and unsupervised, making them ineffective.

Value creation from the waste is missing therefore any project based on waste needs subsidy to make it viable. Unscrupulous

procedures result in such projects dying within a short span of time. Few scrupulous investors setting up projects is almost inconsequential compared to required CAPEX for eradicating the problem.

To summarize the structural challenges for implementation of effective waste management system in India:

- Segregation and storage of MSW at source is lacking and the compostable / non-compostable waste is disposed off to a common community dustbin/ disposal- centre.
- Demarcation of storage area to place the segregated waste in a scientifically safe manner has been lacking.
- Street sweeping and drain cleaning activities are irregular and MSW is dumped in the open on roadsides.
- Local civic bodies that are responsible for managing the process are unscrupulous, thus not efficient enough to form a system in which latest scientific treatment methodologies can be adopted.
- Capacity building and availability of skilled labour, familiarity with new and as well as best practices available for SWM; financial incentives for identifying new techno-feasible solutions; appropriate and quick decision at ULBs level for smooth implementation are real challenges.

How can we bring together various stakeholders, especially the Government, local bodies and authorities, the industry and the numerous NGOs and public at large to effectively tackle the problems created by tonnes of plastics waste?

'Collected post-consumer plastics' is a resource which is easily convertible for next use through a technically sound project. In last few years sufficient stress has been laid on behavioural aspects of common man towards littering. Subsequently, infrastructure development should start in PPP model where substantial infrastructure can be developed while generating profits at the same time.

The key stakeholders influencing the entire value chain of PPP model are:

1. Urban local bodies/municipalities
2. NGOs/social workers/environmentalists
3. Waste generator
4. Technology provider
5. Bilateral and multilateral agencies- International donor agencies
6. Banks and non-banking financial corporations

These stakeholders can be brought together by designing & implementing a sustainable waste management plan with clear roles & responsibility defined for each stage. The supervision should be in the hands of civic/ sanitation department while execution is carried out by the capital investors.

What, in your opinion, is the kind of support that manufacturers, both large scale as well as start-ups, must be given to manage the entire process of reducing plastics waste? This means, right from using bio-degradable inputs to plastics processing to recycling and/ or disposal?

1. The support in form of financial subsidies should be discouraged. The process of post-consumer waste collection and handover to manufacturer/start-up, foremost, needs a transparently enforced plan to reduce plastic waste.
2. Environmentally benign practices are the need of the hour to cope with the almost exponential growth of plastic waste. For this, appropriate technological solutions through PPP model, is required.
3. Creating competency through skill development schemes of the government and provide sufficient financial support to urban local bodies for development of municipal solid waste infrastructure.
4. There is need to implement manage and handle the latest technology/know-how with the subject experts' firms and companies.
5. Establishment of the good public governance in compliance with secured regulatory framework and appropriate financial support and strict contract implementation is required for the success of PPP.
6. Support can include tax rebates, research and development funds, technology incubation, public-private partnerships, and support to projects that recycle single-use items and turn waste into a resource which is reusable.
7. Provide economic incentives to encourage the uptake of eco-friendly and fit-for-purpose alternatives that do not cause more harm.
8. Reduce or abolish taxes on the import of capital goods required by manufacturer/ start-up
9. Use public money collected through taxes/levies on collection of single-use plastics to maximize the public good, thereby supporting local recycling with the funds and creating jobs in the plastic recycling sector with seed funding.

How can plastics waste be used as an effective energy efficient resource on a large scale in the coming years?

Numerous technologies are under progress for converting carbonaceous waste to fuel. These are experimental and expensive procedures where very high temperature plasma torch is used to break the molecules of waste stream into "Syn-Gas".

However, given the outlook, these technologies can be deployed to consume rejects of plastic recycling in a safe and sustainable manner. The output streams may be used as fuel or raw-material for chemical process industry. These technologies are best solutions for handling bio-medical waste which has large plastics component.

What are the kind of engineering and non-engineering products categories which can benefit from plastics recycling / up-cycling?

Novel applications are already available in the market which needs to scale up for better realization.

Engineering Products:

1. Plastics road construction - Plastic roads are made entirely of plastic or of composites of plastic with other materials. The types of plastic that can be used for construction of roads are Polystyrene (PS) (hard packaging, cartons, plates, vending cups etc.); Polypropylene (PP) (ketchup bottles, yogurt cups etc.); Polyethylene (PE) (both high and low density - plastic bags, water bottle, shampoo bottle etc.).
2. Plastic to toilet (Plastone) - Plastone is a material prepared using waste plastics available in the solid waste of the particular area which can be segregated and used as binder with the stone aggregate. This prefabricated Plastone can be used in the construction of structure of the toilet blocks (individual household latrines) and is an effective substitute for bricks and cement blocks
3. Plastic to Pavement Blocks - The 'Plastone block technology' can be used for construction of Pavement blocks. The Plastone blocks are made from mixture of waste plastics and stones and have been found to be five times stronger than the cement concrete block and is able to withstand more pressure and resist percolation of water.
4. Conversion of PET bottle waste into textile products - This eco-friendly process of conversion of PET bottles to bags/textile products is based on zero waste concepts, uses renewable energy, prevents sewage pollution, reduces consumption of bags and creates green environment.

Non-Engineering Products:

1. RECYCLED HDPE PRODUCTS - Tubes, sewer pipes, pallets, boxes, buckets, toys, bottles for detergents, construction, cable insulation, packaging of food products etc.
2. RECYCLED PP PRODUCTS - Pipes, pallets, boxes, furniture, car parts, pots of yoghurt, buckets, butter, margarine, fibers, milk crates, etc
3. RECYCLED LDPE PRODUCTS - Flexible packaging, bin liners, carrier bags, tubes, agricultural mulch film, agricultural sheet, construction film, cling-film, heavy duty sacks, etc.
4. RECYCLED PET PRODUCTS – non-food item bottles, Cosmetic Bottles
5. RECYCLED PVC PRODUCTS - Sewer Pipes, Window frames, Construction, Flooring, Wallpaper, Bottles, Car Interiors, Medical products, Planks, etc.



Interest Equalization Scheme

Stimulating Indian Exports

In April 2015, the Cabinet Committee on Economic Affairs gave its approval for Interest Equalisation Scheme – IES (earlier referred to as Interest Subvention Scheme) with The broad objective of providing exporters with a cheaper source of rupee credit, both, for pre-shipment and post-shipment activities at a rate of 3 per cent.

The Government has positioned the IES as an export incentive, whereby eligible exporters get interest subvention on their export credit. It is expected that cheaper working capital will enable these exporters to become more competitive. The original IES, which was launched in 2015, provided incentive to all manufacturer-exporters who were MSMEs and all manufacturer-exporters under 416 specific tariff lines at 4-digit HS code. These 416 products were largely labour intensive manufactured goods and chosen with a broader goal to promote export-led job growth in manufacturing. IES for pre and post shipment rupee export credit is implemented through RBI and its network of bank.

The following were the features of the Interest Equalisation Scheme when it was launched:

1. The rate of interest equalisation would be 3 percent. The scheme would be available to all exports of MSME and 416 tariff lines. Scheme would not be available to merchant exporters.
2. The duration of the scheme would be five years with effect from 1.4.2015.

3. The scheme would be funded from the funds available with Department of Commerce under non-plan during 2015-16 and the restructured scheme would be funded from plan side from 2016-17 onwards
4. Ministry of Commerce & Industry may place funds in advance with RBI for requirement of one month and reimbursement can be made on a monthly basis through a revolving fund system
5. On completion of three years of operation of the scheme, the Department of Commerce may initiate a study on impact of the scheme on export promotion and its further continuation. The study may be done through one of the IIMs.
6. The operational instructions of the scheme would be issued by RBI.
7. The scheme covers mostly labour intensive and employment generating sectors.

W.E.F November 02, 2018, Interest Equalization rate has been increased from 3% to 5% in respect of exports by the Micro Small Medium Enterprises (MSME) sector manufacturers under the Interest Equalization Scheme on Pre and Post Shipmen Export Credit.

In the initial plan, Merchant Exporters were excluded from the scheme, much to their anguish. Exporters had been persistently pursuing the inclusion of the merchant exporters in the ongoing scheme as they play an important role in finding overseas markets, getting export orders, communicating current preferences, trends and demand for products in international export markets to MSME manufacturers, etc. They also are pivotal to the MSME manufacturers as a significant quantity of their products are exported by Merchant exporters. And the high cost of credit equally impacts their competitiveness as they need to factor in the high interest in their export costing.

W.E.F. January 2, 2019, merchant exporters have also been included under the ongoing Interest Equalization Scheme allowing the equalization rate of 3% per annum for export of products covered under 416 tariff lines identified under the scheme.

The scheme will help the following identified export sectors to be internationally competitive and achieve higher level of export performance. For complete tariff line, please visit on http://plexconcil.co.in/images/pdf/416_tariff_lines.pdf

Operative guidelines have been issued by RBI from time to time. Relevant RBI notifications are as follows :-
 DBR.Dir.BC.No.62/04.02.001/2015-16 December 4, 2015
 DCBR.CO.SCB.Cir.No.1/13.05.000/2015-16 dated February 11, 2016
 DBR.Dir.BC.No.09/04.02.001/2018-19 dated November 29, 2018
 DBR.Dir.BC.No.22/04.02.001/2018-19 dated January 11, 2019
 Trade is requested to make maximum advantage of this scheme.

The list of 416 tariff lines is given below:

S.No.	Sector	Coverage	No of HS4 lines
1	Process agriculture/Food items	All lines	22
2	Handicraft	All lines	37
3	Carpet (Excl. Silk) Handmade	All lines	5
4	Handloom Products	All lines	2
5	Coir & Coir Manufactures	All lines	5
6	Jute Raw, Yarn	All lines	2
7	Other Jute Manufactures	All lines	1
8	Readymade Garments and Made ups (Ch 61-63)	All lines	42
9	Fabric of all types	All lines	33
10	Toys	All lines	1
11	Sports Goods	All lines	8
12	Paper, Stationary	All lines	8
13	Cosmetics and Toiletries	All lines	8
14	Leather Goods and footwear	All lines	7
15	Ceramics and Allied Products	All lines	12
16	Glass and Glassware	All lines	17
17	Medical and Scientific Instruments	All lines	15
18	Optical Frames, Lenses, Sunglasses Etc	All lines	4
19	Auto Components/Parts	All lines	6
20	Bicycle & Parts	All lines	3
21	Articles of Iron or Steel	Notified lines	20
22	Misc. Articles of base metals	Notified lines	10
23	Industrial Machinery, Electrical and Engineering items, 1C Engine, Machine tools, Parts	Notified lines	141
24	Electrical Machinery and Equipment	Notified lines	1
25	Telecom Instruments	Notified lines	6
26	All items manufactured by SMEs other than those covered above	All lines	
Grand Total			416

Industrial Entrepreneur Memorandums Update

IEMs signed in the Plastics segment during April 2019

IEM No.	Company Name	State	Item of manufacture
638	Macro Technologies Private Limited	Andhra Pradesh	Plastics injection moulded parts
657	Polyplastic Industries (India) Private Limited	Gujarat	Auto components of plastic
695	Polycab India Limited	Gujarat	Pipes, fittings and castings
720	Machino Plastics Becharaji Limited	Gujarat	Auto components of plastic
739	Shriji Polymers India Limited	Madhya Pradesh	HDPE bottles and caps
719	Commercial Syn Bags Limited	Madhya Pradesh	Tarpaulin pond liner, mulch films etc.
756	Vectus Industries Limited	Madhya Pradesh	PVC pipes and fittings
681	Hanaprotech Moulding and Tools Private Limited	Maharashtra	Plastic moulded components
677	Flexipol Foams Private Limited	Rajasthan	Plastics in primary forms
687	S D International Private Limited	Uttar Pradesh	Rubber and plastic products
777	SRB Plastipack LLP	Uttar Pradesh	HDPE / PP fabric

Source: Ministry of Commerce & Industry, Government of India










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Know Your COA Member



Interview with Vimal Rathod, MD, Flair Writing Industries Ltd; COA Member & Panel Chairman (Writing Instruments), Plexconcil

Flair Writing Industries Limited is a leading manufacturer and exporter of writing instruments in India. Comprising over 650 products including Metal

Pens, Ball Pens, Gel Pens Fountain Pens, Roller Pens, Refills and Stationery products such as Correction Pens, Markers, Highlighters, Mechanical Pencils, Gel Crayons & Calculators, the company's flagship brand "Flair" was first established in 1967 and today, it celebrates over five decades of success, going from strength to strength each year. In the year 2018, the Flair sold 1 Billion pens!

Flair has been credited with bringing international brands such as Pierre Cardin (Paris), Hauser (Germany), Rudi Kellner to India. Flair also relaunched Reynolds in India, with manufacturing and exclusive distribution for some categories of Reynolds pens in India. Flair is also distributor of "ZIG" (Japan) pens in India.

Mr. Vimal Rathod, Managing Director of Flair Writing Industries is a COA member and Panel Chairman (Writing Instruments) at Plexconcil. He has also served a successful tenure as Chairman of Plexconcil between 2003 and 2005. Today, he talks about his journey and shares with us valuable insights into the making of a success story.

Q: When did your career as an entrepreneur first begin?

A: Flair Writing Industries was first established in the year 1967 under the leadership of my elder brother and mentor, Mr. K J Rathod. Having completed my education, I began my career with the company sometime in 1975. Our flagship brand "Flair" was established in 1976.

Q: How has your journey been so far? What was your vision for the company?

A: At the time that we first commenced with our business, the objective was really simple. It was to establish our own enterprise and we saw an opportunity in the pens manufacturing industry; and that is simply how we started our journey. In the 60's the focus was on metal pens or ink pens as they were known and there were many small-scale manufacturers who supplied their products to wholesale markets. With new technologies coming in, the industry gradually grew and that is when we began to witness the shift from ink pens to plastic ball point pens. While all smaller businesses functioned more like cottage industries with much smaller manufacturing capacities, in the ballpoint pen segment, Camlin, Wilson & Plato were perhaps the only major brands that prevailed.

Today, Flair has expanded its business across many territories and regions, reaching customers through its nationwide sales team of over 800 sales and marketing employees, more than 100 super-stockiest, 7,000+ distributors & approximately 2,50,000 wholesalers and retailers across India. We also have around 50 international distributors catering to more than 80 countries across the world. The company has 7 manufacturing plants spread across Daman, Dehradun, Valsad and Mumbai, which is also our headquarters.

Q: What were the challenges that you had to overcome in the early part of your career?

A: Back in the days, we were often faced with shortages in raw material. By that, I mean components. Refills were not always available and because we functioned like cottage industries, manufacturing units functioned more like assembling units and products were hand assembled. Given the perennial shortage of key components, meeting delivery commitments were quite a challenge. Fortunately, as the Indian market was yet to become quality conscious and sensitive, we were not majorly confronted with quality issues. Having said that, at Flair, we have always tried to maintain our quality standards, despite low awareness and easy acceptance of products in the market.

We commenced our exports in 1980 and in that era, it was quite difficult for Indian manufactured products to break easily into global markets. This was majorly on two accounts. Foremost, there was complete lack of awareness of export procedures and policies amongst the industry. And for those who were aware, unlike today, procedures were long and cumbersome. On the other hand, importers often had pre-disposed notions towards Indian exporters and there was a lack of trust in the quality and delivery of our products. A scenario that seems so far away as today our products are the most respected across the world.

Q: What is your brand's USP? How do you keep ahead of your game?

A: Our brand. Our quality. Innovative products and our high-volume manufacturing capacities. Our factories are equipped with hi-tech assembly machines, advanced tip machines, Packing machines, multi-cavity moulds and injection-moulding machines which are designed and fabricated in India, China, Germany, South Korea, Spain and Switzerland. Our products are respected and renowned for quality and competitive pricing not only in India, but across the globe. Flair today has received recognition as "Asia's Most Promising Brands" by ibrands 360. Our company has also won several awards for our export performance from the Plastics Export Promotion Council, India.



Q: What is your mantra for success?

A: Foremost, in any line of business, keeping up to your commitment is paramount. This leads to building trust that is the foundation of a successful business relationship. Innovation, ensuring consistency in the quality of your products and maintaining competitive pricing, especially in our product line, is very crucial to succeed and also stay ahead of your competitors.

Q: What are your plans for the future?

A: We plan to extend our business into the stationery segment. China is one of the biggest players in the segment today. However, with on-going trade wars between the US and China, many markets are looking towards India to fulfil their requirements and I believe that we are now well equipped to meet the voluminous demands of this segment.

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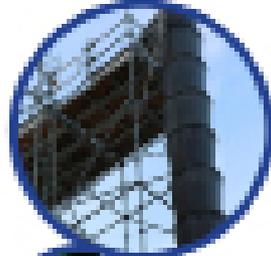
POLYENE has pioneered many challenging applications for plastics, such as Railway chairs, plastic flooring, PV pumps (Plasticon Award Winner 2005), plastic flooring, self priming arrangement for Irrigation pump sets, declared finalist at World Bank Development Marketplace 2006 and India Development Marketplace 2007 of World Bank.

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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

HISTORY OF THE PLASTICS EXPORT PROMOTION COUNCIL (PLEXCONCIL)

Plastics and Linoleum Export Promotion Council

The Plastics and Linoleum Export Promotion Council was set up in July 1955. Its general body consists of nearly 100 members, while its Committee of Administration has 15 members including the Chairman. Its main office is at Maharashtra Chamber of Commerce, 12 Rampart Row, Bombay, while a branch office is situated at 38 Strand Road, Calcutta.

Main Activities—The main activities of the Council are:—

1. Participation in exhibitions;
2. Sending samples to showrooms,
3. Publishing a bulletin,
4. Publishing a Directory of Exporters and Manufacturers;
5. Conducting market surveys;
6. Helping in the standardisation of plastic manufactures; and
7. Collection of export statistics

Trade Delegations.—Early in 1957, a trade delegation sponsored by the Export Promotion Council visited African and West Asian countries and studied the markets there, with particular reference to the imports of plastic goods from other countries, in order to assess India's competitive position in respect of these products. One of the important conclusions arrived at was that there was a very good market for items like leather cloth in some of the countries and this has been vigorously followed up by the Council with the members of the industry and trade and a substantial increase in exports of this item has already materialised. Again in March, 1958, the Council sent out a trade delegation to the South-East Asian countries to study the markets there for Indian goods. The third delegation sponsored by this Council visited the Middle East countries, Persian Gulf, and Aden in March-April, 1959. Reports of these delegations containing particulars relating to export promotion possibilities for Indian plastic goods to the countries visited are published by the Council.

Special Export Promotion Scheme—The most important item of export promotion work undertaken by the Plastics Council is administration of the Special Export Promotion Scheme providing for the supply of raw materials, machinery, etc., to the manufacturers/exporters of plastic goods against their undertaking additional exports during the year.

Overseas Representatives—The Council has appointed a representative in Mombasa for collecting information relating to market trends, etc., and supplying the same to the Indian exporters through the Council. The Representative also undertake canvassing for Indian plastic goods and books orders on behalf of the Indian exporters.

History of Plexconcil Interesting Trivia

- Formerly established as the Plastics and Linoleum Exports Promotion Council, Plexconcil as it is known today first set up operations in 1955 in Mumbai and Kolkata.
- In the year of establishment, the Council had 100 members and a COA comprising 15 members, including the Chairman.
- The first sponsored trade delegation was sent to African and West Asian countries in 1957.
- The Council's most important task was the administration of Special Export Promotion Schemes for the supply of raw material, machinery, etc.
- The first overseas representative was appointed in Mombasa, Kenya, for the collection of market intelligence and information; as well as canvas business for Indian plastics products.

New Members

S.No	Company	Address	Director	Email
1	Parvez Human Hair Enterprise	Paramhalla Sarulia Beldanga, Beldanga , West Bengal	Parvez Sajjad Alam	parvezhumanhairenterprise@gmail.com
2	Rudra Rope Industries	Sr No 802, Nr Shreeji School, Jamnagar Samana Highway, At Lalpur, Moti Veraval, Jamnagar	Mayank R Abhangi	rudraropeindustries@gmail.com
3	Shree Pardarshak Poly Pack	Sanala S.No.27/P-1, Rajpar Road, Shakat Sanala,Morbi, Rajkot	Hiteshbhai D Adroja	shreepardarshak@gmail.com
4	Autus International	Gat No.555, Solu Midc Tal – Khed , Pune	Lina B Vyavhare	sales@autusinternational.com
5	Sure Vinyl Private Limited	3-B Kalpana Society, Mahemdabad Kheda, Mahemdabad	Alpeshkumar A Desai	alpeshnimisha@yahoo.com
6	P&H Melamine Tableware Private Limited	Plot No. 49, Ground Floor, Najafgarh Road, Ind .Area, New Delhi	Ajay Kapoor	ajay@hnhhotelwares.com
7	Amrut Brothers	24 Manorath Estate Nr. Milan Cinema Saraspur, Ahmedabad	Bheraji K Luhar	exports@amrutbrothers.com
8	Oscar Polypack	Plot No. G-2135, Road No. 1-E, Kishan Gate, Metoda Gidc, Rajkot	Samir L Vadaliala	info@oscarpoly.com
9	Aries International	B 2/196, Paschim Vihar, New Delhi	Naresh Rajora	ariesinternational6@gmail.com
10	Rita Industries	Flat No.6, 1st Floor, Bhagwan Shiv Shivneri Co.Op.Hsg.Soc., Sahar Road, Parsiwada, Chakala, Andheri (E), Mumbai	Dhiraj M Shah (Huf)	accounts@ritaindustries.com
11	Slogan Polypack Pvt Ltd	Survey No. 36/P4, Saraya Nesda Road, At Saraya, Tankara, Morbi	Becharbhai B Dhedhi	slogan.polypack@gmail.com
12	Aerolam Insulations Pvt Ltd	701, Shilp Aperia, Nr. Landmark Hotel, Is-con Ambali Road, Bodakdev, Ahmedabad	Brijesh N Patel	phmistry72@gmail.com
13	Essen Industry	Plot No. A77 To A79 Shreenathjii Industrial Estate, Bakrol Bujrang, Ahmedabad	Manthan N Panchal	contact@essensupply.com
14	Parth Poly Coat Yarn Private Limited	53,Mahashakti Industrial Estate, B/H Anil Strach Mill, Bapunagar, Ahmedabad	Shaileshkumar K Koladiya	admin@ppcypl.com
15	Krishi Geopack Private Limited	7th Floor Indra Complex, Sindhvaimata Cross Road, Manjalpur, Vadodara	Joseph Fransis	kikkeri.alok@rishifibc.com
16	Emerald Polymer And Chemicals	F-84 Okhala Industrial Area Phase-I, New Delhi	Sandeep Kumar	emeraldpoly1@gmail.com
17	Secure Polymers Pvt Ltd	Survey No.257, Plot No.5, Opp. Murlidhar Weigh Bridge, Shapar-Veraval, Rajkot	Rasiklal V Viradia	secure@secure-strap.com
18	Ocean Packaging	Plot No. 9 & 10 Sr No 183, Ratanpar Kherali Road Nr Gove High Rise Building , Surendranagar	Yogesh J Gami	oceanpkd@gmail.com
19	Em-Technik India Private Limited	279, Shivajinagar Behind Congress House, Pune	Satish N Kamath	s.kamath@em-technik.in
20	Laminex	Joshi Building, 2nd Floor, FL. Gomes Road, Vasco Da Gama, Goa	Parag Joshi	laminexd11@gmail.com
21	Sree Ambica Knits	No 9 Periyar Nagar Kvb Nagar Road Sengunthapuram(Post), Karur	K S Ashwinkumaar	krgr999@gmail.com
22	Arnav Impex	B78 Girdharpark Society, Novino Tarsali Road, Makarpura, Vadodara	Hareshbhai Limbani	crystalpoly2017@gmail.com
23	Shri Khemisati Plaspak Llp	"E 514 Kailash Industrial Complex Parksite, Vikhroli West, Mumbai	Kamla Dharmal Verma	khemiindia@yahoo.com
24	R.R Engineers	22, Rahul Bhawan, Paharpur Chauraha, Kursi Road, Lucknow	Ravindra Kumar	rrengineers.tech@gmail.com
25	Himalayan Packaging Industries Private Limited	F-10, Lgf, Jungpura Extension, New Delhi	Subhash Chandra Daga	varun@himalayangroup.co.in

Business Inquiries

Name	Mario Schilling
Address	Waterloo 539 - Las Condes, Chile
Email	mario@casia.cl
Contact	56 9 97339888
Enquiry	Buyer is interested in importing Jumbo Bags (HS Code 3923.29.90 and 6305.32.00) from India.

Name	Neil McCracken
Company	4 Front Development
Address	PO Box 16,16122, Nobby Beach Queensland Australia
Email	neil.mccr@yahoo.co.uk
Contact	0444545156
Enquiry	Buyer is interested in importing HDPE products used for garden and landscaping from India

Name	David Majesz
Company	Caseling Inc
Address	9 Nicklesburg Rd # 201 Monroe NY 10950
Email	david@caseling.com or yorksalesys1@gmail.com
Contact	718-913-4883
Enquiry	Buyer is interested in importing EVA hard cases (HS Code 4202.92.9700) from India

Name	Carlos Siu
Company	Primazol C.A.
Address	J-29647989-5, Av. 67 Nro 148A-99 Zona Industrial 2da Etapa, Maracaibo, Venezuela
Email	carlos.siu@primazol.com
Contact	0261-7140125 / 7140128
Enquiry	Buyer is interested in importing Polypropylene from India

Name	Kanaya Hassamal
Company	Bulchand Hassamal & Co. Ltd. / Mitrosh Co. Ltd.
Address	Villa Chambly, Eau Coulee, Mauritius
Email	bulchand@intnet.mu, mitrosh@intnet.mu
Contact	230-5256-1060; 230-5756-1020
Enquiry	Buyer is interested in Polypropylene Mats (PP Mats)

Name	Mauricio Olivares
Company	Vanni Maria Angelica S.A.
Address	Lira 2510, San Jaoquin, Santiago Chile
Email	molivares@vannichile.cl, fzamorano@vannichile.cl
Contact	56-963000856
Enquiry	Buyer is interested in Plastic film / tape, plastic cups / bowl / bottles, garbage bags etc.

Name	David Fish
Company	CEM Corporation
Address	3100 Smith Farm Road, Matthews, NC 28104, USA
Email	david.fish@cem.com
Contact	704-821-7015 (ext. 1170)
Enquiry	Buyer is interested in importing Masterbatches from India

Name	Ing. Ismael Ruiz Pimentel
Company	Reciplac
Address	Profr. Juan Luna No. 90, Co. Jauja, Zacapu, Mich., Mexico
Email	ismaelruizpimentel@hotmail.com
Contact	436-1014-205 / 436-1004-165
Enquiry	Buyer is interested in importing Polypropylene from India

Name	Ing. Igor Rosete Solorzano
Company	Envasadora Gugar, S.A.
Address	Camino de la Toma No. 108, Tlalixtac de Cabrera, Oaxaca, Mexico
Email	irosete@envasadoragugar.com.mx
Contact	951-5032800 / 951-5032820
Enquiry	Buyer is interested in importing PP and PET from India

Name	Horacio Mazariegos
Company	Mazariegos & Asociados
Address	Watteau #72 Int. 303, Col. Sta. Maria Nonoalco, Del. Benito Juarez, c.p. 03700, Ciudad de Mexico
Email	hmazariegos@mazariegosasociados.org
Contact	521-5553498110
Enquiry	Buyer is interested in importing laminated sheet for thermoforming

Name	Carlos Flores
Company	Grupo Come In
Address	Blv. Hidalgo #2534, Col. Tablas de la Virgen. León, Guanajuato. Mexico
Email	comein.contacto2@gmail.com
Contact	+52 (477) 700 8281
Enquiry	Buyer is interested in importing HDPE Melt Flow Index 20 "Food Grade" and biodegradable resin from India.

Name	Hector Gabriel Temprano
Company	Force Line Ind. e Com. de Comp. Eletron. Ltda.
Address	R. Elói Cerqueira, 286 - Belém, São Paulo - SP, 03062-010
Email	hector.gabriel@forceline.com.br
Contact	+55 11 2799-7727
Enquiry	:Buyer is interested in importing Flexible PVC Compound (HS Code 4550.30.00) from India

INTERNATIONAL EVENTS



PLEXCONCIL would be facilitating Indian participation at 12 international events. The planned events for 2019-20 are enlisted below and have been duly approved by the Government of India for financial assistance under the MAI Scheme. Separately, the council has also planned for taking business delegation to some countries.

PLASTIMAGEN FEI PLAST	PLASTPOL	COMPLAST MYANMAR		COMPLAST SRI LANKA		K FAIR VIETNAM PLAS	COMPLAST SOUTH AFRICA	PLAST EURASIA		INTERPLASTICA	INTERNATIONAL HOME HOUSEWARE SHOW JEC WORLD CAPINDIA
April 2019	May 2019	June 2019	July 2019	August 2019	September 2019	October 2019	November 2019	December 2019	January 2020	February 2020	March 2020

Source: PLEXCONCIL

Other Important Industry Events For Plastics (August 2019 - October 2019)

COMPLAST SRI LANKA	SOUTH ASIA	Sri Lanka	August 9 - 11, 2019
Vietnam Plas	ASEAN	Vietnam	October 3 -9, 2019
K show Germany (K 2019)	EUROPE	Germany	October 16 -23, 2019

Plastics Export Analysis

UNITED STATES OF AMERICA			
Product Category	Apr 2018	Apr 2019	Growth
	USD Mn	USD Mn	%
All types of optical items (incl optical frames, lenses, sunglasses etc)	3.48	1.03	-70.4%
Brushes (all kinds)	0.80	1.32	65.0%
Electrical items	0.11	0.19	72.7%
Floorcoverings	0.12	0.15	25.0%
Houseware	1.53	1.26	-17.6%
Human Hair & Products thereof	1.49	1.36	-8.7%
Laminates	0.84	1.01	20.2%
Leathercloth	5.40	3.96	-26.7%
Medical Disposables	1.06	0.89	-16.0%
Monofilaments	1.16	1.36	17.2%
Nets (including fishnets)	0.52	0.62	19.2%
Other moulded and extruded items	13.08	18.04	37.9%
Others plastic items	1.41	1.50	6.4%
Packaging items	10.47	13.27	26.7%
Pipes, tubes, hoses etc and fittings thereof	1.81	1.47	-18.8%
Plastic Raw materials	11.29	12.33	9.2%
Plastic sheets, films, plates etc	18.81	19.82	5.4%
Ropes, twines, cordage	0.81	1.05	29.6%
Self-adhesive sheets/films etc	0.92	1.54	67.4%
Stationery/Office School supplies	0.47	1.36	189.4%
Stoppers, closures, lids etc	0.23	0.64	178.3%
Travelware	0.47	1.93	310.6%
Woven sacks/FIBCs	17.68	17.16	-2.9%
Writing Instruments	6.46	4.29	-33.6%
Grand Total	100.42	107.55	7.1%

CHINA			
Product Category	Apr 2018	Apr 2019	Growth
	USD Mn	USD Mn	%
All types of optical items (incl optical frames, lenses, sunglasses etc)	0.89	0.31	-65.2%
Brushes (all kinds)	0.01	-	-100.0%
Electrical items	0.10	0.04	-60.0%
Houseware	0.95	0.91	-4.2%
Human Hair & Products thereof	16.01	15.06	-5.9%
Leathercloth	0.02	-	-100.0%
Medical Disposables	0.07	0.02	-71.4%
Other moulded and extruded items	0.54	0.51	-5.6%
Others plastic items	0.16	0.33	106.3%
Packaging items	0.55	0.31	-43.6%
Pipes, tubes, hoses etc and fittings thereof	0.06	0.14	133.3%
Plastic Raw materials	80.51	54.95	-31.7%
Plastic sheets, films, plates etc	2.54	3.11	22.4%
Ropes, twines, cordage	-	0.04	NM
Self-adhesive sheets/films etc	-	0.24	NM
Stationery/Office School supplies	0.19	0.03	-84.2%
Stoppers, closures, lids etc	0.03	0.10	233.3%
Travelware	0.06	0.18	200.0%
Woven sacks/FIBCs	0.27	0.87	222.2%
Writing Instruments	0.10	0.05	-50.0%
Grand Total	103.06	77.20	-25.1%

Plastics Export Analysis

UNITED ARAB EMIRATES			
Product Category	Apr 2018	Apr 2019	Growth
	USD Mn	USD Mn	%
All types of optical items (incl optical frames, lenses, sunglasses etc)	1.39	2.95	112.2%
Brushes (all kinds)	0.17	0.76	347.1%
Electrical items	0.56	0.71	26.8%
Floorcoverings	0.74	1.12	51.4%
Houseware	2.15	1.84	-14.4%
Human Hair & Products thereof	0.56	0.29	-48.2%
Laminates	1.50	1.42	-5.3%
Leathercloth	2.09	1.32	-36.8%
Medical Disposables	0.32	0.17	-46.9%
Monofilaments	0.07	0.04	-42.9%
Nets (including fishnets)	0.32	0.30	-6.2%
Other moulded and extruded items	2.04	4.27	109.3%
Others plastic items	0.29	0.39	34.5%
Packaging items	2.52	3.24	28.6%
Pipes, tubes, hoses etc and fittings thereof	0.92	4.02	337.0%
Plastic Raw materials	13.40	18.95	41.4%
Plastic sheets, films, plates etc	4.20	4.33	3.1%
Ropes, twines, cordage	0.70	0.60	-14.3%
Self-adhesive sheets/films etc	0.28	0.74	164.3%
Stationery/Office School supplies	0.06	0.10	66.7%
Stoppers, closures, lids etc	0.93	0.77	-17.2%
Travelware	0.14	0.25	78.6%
Woven sacks/FIBCs	3.50	4.61	31.7%
Writing Instruments	0.63	0.46	-27.0%
Grand Total	39.48	53.65	35.9%

Plastics Export Analysis

BANGLADESH			
Product Category	Apr 2018	Apr 2019	Growth
	USD Mn	USD Mn	%
All types of optical items (incl optical frames, lenses, sunglasses etc)	0.38	0.34	-10.5%
Brushes (all kinds)	0.06	0.03	-50.0%
Electrical items	0.04	0.08	100.0%
Floorcoverings	0.01	0.05	400.0%
Houseware	0.03	0.02	-33.3%
Human Hair & Products thereof	0.60	0.22	-63.3%
Laminates	0.07	0.11	57.1%
Leathercloth	0.45	0.61	35.6%
Medical Disposables	0.26	0.20	-23.1%
Monofilaments	0.03	0.02	-33.3%
Other moulded and extruded items	0.79	0.80	1.3%
Others plastic items	0.21	0.17	-19.0%
Packaging items	0.59	1.65	179.7%
Photo Films	0.04	0.09	125.0%
Pipes, tubes, hoses etc and fittings thereof	0.17	0.21	23.5%
Plastic Raw materials	27.32	18.12	-33.7%
Plastic sheets, films, plates etc	3.25	2.44	-24.9%
Ropes, twines, cordage	0.03	0.05	66.7%
Self-adhesive sheets/films etc	0.04	0.19	375.0%
Stationery/Office School supplies	0.01	-	-100.0%
Stoppers, closures, lids etc	0.03	0.16	433.3%
Woven sacks/FIBCs	0.17	-	-100.0%
Writing Instruments	0.38	0.55	44.7%
Grand Total	34.96	26.11	-25.3%

Plastics Export Analysis

NEPAL			
Product Category	Apr 2018	Apr 2019	Growth
	USD Mn	USD Mn	%
All types of optical items (incl optical frames, lenses, sunglasses etc)	0.32	0.16	-50.0%
Brushes (all kinds)	0.27	0.29	7.4%
Electrical items	0.02	0.13	550.0%
Floorcoverings	0.14	0.12	-14.3%
Houseware	0.21	0.10	-52.4%
Laminates	0.76	0.76	0.0%
Leathercloth	0.31	0.25	-19.4%
Medical Disposables	0.12	0.14	16.7%
Monofilaments	0.05	0.03	-40.0%
Nets (including fishnets)	0.01	0.01	0.0%
Other moulded and extruded items	0.83	0.82	-1.2%
Others plastic items	0.22	0.16	-27.3%
Packaging items	1.64	0.89	-45.7%
Pipes, tubes, hoses etc and fittings thereof	0.63	0.61	-3.2%
Plastic Raw materials	8.63	11.52	33.5%
Plastic sheets, films, plates etc	3.26	3.51	7.7%
Ropes, twines, cordage	0.05	0.05	0.0%
Self-adhesive sheets/films etc	0.15	0.07	-53.3%
Stationery/Office School supplies	0.01	0.02	100.0%
Stoppers, closures, lids etc	0.49	0.48	-2.0%
Travelware	0.02	0.02	0.0%
Woven sacks/FIBCs	0.09	0.25	177.8%
Writing Instruments	0.46	0.34	-26.1%
Grand Total	18.69	20.73	10.9%

VIETNAM			
Product Category	Apr 2018	Apr 2019	Growth
	USD Mn	USD Mn	%
All types of optical items (incl optical frames, lenses, sunglasses etc)	0.03	0.01	-66.7%
Brushes (all kinds)	0.04	0.05	25.0%
Electrical items	0.01	0.01	0.0%
Floorcoverings	0.01	-	-100.0%
Houseware	-	0.02	NM
Human Hair & Products thereof	0.55	0.26	-52.7%
Laminates	0.34	0.18	-47.1%
Leathercloth	0.49	0.52	6.1%
Medical Disposables	0.04	0.09	125.0%
Monofilaments	0.18	-	-100.0%
Nets (including fishnets)	-	0.08	NM
Other moulded and extruded items	0.08	0.25	212.5%
Packaging items	0.28	0.10	-64.3%
Plastic Raw materials	12.77	9.00	-29.5%
Plastic sheets, films, plates etc	0.26	0.51	96.2%
Ropes, twines, cordage	0.01	0.01	0.0%
Self-adhesive sheets/films etc	0.06	0.10	66.7%
Stationery/Office School supplies	-	0.01	NM
Stoppers, closures, lids etc	0.06	0.03	-50.0%
Travelware	0.03	0.04	33.3%
Writing Instruments	0.21	0.22	4.8%
Grand Total	15.45	11.49	-25.6%

Plastics Export Analysis

INDONESIA			
Product Category	Apr 2018	Apr 2019	Growth
	USD Mn	USD Mn	%
All types of optical items (incl optical frames, lenses, sunglasses etc)	0.04	-	-100.0%
Brushes (all kinds)	0.28	0.97	246.4%
Floorcoverings	0.07	-	-100.0%
Houseware	0.04	-	-100.0%
Human Hair & Products thereof	0.44	0.33	-25.0%
Laminates	0.59	0.54	-8.5%
Leathercloth	-	0.04	NM
Medical Disposables	0.11	0.31	181.8%
Monofilaments	0.02	0.06	200.0%
Other moulded and extruded items	0.42	0.24	-42.9%
Others plastic items	0.09	0.06	-33.3%
Packaging items	0.16	0.20	25.0%
Pipes, tubes, hoses etc and fittings thereof	0.03	0.05	66.7%
Plastic Raw materials	6.98	5.16	-26.1%
Plastic sheets, films, plates etc	0.92	0.80	-13.0%
Ropes, twines, cordage	0.48	0.11	-77.1%
Self-adhesive sheets/films etc	0.01	0.03	200.0%
Stoppers, closures, lids etc	0.18	0.08	-55.6%
Travelware	-	0.10	NM
Woven sacks/FIBCs	0.02	0.03	50.0%
Writing Instruments	0.08	0.19	137.5%
Grand Total	10.96	9.30	-15.1%

SOUTH AFRICA			
Product Category	Apr 2018	Apr 2019	Growth
	USD Mn	USD Mn	%
All types of optical items (incl optical frames, lenses, sunglasses etc)	0.61	0.19	-68.9%
Brushes (all kinds)	0.05	0.08	60.0%
Electrical items	0.02	-	-100.0%
Floorcoverings	0.15	5.52	3580.0%
Houseware	0.04	0.07	75.0%
Laminates	0.24	0.06	-75.0%
Leathercloth	0.56	0.30	-46.4%
Medical Disposables	0.06	0.07	16.7%
Monofilaments	0.05	0.03	-40.0%
Nets (including fishnets)	0.03	-	-100.0%
Other moulded and extruded items	0.32	0.37	15.6%
Others plastic items	-	0.06	NM
Packaging items	0.34	0.51	50.0%
Pipes, tubes, hoses etc and fittings thereof	0.42	0.13	-69.0%
Plastic Raw materials	0.65	1.10	69.2%
Plastic sheets, films, plates etc	4.27	4.99	16.9%
Ropes, twines, cordage	0.05	0.12	140.0%
Self-adhesive sheets/films etc	0.33	0.36	9.1%
Stationery/Office School supplies	-	0.01	NM
Stoppers, closures, lids etc	0.06	0.09	50.0%
Travelware	0.04	0.03	-25.0%
Woven sacks/FIBCs	0.64	0.21	-67.2%
Writing Instruments	0.11	0.02	-81.8%
Grand Total	9.04	14.32	58.4%

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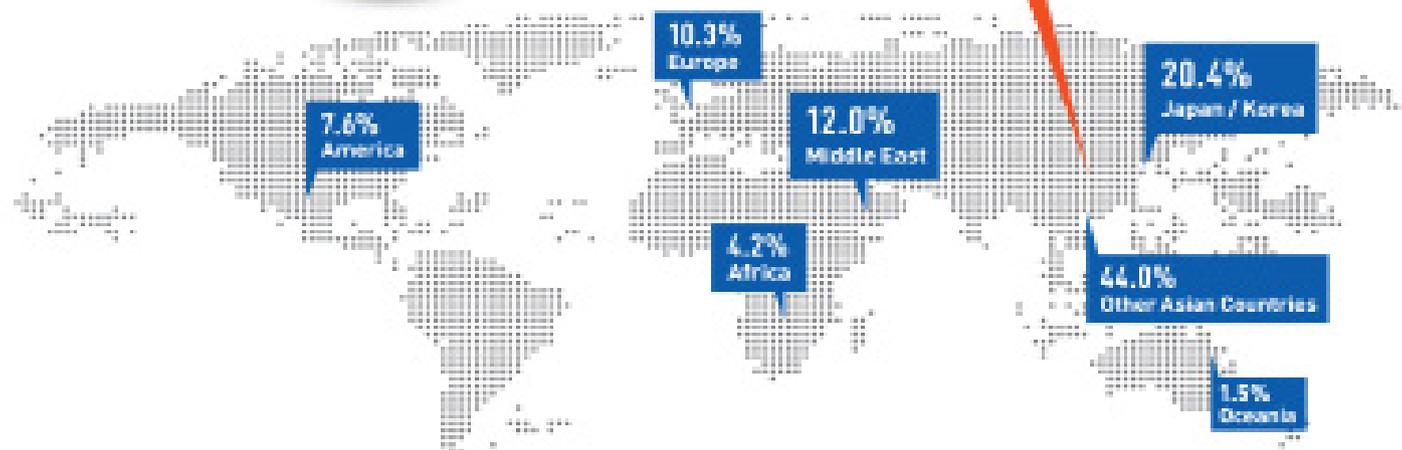
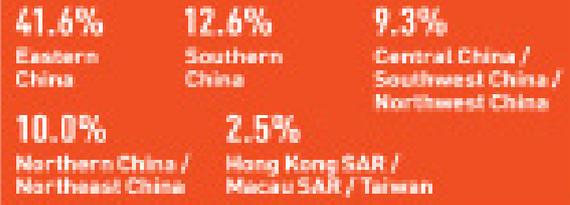
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