PLEXCONCIL - The Plastics Export Promotion Council

PLEXCONNECT®

Edition 23, MAY 2021

Top 4 Trends in Caps & Closures

Shipping Challenges from Covid 19 to Suez Canal

Interview with National Award Winner, Dr. Samir Chikkali, Principal Scientist, NCL

Countryscape – Focus on Germany

THE PLASTICS EXPORT PROMOTION COUNCIL

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65 years 1955-2020 Empowering Lives through Plastics

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Editor: Sribash Dasmohapatra, Executive Director, Plexconcil

Associate Editor: Sangita Iyengar

Send in your feedback, comments, suggestions to **editor@plexconcil.org**

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

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

Chennai - Southern Regional (Regional Office)
Rasheed Mension, 3rd Floor, 408 Anna Salai
Chennai - 600006
Tel: 91-44-28292620
Fax: 91-44-28291518
Email: ruban.hobday@plexconcil.org,
dayanidhi@plexconcil.org

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

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

@officialplexconcil
THE PLASTICS EXPORT PROMOTION COUNCIL
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From the Chairman's Desk

The first quarter of this financial year has started on a bittersweet note. Despite the hardships and challenges of the pandemic, one could say that we capped the negative growth of plastic exports at 1.6% (Value Terms) until March 2020 at a time when the situation around us seemed so grim. Furthermore, export growth in March was a good nearly 50% compared to March 2020 which infused confidence back into the industry. If we can keep maintaining the similar levels of exports, we can certainly hope to achieve 20% growth in this financial year.

On the other hand, the second wave of COVID 19 has once again rattled the people, Govt and industries alike. The situation is quite serious once again and while every effort is being made by the State and Central Govts to manage the situation and contain the consequences, it is our duty as responsible citizens to keep up with all suggested precautions, stay home and stay safe. Citizens need to maintain their calm and comply with the efforts of lakhs of frontline workers to avoid the worsening of the situation.

As we know, the price volatility battle on raw materials continues. With the new order on BIS for LDPE, LLDPE, & HDPE, while as a responsible trade body, we welcome the Govt's initiative to focus on quality, the industry is faced with yet another dilemma. The new order has made it mandatory for petrochemical producers of PE to meet the new criteria set by BIS with the objective of curbing imports and improving the quality. Au contraire, the new order sets the pace for import of cheaper finished goods to flourish which not only beats the quality objectives, but the additional compliance will only increase the cost of PE for both domestic industry and exporters, rendering us uncompetitive at both levels. India is already facing a shortage of PE and continues to remain heavily import reliant. Thus, the order will further hinder importers who may not be able to source the required material as suppliers may feel dissuaded to export to India on account of this additional compliance. Perhaps the Govt could have started with enforcing the standards on few polymers for which India is Atmanirbhar before expanding it to the other polymers that are scarce but have high demand.

Challenges notwithstanding, at Plexconcil, we continue to work towards the growth and benefit of our industry. We have been in active engagement with various Ministries & Govt departments such MSME, DCPC, DGFT, etc to address the various points of concern for the industry including the FTP, Raw Material pricing, RoDTEP, etc. We have also mapped 12 export destinations for this year and have been in active engagement with embassies and consulates for our RBSMs and perhaps if all goes well, lead Indian delegations to international fairs once again later in the year.

Innovation lies at the heart of a successful industry. In this issue, we bring you two very inspiring interviews; first with Dr. Samir Chikkali, Principal Scientist at the National Chemical Laboratories for receiving the 10th National Award for Technology Innovation in the category of "Innovations in Polymeric Materials"; and Mr. Narayan Lal Gurjar, a young Achiever whose company EF Polymers raised Y 40 Million from the OIST through The Innovation Square Startup Accelerator, Okinawa for developing 100% Organic super absorbent polymers from bio waste. An elixir for farmers facing water scarcity, the company is one of two startups chosen from 200 global participants, to receive the funding. A proud achievement for our country indeed.

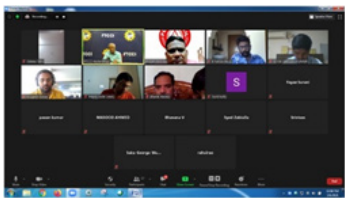
As always, we bring you news, opinions, and insights from the global plastic industry and we hope that you have found these helpful. We do invite you to keep sharing your views and perspectives with us and together, let's build a greater industry for all of us.

Stay safe and healthy.
Warm regards,

Arvind Goenka
Chairman

R.O. South

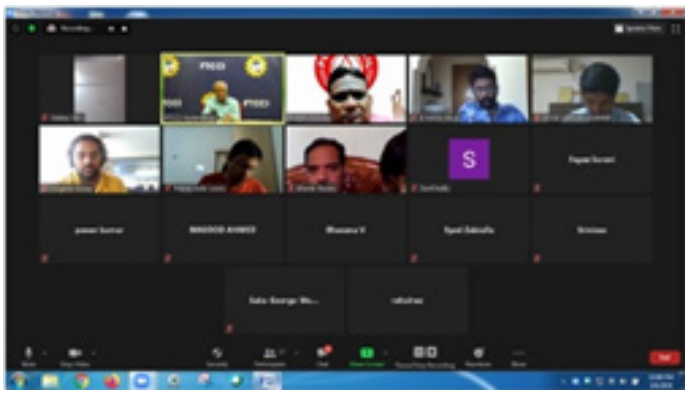
Certificate Course in Export-Import Management organized by the Federation of Telangana Chamber of Commerce & Industry on 06/03/2021 thorough Virtual Conference



The Regional Director – South was invited by the Federation of Telangana Chamber of Commerce & Industry as a Guest Lecturer during their Certificate Course in Export-Import Management on 6th March 2021 on the subject "Benefits of Participation in Trade Fairs & Exhibition" and about Plexconcil.

This course was intended to impart knowledge on the export-import ecosystem which includes foreign trade policy, documentation, logistics, trade finance, foreign exchange, and risk management. The course had 30 registered participants from different industries who were looking for guidance to further their opportunities in exports.

The Regional Director – South presented the benefits and later informed the participants about the role of Plexconcil and its benefits of being a member. The response was excellent as the participants felt that they got a lot of important information about the export industry during the presentation.



R.O. East

Meeting with Mr Alok Tibrewal, Raw Material& Polymers Panel Chairman of PLEXCONCIL – 12/03/2021

Mr Nilotpal Biswas, Regional Director had a meeting with Mr Alok Tibrewal, Director, Swastik Plastoalloys Pvt Ltd. and Panel Chairman – Raw Material & Polymers. Main objectives of the meeting was to discuss the Council's activities and also the formation of Panel committee in order to address specific export-related problems and find ways and means of their redressal.

H.O. Mumbai

Consumer and Housewares Panel Committee meeting held on 24/03/2021 through virtual mode

Mr. Dhruv Sayani, Panel Chairman – Consumer and Housewares Panel convened this meeting with the Panel Committee on 24th March,2021 through virtual mode. Members actively participated in this discussion and gave their suggestions to enhance the exports of this panel. They also highlighted the issued faced by them while doing exports which they would be writing to the Council in due course.

ED assured members Council's full support in resolving their issues.

R.O. East

Virtual Training Cum Interactive Seminar on Recent Changes in GST Rule with regard to IGST Refund on Exports – 26.3.2021

PLEXCONCIL(Eastern Region) office organised the above virtual Training cum interactive seminar. Mr Deshdulal Chatterjee, Superintendent(GST Implementation cell), CGST Office, Kolkata made a detailed presentation on the subject. After the presentation he also interacted with the participants. Mr. Amit Pal, COA Member moderated the session.

R.O. South

Report on the PLEXCONNECT 2021 – VIRTUAL BSM WITH SOUTH KOREA on 26/03/2021:

The Plastics Export Promotion Council with the support of the Embassy of India, Seoul, South Korea organized the first PLEXCONNECT 2021 – Virtual BSM with South Korea on 26th March 2021. The Embassy of India, Seoul, South Korea supported the event in sourcing the buyers for the Indian Sellers/Companies who were predominately from FIBC/Woven Sacks & Human Hair & Products.

Event Partners

The Embassy of India brought KOIMA (Korea Importer's Association) and ICCK (Indian Chamber of Commerce of Korea) as the Event Partners in using their database and contacts to bring in the right buyers for the event which was the crucial part of any BSM.

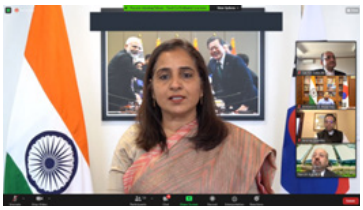
PLEXCONNECT 2021 Promotions

The Council was able to promote the event by getting 22 Indian Companies as participants predominately from FIBC and Human Hair & Products.

- The Embassy of India through their contacts promoted through the e-brochure created by the Council to their relevant database covering more than 15 Associations/Chambers including the Korea Wig Association who had advertised on their website about the event to promote their 300 and more buyers through the link http://kowa.kr/kowa_new/sub/board.php?mn=board&fn=board&md=v&zest_bn=board_37&bn=board_37&seq=331&haknyun=&ban=&base_year=&page=)
- The event was promoted through Plastic Science which is a monthly magazine, having around 10,000 Korean Companies as subscribers. This magazine was started in 1987 and it promoted PLEXCONNECT 2021 through their database and also on their e-magazine covering the entire nation through the link https://www.plasticnet.kr/found/market/main/index_intro.php?mart_id=mbwshop&Member_Session=074586a309939ac483e4940ed57ea487
- An e-brochure with details of each seller with their products and contacts was designed by the Council and circulated amongst the Korean Companies with a link for registration. The e-brochure was translated into Korean Langauge to have better reach.

PLEXCONNECT 2021 – The Event

The event was hosted on Virtual Platform on 26th March 2021 starting from 12.30 KST with a brief inaugural followed by B2B meetings which went on till 05.30 pm KST.

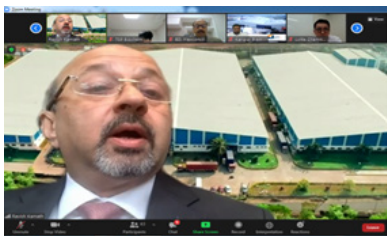


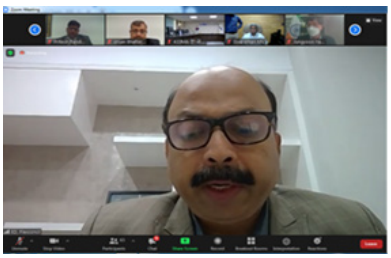
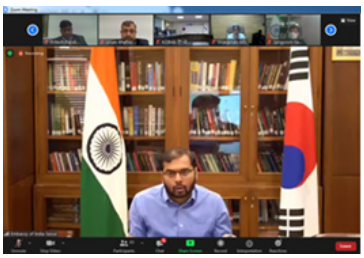
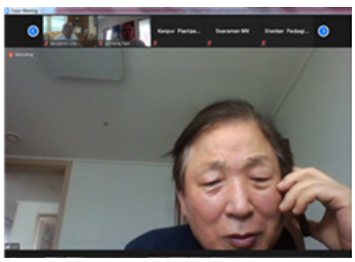
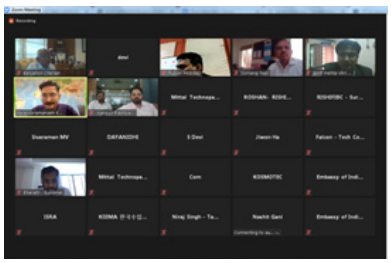
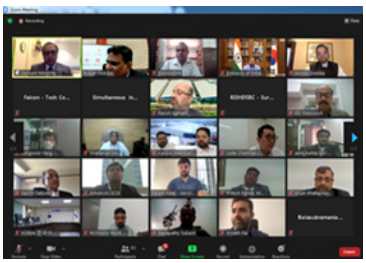
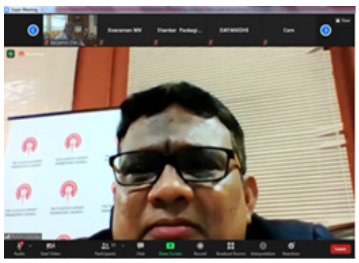
Her Excellency Smt. Sripriya Ranganathan, Ambassador, Embassy of India, Seoul, Korea in her pre-recorded speech spoke on the occasion appreciating the Plexconcil for hosting the BSM with Korean Companies and said that this would be a good beginning for the industry during the tough times.

Shri. Arvind Goenka, Chairman, Plexconcil, India welcomed both the Indian Companies and the Korean Buyers which was followed by a presentation on the Indian Plastic Industry by Shri. Ravish Kamath, Immediate Past Chairman, Plexconil, India.

Mr. Hong Kwang-Hee, Chairman, KOIMA (Korea Importer's Association) wished the event all the success in his pre-recorded message the event. Mr. Sachin Satpute, Chairman of, Indian Chamber of Commerce in Korea who had supported the event through their efforts in promoting the event spoke on the occasion followed by Closing Remarks by Shri. Hemant Minocha, Vice Chairman, Plexconcil, India.

The Council had organized the Virtual Platform to have "Korean Translation" for the Korean Buyers along with 6 interpreters for the B2B. The event had 49 B2B meetings between the Korean and Indian Companies facilitated through the online "breakout rooms". Each Indian Company was provided with an interpreter which helped them to reach out to the Korean Buyers.



R.O. South

Panel Meetings (FIBC, Woven Sacks/Fabrics, Miscellaneous Products) on 30th & 31st March 2021

As per the advice of the Head Office, the Regional Office – South has been assigned to coordinate the following 4 Panels Committees which included:

- Forming the panel members with the support of the Panel Chairman
- Sending the invitation to the selected Members
- Preparing the presentation through collate the statistics and projections
- Follow up with personal calls in confirming their presence
- Preparing the minutes of the meeting with action plans after the meeting
- Preparing the SWOT analysis to be submitted to HO/ED for further action

In the reporting month, the RO South was able to organize FIBC, Woven Sacks/Fabrics, and Misc Products Panel meetings on 30th & 31st March 2021 over the virtual medium (Webex).

H.O. Mumbai:

1. Western Regional Committee Meeting held on Tuesday 09th March, 2021 at 4.00 pm on Virtual mode.
2. Plexconcil has arranged Webinar on International Trade Remedies Titled “Protect Your Benefits with Anti-Dumping Knowledge”.

WEST

1. Representation to Directorate General Of Trade Remedies on the Final findings by DGTR in the matter of Mid – Term Review investigation concerning imports of Polytetrafluoroethylene (PTFE) originating in or exported from Russia. DGTR have accepted our request and maintained the status quo by not increasing the Anti-dumping duty.
2. Representation to Embassy of India, Santiago, Chile regarding request for getting NOC from the Custom to bring back the goods to India - M/s. Rapid Coat Division (Unit of Rapid Engineering Co. Pvt. Ltd)
3. Representation to Directorate General of Shipping regarding Exporters facing problem- Increase in sea freight and shortage of containers
4. Representation to DGFT, New Delhi regarding request for removal of pre-import condition from AA with retrospective effect, cancellation of demand notice of Customs and removal of exporter name from DEL
5. Representation to Addl. DGFT, New Delhi regarding request for issuance of DFIA of M/s. Streamflow Polyweave Pvt. Ltd., Mumbai.
6. Representation to DGFT, New Delhi and copy to DoC regarding extension of IGST exemption on procurement of raw material under advance license, extension of DIFA further six months and to continue interest subvention on exports.
7. Representation to Office of the GST Council Secretariat regarding members inputs on Inverted Tax Structure in GST regime
8. Representation to DGFT, New Delhi and copy to DoC regarding extension of IGST exemption on procurement of raw material under advance license, extension of DIFA further six months and to continue interest subvention on exports with IFIBCA request letter.
9. Representation to Foreign Trade (ASEAN) regarding clearance of import cargo coming from Malaysia to Chennai Custom
10. Representation to Foreign Trade (ASEAN) for sharing SL's Negative List and Indian Negative list under ISFTA.

Dr. Samir Chikkali

Principal Scientist from Polymer Science and Engineering Division, National Chemical Laboratory

National Chemical Laboratory's Dr Samir Chikkali, Principal Scientist from the Polymer Science and Engineering Division, and his team, received the 10th National Award for Technology Innovation in the category of "Innovations in Polymeric Materials" for their work on Disentangled Ultrahigh Molecular Weight Polyethylene. The National Awards for Technology Innovation were instituted to incentivize meritorious innovations and inventions in various fields of petrochemicals and downstream plastics processing industry by the Department of Chemicals & Petrochemicals, Ministry of Chemicals & Fertilizers, Government of India.

He has also been named the recipient of the Professor Kaushal Kishore Memorial Award 2020, by the Society of Polymer Science, India. The award recognizes and encourages young outstanding talent with a demonstrated potential to excel in the field of polymer science. Dr Chikkali obtained his PhD from the University of Stuttgart, Germany under the supervision of Prof. Dietrich Gudat in 2007. Subsequently, he did postdoctoral research at the University of Amsterdam, Netherlands and the University of Konstanz, Germany. In 2012, he joined CSIR-NCL, to start his independent research career.
Dr Chikkali has authored more than 55 research papers in international peer-reviewed journals; besides, he has filed 15 patents in India and abroad. Currently, he leads a team of 12 researchers in polyolefins, organometallics and renewable/degradable polymers at NCL.

Dr Chikkali has been recognized with several awards including Alexander von Humboldt postdoctoral fellowship, Dutch Polymer Institute postdoctoral fellowship, The Ramanujan Fellowship by DST, Best Scientist Award by North Maharashtra University, Scientist of the Year Award 2016-2017 by NCL-Research Foundation and, Young Associate of Maharashtra Academy of Sciences 2017.

Plexconnect presents excerpts from an interview with Dr. Samir Chikkali

Congratulations on receiving the 10th National Award for Technological Innovation in Polymer Materials. Tell us about the project. How do you feel about this proud achievement?

Today, nearly 60-70% of polymers manufactured in India or even globally are Polyolefins and PET, PVC, etc make the rest. And while in India, there are several largescale companies engaged in the production of Polyolefins, there is not even a single academic group working on the same. Twenty years ago, we did have some groups at IITs and NCL working on the subject; however, in the past decade or so, this has not been the case. Hence, I felt that our industries really required that help.

On the other hand, our industries have also been struggling to innovate. They are licensing technologies available globally, but these are for specific commodity products only. Since there is hardly any in speciality

polyolefins present in the country and I have had experience in preparing metal catalyst during my PhD and exposure to organometallic catalysis during my postdoctoral stay in Netherlands, Germany, I decided to work in the area of polyolefins in general and disentangled Ultra High Molecular Weight PE (dUHMWPE) in particular, which won the national award.

This polyolefin has been known for 3 decades now, and there are 2 major companies worldwide who manufacture the UHMWPE. India imports nearly 2000 tonnes of the material per annum. The technology is also not available for licensing this product and hence our industries cannot manufacture the same in India. Considering the restraints and challenges faced by the industry and the potential scope for academic investigations, we ventured into dUHMWPE and started our work.

I am indeed honoured to receive this National Award for Technology Innovation from the Ministry of Chemicals and Petrochemicals, GOI. I feel that our efforts did merit the honour and recognition and would like to believe that the award will boost the confidence and encourage the younger generation to enter into the field.

Your team and you have designed and synthesized a set of homogeneous and heterogeneous catalysts that deliver super-strong polyethylene called "Disentangled Ultra High Molecular Weight Polyethylene (dUHMWPE) that can be used bulletproof materials, anti-ballistic applications, prosthetics, and highly demanding applications. What are the existing materials used and what are the advantages of your find over existing materials?

Indeed, the dUHMWPE can be used for these demanding applications. There are also a couple of other materials that are used for demanding applications, such as, Kevlar or Nomex. In fact, in recent years ultrahigh molecular weight polyethylene is being used. But the commercial UHMWPE is entangled and processing of entangled UHMWPE requires large quantities of solvents, which actually restricts its large scale usage. Taking into consideration the various factors that impact this class of polyolefins, we undertook the research and development that boast the following advantages:

Advantage

1. Prepared using a patented heterogeneous catalyst.
2. Our material, dUHMWPE, can be processed without solvent. This is a solvent free, solid state processing, which reduces environmental pollution.
3. Polymerization is carried out at 40 °C; which is lower than commercial processes (gas phase polymerization: 70 °C, slurry phase polymerization: 80-100 °C and solution phase polymerization: 120 °C) used in the industrial production of polyethylenes.
4. Given that no solvent is required for processing of dUHMWPE, our innovation offers a sustainable alternative to existing entangled UHMWPE.
5. There is no licensor in the world, therefore, this indigenously developed dUHMWPE can reduce our dependence on imports.

Most institutions involved in polymer science research in India are chiefly government supported academic institutions. The presence of private research laboratories is negligible. What, in your opinion, has been the reason for the same?

It is true that there are not many polymer science institutions in the country. As compared to global R&D spending, the Govt spending on R&D in our country is low. Less than 1% of our GDP. And undoubtedly this is because back in the day, we were still a developing country and the GOI had many more critical tasks to accomplish. However whenever required, some investments were made in R&D and as a result, today we have had many significant achievements akin to developed countries. While our R&D investment still remains lower than the global average, one needs to understand that R&D even at a worldwide level, is not a profit-making industry. Indian industries do not have deep pockets and there is thus a hesitation to venture into this uncertain arm of the industry. Needless to say, there are exceptions that have come up in the past 2 decades with India emerging as a global R&D hub, not just to meet our own requirements, but to also support multinationals. Today, we also find many MNCs setting up their facilities in India. Reliance, IOC, HPCL, BPCL etc have also set up huge R&D centres and there is growing awareness that if our industries are to be globally competitive, R&D is crucial.

How do you find or define applications for research while focusing on reducing carbon footprint and achieving a general development towards green technology and products, especially in plastics?

The answer to this is not simple so I will address it in 2 parts.

The Plastic industry is diverse, and most of the commercial polymers originate from fossil resources. Indian plastic industry with its growth rate of about 8-12% is still growing and it will be some time before we could meet 100% of our domestic demand. For example, one the most commonly used PE is also being imported currently indicating heavy reliance from external sources. Hence, I believe that our industry will require immense support from academic institutes like ours who can innovate and develop products that can in turn help manufacturers meet the domestic demand and reduce

import reliance. In other sectors, such as pharma, we do import to a large extent (about 70% of bulk intermediates) to meet our requirement, but by volume these are small. While the import of plastics is not as huge, in terms of volumes, it is large. The first priority is to meet domestic demand, although these plastics might have fossil origin.

The second part is that if one were to search alternative materials to replace plastics, one needs to consider what these are and are they equally polluting or lesser polluting. For example, PET has emerged as the alternate to Glass in the past few decades. Now the carbon footprint of glass is much higher than plastics. Factually speaking plastics packaging have a lower carbon footprint, making it a better option. However, sustained long term efforts have to be undertaken at a global scale to reduce carbon footprint and invent carbon neutral processes and products. It is a collective global responsibility.

No one wants to pollute today. Currently there are many efforts being made to look for alternatives that are lesser polluting and this process will continue until we find solutions that are most sustainable. Govts and organizations are taking several initiatives towards this end with reducing, recycling, reusing, recreating, etc.

With R&D becoming one of the major thrust sectors under recent GOI policies today, how can such policies and change in outlook from the country's leadership transform the R&D landscape in the country?

The Covid 19 is a particularly good example to understand the role that has been played by continuous R&D in any society. When the entire country was shutdown, our R&D units developed a whole range of products from masks to complex vaccines within 1 year! And this has been possible because we had been making investments in R&D over the years and hence expert manpower, facilities and findings could be immediately deployed when the pandemic hit us. This entire situation in the world today has helped reinforce faith in R&D and will further boost the R&D landscape not only in India, but also globally. GOI also recognizes the importance of the role of R&D and a boost in investments will definitely be a shot in the arm for the industry. We may not be the best yet, but we are definitely among the most recognized R&D hubs in the world.

How can we create more synergies between academia and the industry to invest in R&D that is critical to not only product development, but also its impact on the environment?

Foremost, this will require a shift in mindset as has been demonstrated by the pandemic that the world has experienced after nearly a century. Large corporations/ MNCs have their own R&D centres and invest heavily in them. However, to bridge the gap between midsize industries and academia, a reach from both sides is important. For example, institutions such as CII, could push from the industry side. We have GOI mechanisms where in labs like NCL frequently interact with industries or industries approach us for solutions. Such mechanisms must be strengthened further, and perhaps smaller industries may be incentivised to pursue innovation. Innovation and R&D take time and generally speaking, MSE industries usually look for quick fix solutions as they cannot sustain the long periods that it takes.

Every industry is driven by profit which depends on certain non-infringing processes/ IPs. Manufacturing works with the use of patents and licenses. However, because R&D is so specific that the particular industry/ manufacturer undertaking R&D would certainly not share their findings in the market due to market competition. Keeping in mind such restraints and challenges, at NCL, we work with consortiums. We work with a consortium of about say 10 industries/ manufacturers who have a common problem and find solutions that they can all use. However, they have to pre-agree to terms and there is an understanding beforehand. Such approach could be helpful for MSEs. However, it cannot be a general solution as most industries would like to have IP rights before they invest in their manufacturing to maintain competitive advantage.

Polymer science in India is still considered an emerging stream with lesser awareness and few universities offering curriculums and research opportunities. How can this be changed, and greater awareness created among the younger generations about opportunities in the field?

To begin with unfortunately, our science community is still not very convinced about the importance of polymer science and hence not many universities offer programmes in polymer science yet. The number of students opting are very very few despite the large number of polymer manufacturers and processors in the country. There is a huge gap, and this must change, and more universities and ITIs must come forward. ITIs could offer vocational courses to students and that will help them find gainful employment with plastic processors. Such courses at entry levels must be encouraged. There have been small changes in this direction. Emphasis is re-

quired from academia and policy makers in the country. Industry bodies and associations could also approach universities directly and offer joint degree programs, on campus interviews/ jobs, etc. If universities are convinced of employment for their students, this would encourage them to offer more such courses. Today, many colleges have advisors from the industry for their curriculum. If I am not wrong, Somaiya college in Mumbai is one such example where M.Sc. polymer science is jointly taught by faculty and industry experts. Such advisors help bridge the gap between industry requirement and academia. They also help students enter into the industries which is a realistic way of generating awareness for the subject application.

In India, what are the most recent developments in the field and what can we expect in times to come?

In polymer science, sadly most of the manufacturers have imported technologies for production of polyolefins, and other commodity polymers. There is no Indian technology available that can overcome economies of scales. Profits in the business are not huge, but the scale is massive. Unfortunately, our manufacturers do not have the capacities or capabilities to produce specialty polymers in India. It is all imported as the requirement as compared to commodity polymers is much smaller in volume. Manufacturers are also not equipped because the licensed processes from Europe, USA or Japan, etc are fixed and cannot be changed. Hence, while we can produce commodity polymers on large scale, we are unable to manufacture specialty grades as it requires long-term investments. Large companies could consider investing in medium or smaller scale for specialty grades as there is demand for such polymers with growing number of applications and technological advancements in India and globally. Unfortunately, this is not happening currently.

To change this scenario, we need to anticipate future requirements and have a champion to drive the development of speciality grades. The Academia and industry are currently making efforts. Academia has the resources to develop new products but cannot manufacture to scale. While the industry is focused on profitability without long-term developments. We need the two arms of the business to work together and anticipate future demands and invest in products/ solutions that will be commercially viable and sustainable in the future.

Tell us about your role at the National Chemical Laboratories. How did you become interested in this field?

To begin with, I have been fortunate to have good teachers (Prof. Manikshete and Prof. Battin) during my undergrad years who could imbibe that chemistry is a good subject and can have good career potential. Similarly, my teachers (Prof. Maldar and Prof. Lonikar) during my master's had excellent international exposure and they helped me gain much wider perspective of opportunities with polymer chemistry as a subject at a global level. This was probably foundational to my pursuing a career in the subject and since then I went on to achieve many milestones in my academic and research careers.

At NCL, which is a constituent lab of CSIR, we are assigned mandates by CSIR besides us having our own projects. One of the key mandates is to help industries and that is the reason why we have good connect with industries. I have been interacting and working with industries since my first year at NCL. My group has industry sponsored projects, which are short-medium term assignments and we provide practical solutions to the industry. I also interact with the industry in various capacities; including consultancy. On my team, we have 8 PhD students, couple of project assistants and postdocs, and we undertake several research projects to address real world problems.

How can Govt bodies such as the Plastic Export Promotion Council as well as similar other bodies help efforts such as yours for the overall benefit of the industry and communities at large?

It is a good idea if an industry body like Plexconcil approaches us with their problems on behalf of the industry rather than specific companies approaching us directly. This could help address a collective problem and help us develop broader solutions for the industry as a whole. That way it is overall growth and advancement for an entire set of industries. At NCL, we have different models to address industry problems and we could work with industry bodies like Plexconcil in a manner that best works with their expectations or requirements.

GERMANY

Economic overview

Germany lies in Central Europe and shares land borders with as many as nine other countries. It has an area of 357,022 square kilometres and a population of 83.2 million.

Germany is an advanced economy that has made a mark for itself in both manufacturing as well as services industry. The country is known for high level of productivity and a world-class infrastructure. While German economy did not fare well in the last year, it still experienced the least severe recession in Europe due to Germany's resilient manufacturers and timely fiscal response from the government.

As of April 8, 2021, the S&P's rating for Germany is AAA (stable); Moody's rating stands at Aaa (stable); and Fitch has a reported rating of AAA (stable).

Economic indicators		2018	2019	2020
Nominal GDP	USD Trillion	3.97	3.86	3.78
Nominal GDP per capita	USD	47,832	46,473	45,466
Real GDP growth	%	1.3	0.6	-6.0
Total population	Million	82.9	83.1	83.2
Average inflation	%	2.0	1.3	0.5
Total merchandise exports	USD Trillion	1.56	1.49	1.38
Total merchandise imports	USD Trillion	1.29	1.24	1.17

Source: IMF, TradeMap

Germany has trade agreements with over 100 countries including Canada, Egypt, Japan, Mexico, Singapore, South Korea, South Africa, Vietnam, and the United Kingdom among others. India and the EU have been engaged in negotiations on a broad-based Bilateral Trade and Investment Agreement (BTIA), once signed it will open a huge window of trade opportunities between India and the EU countries.

Trade overview

Germany is among India's top-10 trade partners in the world and the largest trade partner in Europe. In 2020, India and Germany engaged in bilateral trade worth USD 20.6 billion. During the year, India's exports to Germany were valued at USD 7.7 billion in comparison to India's imports worth USD 12.9 billion resulting in a trade surplus of USD 5.2 billion to Germany.

The major items of export from India to Germany are machinery, mobile phones, pharmaceuticals, auto components, garments and textile, leather and leather goods, and wooden furniture. Likewise, major items of export from Germany to India are aircrafts, electrical generation equipment, auto components, bearings, measurement and control equipment, chemicals, machine tools, among others.

German Plastic Industry*

Germany is Europe's number one plastics location. The industry's success story began 100 years ago – when German scientist and Nobel Prize winner Hermann Staudinger published a groundbreaking paper.

Today Germany is Europe's largest producer and manufacturer of plastics. The country's plastics industry value chain includes plastics manufacturers and processors, machine manufacturers, the application industries and the plastics and rubber recycling industry. One of the most important industry sectors in Germany, the plastics industry generates annual turnover of over EUR 97 billion. The industry enjoys around seven percent share of domestic industrial production and plays a major role in providing new and innovative products and solutions to a number of key industries including the automotive, mechanical engineering, packaging, electrical engineering, and construction industries. In addition, plastics are used in the medical, furniture and household goods industries as well as in agriculture - broad applications in a competitive European consumer market.

German plastics producers, processing industries and industry-related research institutions and centers of excellence are setting international standards with their excellent infrastructure, know-how and their results in research and development. Foreign companies located

in Germany benefit from the advantages of the single European market and the existing structures along the entire value chain to access innovative clusters and high quality research.

India Plastic Exports to Germany

Within plastics, the trade is in favour of Germany with exports worth USD 518.6 million to India and a trade surplus of USD 210.5 million. India's plastics exports to Germany primarily comprise of the following:

- Plastic raw materials (22.3%)
- Woven sacks/FIBCs (16.3%)
- Plastic sheets, films, plates etc (15.9%)
- All types of optical items (12.5%)
- Other moulded and extruded items (6.1%)

Germany's annual plastics imports are valued at between USD 60-70 billion. Its plastic imports are largely catered to, by China (12.9%), Netherlands (8.7%) and the United States (7.3%). However, India also has a good standing in some of the plastic product imports by Germany:

- Woven sacks/FIBCs – Market share of 24.3% share (Rank 2)
- Masterbatches – Market share of 5.6% share (Rank 8)

- **Trade potential**

Our internal research indicates that India's export of value-added plastics to Germany has the potential to grow by nearly USD 5.9 billion. Product categories, within value-added plastics, that have immense export potential for export to Germany include:

Product Category	Germany's import from India	Germany's import from world	India's export to world	Trade potential for India
	USD Million	USD Million	USD Million	USD Million
Plastic sheets and films	63.9	5,065.0	1,333.7	1,173.3
Packaging items	10.1	2,983.8	731.2	628.6
Medical disposables	16.1	7,337.9	638.6	622.4
Masterbatches	87.8	1,556.9	1,154.4	621.8
Other moulded and extruded items	34.3	7,636.3	601.5	567.2
All types of optical items	33.9	2,998.7	379.5	247.7
Woven sacks / FIBCs	68.9	283.4	855.5	209.8
Pipes, tubes, hoses etc	6.2	1,991.6	171.1	146.5
Electrical items	44.7	4,927.8	168.1	123.3
Self-adhesive sheets and films	8.2	1,236.3	109.3	101.1

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- Others

For Membership : Ms. Anagha Barve | +91 22 26833951/52 | anagha@plexconcil.org

Michelin Approves Use of Polyester Tire Cord Recycled from Waste PET Bottles

French tire maker Michelin says it has successfully validated the use of Carbios' enzymatic recycling technology for PET plastic waste as a high-tenacity reinforcing fiber in its tires — potentially creating a long-term end-use application for waste plastic from billions of PET bottles.

With some 1.6 billion car tires sold worldwide every year by all tire manufacturers combined, the amount of PET fibers used in these tires represents 800,000 tonnes of PET per year, according to Carbios. When applied to Michelin, the firms said jointly on April 23, "this represents nearly three billion plastic bottles per year that could be recycled into technical fibers for use in the company's tires."

Carbios has been working since 2015 to develop a process that combines enzymes and plastics to transform polyester textile waste back into two purified monomers — terephthalic acid (PTA) and monoethylene glycol (MEG). These constituents can then be repolymerized into PET that can be used to produce PET with virgin-like properties.

Carbios currently is operating at pilot scale, and counts the quantities it produces in cubic meters. But by September, the company says it will start a demonstration plant in Clermont-Ferrand, where it shares headquarters space with Michelin.

The 10-year-old Carbios further has said it expects by early 2025 to be ready to open an industrial-scale plant, with capacity somewhere between 35,000 and 75,000 tons per year. Carbios' enzymatic recycling process uses an enzyme capable of depolymerizing the PET contained in various plastics or textiles, to include such things as bottles, trays, and polyester clothing, potentially enabling what it calls the "infinite recycling of all types of PET waste."

The firm notes that conventional thermo-mechanical recycling processes for complex plastics do not achieve the high-performance grade of PET required for pneumatic applications. However, the monomers resulting from Carbios' process, which uses colored and opaque plastic waste such as bottles, once repolymerized in PET, meet Michelin's requirements for use in its tires.

"The technical fiber obtained is of the same quality as the one from virgin PET, processed with the same prototype installations," noted Carbios. "This high-tenacity polyester is particularly suitable for tires, due to its breakage resistance, toughness, and thermal stability."

"We are very proud to be the first to have produced and tested recycled technical fibers for tires," said Nicolas Seeboth, Michelin's Director of Polymer Research, noting that the tire cords in question were made from colored bottles. "These high-tech reinforcements have demonstrated their ability to provide performance identical to those from the oil industry."

"In 2019," added Carbios Chief Scientific Officer Alain Marty, "Carbios announced it had produced the first PET bottles with 100% purified terephthalic acid (rPTA), made from the enzymatic recycling of post-consumer PET waste. Today, with Michelin, we are demonstrating the full extent of our process by obtaining from this same plastic waste recycled PET that is suitable for highly technical fibers, such as those used in Michelin's tires."

Source: Plastic Today

SUEZ and LyondellBasell extend collaboration with Samsonite

Quality Circular Polymers (QCP), the plastics recycling joint venture of SUEZ and LyondellBasell, has renewed its collaboration with Samsonite for its Magnum Eco suitcase collection, which leverages QCP's expertise in high-quality polymer recycling.

Samsonite turned to QCP to benefit from its expertise in plastics recycling and recovery to take part in the conception of this new collection. Designed in Europe, the suitcases are made from household plastic packaging waste from the Netherlands and Belgium. Using the innovative Recyclex technology, the exterior shells are made entirely from recycled plastics and the interior fabric is also developed from 100 per cent recycled PET bottles.

Christine Riley Miller, Samsonite's Global Director of Sustainability, said: "We are continuously looking for new ways to reduce our environmental footprint across our operations. This includes innovating how our products are made so we play our part in repurposing plastic waste."

Richard Roudeix, LyondellBasell SVP of Olefins and Polyolefins for EMEA and India, added: "LyondellBasell is taking definitive action to advance its circular economy ambitions, and the Samsonite Magnum Eco luggage is a perfect demonstration of bringing this valuable plastic resource back to life ··· We are honoured to join Samsonite in being part of this sustainable solution to help end plastic waste in the environment."

Jean-Marc Boursier, Senior EVP of SUEZ in charge of the France Region and Group COO, continued: "We are delighted to continue our collaboration with Samsonite. R&D, a key driver of growth and differentiation for the SUEZ Group, combined with our expertise in recycling high-quality polymers, played an important role in the development of this new suitcase range. We are proud to offer concrete circular solutions and technologies to our customers. We are particularly vigilant in ensuring the traceability, compliance and sustainability of the plastics that we recycle, with LyondellBasell, within the QCP joint venture."

This new collaboration comes after QCP's acquisition in December 2020 of TIVACO, a plastic recycling company located in Belgium.

Source: Interplas

Avient and IVCC accelerate formulation development of long-lasting insecticidal nets for malaria control

Avient is working with IVCC to accelerate the eradication of malaria and tackle insecticide resistance through the creation of a new masterbatch production laboratory in Guangzhou, China, where research and development of novel, active insecticide ingredients for long-lasting insecticidal treated nets (LLINs) will be undertaken.

The facility is expected to be fully operational this summer, and open to current and future innovation projects. It will provide a medium-scale platform for testing and developing masterbatch formulations with insecticides to speed up the process of bringing LLINs to the market. Image: avi

Developing these formulations is imperative to eliminating malaria, as insecticide resistance is making the most widely used formulations, such as pyrethroids, increasingly ineffective. The new facility will also support scale-up for promising formulations.

Avient has the capabilities to optimise masterbatch formulations for LLINs to deliver ideal insecticide performance. This includes optimum bio-efficiency and controlled migration of the insecticide to the fibre surface – enough to kill a mosquito on contact.

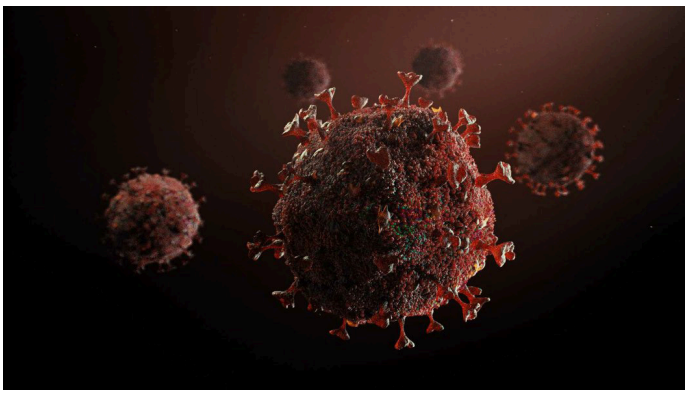
Established in 2005 through a Bill & Melinda Gates Foundation grant, IVCC works with industry, funding partners, and researchers to develop new public health insecticides for use in LLINs, indoor residual spraying (IRS), and other vector control tools.

Nick Hamon, CEO of IVCC, said: "Partnering with Avient is an important step in our product portfolio development work. Improving our capabilities to develop and deliver new tools to help address the growing threat of insecticide resistance is critical if we are to achieve our mission." Michaël Adam, global technology director at Avient, added: "Avient's collaboration with IVCC will enable LLINs manufacturers to transform their visions into groundbreaking products that improve quality of life in a meaningful way. Working towards a solution that saves lives and improves public health aligns with Avient's sustainability goals and commitment to our communities, both local and global."

Source: Interplas

New SteriTouch antimicrobial additive proven to reduce SARS-CoV-2

Radical Materials has launched an antiviral additive under its SteriTouch brand which has demonstrated efficacy of 99.9999% within 3 hours against bacteriophage Phi6 and 93% in 2 hours against SARS-CoV-2, the virus responsible for COVID-19.



The result of many months of development and testing, the new additive is supplied as a liquid and is suitable for most solvent-based applications. Radical is continuing with the development of antiviral additives, specifically for water-based systems and polymers.

"Having tested most active substances, including those based on silver, copper, zinc, silane quats and several organics, we now have a much clearer picture of how each performs in different materials and under different conditions." said company director Nick Corlett.

"There is no 'one size fits all' solution, so our intention is to develop a range of anti-viral additives suitable for most of our customers' applications. We have taken our time to reach this point, but it is important to us that all products carrying the SteriTouch brand are diligently tested and provide robust performance."

"The last twelve months have seen a great many new products arrive on the market making excessive and often unsubstantiated claims, but Radical is fortunate to be working with some very committed partner companies, intent on delivering genuinely beneficial products." Radical Materials is confident in its ability to improve upon this most recent result: "To date, we have only tested one coating containing the new additive against SARS-CoV-2. The results were good [93% reduction in 2 hours] but given the exceptional performance of the additive against Phi6, we would be most surprised if we can't achieve even better efficacy against SARS-CoV-2."

Source: Interplas

US company introduces ultra-low temperature EPM 953 elastomer

Pennsylvania-based manufacturer of high-performance seals, thermoplastics, composites and engineered components Green Tweed has introduced its EPM 953 elastomer for phosphate ester hydraulic systems in aerospace applications.

Developed for its ultra-low-temperature performance and compatibility with phosphate ester hydraulic fluids, EPM 953 outperforms existing EP elastomers and maintains an excellent seal at temperatures as low as -85° F (-65° C) or below, according to a recent press release.

Such contributions to temperature reducing technologies could, over time, help to significantly decrease the carbon footprint of the aerospace sector.

Suitable for static and dynamic seals in hydraulic actuation systems, Greene Tweed's EPM 953 delivers improved elasticity at ultra-low-temperatures. The new proprietary elastomer material has been extensively tested, ensuring high durability and little to no hydraulic fluid leakage over the lifetime of an aircraft. EPM 953 meets and exceeds the new AMS 7361, which is still in draft form, in independent testing.

In addition, the new EPM 953 improves dynamic cap seal energisation while increasing the margin of safety and elasticity at low temperatures. Its superior hydraulic fluid leak prevention ensures reduced environmental impact by eliminating the release of phosphate ester hydraulic fluids into the environment.

DuPont Builds Adhesives Plant in China to Support Vehicle Electrification, Lightweighting

DuPont announced today that it is investing approximately $30 million to build a new manufacturing facility in Zhangjiagang, Jiangsu Province, in East China. The facility will produce adhesives to serve customers in the transportation industry, specifically targeting two industry mega trends — vehicle electrification and lightweighting. Construction will begin in Q3 of this year, and the facility is expected to be operational by early 2023.

The facility at the Yangtze River International Chemical Industrial Park in the Zhangjiagang Free Trade Zone will support growing demand for its advanced solutions in adhesive technology, said DuPont Mobility & Materials in the announcement.

The company's portfolio includes Betaforce TC and Betatech thermal interface materials that help support battery thermal management; Betaforce multi-material bonding adhesives for battery sealing and assembly; and Betamate structural adhesives for vehicle bodies and battery bonding to support crash durability and lighter weight vehicle structures.

"This investment reinforces our commitment to advance auto electrification and sustainability while extending our leadership position in China and the Asian market," said Randy Stone, President of DuPont Mobility & Materials. "Our new manufacturing facility will support anticipated growth in the automotive sector due to strong customer demand for our advanced solutions enabling the transition to electric and hybrid vehicles."

DuPont also recently established an adhesives facility in Utsunomiya, Japan, to support growth in automotive electrification.

Source: Plastics Today

Advil Reducing Plastic in 80+ Million HDPE Bottles by 20%

Advil maker GSK Consumer Healthcare (GSK) announced April 19 a commitment to reducing the plastic in more than 80 million Advil bottles by 20%, which will result in a reduction of nearly 500,000 pounds of plastic in the environment. By 2022, Advil will have reduced the plastic in nearly all bottles available in stores and online, with the exception of the brand's Easy Open bottles.

The new barrier resin technology reduces the amount of resin required to mold and craft the high-density polyethylene (HDPE) bottles, while maintaining the same barrier protection properties.

"As a world leader in pain relief, we at GSK are proud to transition Advil to a more environmentally friendly packaging, further supporting GSK's commitment to sustainability," says Sarah McDonald, VP of sustainability. "With the new technology available to us, we saw this as an opportunity to invest in the future of our brands and sustainability goals. The initiative is a first in the over-the-counter (OTC) medicine category, and kicks off a series of plastic reduction initiatives across the GSK product portfolio."

What and who's involved.

"Our primary goal was to eliminate as much plastic from the bottles as feasible without impacting the barrier performance, structural integrity, or recyclability of our package," says McDonald. "We successfully achieved all three without any impact to our product shelf life."

Rather than a discrete barrier layer, the bottle is comprised of a homogenous barrier resin, specifically a unique Bi Modal HDPE resin with a nucleating agent, according to McDonald. "This additive allows for the reduction in plastic while maintaining the same product protections. We chose this material due to the unique properties of the HDPE to work with the barrier additive while maintaining it's 100% recyclability."

Bi Modal HDPE, from Dow, is a resin engineered for "lightweight pharmaceutical bottles that provides a gas

barrier and extended shelf life," according to the company's website. McDonald credits the success of the lightweighting program to GSK's collaboration/partnership with Dow and Milliken for the materials and Alltrista Plastics for the manufacturing.

Both the incumbent and new bottles are fully technically recyclable through the HDPE recycling stream, she points out.

The conversion does not include the brand's Easy Open bottles. "We pursued the higher volume Advil bottles of the same design," she explains. "This was done to minimize complexity and target more impactful volumes." Additional source reductions include the bottle's cap, which uses 11% less plastic, McDonald informs PlasticsToday.

The US remains the sole benefit of the initiative for now. "The US is our largest market for Advil, accounting for 71% of total sales, so we wanted to focus on our largest market first, where we have the biggest opportunity to make an impact," McDonald says.

The program will be communication this year primarily through digital channels, including online creative banners with key retailers for their Earth Day activations as well as a landing page on Advil.com, which will provide consumers with more details about the initiative.

Notably, the development serves as an expandable technology platform. "Other GSK product lines and brands are currently being assessed to use this technology," she reports. "We started with Advil because the brand uses millions of bottles annually which has allowed us to have a large initial impact on plastics reduction."

Source: Plastics Today

Industry pioneer: Beiersdorf launches first packaging made from certified, renewable plastics

At the end of last year, Beiersdorf had announced its cooperation with the global company SABIC. The aim of the collaboration: to produce more sustainable cosmetics packaging from the certified renewable polypropylene (PP) of SABIC's TRUCIRCLETM portfolio, replacing fossil-based virgin plastic. From June onwards, the face care products of the NIVEA Naturally Good product range will be on the shelves in about 30 countries around the world featuring this innovative, more environmentally friendly packaging. "We are proud to be a pioneer among our industry in the field of renewable plastic packaging. The ambitious targets we have set ourselves with our CARE BEYOND SKIN Sustainability Agenda are being put into practice with a great deal of commitment and hard work," says Jean-François Pascal, Vice President Corporate Sustainability at Beiersdorf.

High Requirements on the Material

The project began with a comprehensive analysis of the market for alternative plastics. The requirements on the material were high, since Beiersdorf aims to become more sustainable without any compromise on its quality brands and products. "Our excellent skin care products obviously include a high-quality packaging, which has to fulfill many requirements," says Michael Becker, Head of Global Packaging Development at Beiersdorf. "On the one hand, this concerns visual and tactile features that our NIVEA consumers are acquainted to, but packaging recyclability is also an important aspect for us – in line with our vision of a circular economy that we aim to support." Another essential criterion in the selection of the raw material and the supplier was that the so-called "feedstock concept", which for the NIVEA Naturally Good face care packaging is based on a second-generation raw material: tall oil. Producing a cosmetic packaging from sugar cane or corn and thus using a source of food had been out of the question. "The certified renewable plastic we source from SABIC has no visual effects or other adverse properties. Accordingly, the jar made of renewable PP is neither visually nor haptically distinguishable from the previous packaging. In addition, SABIC pursues a holistic sustainability approach with its feedstock concept. That convinced us," explains Hannah Rasel, Senior Packaging Specialist at Beiersdorf.

Sustainable Selection of Supplier

Beiersdorf has also taken a new approach to the sourcing of the new packaging concept, as Isabel Hochgesand, Beiersdorf's Chief Procurement Officer, explains: "We are now getting involved much earlier and deeper in the supply chain, where we are building new supplier relationships. Becoming more sustainable as a company also means driving the development of new materials along the value chain. We are going beyond our existing supplier relationships and bringing upstream suppliers together with our tier 1 suppliers to accelerate the transformation of our packaging materials towards sustainability." In fact, Beiersdorf had identified SABIC itself and then brought them to the table to work together

with Berry Global, a long and trusted partner of Beiersdorf for the production of the face care jars. This way, the shift to more sustainable packaging could quickly be realized. Beiersdorf sees this approach as one of the key drivers of a rapid market introduction: From the idea to the implementation, it took just nine months. “We need these strong partnerships along the value chain and are very pleased that we were able to establish such a good cooperation with our suppliers Berry Global and SABIC,” adds Julia Wiedemann, Global Category Manager Sustainable Packaging in Procurement at Beiersdorf.

Principle of Mass Balancing

The new, more sustainable packaging that Beiersdorf is now introducing for its NIVEA Naturally Good face care products is based on the principle of mass balancing, in accordance with the International Sustainability & Carbon Certification (ISCC PLUS) scheme. The raw material base for the renewable plastic is certified renewable tall oil, which is a ‘second generation’ feedstock and by-product of the forestry-industry. It is replacing crude oil and according to the mass balancing approach it is integrated seamlessly in the manufacturing process – without the need to establish a separate production process.

New Packaging enables Climate Neutrality

Converting the packaging to renewable plastic not only has the advantage of conserving fossil resources, but also reduces CO2 emissions. Approximately 76 g of CO2e are saved per jar produced, a reduction of around 60% compared to the fossil-based jar. The project therefore also contributes to the company’s climate target of reducing its greenhouse gas emissions by 30% absolutely across the entire value chain (Scope 1-3) by 2025. Any remaining emissions that cannot be avoided or further reduced during the manufacturing of the product are – for the first time – climate-neutralized via carbon offsetting, through afforestation projects. This step is new for Beiersdorf and its largest skin care brand. The NIVEA Naturally Good face care range comprised of eight products will be clearly recognizable as ‘climate-neutralized’ on pack and on shelf.

Source: Packaging360

INEOS Styrolution, Recycling Technologies and Trinseo progress plans for the first polystyrene recycling plant in Europe

INEOS Styrolution, Recycling Technologies and Trinseo have announced today that they have reached a significant milestone in their plans to build commercial polystyrene (PS) recycling plants in Europe. Recycling Technologies has been selected as the technology partner. These three companies all share the same vision of making PS a circular material through depolymerisation. The unique properties of PS allow for full circularity where PS waste is returned to its chemical building blocks before being polymerised again. The recycled PS will have identical properties with virgin PS. Life cycle assessment calculations show significant decreases in greenhouse gas emissions when compared with PS production from naphtha.

INEOS STYROLUTION

Following a detailed assessment of technology options, Recycling Technologies was selected to join INEOS Styrolution and Trinseo as the technology provider for commercial scale recycling of PS. Recycling Technologies’ solution provided the highest yields in the conversion of PS to styrene monomer and provided the most scalable solution due to the company’s fluidised bed reactor combined with expertise of a highly skilled technical team.

Prior to building the commercial scale recycling plants, a PS recycling pilot plant will be built in the UK in 2022, and the technology will be further developed jointly by the three parties. The pilot plant will provide information and data related to chemical recycling and operations to support future development of the commercial scale recycling plants.

INEOS Styrolution plans to build its full commercial scale recycling facility in Wingles, France. Trinseo announces its plan to build its own plant in Tessenderlo, Belgium, which is expected to be operational in 2023. Each plant would aim to convert 15kT/y of PS waste into recycled styrene.

Sven Riechers, Vice President, Business Management, Standard Products EMEA at INEOS Styrolution, said, “Being the location of one of our polystyrene plants in Europe, Wingles is perfectly suited for our future recycling facility.”

Nicolas Joly, Vice President, Plastics & Feedstocks at Trinseo and President of Styrenics Circular Solutions, adds, “Polystyrene turns out to be a wonderful polymer. Not only is depolymerisation an effective recycling method, but it also allows for recycling while also maintaining food contact compliancy.”

Adrian Griffiths, CEO & Founder of Recycling Technologies Ltd., comments, “Our collaboration with INEOS Styrolution and Trinseo is a strong recognition of our technology’s ability to make polystyrene circular. We

look forward to working with these two global leading companies to build Europe's first chemical polystyrene recycling facility."

Source: Indian Chemical News

LyondellBasell launches new range of sustainable polymers

LyondellBasell has announced the launch of a suite of products under the name Circulen enabling brand owners to improve the sustainability of consumer products. This announcement marks the next step in LyondellBasell delivering on its sustainability goal of producing and marketing two million metric tons of recycled and renewable-based polymers annually by 2030, which is one of the most ambitious goals in the industry.

The LyondellBasell Circulen product family supports the reduction of plastic waste through the use of recycled content, and a lower carbon footprint through the use of renewable-based content as compared to feedstock from fossil-based sources. The Circulen product portfolio includes:

- CirculenRecover polymers are made from plastic waste through a mechanical recycling process;

- CirculenRevive polymers are made using an advanced (molecular) recycling process to convert plastic waste into feedstock to produce new polymers, which have a wide range of uses; and

- CirculenRenew polymers are made from renewable feedstocks such as used cooking oil, which have a wide range of uses.

To help achieve the company's ambitions, LyondellBasell is implementing a multi-pronged approach to advance the circular economy by bringing sustainable solutions to life.

"With the new Circulen product portfolio, we are taking concrete action to advance the circular economy today, innovate for the future and partner across the value chain," said Ken Lane, LyondellBasell Executive Vice President Global Olefins and Polyolefins. "Our ambition is bold, yet necessary, and we are committed to doing our part to help address the global challenges of plastic waste in the environment and climate change while meeting customer and brand owner needs."

The launch of the new Circulen portfolio follows several recent announcements focused on LyondellBasell's circular economy ambitions:

- Expanding the Quality Circular Polymers mechanical recycling joint venture portfolio to include both post-consumer and post-industrial recycled plastic;

- Extending future innovation in advanced (molecular) recycling with LyondellBasell's MoReTec technology and the start-up of a pilot facility;

- Utilizing renewable-based feedstocks comprised of waste and cooking oils to produce plastic products that help reduce CO2 over the product life cycle; and

- Securing International Sustainability and Carbon Certification (ISCC) PLUS certification of our European cracker and polymer sites.

The LyondellBasell Circulen portfolio is currently available in Europe and will soon be introduced in North America and China. Circulen products are presently used in the new Samsonite Magnum Eco suitcase line, and garden equipment (e.g., watering cans).

WE HAVE A NEW ADDRESS IN AHMEDABAD!

Plexconcil is pleased to inform you that we have now moved to our new office premise in Ahmedabad. Kindly note the new address and contact numbers below!

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380015 (Gujarat)

Contact Person:
Naman Marjadi
M: 9429115629
T: 079-48010103
E: naman@plexconcil.org

www.plexconcil.org

India News

Govt seeks to step up monitoring of imports

The government is contemplating expanding the import monitoring system to electrical machinery, machinery and mechanical appliances, certain metals, chemicals, and plastics to devise a strategy to better understand imports.

The government is looking to expand the import monitoring system to electrical machinery, machinery and mechanical appliances, certain metals, chemicals and plastics as it seeks to devise strategy to better understand imports, a lot of which is being shipped under the radar, and co-relate it with domestic manufacturing capability and capacity utilisation. This data is seen to be crucial for imposing trade remedial measures in case a surge is noticed.

For every product category, there is an "others" group, where items are not properly classified. An analysis undertaken by the commerce department showed that close to 80% of the imports under 10 segments were imported under the "others" category and their total value added up to $128 billion, which was a third of the shipments into the country.

Between January 2020 and January 2021, 55% of India's imports were in the "others" group, the analysis showed. As much as 97% of the metal scrap entered via the others route during this period. Similarly, 60% of the auto components came in this segment, providing little information to the government on the kind of auto parts that came into the country.

As a result, the government has devised a multipronged strategy, including issuing HSN Codes to classify these goods for better monitoring. Besides, an import monitoring system has been put in place for iron and steel products, which requires advance information to be submitted online by the importer and the payment of registration fee. The mines ministry has also recommended a similar mechanism for certain non-ferrous metals.

Sources said that commerce and industry minister Piyush Goyal has held detailed discussions on the issue with various ministries and the system will be ramped up in coming days. Data available with commerce department showed that South Korea was the largest source for imports under the "others" category.

Source: ET

Shri Piyush Goyal launches "DGFT Trade Facilitation App" for Providing instant access to Exporters/Importers any-time any-where

Commerce & Industry Minister Shri Piyush Goyal today launched DGFT 'Trade Facilitation' Mobile App during the online video conference, for promoting ease of doing business and providing quick access to information to importers/exporters.

Speaking on the occasion, Shri Piyush Goyal said that very often, the simple trade-related process becomes cumbersome, and when they are available with a touch of a button, like with a mobile app, we will ensure the Ease of doing business and the speedy growth in international trade. "We desire to move towards paperless, automated processing systems, simple procedures for

trade players, online data exchange between departments & digital payments & acknowledgements.", he added

Shri Goyal said that in the post-covid world, tech-enabled governance will play a key role in determining India's growth and competitiveness. He said that a Single-window approach has enabled tech transformation of service delivery in India. It has liberated last-mile beneficiary from location-based constraints, and enhanced ease of doing business. He said that Progress in technology helps develop the economy and strengthen Indian firms in the competitive global market.

Lauding the initiative of DGFT, Shri Goyal said that the new Trade Facilitation App is a step in the right direction as it provides easy, omni-channel access to various trade related processes and enquiries at the touch of button. He said that truly imbibing Prime Minister's vision of Minimum Government, Maximum Governance, DGFT is standing up for businesses as a true leader with e-issuance of certificates, QR scan process to validate documents. It will reduce transaction cost and time for imports and exports related processes, and usher in transparency. He said that 'Trade Facilitation Mobile App' is a symbol of India's idea of Aatmanirbharta – Making governance easy, economical & accessible, as it symbolises shift in traditional thinking.

Shri Goyal said that Trade facilitation App is READY for Industry 4.0, as it provides:

- Real-time trade policy updates, notifications, application status alert, tracking help requests
- Explore item-wise Export-Import policy & statistics, Track IEC Portfolio
- AI-based 24*7 assistance for trade queries
- DGFT services made accessible to all
- Your Trade Dashboard accessible anytime &anywhere

The Minister said that 'Mobile' India creates an international trade opportunities for MSMEs and Foreign players. It will enable creation of a quality conscious and cost-competitive domestic industry. Further, it will significantly contribute to export target of $1 Trillion by 2025 and GDP target of $5 Trillion. He said that for advanced App development, more inputs & ideas of all stakeholders should be invited for further refinement which will help in expediting our technological transformation. Shri Goyal also called for engagement with technology and language specialists to develop Governance Apps in various regional languages, which will support the spirit of oneness amongst our citizens.

The new Mobile App of DGFT provides the following features for ease of the exporters and importers –

- Real-time Trade Policy Updates and Event Notifications
- Your Trade Dashboard Anytime Anywhere
- Access all services offered by DGFT in App
- Explore Item-wise Export-Import Policy and Statistics
- 24x7 Virtual Assistance for Trade Related Queries
- Track your IEC Portfolio – IEC, Applications, Authorizations
- Real-time Alerts on status of applications
- Raise and track help requests in real-time
- Share Trade Notices, Public Notices easily

The App will be available on Android and iOS platforms. The App can also be downloaded from the DGFT Website (https://dgft.gov.in). It has been developed by the Tata Consultancy Services (TCS), as per the directions of the Directorate General of Foreign Trade (DGFT).

Dow, Lucro and Marico join forces to advance circular packaging solutions in India

Dow and Lucro Plastecycle, an Indian recycling company, welcome Marico Limited, one of India's leading consumer goods companies into a tripartite partnership to introduce Dow's PCR-based coalition shrink films into its line of consumer products. This alliance enables Dow to work towards meeting its new sustainability target of stopping waste by collecting 1 MMT of plastics to be collected, reused or recycled by 2030.

Earlier this year, Dow and Lucro signed a memorandum of understanding (MoU) to develop and launch polyethylene (PE) film solutions. Under the MoU, Dow will utilize its industry leading team of packaging experts, material scientists, recycling equipment, blown film manufacturing and testing capabilities to help Lucro develop recycled film for various applications.

With the addition of Marico Limited, this tripartite partnership forms part of Dow's comprehensive strategy to enable a circular economy for plastics by focusing on integrating recycled content into product offerings en-

suring that product's values are maximized and extended across its lifecycle from creation to use to disposal.
"We are pleased to welcome Marico, a leading consumer goods company in the health, beauty and wellness space, join us in leading the way in India by offering circular packaging options through Dow's innovative resins and Lucro's expertise as a high quality, innovative and recycled-content flexible film manufacturer, said Bambang Candra, Asia Pacific commercial vice president of Dow Packaging and Specialty Plastics. "This arrangement places all the valuable stakeholders along the road to sustainability with the aim to meet market demands for brands seeking to use more recycled content in their packaging"

Dow's virgin resins in combination with Lucro's PCR is aligned with Dow's strategy of designing products for circularity and implementing recycling solutions to provide new life for used plastics.

"Sustainability is a long-term commitment and a way of life at Marico. We are constantly working towards making a difference by adopting every possible measure that will propel us further along the road to secure a sustainable future. Furthering our ongoing programs towards integrating circularity principles in product packaging, this partnership with Dow is significant as it enables us to use post-consumer recycled resin that helps reduce our carbon footprint," said Jitendra Mahajan, chief operating officer – Supply Chain & IT, Marico Limited.

"We have always been passionate advocates for recycling post-consumer waste and believe that there is a lot of value that can be derived from it," said Ujwal Desai, co-founder and managing director of Lucro. "Collectively between Dow, Lucro, and Marico Limited, we are looking forward to supporting brands owners in meeting their sustainability goals through the development of PCR-based sustainable packaging solutions."

Source: Packaging360

L&T Construction bags contract from Oilfields Supply Centre

The Buildings & Factories business of Larsen & Toubro Construction has secured significant contract from Oilfields Supply Company Saudi owned by the Dubai based Oilfields Supply Center Ltd. to design and build one of the World's largest Oil & Gas Supply Bases at King Sallman Energy Park, Dammam, Kingdom of Saudi Arabia.
The project involves constructing industrial facilities of different sizes, an administration building, ancillary buildings, associated infrastructure and storage yards along with Civil, Structural, MEP and Architectural Works. The project is scheduled to be completed in 30 months.

"We thank our client, for reposing confidence in our capability to build a project of such size and scale," said M. V. Satish, Whole Time Director & Senior Executive Vice President (Buildings), L&T.

Elaborating on its significance, M. V. Satish said, "This project will act as a business incubator to support the oil and the gas industry in the Kingdom and help accelerate industrial growth in the energy sector. It has strategic significance for L&T too, marking our future growth in such a potential-rich market like the Kingdom of Saudi Arabia."

Source: Indian Chemical News

BPCL-Kochi Refinery dispatch first parcel of petrochemical Normal Butanol

The first parcel of Normal Butanol produced in the new propylene derivatives petrochemical complex of Bharat Petroleum Corporation Ltd at Kochi Refinery was virtually flagged off by Arun Kumar Singh, Director (Marketing), BPCL-Kochi Refinery.

Normal Butanol is one of the six major niche petrochemicals being produced and marketed in 'world scale economic size capacity' for the first time in the country by BPCL.

The first parcels of Normal Butanol was transported in ISO containers to KLG Plasticizers (Silvassa) and Rachna Plasticizers (Silvassa) and in tank lorry to Visen Industries, Chennai. The product finds application in plasticizers, textile manufacture, impact modifiers for rigid PVC, amino resins and butyl amines.

The annual consumption of Normal Butanol, predominantly by Plasticisers and Automotive Paint manufacturers is 60-65,000 tonnes annually in India, which was mostly imported till now. Kochi Refinery is equipped to produce 38,000 tonnes annually, substituting the import of Normal Butanol.

The Prime Minister Narendra Modi had dedicated the propylene derivatives petrochemical complex at Kochi Refinery in February. Capital cost for setting up the complex was approximately ₹6,000 crore. Design capacity of the complex is 1,80,000 tonnes Butyl Acrylate, 10,000

tonnes 2 Ethyl Hexyl Acrylate, 47,000 tonnes Acrylic Acid, 47,000 tonnes 2 Ethyl Hexanol and 38,000 tonnes Normal Butanol.

Normal Butanol is produced in the new Oxo Alcohol Unit which is the second and the largest unit in the country.

Source: thehindubusinessline

NBFCs seek extension of MSME restructuring scheme until March 2022

Non-banking finance companies (NBFCs) have requested the Reserve Bank to extend the one-time restructuring scheme of MSME advances till March 31, 2022, as these players are unable to revive their businesses. In February last year, the Reserve Bank had permitted one-time restructuring of existing MSME advances, classified as 'standard' without downgrade in the asset classification subject to certain additional provisioning and other compliances.

The time limit for implementation of the scheme was till December 31, 2020. In a recent letter written to RBI Governor Shaktikanta Das, FIDC, an industry body of NBFCs, said due to the severe second wave of COVID-19, the micro, small and medium enterprises (MSMEs) have not been able to revive their economic activities and are in urgent need of support from the lenders.

"Considering the challenging environment for MSMEs and lenders, it will be helpful, if the RBI extends the restructuring scheme till at least March 31, 2022," the Finance Industry Development Council (FIDC) wrote. NBFCs primarily cater to the funding needs of micro, small and medium enterprises (MSME), including retail and wholesale traders.

The industry body also urged the RBI to allow restructuring of certain MSMEs loans that already have got the similar relief under the same scheme during the first wave of COVID-19, but are now facing challenges. The FIDC has also requested the central bank to provide priority status lending (PSL) classification benefit for bank lending to NBFCs on a permanent basis. Earlier this month, the RBI extended the PSL benefit by six months till September 30, 2021.

The letter said under the on-lending model, only fresh loans granted by NBFCs are allowed PSL benefit and the existing unencumbered pools of eligible PSLs do not qualify for such classification benefit. The industry body urged the RBI to allow bank refinance against existing unencumbered MSME pool originated by NBFCs.

In a separate letter to MSME minister Nitin Gadkari, the FIDC requested to reinstate guarantee cover under Credit guarantee fund scheme for NBFCs (CGS-II) to 75 per cent which was recently revised to 50 per cent. Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE) had framed CGS II for providing guarantees in respect of credit facilities extended by eligible NBFCs to micro and small enterprises (MSE) borrowers.

Source: moneycontrol

New quality standard for polyethylene will hurt domestic producers: PLEXCONCIL's Arvind Goenka

The Indian government has set a new quality standard for the domestic producers of polyethylene to adhere to. Department of Chemicals and Petrochemicals under the Ministry of Chemicals and Fertilizers issued an order dated April 15, 2021 that makes it mandatory for petrochemical producers of certain kinds of polymers to meet the new criteria set by Bureau of Indian Standards (BIS).

The order is applicable to three kinds of polyethylene material, the raw material used for making various plastic products: low-density polyethylene (LDPE) (widely used to make grocery bags and packaging material); linear low-density polyethylene (LLDPE) (used in making stronger bags, toys, buckets, pipes) and high-density polyethylene (HDPE) (jugs, plastic bottles, mugs, shampoo bottles). The new standard titled "Specification of Polyethylene Material for Moulding and Extrusion" is labelled under Indian standard IS 7328:2020.

The industry is of the opinion that meeting these standards is not an issue and manufacturers have the technical know-how and infrastructure but the Order will fail to meet its purpose.

Arvind Goenka, Chairman of trade body for plastic exporters Plastics Export Promotion Council (PLEXCONCIL) told Financial Express Online that the rationale of the order was to curb imports and improve the quality of plastic products in the country.

But, this Order will accomplish neither goal. He explained, "Setting the quality standards on the raw materials would still allow cheap quality plastic finished goods to be imported into the country." In fact, the additional compliance will increase the cost of domestically produced polyethylene and as a result of the finished products putting domestic manufactures at a disadvantage over importers, he said.

Plus, the raw material in itself doesn't ensure that the finished product will be of the desired quality. It depends on several other factors such as additives used and even the process of manufacturing.

There is also a requirement for overseas importers to obtain a licence to ensure that their product conforms to the new standards imposed by the BIS. It should be noted that India is a net importer of these products and the additional compliance might dissuade many suppliers to export to India. "India already faces a shortage of these products and the Order might dissuade many exporters in the US and the Gulf countries, especially the smaller players, to send their products to India," said Goenka.

He added, "The government should perhaps have started with other raw materials such as Polypropylene (PP) where India is self-sufficient and gradually expand to other products."

This order will be enforced after 180 dates from the date of publication of the official gazette. It is only applicable for domestic petrochemical manufacturers and not Indian exporters.

Source: Financial Express

Narayan Lal Gurjar

Founder & CEO, EF Polymer Pvt. Ltd.

Narayan Lal Gurjar is the Founder and Chief Executive Officer with EF Polymer Private Limited. He completed his graduation in Agriculture Engineering from the College of Technology and Engineering, Udaipur. An innovator and nature lover, he and his team founded EF Polymer Private Limited out of a pure passion to help farmers across the world struggling with huge water and fertilizer requirement. Since 2018, the company has successfully developed, tested, and piloted 100% Organic Super Absorbent Polymer cum Fertilizer.

What was your vision behind starting EF Polymers? How did it all begin?

I am from Rajasthan which has a very dry and arid climate. Draught is very common and people are often faced with severe water scarcity in most parts of the state. I come from a farming/ agricultural family and from my early childhood, I have seen the struggles faced by our farming communities on account of such acute water shortage. As a child I have always been interested and inclined toward science and hence with my father's encouragement, during my high school days, I started working on solutions that could specifically address this critical aspect of farming and ways to maximize the resources available. We started experimenting with whatever local resources we had available to us. We did not have any special equipment, technology, machinery, labs, etc and whatever was available, was very limited. It took us four years of trial and error to come up with the concept and after about three months of intense experimentation, we finally developed a prototype. We approached the Agriculture University in our city with our prototype and since I was a student already, we were fortunate to receive the help of one of my Professors in validating the product. We did not envisage starting EF Polymer as a company. It was a project for us. But with the right support, guidance, mentoring and encouragement we turned our project into a full-fledged start-up in 2018.

Tell us about Fasal Amrit, a ground breaking solution developed by your company. How did you come about with such a solution?

The name Fasal Amrit itself suggests what it is about. Fasal is crop and Amrit means elixir or something that gives life to the crop. The concept or the idea behind the product is based on super absorbent polymer properties. Super absorbent polymers are able to absorb at manifold, hundreds or thousand times its weight. We have developed such a product from bio waste such as sugarcane, banana, and other natural waste. We recycle such bio waste and this is further polymerized using our patented process and converted into an organic water retention polymer. Fasal Amrit basically absorbs water about hundred times it weight and when mixed with soil, it allows such soil to absorb and retain water for a much longer period. The product comes in a powder form and it can be mixed with the seed before sowing or in areas which have crops growing, it can be scattered in the soil. The powder mixes with the soil and absorbs the water

content which is subsequently released back into the soil. Under normal circumstances, a farmer especially in places where the soil conditions are semi-arid or arid may require watering his fields every 10 days as the soil is unable to effectively absorb water. By using our product, the farmer not only can improve the absorption of water, but watering can be done every 15-20 days. This way, we save on water, and improve productivity in an environmentally safe manner. The product has proven to save 40% of water consumption. Soil quality remains unharmed even after repeated use and we have validated the same from the Japanese Agricultural University as well. In 1 year, the product becomes 100% fully biodegradable.

What is the likely impact of the product on the agricultural landscape in India and globally?

Foremost, as a team, we are highly motivated to be a part of the circular economy. And secondly, we aim to promote organic farming and eliminate use of harmful chemicals and prevent soil degradation. Our product works on all these levels of environmental preservation, without any long term damage, but with enhanced efficiency. Farmers can grow their crops with even very low water availability. In India, according to the 2016 Water Dept Report, 8 States and 263 districts suffered from draught. Hence in India itself, there is great potential for the product in helping farmers overcome such challenges and support the farming community in draught affected areas. We have also started exporting the product to Thailand, Taiwan, Japan and plans are in place to expand its global outreach/ exports, especially countries that face water crisis for farming.

Which are the key markets for the product in India and overseas?

USA (especially California), South Africa, Middle East (Dubai), Thailand, Taiwan and similar other countries with water scarcity are our primary target markets. In India, we are currently working within Rajasthan and Uttar Pradesh and have plans for expansion to Maharashtra, Karnataka, etc.

Currently we are looking for distributors and distribution channels pan India so that more farmers can benefit from Fasal Amrit. Since our network in Rajasthan is strong, we are focused in the state currently, but plans are in place to expand to other states soon as well.

What are the other initiatives or innovation that your company is working on or plans to undertake towards sustainability?

We are working on some organic growth promoters also created from organic waste. We are also looking at organic pesticides. Our main focus is Waste to Wealth and hence all our products are aligned to this concept. There are chemical based products available globally today. However, these are made from acrylic and acrylamide based. Our focus is on organic, bio based products which are not currently available in the market. Our product is patented in India, Japan and USA.

Your company has the distinction of being the second entrepreneurship to have raised Y40 million seed capital from the Okinawa, OIST Start Up Accelerator Programme. How will this help further your objectives?

We received various supports from OIST through The Innovation Square Startup Accelerator (I2@OIST, https://i2.oist.jp/accelerator) as a cohort of 2019 program. I2@OIST provides funding, resources/services for R&D and business development to deep-tech entrepreneurs who wants to start his/her business in Okinawa, Japan. Being foreigners in Japan, we started the project with a mixture of anticipation and dread, but we got very close support and encouragement from the OIST staffs. We couldn't have achieved this successful fund-raising without OIST's support.

Having said that, our fundamental objective, now that we have developed and perfected the product is to scale and extend the product outreach to farmers from draught areas across India. We want to increase our production capacities, build our teams, distribution as well as sales and marketing. These are important for the growth and sustainability of our product and business operations as well as outreach efforts to various regions, states, countries.

How can we leverage technology and innovation to develop unique world class products and solutions on par with likes of Germany, Japan, etc? What are some of the key learnings from such countries that we need to adapt?

I believe that as a country, we have huge potential for innovation. However, the major challenges lie at very grass roots levels, especially when you want to validate

your product or solution. It becomes very difficult to show or develop proof of concept as there is no support or facility for such things available across the board. In Japan, Italy, etc, innovation is given a lot of encouragement and innovators have the means to validate and test their product because facilities are made available to them and can be easily accessed.

Start-ups usually lack funding and creating prototypes or validation requires funding, labs for testing, mentoring, etc. As innovators, we are focused on developing the product from the root idea. However, these require testing, validation, etc in real time situation. We do not have any set standards/ protocols for the same. In many cases, innovators are unable to seek the help of private organizations or universities as testing charges are very high. The GOI schemes should be designed to help startups right from the word go so that innovators can bring their product to a level that it can be further commercialized. We need help in testing and validating as it will help build credibility for the product. The Govt, Academia and private industries can help and they can help collectively. But currently, we do not see it happening in the efficient manner that it should.

Another aspect is the execution of GOI declared programmes and policies. Grand announcements are made every now and again to promote innovation in India, but on ground execution of such schemes is almost non-existent. The bureaucracy is prohibitive and unfortunately, benefits or incentives often do not reach the rightful recipients. Having said that, in recent times, things are changing, and we find a lot more innovation see the light in our country. However, such efforts should be accelerated in the true sense if we have to have real start up revolution.

What is the kind of support that you believe are required for young innovators like yourself in not only seeking solutions to environmental challenges, but also making it commercially viable and accessible to the population at large?

Besides facilities for testing and validation, we need to provide innovators and startups access to GOI schemes directly. We also need to build more awareness about the facilities that have been designed by GOI for such ventures and most importantly, ensure facilities are made available to deserving candidates when and where they most need it. Schemes designed just on paper have no real meaning to our efforts. Many universities organize events for innovation and new ideas, etc and there are many ideas that also get generated by young students. However, most of the winning ideas fade away because they do not know what to do next. We, ourselves, have participated at 40-50 such events and even won recognition in at least half of them. However, most times, one hits a roadblock after that as we neither receive financial support or proper facility or guidance to take our projects further.

What were your biggest challenges? How did you overcome them?

In the initial phase, we faced lack of funding and later we were challenged by how to validate our technology in an efficient way. Proving our technology and getting access to right organization to develop proof of concept was a huge challenge, but we eventually overcame it as I was in University and had help from my mentors. Once that happened, we approached many organizations and did a Google search on where and how to attract the right interest in our product. This was a huge exercise for us. After much searching, we came across the OIST Programme where we submitted our proposal and fortunately, our product was selected for the Accelerator Programme funding. Of the 200 global applications, we were the second to receive the funding and we consider that a huge step forward for us.

We had great mentors and guides. Many innovators have great products but do not know what next steps should be. We need to have a mechanism/ organization who can handhold such people to take their ideas to commercial levels. Innovators must also be open to improvements, suggestions and constructive feedback to make their concept commercially viable. They should be open to ideas or changes that will improve their ideas and make them commercially and practically viable. They must be patient. Mentors and guides can help them through this process.

What or who has been your inspiration?

I am inspired by nature. I believe nature has a solution to every problem. We need to learn to listen, observe, understand and respect the power of nature. We must work along with nature. Science and nature are one and we can find every solution that we seek by simply just aligning ourselves to nature.

What is your message to young entrepreneurs of India today?

I would like to say that if you have an idea, don't think about failure or success. Work on your idea. Take small steps, keep being inspired and motivated. Support from nature, people, society will come. Also, in India, there are so many opportunities. Keep at it. Meet as many people as you can, participate at events and you will find the right fit eventually. Like minded people will come your way. So, keep participating, keep exploring.

FASAL AMRIT

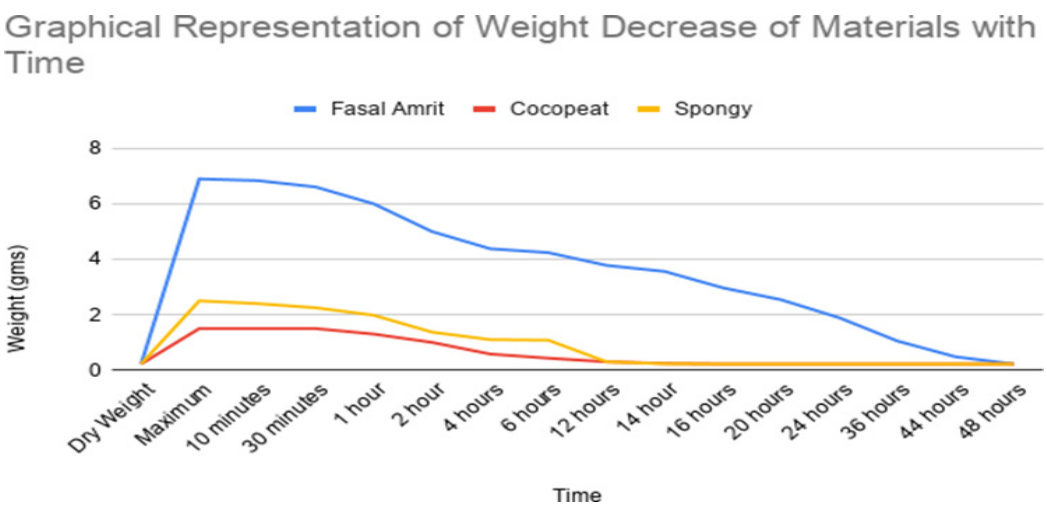
Fasal Amrit is an organic hydrogel made by using orange peel. It is useful to reduce the irrigation water, fertilizer requirement, to increase agriculture yield.

FEATURES

- Maintain moisture in the soil for as long as 10-15 days
- Prevents evaporation and leaching of water and nutrients
- 30-40% less irrigation water requirement
- Provides a healthy environment to soil and crop/ plant
- Rejuvenates polluted soil, supports organic agriculture
- 100% biodegradable in the soil after 6 months
- Works as organic fertilizer after degradation
- 100% organic and chemical-free

BENEFITS

1. Save more than 40% of total water
2. Reduce more than 20% fertilizer requirement
3. Increase overall profit by more than 20%
4. Reduce the cost of water and fertilizer by 30%



FIELD TESTING - INDIGO

Fasal Amrit has been tested with Indigo Plant in Okinawa Japan.

Location: Higashi Village

Experiment Timeline: January 2020 - February 2020

Project Incharge:

Prof. Ryuichi Suwa, Faculty of Agriculture, University of the Ryukyusb Yoshinari Kazuma, Director at LIQUIO Private Limited Yuki Tonooka, Ph. D. / Deputy Director, University of the Ryukyus

Project Carried Out By

Narayan Lal Gurjar, Founder & CEO, EF Polymer Private Limited Puran Singh Rajput, Co-Founder & COO, EF Polymer Private Limited

The Future is Here! Top 4 Trends for Caps & Closures Market

In many industries, including FMCG, industrial products and medical supplies, closures are a vital part of product packaging. The Global Beverage Caps and Closures market was valued at USD 62.08 billion in 2020 and is expected to reach a value of USD 80.87 billion by 2026 and work at a CAGR of 4.54% over the forecast period (2021-2026).

- The increasing demand for packaged beverages coupled with the technological advancements in packaging solutions is expected to aid the growth of the market over the forecast period.
- It was anticipated that the most established beverage categories such as milk and fruit juice are expected to offer sluggish growth opportunities, whereas, newer beverage categories including sports drinks, ready-to-drink tea and coffee, and other healthy beverage alternatives will increase the overall demand for beverage closures.
- Stringent Regulations on the Usage of Plastic Bottles will act as a factor which will restrain the growth of beverage caps and closures. The regulations by the government have a direct and adverse effect on the sales of caps and closures.

Asia Pacific is Expected to Hold a Major Market Share

- The beverages industry in the Asia Pacific region has shown robust growth in the past decade, owing to rising disposable incomes and this trend is expected to follow over the forecast period, owing to changing consumer preferences, indicating an increasing prominence towards energy and nutritional drinks.
- Rapidly growing middle class and evolving workplace culture, are increasing the amount of alcohol consumed in the region. Statistics from the World Health Organization (WHO) reported that total pure alcohol consumption per capita amounted to 7.6 liters in 2015.
- This trend is further expected to increase over the forecast period, resulting in a higher production of alcohol, proportionately driving the demand for caps and closures in the APAC region especially in countries such as India, Taiwan.
- However, the vendor landscape of the market has been rendered primarily fragmented owing to the presence of a massive set of regional as well as international players.

TOP 4 TRENDS

1. INNOVATIVE CLOSURE DESIGN ENHANCES BRAND IMAGE

With the significant rise of eCommerce, social media and the demands for a premium online experience, innovative closure design is playing a key role in company branding and attracting consumer attention. With this in mind, designers are putting more emphasis on a wide range of colours and complex structures which are an emerging trend.

Customers Expectations Drive Innovation

Rising Demand for Quick Colour Change

2. E-COMMERCE DRIVES SAFETY DESIGN

In the past, products were delivered in bulk to stores for sale via traditional offline channels. In the era of e-commerce, shipping has changed to small-volume couriers that place extra challenges on the seals of closures. In addition to the aesthetics aspect, closure designers are now required to consider the greater protection of the product during express delivery, especially focusing on leak proof design.

3. CONTINUOUS LIGHT-WEIGHTING WITHOUT COMPROMISING SAFETY

In recent years, with increasing awareness of the environmental impact, consumers have been driving the need for more sustainable packaging. Lightweight closure design is a solution to significantly reduce plastic usage and align with the recent trend in green initiatives. On the other hand, for closure manufactures, light-weighting requires less resin, which can effectively reduce material cost in the injection moulding process. Therefore, considering both the economic and social benefits, light-weighting has become a goal of continuous innovation with its own set of challenges, e.g. the need to consider how to keep or improve the performance of closures while reducing their weight.

4. COST-EFFECTIVENESS IS A CRITICAL FACTOR

How to minimise part cost is an eternal topic for plastic closure manufacturers. They are adopting more innovative processes to improve efficiency, ensuring process stability and part consistency, while reducing waste caused by production defects. Those approaches all contribute to the reduction of closure manufacturing costs.

Source: mastip.com

TRENDS AND DEVELOPMENTS IN BEAUTY PACKAGING

- As the wellness industry continues to merge with the cosmetics industry, there has been a shift from simple cosmetic closures to more advanced multifunctional closures, with latest caps including twist-lock caps and tamper-evident caps.
- From edgy geometric shapes to playful and multifunctional styles, clients have been opting for caps that are an alternative shape or disproportioned shape compared to the shape of the body of packaging, such as a small round cap on a square jar, or a octagon cap on a round tube, emphasizing this organic and tactile trend.
- Practicality is the top consideration in cap choice aesthetics. Driving the need for locking caps for leakage and tamper-proof functionality. Caps that not only offer a unique and modern visual impact but also provides an easier grip for users, Sliding and flip-top caps are other examples where smooth and elegant design meets easy, single- handed, foolproof use.
- Due to the impact of COVID-19 consumers are also becoming more conscious of touching their face and contaminating their formulations creating an increased demand for new cap designs with built-in applicators, such as built-in brushes or doe foots for makeup application.
- For premium beauty brands, the look of luxury continues to reign as a top brand image feature. Simple cap design are made more luxurious by adding a magnet to the cap for a premium weighted feel or by adding a second process finish like metallization, an aluminum sheath or by a two part cap with a sophisticated locking system.

Beauty and Sustainability

- Closures can be manufactured in post-consumer resin (PCR) in 100% or less to help brands meet sustainability and performance goals for packages. Using advanced color technologies that are becoming increasingly sophisticated in matching colors previously thought too difficult to match in PCR.

- Caps made from PCR plastic, as well as 100% recyclable PP mono-material caps, including its own exclusive biodegradable packaging that's 100% biodegradable, 100% compostable and 100% recyclable with flush-fit friction closure, no hinge, no magnets, are becoming the ultimate sustainable cap choice for compacts, palettes, sticks and pots.
- Lombardi Design & Manufacturing, which uses sustainable materials for its different cap applications, has a particular expertise with Tenite, a clear, cellulosic plastic resin from Eastman that is derived from sustainable wood farming.

- Virospack recently launched an elegant new curved bulb dropper configuration that features an avant-garde, rounded silhouette. The two plastic curved cap choices can be combined with a new curved rubber bulb to fit standard 20/410 bottles. The new configuration is amenable to different decorative finishes such as painting or metallization, and the bulb can be moulded in color.

- Olcott Plastics (a Pretium Packaging brand), has expanded its offering in frosted/textured finish plastic closures with a standard smooth top or in extra tall and dome options as a great way for brands hoping to refresh their packaging without making major changes to filling lines or product packaging.
- Lombardi Design & Manufacturing added to its line of custom injection molded and dispensing caps for fragrance and skincare, a new domed cap offering for its recently expanded range of Propel/Repel Sticks. While typical deodorant propel/repel retractable configurations utilize a top-fill process and flat-topped cap, Lombardi's new domed offering is a fresh, alternative shape for smaller sized retractable products, such as color cosmetic blushes, foundations and highlighting sticks. The new domed cap is amenable to bottom fill processes, allowing colorful formulas to fill and mold to the shape of the domed cap, providing a window to the product and a colorful point of brand differentiation on-shelf.

Source: beautypackaging.com

POLY VINYL CHLORIDE (PVC)

Poly Vinyl Chloride is a type of thermoplastic polymer. It is produced in two general forms: rigid and flexible. Due to its versatile nature, PVC finds use in plumbing and agricultural pipes, cable and wire insulation, doors and window frames, artificial leather, coated fabrics, flooring, medical devices, blood storage bags, footwear, signage etc. Products made of Poly Vinyl Chloride can be identified by the triangular recycle symbol with the number "3" resin identification code which is generally mentioned at the bottom of packaging. PVC is recyclable.

The product is classified under Heading 3904 (generally 39041010, 39041020, 39041090, 39042100, and 39042200) of the Harmonized System (HS) of Coding.

World-wide import of Poly Vinyl Chloride, in primary form, is between USD 14 – 15 billion.

- In 2019, top-5 exporting countries of PVC were: United States (21.7%), Germany (9.5%), Taiwan (8.7%), France (6.7%), and China (5.3%).
- Likewise, top-5 importing countries of PVC were: India (13.6%), China (5.9%), Italy (4.6%), Germany (4.5%), and Turkey (4.4%).

India is a net importer of Poly Vinyl Chloride. In 2020, India imported 1.64 million tonnes of PVC valued at USD 1.45 billion from the world. Japan, Taiwan and South Korea were the major source for India's import of PVC.

Source Country	Value (USD Mn)	Source Country	Qty. (KT)
Japan	373.04	Japan	412.36
Taiwan	243.41	Taiwan	271.17
South Korea	185.16	South Korea	213.29
Thailand	75.07	United States	77.92
United Arab Emirates	59.96	Thailand	74.39
United States	59.79	Russia	70.18
Russia	58.40	Colombia	64.47
Colombia	51.76	United Arab Emirates	62.97
China	44.93	Ukraine	50.00
Ukraine	43.39	Norway	48.68

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

India is also an exporter of Poly Vinyl Chloride. In 2020, India exported 99,379 tonnes of PVC valued at USD 71.7 million to the world. China was the major destination for India's exports.

Destination Country	Value (USD Mn)	Destination Country	Qty. (KT)
China	44.19	China	73.41
Nepal	4.56	Nigeria	4.49
Nigeria	4.33	Nepal	4.43
Kenya	3.22	Kenya	3.11
Bangladesh	2.74	Bangladesh	2.68
Tanzania	2.61	United Arab Emirates	2.39
United Arab Emirates	2.14	Tanzania	2.39
Sri Lanka	2.09	Sri Lanka	1.48
Uganda	1.05	Uganda	1.03
Qatar	0.72	Qatar	0.93

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

Interestingly, while India is a net importer of Poly Vinyl Chloride, there is Anti-Dumping duty on import of PVC into India from China, Malaysia, Russia, South Korea, Taiwan, Thailand, United States, and the EU. Moreover, the basic customs duty applicable on import of PVC into India stands at 10%.

Major manufacturers of PVC in India include: M/s Reliance Industries Limited, M/s Chemplast Sanmar Limited, M/s Finolex Industries Limited, M/s DCW Limited, and M/s DCM Shriram Limited.

Interview with Mr. Alok Tibrewala, Director, Swastik Plastoalloys Pvt Ltd. and Panel Chairman – Raw Material and Polymers

Interview with Mr. Alok Tibrewala, Director, Swastik Plastoalloys Pvt Ltd. and Panel Chairman – Raw Material and Polymers

Swastik Plastoalloys Private Limited is recognized as one of the leading manufacturers and exporter of Colour & Additive Master Batches and Thermoplastic Compounds for the Plastic Processing Industry. Always abreast of the latest developments, Swastik Plastoalloys has strictly adhered to its unique philosophy of offering technologically superior, often tailor made, cost-effective, world class product in Plastic Processing Industry.

Alok Tibrewala, Director at Swastik Plastalloys Pvt. Ltd. & Plexconcil Panel Chairman for Raw Materials and Polymers, is a Qualified Chartered Accountant and has been spearheading his company since 1992. A well-respected member of the plastics fraternity, he has also served as Past President of Indian Plastic Federation (IPF) and is a MC Member of Plastindia Foundation and Co-Chairman Plastindia 2022, Co-Chairman - FICCI MSME, WB and Jury Bench Member- West Bengal MSE Felicitation Council.

Plexconnect in an interview with Mr. Alok Tibrewala:

When and how did you first start your journey with Swastik Plastalloys? What have been your key learnings over the years?

My father had a company that was then called Swastik Polymers Ltd., and I joined the company after completing my CA in 1992. The company was engaged in compounding, primarily, telecom compounds. However, the business ran into difficulties as we were catering to the telecom industry that went through a huge transition in 1998. Subsequently, in 2003, we decided to enter the masterbatches business. With hard work and dedication, the business grew exponentially, and in 2015, I set up Swastik Plastalloys and we commenced the production in 2018.

I have always believed in the significance of sound business principles. Ethical standards are a must, and this is something that will hold in good stead in the long run. Quality is extremely important for growth. In fact, it is a key driver for growth. One may produce at mass level; however, to achieve true growth, one needs to focus on consistently delivering high quality standard products. Today, we find that the country is enforcing BIS standards in plastics as well and eventually those industries that are unable to comply with quality standards will phase out and so will the businesses that are associated with them.
Another crucial aspect is to ensure that your company is financially strong. This has been further proven, especially considering the recent jump in raw material pricing. If a company does not have rock solid finances in place, they will not sustain. Price volatility in our industry is a common occurrence, and companies need to ensure their ability to override the curve.
Compliances must also be strictly adhered to. Companies must ensure that their processes and finances are transparent. Consistent efforts must be made towards overall growth of a business.

What are some of the biggest challenges of your career and how did you overcome them?

There have been two major challenges in my career so far. The first one was way back in 1999 with Swastik Polymers when, all of a sudden, all cable manufacturers shut down and we lost all our customers. We had to shut down our facility. By 2001, we had to declare our company accounts NPAs, as the bank interest rates were as high as 27% during that period.

The bank offered us a rehabilitation package with a waiver of Rs. 90 lakhs. Had I taken the waiver, I would have not only shut my business but would have also lost

credibility with all Indian banks. The only alternate for me was to approach the banks, have them restructure my loan to an interest-free term loan, which I repaid in the next 5 years. That was one of the most difficult decisions to make and perhaps one of my greatest career challenges.

The second most challenging time was, as for a lot of companies, April 2020 and the pandemic period. During the national lockdown, many industry peers were talking about cutbacks, and not paying salaries etc., which almost seemed like an excuse on the part of some businesses to renege on their commitments. There was a complete sense of pessimism prevailing during that time and everything seemed quite bleak. After careful introspection and consideration, I realized that after having spent more than two decades in the business, it would be an utter failure on my part as an entrepreneur if I could not help my company sustain its team for 2-3 months. To me, that seemed completely unethical. We decided to tide over the challenging times together as a team. Our staff was taken care of as a family, we did not have any retrenchments and our teams were not just paid salaries, but those who contracted the virus were even given 21 days' paid leaves. We did our best, and thankfully, the lockdown did not last very long so we were able to bounce back. While this was a huge challenge, and not unique to us alone, with our timely decisions, we earned the respect and faith of our team members and that is a huge factor for any company.

R&D is significant to nearly all industries. What can we expect within the Masterbatch industry in India in the coming years?

With the rise in polymer consumption, the demand from the industry will rise. Plastics are needed every where and the industry's growth is driven by growth in consumerism. Coloured plastics have a high demand in consumer products, and that factor will drive the demand for masterbatches. There are a lot of functional masterbatches coming into the market today, as different products demand different functionalities. Hence, the masterbatches that are being produced today need to keep up with the changing requirements/functionalities of the products. In the past 15 years, the industry has taken a serious view of R&D. Worldwide, companies are making huge investments in R&D, and so is the trend in India. Also, there has been an increase in the number of young graduates who are interested in the plastic engineering technology, and thus, we have a large talent pool available to us. We are also seeing seriousness in manufacturers who have been apportioning a part of their capital into R&D along with manufacturing, so the two aspects have become intrinsic parts of businesses. This was not the case earlier. In fact, in the past 15 years, all major players have set their own prototyping machines to test their products.

Which are the major application segments that are most likely to drive the growth of the Masterbatches segment?

Pipes industry will see a huge demand. The Government is talking about water supply to every household in the next 10 years making water management an important industry segment for the pipes industry. Irrigation is also an important component of the pipes industry. Today, 12-15% of the agricultural land is using micro irrigation due to acute water shortage in the country. With growing scarcity of water resources, drip irrigation systems will increase, and hence, there will be a huge demand for pipes to facilitate the same.

Non-woven fabric segment too has growth potential. Non-woven fabrics are those that we commonly see in consumer markets with PPE suits, masks, etc. This has yet to be fully explored in terms of its industrial application. Therefore, this segment has a huge potential for masterbatches. Raffia, typically used as cement/ fertiliser bags, and Jumbo bags used in bulk packaging etc. will also experience much growth with infrastructure, as well as growth in agriculture.

Food processing industry is yet another industry with immense scope. A lot of food is wasted in India as we are unable to package the products at farms. With growing awareness and more products available, this will boost the bulk food packaging industry. This industry has huge masterbatch requirements. Even automobile segment has been growing quite well.

With a major shift in e-commerce platforms, consumer packaging will get a boost.

What are the emerging export destinations for your segment? And how can we tap these?

Conventionally, Bangladesh, Nepal, Middle East and Africa were major export destinations and we have had good exports to these regions. These countries/regions are focused on commodity masterbatches, and we have done well so far in catering to them. However, Indian masterbatches manufacturers are now shifting towards specialized masterbatches, and the demand for these have been coming from Latin America, US and Europe. The world is opening up to Indian industry. We need to be prepared to meet their technical requirements and I believe that we are prepared to meet this rise in demand.

Having said that, we need the Government support. Infrastructure in our country is still weak. Our time lags are the highest, there is red tapism, and many of our policies, including the FTPs, are weak or flawed when you look at their on-ground implementation etc. For example, if we take a simple case of the GST Policy, the

amendments made to the basic Act may be 40 times the actually Act itself. Hence, it is simple - when policies are designed, they must consider all the potential impacts or limitations, as well as practicality in implementation right down at the grassroots levels. It should be simplified. Roads, ports and other such important facilities need to be improved. When we talk about the ease of doing business in our country, it has to be comprehensive, and not just focused on licenses/ permits alone.

What are the distinct advantages that India, as a country can offer, especially considering China's low quality and low-cost products that flood the market?

India has a great set of entrepreneurs in the Masterbatches segment with world class players in the industry. Today, we have the most advanced technologies to manufacture global quality products. We are the leading source of quality pigments, which are far superior to those made in China. Indian masterbatches are far ahead of Chinese manufacturers in terms of quality. In fact, Chinese industry does not enjoy the confidence of global users the way our Indian industry does. Here in India, Masterbatches are not supplied in bulk but are rather customized to client's requirements. Hence, scalability is not a challenge. Furthermore, since the masterbatch industry is not labour intensive, and we do have a good manpower supply as well, it makes our position advantageous. However, there is a requirement for consistent quality standards, good business relations and commitment to delivery. India definitely scores high on all these parameters, which give our industry a distinct competitive advantage.

With the recent sharp price volatility in raw material generally, what has been the impact on the segment? What does the future hold and what needs to be done?

Price volatility is something that people will have to get used to, especially during times such as the current pandemic when the entire world is going through uncertainties in economies. There is no precedence or likely imminent subsequence to this situation. The Masterbatches industry is bleeding today, and we have even seen nearly 100 to 200% rise in prices of various Raw materials. Our biggest challenge lies in passing this cost on to customers. Processors only understand polymers, which is different from the Masterbatches inputs. A lot of downstream players of chemical and Pigments manufacturing which is the main raw material for masterbatch segment have shifted to China, and we have also been facing challenges in trade with China. There is a lot of uncertainty all the time. It is time for India to build backward integration, especially for pigments and chemicals.

In terms of TiO2, which is a major input for our industry, we do not have quality manufacturers. We are still highly import dependent on China for additives. Polymer producers in India are purely market driven and there is no difference between landed and domestic price. India is highly deficit in polymer production versus consumption. Investing in Polymers production can be done only by PSUs and such investment can be extremely high. Our industry has been asked to increase exports. However, if we continue to face challenges in raw material procurement and pricing, how can one increase exports. Hence, the Govt needs to decide. Exports can only happen if we have surplus products and that requires us to have much greater raw material production in the country.

What are your Top 3 priorities as Panel Chairman to progress the Council's goals?

Foremost, we want to be very vocal about the need for better infrastructure for Raw Material in India. This is something we wish to take up very strongly with the government. One may talk about facts and figures, but these do not always reflect the right on-ground situation.

Our committee will also take up the FTP with the Government, and how it can be made easier, conducive, especially for smaller industries. While large players may not always be greatly impacted by FTP, we need to focus on the smaller players too. They must get the right benefits and be encouraged. How do we attract more smaller players and get them excited to enter into exports? How do we help small exporters to become large players? The government needs to pay attention to these issues. Thirdly, we will focus on capacity building by PSUs for the manufacturing of polymers. Oil demand will eventually come down in the next decade. Hence, it is critical for the Government to invest in polymers manufacturing, which will help domestic and export sectors alike.

As a leader, what are your values and how do you ensure your team shares the same?

As a leader, one should always be positive and optimistic. These are the most integral qualities of a good leader. In any situation, it is important for leaders to have such attitude to tide over challenges as in the case of the pandemic.

We have to take pride and identify our country's strengths. We should celebrate what we have and our achievements rather than focus on what we do not have. We should be transparent and vocal, especially when making our representation to the governmental authorities. By simply pleasing or falsely praising the policies, we will not help ourselves. Rather, we should be direct, upfront and factual, albeit humble and polite when high-

lighting our concerns if we are to really have a meaningful dialogue with policymakers, as they are here to help us.

We need to rise above ourselves and work towards betterment for all. That makes a true leader. Greater transparency, sharing data, having more interactions, being open to suggestions, and instead of competing with each other, we need to be collective in our thought process, identify common concerns when representing our cause, and work towards the overall upliftment of our industry.

Who would you say has been your inspiration or has had the most impact on you as a leader?

It would definitely be my father. My father was an active member of the plastic industry association in the Eastern part of India. He worked tirelessly with the fraternity, always helping, supporting and guiding his fellow members. He always advised me to be an ethical businessman. Even on a personal front, we were always encouraged to do the right thing and stand for what is right. He encourages me to be honest and for him, it was never about how big or small a businessman you are, but always how satisfied and happy you are with your business. CSR may be a recent activity for most companies, but my father has always encouraged us to be kind, compassionate and help the communities that make up our ecosystem and value what we have. He is definitely my big inspiration.

What would your message be to young entrepreneurs and new exporters?

- Please accept that India is growing. Stop paying attention to negativity and believe that India is growing. Two years ago, our Hon'ble PM said that we would be become a $5 Trillion economy in 5 years, but we should discount the pandemic period and have the faith that our country is well on its way to grow. You can sit on the fence or be a part of this growth. The time now is right to be a part of India's success story and simultaneously grow yourself. Such opportunities are rare, and after the liberalization of India's economy in the 1990s, we have this opportunity yet again now.
- When something does not seem to go your way, it is the time to invest. In good times or bad times, there is always demand for products. It is up to us how we convert challenges into opportunities.
- Banking and finance are especially important and new entrepreneurs must have good banking network. You cannot conduct big business on your own money.
- Be honest, ethical and true to yourself. You will be respected and appreciated.
- Invest in human resources. Your people drive your company, and you alone cannot do it. Treat them well and respect your team. Good humans are hard to come by.
- Invest in good vendors. Your company is as good as your vendors. Stick to the commitments, respect them and be open to new vendors. You never know when a new idea may come your way.
- Respect your environment. Be conscious of the pollution we generate. Do not wait for laws. As humans, it is our duty and our responsibility to save our environment, save energy, reduce damage to the earth for us, our children and the world.

Everyone needs to be safe and healthy, especially in the current situation. It is time for the industry to give back to the society, so please be generous in supporting your nation, even if it means staying just at home!

How The Role of Injection Molders Is Redefined by the Resin Shortage

Jenna Keib, Kaysun.com

The resin shortage has injection molders and the larger plastics industry struggling to find balance. The late-February storm that blew into Texas and shut down 80% of U.S. resin production was the catalyst, but only one contributing factor.

Industry authorities point to several reasons why resin supply and resin cost continue to fluctuate and how the ripple effect impacts suppliers and injection molders. A snapshot of current pricing illustrates the topsy-turvy landscape:

Source: The Plastics Exchange

Knowing the "whys" behind the problem is beneficial, but absorbing a 50% price increase per pound of polypropylene (PP) and 30% reduction in production capacity isn't sustainable.1 It raises an equally pressing question: what can injection molders do about it to support customers, maintain production, and protect margins?

INJECTION MOLDERS SEARCH FOR ANSWERS

A recent PlasticsToday "Plastic Possibilities" podcast tapped business consultant and supply chain expert Ambrose Conroy of Seraph for insights into the resin shortage dilemma.

Conroy frames the situation as a failure of risk management. It's partially understandable given the statistical unlikelihood of one low probability/high impact event occurring, let alone several in succession. However, the reality is that a global pandemic, a blockage and shutdown of the Suez Canal, and a power grid-crippling U.S. winter storm all happened. And they all chipped away at the plastics industry.

The discounted risk revealed several shortcomings in what was thought to be a seamlessly integrated global supply chain, leaving injection molders and others in the industry to grapple with:

- **Labor challenges:** The widening skilled workers gap was already a concern. COVID-related shutdowns, layoffs, and hesitancy about potential virus spread further decimated the workforce.
- **Price volatility:** A limited resin supply drives up prices. Injection molders feel the pinch of resin costs from both sides as suppliers pass along increases and OEMs are reluctant to take on extra expense during uncertain times.
- **Not meeting consumer demand:** The pandemic continues to keep people at home. Spending less

on outside experiences and services has funneled more money into product purchases — most of which contain plastic. Skyrocketing demand can be seen as a positive for the industry, of course, but it also creates pressure that further constrains a weakened supply chain.

Taken individually or on the whole, the obstacles spell trouble for injection molders. In response, many molders have undertaken initiatives to maximize assets.

Investing in technologies that offer the best OEE, developing internal staff members, and strategically shifting into additional verticals are among the most popular approaches. However, seeking alternative materials is more often the solution of choice.

THE GOOD AND BAD OF ALTERNATIVE MATERIALS

Given that there are more than 25,000 engineered plastics, finding alternatives mainly to PP and PE seems like it would be easy enough. But, like so many challenges related to the resin shortage, it's not quite that simple. In the larger context, importing and inventorying alternative materials are hampered by container shortages. A lack of containers can tack on days, if not weeks, to shipping and port delays. Even if the resins are delivered, not all injection molders have storage capacity without the aid of containers.

Local and regional shutdowns related to COVID also complicate the issue. Countries currently shouldering more production capacity such as China and the U.S. can't depend on other regions to come back online as anticipated. As a result, resiliency and demand are at loggerheads which interferes with finding and using alternative materials.

Declarations of force majeure often ensue for injection molders because:

- Current shortages blanket multiple grades of resin, limiting which alternative solutions may be viable
- If a certain plastic is deemed appropriate for use, there are no guarantees that the manufacturer is in a position to take on new customers to accommodate the need
- Excessive lead times — 20 or more weeks in some cases — make it impractical to fulfill orders in a timely manner

COLLABORATIVE EFFORTS

While the news is dire, it doesn't mean that alternative materials are off the table as solutions for injection molders and their OEM customers. In fact, it is collaboration between the two that is leading to successful navigation of the resin shortage.

Sustainable packaging developments one year in the new normal

Dr Sameer Joshi, Packaging360

The year 2020 will be remembered for a new word the new normal after the lockdown began in February and March 2020. One year down things have changed, thoughts and actions too. The companies commitments with sustainable packaging goals, 2025 is fast approaching. That's the year when many have pledged to become zero waste, or to use 100 percent reusable, recyclable or compostable packaging. Yet, at the same time, the pandemic has led to a surge in environmental and sustainability awareness by showing how much carbon emissions can drop, or wildlife can flourish, when the world's economic engine slows down.

As TerraCycle founder and CEO, Tom Szaky, put it, "The world is waking up, but the systems that are there that allow them to act are going the other way. There's this divergence, which is a great opportunity for anyone who can bridge the gap." Bridging that gap with novel solutions and collaborations, in a race against the clock, is one of five key themes for sustainable packaging in 2021, one year after lockdowns were declared.

1. A year for reckoning — and opportunity

It was critical for helping stakeholders understand the system, the supply chain, and the role that emerging tech will play, and it provided the environment for everyone to buckle down and rework recycling goals clearly, stakeholders will have to get out of their silos and collaborate across sectors.

Although it's a challenging time, **with companies' 2025 sustainable packaging goals** coming due and the recycling market in disarray, Tom Szaky says that 2021 will be an interesting year: " For Loop, the reusable pack-

aging platform that allows consumers to buy goods in durable packaging and return it to producers after use, that means opportunity and business looked good.

2. Reuse models will continue to grow

Loop is fast growing, raising $25 million last year. It's moving into quick service restaurants including Burger King, McDonald's and Tim Hortons in 2021. "The big theme for is retailers are starting to do in-store quite aggressively," said Szaky. Carrefour already has begun in France. Many of the other 15 retailers that Loop works with are starting store rollouts in six countries in 2021, according to Szaky.

Loop isn't the only reusable packaging platform seeing strong growth. Algramo expanded into New York City-Courtesy of Plenty of new reuse pilots are springing up, such as Good Goods, a New York City startup that incentivizes customers to return their wine bottles to the point of sale, or the dozens of other projects summarized in the Ellen MacArthur Foundation report, **"Reuse — Rethinking Packaging."** In fact, experimentation is the name of the game with reuse models.

We're very much in an age of experimentation, and need to continually interrogate what are the unintended consequences when you switch from one system to another," said Daly. "We really want to make sure that sustainable choices like reusable packaging aren't just limited for people who can pay extra for their goods." Also key is ensuring that reusable get the longest life and largest recapture rate, and that they're recyclable and recoverable at the end of their life.

3. Compostable packaging finds a niche with food waste

Biopolymers and compostable materials are quickly becoming an alternative to disposable packaging, but there's a confusing array of materials being developed. Some bio-based materials such as bio-PET are derived from biological materials, but are not biodegradable. Meanwhile, other bio-based materials such as PLA, (polylactic acid), a natural polymer made from corn starch or sugar cane, is biodegradable, although not in the way a consumer might assume it to be.

To help brands and others understand the fast-evolving landscape of bio-based materials, Closed Loop Partner's released **"Navigating Plastic Alternatives in a Circular Economy".**

We're very much in an age of experimentation, and need to continually interrogate what are the unintended consequences when you switch from one system to another.

Among its conclusions, the report finds that compostable alternatives are not a silver-bullet solution, in part because there is not enough recovery infrastructure to recapture their full value efficiently. Plus, among the 185 commercial composting facilities that exist, many don't accept compostable-certified packaging. "We have to rethink where composting is appropriate and where it isn't. It is a really good solution where you have food waste," Goodrich said. Daly agrees: "What we wouldn't want to see is any format that is being successfully recycled being converted to a compostable format when there isn't the infrastructure possible. That would create a misalignment between the material and infrastructure that would exacerbate the challenges already in place today."

4. Extended producer responsibility takes off

The Flexible Packaging Association (FPA) and Product Stewardship Association (PSI) released a joint statement calling for extended producer responsibility at the end of life for flexible packaging and paper. The statement lays out eight policy elements that could go into legislation, including a mechanism for producer funding for collection, transportation and processing of packaging, among other critical funding needs for municipal recycling facilities.

"With this agreement, FPA member companies and PSI member governments, companies, and organizations have started down a path together to provide desperately needed fiscal relief for municipalities while fixing and expanding our national reuse and recycling system.

Remarkably, FPA wasn't the only industry association to step up on extended producer responsibility. The Recycling Partnership released "Accelerating Recycling," a policy proposal outlining fees that brands and packaging producers would pay that would help fund residential recycling infrastructure and education. A proposed per-ton disposal fee could be required at landfills, incinerators and waste-to-energy plants, with the revenue going to local governments for recycling programs. The American Chemistry Council also came out with a position paper supporting packaging fees across multiple

material types, in addition to disposal fees to equalize the costs of disposal versus recycling.

5. Rising action to eliminate toxics from food packaging

Amazon was the latest among more than half a dozen major food retailers — from Whole Foods to Trader Joe's to Ahold Delhaize — to announce a ban on certain toxic chemicals and plastics in food packaging materials. The new restrictions apply to Amazon Kitchen brand products sold through the tech giant's various grocery services, but not to other private-label or Amazon brand-name food contact materials, such as single-use plates. Still, it's a good start. And Amazon's actions "send a strong signal to competing grocery store chains that they need to get their act together, and also tackle some of the same chemicals of concern that scientists are sounding the alarm on," Mike Schade, campaign director for Safer Chemicals, Healthy Families, Mind the Store.

One really sees a sense of urgency around these issues, as plastic production continues, as more and more materials are lost to landfill that we're not able to recapture as a valuable resource.

Schade has seen rising attention over the past few years on the part of both food retailers and fast casual restaurants, towards not only banning specific chemicals, but also restricting classes of chemicals.

Getting toxics out of packaging, in flexible films in particular, was also on the agenda at meetings in 2020 that brought together 80 representatives from consumer brands, waste managers and the plastics industry over a nine-month period.

Such attention on toxics is critical, as a comprehensive report on the health impacts of endocrine-disrupting chemicals found in packaging and other plastics materials underscored last month. Bisphenol A, phthalates, per- and polyfluoroalkyl substances. (PFAS) and dioxins are among the chemicals that disturb the body's hormone systems, one can expect more food retailers and fast casual restaurants to ban or restrict endocrine-disrupting chemicals from their packaging.

More work is needed all around in 2021 to advance a circular economy. One sees a sense of urgency around these issues, as plastic production continues the approaches must be collaborative and systemic. None of anybody can do this alone, for a better planet.

Know Your Bio Plastics

Bioplastics are used as alternatives to conventional fossil fuel based plastics and are increasingly being used in food contact materials (FCMs). For example, the Coca Cola Company has recently launched its Plant Bottle, which is partially made from biobased plastics and Danone is using polyactide (PLA) for its yoghurt cups.

Two different types of bioplastics exist: biobased polymers and biodegradable plastics. Two further specific definitions for biorelated plastics are oxo-biodegradable plastics and bio-nanocomposites.

Biobased polymers are made from biobased resources though in practice biobased resource content may vary [1]. Biomass used for the production of bioplastics may either be extracted directly from plants (starch, cellulose) or produced by microorganisms in fermentative processes (e.g. polyhydroxyalkanoates (PHA)). Biomass can either be from 1st generation feedstock (e.g. corn, sugar cane) or from non-food crops (2nd generation feedstock, e.g. lignocellulosic material). Biobased polymers can also be produced by further chemical modifications and are not necessarily biodegradable.

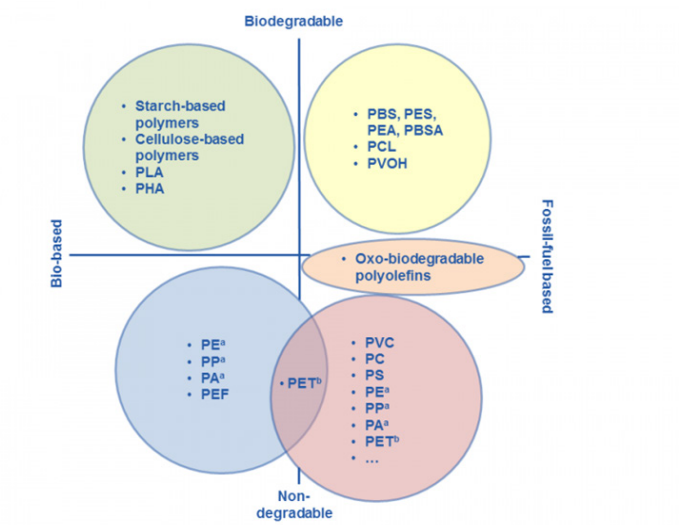


Figure 1: Bioplastics – Material source and biodegradability

Biodegradable plastics may be made from both natural and fossil resources and are biodegraded by microorganisms in their natural environment. The products of this process are energy, biomass, water and carbon dioxide or methane, depending of the presence or absence of oxygen. If biodegradable plastics are degraded in accordance with standards for compostability, e.g. the European standard EN 13432, they may be labeled compostable.

Oxo-biodegradable plastics are mainly composed of polyolefins such as polyethylene (PE) and polypropylene (PP), which contain further chemical additives intended to accelerate degradation. Oxo-biodegradable plastics do not degrade according to the previously mentioned standards.

Bio-nanocomposites are biopolymers which have been stabilized using nanoparticles [2]. The nanoparticles enhance technical properties, such as barrier, thermal, chemical or mechanical stability and include nanoclays and nanosilver. The following bioplastics, which are to a varying degree biobased and biodegradable, are relevant for FCMs (Figure 1):

Starch-based polymers	- Biodegradable polysaccharide - Alternative for polystyrene (PS) - Used in food packaging, disposable tableware and cutlery, coffee machine capsules, bottles
Cellulose-based polymers	- Biodegradable polysaccharide - Low water vapor barrier, poor mechanical properties, bad processability, brittleness (pure cellulosic polymer) - Regulated under 2007/42/EC - Coated, compostable cellulose films - Used in the packaging of bread, fruits, meat, dried products, etc.
Polylactide (PLA)	- Biodegradable, thermoplastic polyester - Possible alternative of low- and high-density polyethylene (LDPE and HDPE), polystyrene (PS), and poly terephthalate (PET) - Transparent, rigid containers, bags, jars, films
Polyhydroxyalkanoates (PHA)	- Biodegradable polyester - Family of many, chemically different polymers - Brittleness, stiffness, thermal instability
Biobased polypropylene (PP) and polyethylene (PE)	- Non-biodegradable vinyl polymer - Mainly based on sugar cane - Identical physicochemical properties
Partially biobased polyethylene terephthalate (PET)	- Alternative to conventional PET - Up to 30% biobased raw materials - Used in bottles
Biobased polyethylene furanoate (PEF)	- Non-biodegradable polyester based on a heteroaromatic 5-ring structure - Better barrier function than PET - Up to 100% biobased raw materials - May be used in the future in bottles, fibers, films
Aliphatic (co)polyesters	- Biodegradable polymers including e.g. polybutylene succinate (PBS), polyethylene succinate (PES), and polyethylene adipate (PEA) - Used in disposable cutlery
Aliphatic-aromatic (co)polyesters	- Biodegradable polymers including e.g. polybutylene adipate terephthalate (PBAT), polybutylene succinate terephthalate (PBST). - Used as fast food disposable packaging, PBAT for plastic films
Polycaprolactone (PCL)	- Biodegradable polyester - Low melting temperature, easily biodegradable - Used in medical applications, as PCL blends in FCMs
Polyvinyl alcohol (PVOH)	- Biodegradable vinyl polymer - Used for coatings, adhesives, and as additive in paper and board production
Polyamides (PA)	- Non-biodegradable polymer - Used in high-performance polymers, not commonly in FCMs
Others	- Animal (chitosan) and protein (soy protein isolate, gluten and zein) based bioplastics

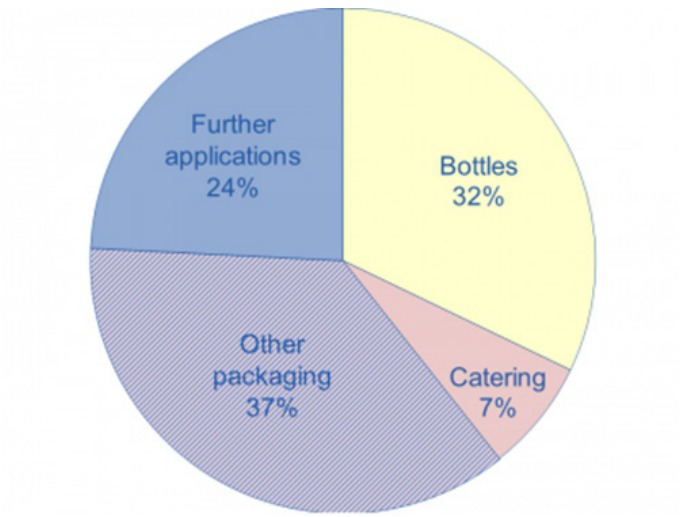
Usually, pure biodegradable plastics do not perform as well as conventional plastics. Material properties are enhanced by the addition of chemicals including antioxidants, light and UV stabilizers, releasing agents, cross-linking agents and many others.

Toxicity

The monomers of cellulose- and starch based polymers as well as those of PHB and PLA are judged to be of no health concern. This stands in contrast to the toxicological properties of many other monomers used in plastics packaging materials (e.g. bisphenol A (BPA), bisphenol S (BPS), vinyl chloride and acrylamide). However, more additives are usually used in bioplastics than in conventional plastics. The different physicochemical properties of biobased FCMs may result in higher or lower migration rates of additives. Pure bioplastics are usually less stable and have a lower diffusion barrier than conventional plastics. Migration from PLA and starch-based polymers was reported to be low. From oxo-biodegradable plastics, degradation aids are a further source of chemical migrants, in addition to other additives. In their 2011 publication, Ammala and colleagues provide an overview of commercial and potential degradation aids, including benzophenones and di-thiocarbamates. Regarding bio-nanocomposites, 3 of 4 studies showed cytotoxic effects of nanoclays. However, these studies do not allow for a conclusion on the toxic potential of bio-nanocomposites due to the great variation among nanomaterials, even those derived from the same batch, and a lack of standardized testing conditions.

Market, regulation and standards

Bioplastics covers approximately 1% of the global plastics demand according to the European Bioplastics association and Plastics Europe. In 2007, starch had 50% of the market share of bioplastics, followed closely by PLAs. Applications of bioplastics are distributed as shown in Figure 2 .



While currently only 0.01% of arable land mass is used for cultivation of raw materials used for bioplastics, the substitution of all plastics with bioplastics would require the use of 7% of the globally arable land. Plastics Europe and European Bioplastics suggest the use of sustainability certification schemes to ensure sustainable sourcing. Opponents have argued that the cultivation of crops for bioplastics requires very intensive farming including the use of fertilizers, pesticides, high water usage and possibly genetically modified plants considered inconsistent with sustainable agriculture.

Various labels are available to certify a bioplastic product. Labels certify a material's potential of biodegradability or compostability under the conditions defined in the corresponding standards. As landfills used for garbage disposal usually provide anaerobic conditions many biological processes required for decomposition are prevented. Another concern expressed regarding biodegradable plastics is the potential accumulation of metabolites in industrial composting facilities. The testing of the final compost for heavy metals and other toxic chemicals is required but may be difficult and expensive. The use of Life Cycle Assessment (LCA) to evaluate the environmental impact of packaging materials, including bioplastics, has provided highly variable results, as a result of the variety of criteria and assumptions applied. Generally, it is important to consider as many environmental impact categories as possible when choosing an alternative material using LCA. Usually, bioplastics score lower in energy and carbon dioxide equivalents, but have a higher eutrophication potential. Under standard LCA methods, chemical migration and subsequent human health effects during the actual use phase are currently not considered.

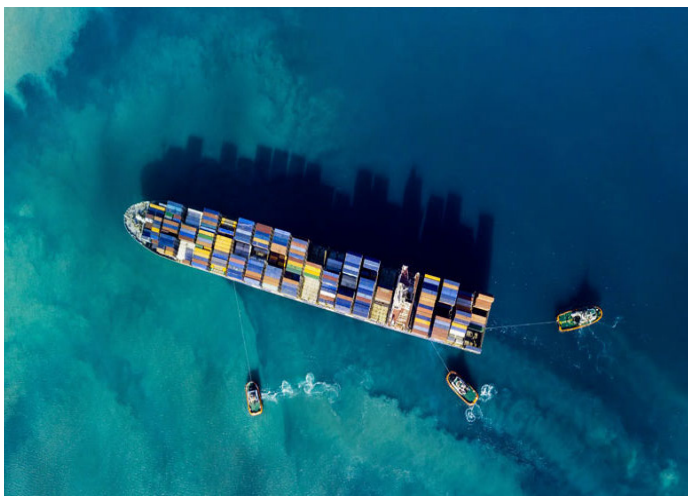
Source: FoodPackagingForum

Shipping Challenges Persist In 2021: From Covid-19 To Suez Canal Blockage

This piece tackles the current crisis hobbling the shipping industry and global trade, and also discusses ways to get around it.

MSC, the second largest shipping company in the world calls Suez blockage "one of the biggest disruptions to global trade in recent years"

On March 29, tug boats honked their horns in celebration as the megaship MV Ever Given was refloated, ending its six-day-long blockade of the Suez Canal, one of the world's busiest trade routes connecting the Mediterranean Sea to the Red Sea. But the celebrations might have been premature. The blocking of the canal is the latest disaster to hit the shipping industry. It's been one crisis after another, starting with the Covid-19 pandemic in 2020, followed by Brexit in January 2021, and now this. In between, a record surge in imports to the United States and Europe from Asia should have elicited a sigh of relief from a battered global economy. On the contrary, it stretched the global supply chain – from shipping lines, ports and warehouses to factories – even more. What's happening is unprecedented. And it doesn't look like it's going away in a hurry.



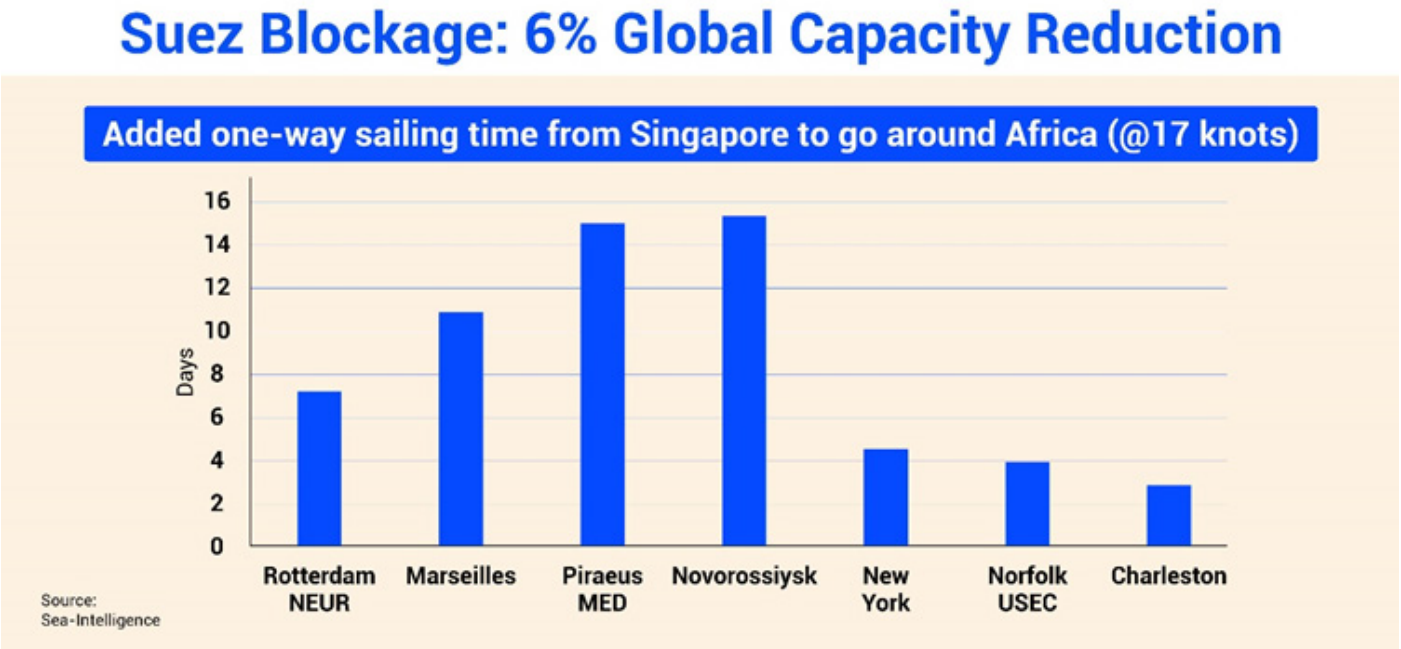
Shipping challenges that the World is facing right now

A whole lot, actually. Here's a round-up, starting with the latest major event:

Suez Canal – It's not over yet

The Ever Given has been freed and the Suez Canal unblocked. But there were 450-odd vessels stranded on either side of the blockage for the six days the ship was wedged in. By the time these ships crossed the canal, it was already April 3. That's a delay of 11 days just at the incident site. It will take weeks more for these ships – which took off from Asia and are headed for Europe – to complete their journeys. Additionally, some vessels were re-routed via the Cape of Good Hope to avoid the canal. This adds an average of eight more days to their journey.

As for the Ever Given, Egyptian authorities have impounded the vessel with its 18,300 container loads of cargo and 25-member crew. They are demanding $900 million in compensation from the ship's Japanese owner, Shoei Kisen Kaisha. The cargo might be detained till the dispute is settled. Taiwan's Evergreen, which was operating the vessel on a long-term charter, is considering moving the cargo to other ships. But this would be a challenging and time-consuming exercise. Given that a long delay is inevitable, reports indicate that the ship owner could face a storm of claims from cargo owners over the loss of perishable goods and delayed deliveries.



Port congestion worsens

The delayed arrival of ships stranded at the Suez is bound to clog up ports worldwide, especially in Europe. Lars Jensen, chief executive of SeaIntelligence Consulting, said cargo could flood European ports "like ketchup out of a bottle". Terminal, warehousing and trucking operations will naturally be affected. Larger ports like Singapore, Rotterdam and New York are expected to bear the brunt of this unplanned spike in ship calls. On April 12, ships with a collective capacity of 370,000 TEU were reportedly on route to Singapore, where 83 vessels with a capacity of 299,310 TEU were already waiting to be unloaded.

Port congestion means delays. By this projection, the collective delay to shipping fleets caused by the Suez incident is 1,072 days. On the Shanghai-Rotterdam route, delays are up to seven days from three days at this time last year. In an indication of just how bad shipping schedules have been impacted, German shipping company Hamburg Süd, in an update of its North America operations between April 12 and April 19, reported delays ranging from 2.5 days to an alarming 59 days.

Even before the blockage, ports had been dealing with prolonged congestion and large-scale workforce absenteeism as a direct consequence of the pandemic. According to this report, port congestion in the second half of 2020 – when the global economy went back to work after restrictions were lifted – increased 20% from the same period in 2019. This means ships loading and unloading an average of 6,000 containers per visit spent 83 hours at ports, an increase of 20% from the previous year.

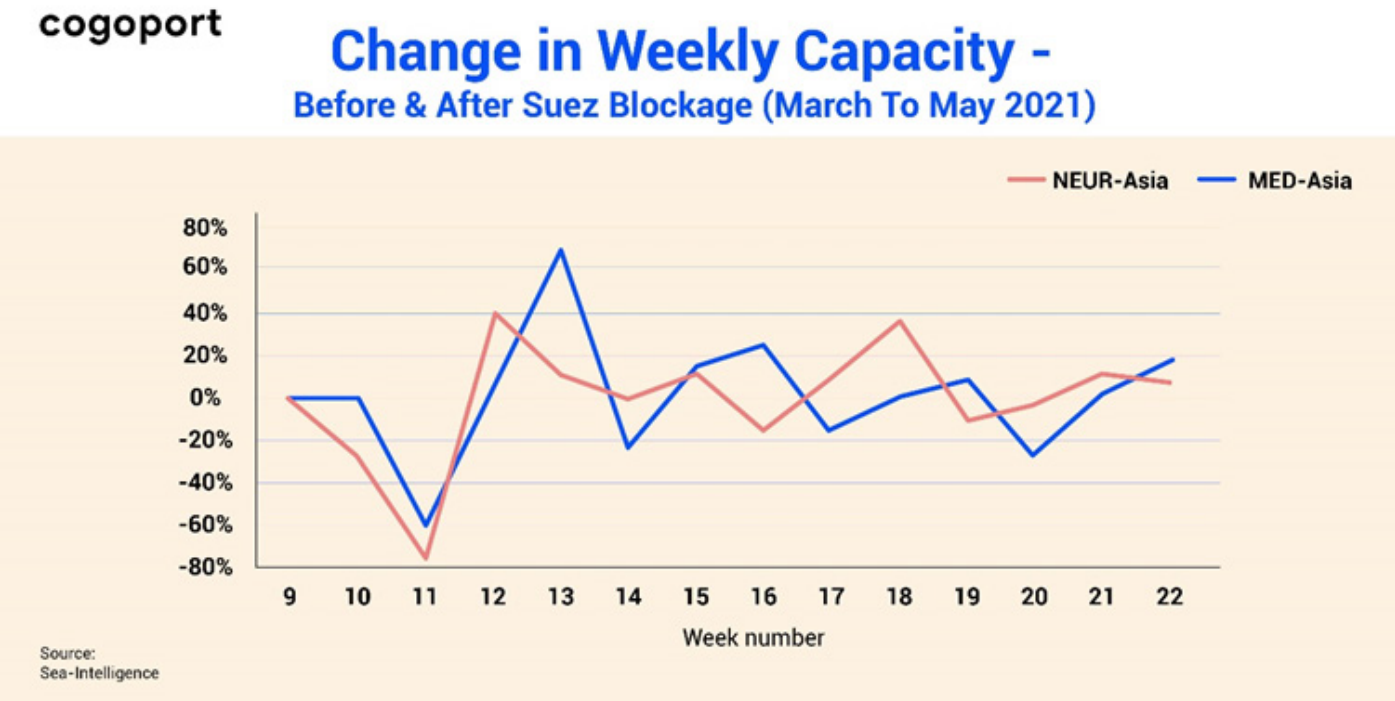
If that isn't bad enough, traders moving their goods in and out of the UK have had to contend with increased port congestion due to Britain's decision in January to exit the European Union and the resultant changes in customs processes. Leading UK ports like Felixstowe and Southampton are seeing a critical build-up of containers.

Container shortage plays on

For every container stuck in the UK, that's one container less in Asia. And hundreds of thousands of containers have been grounded at US and Europe ports for months now, thanks to pandemic restrictions first and then record imports from Asia in the build-up to Christmas and New Year. For every 10 containers shipped to North America from Asia, only four reportedly return. The result is a severe container crunch in Asia that is forcing rice exporters in Thailand, Vietnam and Cambodia to give up on some shipments to the US. The imbalance has been aggravated by carriers focusing on the more lucrative Asia-US and Asia-Europe routes. So, stacks of empty containers are idling at ports in Africa, South America, Australia and New Zealand. Now, with a huge fleet headed for Europe after the Suez re-opening, the container build-up in the continent is set to worsen.

Blank sailings continue

The Suez incident has also added to the scheduling problems of shipping lines. Most have planned blank sailings during April and May so that they can focus on dealing with current delays. To blank a sailing is to cancel all or part of the voyage. On April 7, German shipping major Hapag-Lloyd said that its vessel HMM Rotterdam, which was re-routed via the Cape of Good Hope, would be omitting Jebel Ali to make up for time. Cargo bound for the Dubai port will be discharged in Singapore and sent on a separate ship. Blank sailings have become a frequent occurrence in the recent past. In December too, THE Alliance, a group of carriers including Hapag-Lloyd, blanked sailings on key routes citing "unprecedented times of the pandemic".



Impact on global trade and economy

The supply chain disruptions, caused by pandemic conditions and inflamed by the Suez Canal blockage, are expected to have massive implications, financial or otherwise. Some of these outcomes are already being felt:

- Freight rates through the roof – After the Suez incident, freight rates on many Asia-Europe and Asia-US routes have risen steadily through April, shows maritime consultant Drewry's World Container Index. One reason for this is fresh surcharges by shipping lines. For example, CMA CGM has imposed a peak season surcharge on most of its routes. Drewry's index also reveals current Asia-Europe and Asia-US freight rates are on average 221% higher than at the same time last year. This is primarily due to the pandemic, which consistently drove prices up. The cost of shipping goods on the China-Europe route in March 2021 was three times what it was in November 2020 while China-US West Coast rates doubled between June 2020 and March this year, according to this report. Another report shows that it now costs more to ship to North America from Singapore than from any other Southeast Asian port due to the crippling congestion in Singapore.

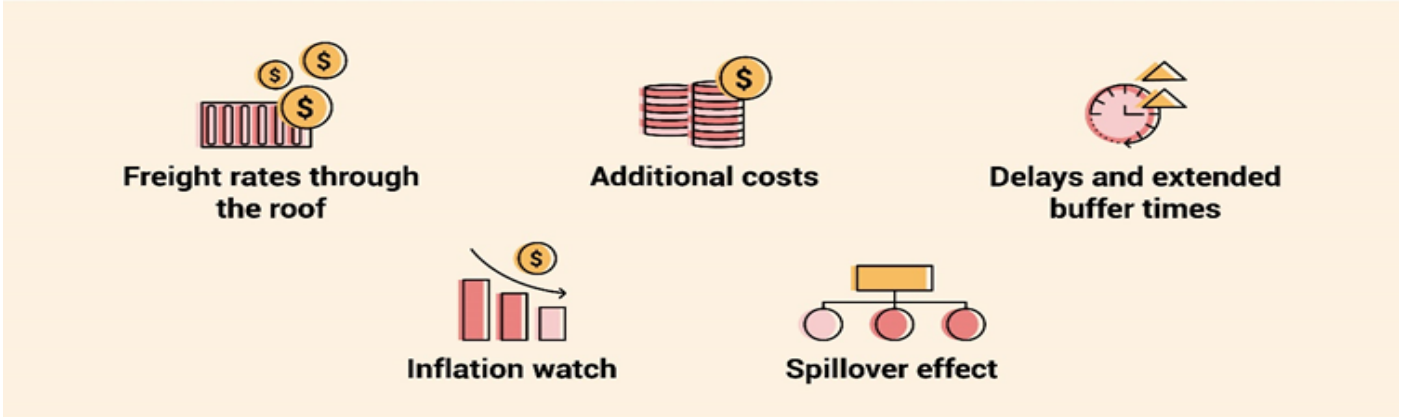
- Additional costs – The supply chain disruptions have added to shippers' expenses in the form of demurrage, detention and storage fees at ports, and rescheduling charges as a result of cargo rollovers and blank sailings. Shippers are also spending more money to stock up on extra inventory.

- Delays and extended buffer times – The Suez incident's immediate impact is a 60%-80% drop in export capacity on Asia-Europe routes, according to consultant Sea-Intelligence. This means export cargo in Europe will have to wait at least a fortnight before it can be moved, it adds. Long delays are already forcing shippers worldwide to add weeks to their delivery schedules.

- Inflation watch – There's a real danger that the steep hike in shipping costs will have a knock-on effect on inflation. Two days before the Ever Given was refloated, The Washington Post reported an increase in oil and African coffee bean prices due to a scarcity scare. It warned that other commodities such as chemicals, apparel, iron ore and manufactured goods could be impacted as well.

- Spillover effect – The high demand for container ships is spilling over into other modes of shipping such as break bulk, according to this Bloomberg report. Break bulk is the mode of transporting loose material that cannot be shipped in containers (barrels, drums, paper reels, etc). Wood pulp, a raw material for toilet paper, is shipped as break bulk cargo. And Suzano SA, a global supplier of wood pulp in Brazil, told Bloomberg a growing demand for break bulk cargo vessels was hampering their exports to such an extent that it might lead to a toilet paper shortage.

Impact of Current Shipping Challenges on Global Trade and Economy



Solution: 3 ways to increase efficiency

The supply chain disruptions are an indication of what ails the shipping industry at large and will most likely persist beyond Covid-19. This calls for long-term planning. Maritime consultant Drewry suggests three solutions, which cannot work without the entire supply chain coming together. They are:

- Ensure greater transparency of port capacity and productivity to catch early warning signs
- Urge shippers to act on the early warning signs and re-route cargo early. Re-routing means additional expense, so this might call for some form of financial incentive, Drewry suggests
- Encourage carriers to proactively adjust schedules early and refrain from cut-and-run responses
- To make these suggestions action, several tech companies are offering digital solutions to shippers and carriers. These include:
  i. Port Intel, an online port congestion report service Launched on March 15, informs its subscribers when their ships are anchored near congested ports and helps them look for alternative routes.
  ii. Port technology provider Portchain's berth optimisation software provides data on berthing capacity at ports. This helps carriers plan ahead and share accurate schedule details with ports, which can optimise their berthing and equipment utilisation as a result. Portchain counts several ports in Europe and Asia as well as leading carrier Hapag-Lloyd among its customers.
  iii. Non-profit Digital Container Shipping Association's (DCSA) Track & Trace (T&T) standards offer shippers real-time, cross-carrier data on the status of their cargo. The DCSA T&T standards have been adopted by most of the association's carrier members including MSC, Ocean Network Express (ONE), CMA CGM, Yang Ming and Evergreen.
  iv. Port of Singapore Authority's (PSA) cargo solutions, such as "Priority Discharge" for time-sensitive cargo, "Top Stowage" and "Express Delivery" for shipments requiring expedited discharge and delivery, "Flexi-Alerts" email or SMS service for timely updates on vessel arrival and departure, load and discharge times, and so on.

From the suggestions and solutions mentioned above and from UNCTAD, it is clear that a permanent fix for the current problem lies in increased digitisation of shipping services and improved communication between supply chain partners.

When will the situation normalise?

Not until 2022, by most accounts. Port and container shortages are expected to persist through 2021, lessening in degree with the passing months. Freight rates will likely stay high till 2022, according to Drewry's latest Container Forecaster report. It tallied the collective operational profit for shipping lines in 2020 to be $26.6 billion, the highest it has recorded, and predicted that this record might be eclipsed in 2021. Freight rates might start easing up in 2022 but are expected to stay elevated till 2023, the report added.

Courtesy: cogoport.com

Cyber Scams Target Importers, Exporters: What To Do To Stay Safe Online

On January 4, the Directorate General of Foreign Trade (DGFT) – India's import-export regulator – issued an advisory warning importers and exporters of rising instances of cyber fraud in payments and advising them to implement certain "security protocols" for their email communication. This is not the first time a government authority has issued a cybercrime warning to India's import-export community, the majority of which is made up of micro, small and medium enterprises (MSMEs).

As more and more importers/exporters transact online, they must realise that this transition comes with conveniences and risks. It is important that they learn to detect, resist and respond to cyber threats. In today's blog, you will learn:

- What is a cybercrime?
- Who are cyber criminals?
- What are the cybercrimes targeting importers, exporters and MSMEs?
- What can they do to protect themselves?
- What should they do when under attack?
- Case studies

What is a cybercrime?

The Home Ministry defines a cybercrime as "any unlawful act where [a] computer orcommunication device or computer network is used to commit or facilitate the commission of [a] crime". A cybercrime can be launched for various reasons – to steal money or intellectual property, access sensitive data, disrupt the operations of a company/individual, defame a company/individual. Cybercrimes come in many forms, the most common examples being:

- Cyber fraud, such as phishing scams
- Malware attacks such as viruses, worms and trojans
- Ransomware attacks

Cybercrimes harm businesses by:

- Stopping trade and transactions temporarily
- Causing financial losses
- Forcing existing customers out and turning new ones away
- Damaging a company's reputation, sometimes permanently

Cyber criminals: Who are they?

Anonymous and hard to trace, cyber criminals or hackers, as they are generally called, fall in the following categories, according to this academic paper by Norwich University:

1. **Identity thieves:** They gain access to their victim's personal information and use it to impersonate the victim and make financial transactions.

2. **Internet stalkers:** They monitor their victims' online activity on social media or through a malware attack. Usually, their objective is to access personal information and use this to defame the victim or blackmail them into paying a bribe.
3. **Phishing scammers:** They mimic business and government websites and trick their victims into revealing sensitive information, which they use to commit identity theft or sell on the dark web.
4. **Cyber terrorists:** They are criminals who target governments and businesses purely to cause them harm. Their main motive is not financial.

Hackers can be individuals or organised groups. Often, they are insiders – employees, business partners, contractors and vendors who are either negligent or act maliciously. In 2018, a McKinsey study found an insider threat in 50% of cyber security breaches reported between 2012 and 2017.

MSMEs: A soft target

Unlike large companies, small businesses have basic cyber security measures in place, if at all. This makes them a soft target.

- 43% of cyber attacks worldwide are aimed at small businesses, says a 2019 Accenture study.
- Two-thirds of small businesses (10-49 employees) in the UK suffered cyber attacks in 2018, says another survey. The attacks cost each targeted business £65,000.
- A 280% increase in cyber attacks targeting small businesses was recorded in the 10 months of 2020 when Covid-19 forced companies to transact online and work from home, says cyber security firm Cyfima.
- Indian MSMEs are especially vulnerable, according to a 2016 survey in the Asia-Pacific region by cyber security firm ESET.

Cybercrimes targeting importers, exporters and MSMEs

The top online crimes against MSMEs, especially those in the import-export business, are:

1. **Phishing:** The attacker poses as a legitimate entity, contacts the victim via email, telephone, text or social media and lures them into revealing sensitive information (log-in and banking details, etc). With this information, they access important accounts and steal money. A phishing scam can have multiple targets or just one, in which case it is called spear-phishing. It's probably phishing if the communication you receive comes with a) a limited-period offer that's too good to be true, b) a mysterious hyperlink or attachment, c) spelling and grammatical errors.
2. **Ransomware:** The attacker demands payment to release their victim's computer system from a virus installed by them. The mode of attack is usually a phishing email. In 2020, Australian logistics firm Toll Group was hit by two ransomware attacks in three months. Payouts can cost hundreds of thousands of dollars, sometimes even a million dollars. Even if you don't pay, the cost of recovering from an attack is enormous. It's probably a ransomware attack if a) you can't access your desktop or files, b) your file name has a strange extension attached to it, c) software tools you didn't install appear on your system, d) there is increased CPU and disk activity.
3. **Malware:** Apart from ransomware, criminals use other types of malware – short for malicious software – to hold small businesses hostage:

- Trojans – They imitate safe software but contain malicious instructions, which must be executed by the victim to take effect. A common trojan is the anti-virus pop-up that claims your computer is infected and instructs you to run a programme to clean it up.
- Worms – They spread copies of themselves from device to device, without the victim taking any action.
- Viruses – The only malware capable of duplicating itself and spreading to multiple files, making them dangerous and hard to clean.
- Spyware – As the name suggests, this malware spies on you to gain sensitive data.
- Botnet – Short for "robot network", a botnet is a network of devices infected by malware and controlled by the attacker, who is called a bot-herder.

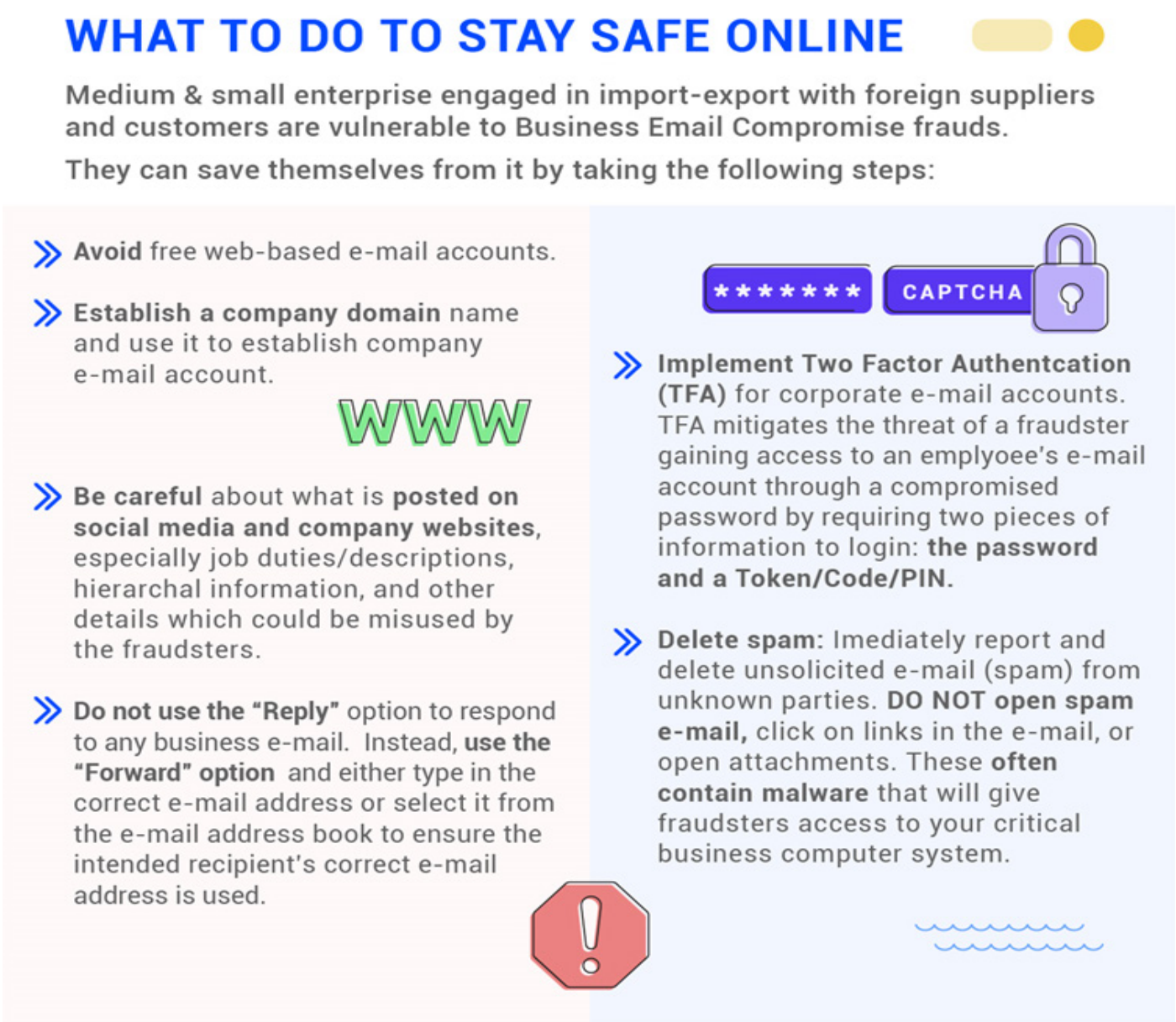
4. **DDoS attack:** A distributed denial-of-service (DDoS) attack shuts down a web server or system by flooding it with fake traffic. If the crash is severe and the downtime long, it can cause considerable loss of business.

How to protect yourself

The DGFT advisory recommends these email safety protocols for importers/exporters:

- Sender Policy Framework (SPF), which verifies that a message coming from a particular domain was actually sent from that domain
- Domain Keys Identified Mail (DKIM), which adds a digital signature to each message, verifying that it wasn't forged
- Domain-based Message Authentication, Reporting and Conformance (DMARC), which enforces SPF and DKIM authentication

The Delhi Police Cyber Cell also has some useful tips for MSMEs engaged in the import-export trade:



Then, there are a few other easy steps you can take yourself to protect your business:

- Use security software (anti-virus, anti-spyware) and set it to update automatically
- Update your operating system, browsers, plug-ins regularly
- Use strong, unique passwords. Have different passwords for different websites
- Back up your data, but don't leave the back-up external hard drive connected to your computer
- Don't click on unverified emails, hyperlinks and attachments. Hover over a suspicious hyperlink to see the actual address, which might be different
- Try not to use public WiFi, or use it only with a secure VPN
- Download software only after reviewing it. Remove software you no longer use
- Encrypt sensitive information (customer data, etc). Encryption works by converting data into secret code that cannot be read by unauthorised persons
- Detect and block high-risk sites to prevent your employees from viewing them
- Watch out for tell-tale signs. A phishing email, for example, looks like it's from a sender you know (say, a bank), has a generic greeting (Hi!) that a genuine business partner probably wouldn't use, urges you to click on a link, etc
- Uninstall/disable Java and Flash Player when not in use. Both programmes have recently been associated with ransomware attacks

It is vital to take your employees on board while implementing cyber security measures:

- Train your employees to read the warning signs, to not click on unverified links and email, to know when a breach has occurred and to report it
- Set specific guidelines for the company's online activity, including social media
- Hold regular training sessions and briefings to ensure your workers are aware of the cyber security measures in place
- Ensure strict controls on access to information. Access should be given only to employees who need it
- Have a work-from-home policy in place. Ask employees to encrypt their home WiFi, reset their router's default password, back up their data. Discourage them from using personal devices for work and from downloading their own apps on work devices. Ask them to keep their devices in a safe location. Train them to turn off their bluetooth when not in use.

What to do when under attack

- Disconnect your device/devices from the Internet and all linked networks
- Use your security software to perform a complete scan
- Restore files from back-up
- Reinstall your operating system
- Reset your passwords and personal details
- Alert your bank if you suspect a threat to your financial data
- Close your accounts to prevent fraud/theft
- Investigate the breach to find out how it happened, who was responsible and who was affected, what weakness in your system was exploited, etc
- In case of a ransomware attack, don't pay the ransom

Know your cybercrime authority

In India, most state police forces have a cyber cell that deals with online crimes. You can lodge a complaint with them directly or submit one online on the Home Ministry's National Cyber Crime Reporting Portal, which will then be dealt with by the police or appropriate law enforcement agency (such as the National Cybercrime Forensic Laboratory and National Cybercrime Threat Analytics Unit). Read the steps to filing an online complaint here. The laws covering cybercrimes in India are the Information Technology Act, 2000, the IT Amendment Act, 2008, and relevant sections of the Indian Penal Code.

Case studies 2020

The DGFT and Delhi Police advisories are an indication of the growing number, frequency and threat of cyber attacks on small businesses:

- **Rebate licence theft:** In July 2020, the Delhi Police Cyber Cell busted a gang that targeted garment exporters by stealing their duty rebate licences (a government incentive) worth Rs 3.4 crore. The rebate can only be claimed on the DGFT website with the help of a digital signature certificate (DSC) key. The attackers reportedly accessed information about the companies and fraudulently obtained the DSC keys and licences by exploiting weaknesses in the DGFT's document verification process.
- **Malspam targets manufacturers, exporters:** The same month, IT firm Quick Heal's enterprise security brand Seqrite warned of a malicious spam campaign against India's manufacturing and export sector. The attack reportedly began with a phishing email containing infected MS Office PowerPoint files.
- **Duty scrip theft:** The Madhya Pradesh Police Cyber Cell arrested six persons in October 2020 for transfering the duty credit scrips (DCS) – an export promotion benefit – of a pharma firm and an automobile company to fake beneficiaries by fraudulently using their digital signatures.
- **Pharma majors attacked:** In 2020, Hyderabad-headquartered Dr Reddy's Laboratories and Mumbai-based Lupin came under cyber attack. At the time, Dr Reddy's was conducting clinical trials for a Covid-19 vaccine while Lupin had just launched a Covid-19 drug. Both companies are multinationals and not small businesses. But the attacks reinforce the fact that pharmateutical companies are a top target of hackers.

Given the growing menace of cyber attacks, cyber security now accounts for 30%-40% of the IT budgets of Indian companies. India's cyber security industry is expected to be worth $35 billion by 2025. This shows that businesses, big and small, are waking up to the threat of cyber attacks, as they rightfully should.

Courtesy: cogoport.com

IEMs signed in the Plastics segment during March 2021.

IEM No.	Company Name	State / UT	Item of manufacture
294	Kejriwal Geotech Private Limited	Gujarat	PET chips
300	Carl Zeiss India (Bangalore) Private Limited	Karnataka	Spectacle lens
308	Virgo Laminates Limited	Gujarat	Decorative laminates
374	Shrinath Rotopack Private Limited	Telangana	Plastic packaging products
427	Lare FIBC and Energies Private Limited	Tamil Nadu	FIBC
433	Alok Masterbatches Private Limited	Tamil Nadu	Master batches
435	Time Technoplast Limited	Dadra & Nagar Haveli	Containers of plastics
436	Time Technoplast Limited	Dadra & Nagar Haveli	Composite cylinders

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

New Members

The Plastics Export Promotion Council added the following companies/firms as new members during March 2021. We would like to welcome them abroad!

Sr. No	Name of the Company	Address	City	Pin	State	Director Name	Email
1	AGARWAL POLYSACK INDUSTRIES	UG-49, ATLANTA BUSINESS HUB, B/H MARVELLA CORRIDOR, VIP CANAL ROAD, VESU,	SURAT	395007	Gujarat	YASH AGARWAL	info@apindustries.biz
2	CK FABRICS PRIVATE LIMITED	FLAT NO 302 PLOT NO 106, SARDAR PALTEL NAGAR KUKATPALLY HYDERABAD SARDAR PATEL NAGAR KUKATPALLY	HYDERABAD	500072	Telengana	RAGHAVENDRA GOUD	RAJESHRAOLOKI@GMAIL.COM
3	DHUNSERI POLY FILMS PRIVATE LIMITED	DHUNSERI HOUSE,4A, WOODBURN PARK	KOLKATA	700020	West Bengal	Chandra Kumar Dhanuka	tsarkar@ivld-hunseri.com
4	DYSON BRUSHES PRIVATE LIMITED	PLOT NO. 2B/2, KHASRA NO.87, VILLAGE MAHUKHERA GANJ, NAINITAL,	KASHIPUR	244713	Uttarakhand	VIMAL SAXSENA	dysonbrushes-pvtltd@gmail.com
5	ENDURA ROPES PRIVATE LIMITED	NEAR SUDHIR PLASTIC, SURVEY NO 12/2, MOTI MARAD, TALUKA DHORAJI,	RAJKOT	360421	Gujarat	SACHIN J GANATRA	enduraropes@gmail.com
6	JFLEXY PACKAGING	TF-01, CAMPS CORNER-II, OPP. PRAHLADNAGAR AUDA GARDEN, ANANDNAGAR, PRAHLADNAGAR,	AHMEDABAD	380015	Gujarat	chetan kadiya	sushil@jflexy-packaging.com
7	KING INTERNATIONAL	GROUND FLOOR, C 38, WAZIRPUR INDUSTRIAL AREA, WAZIRPUR DELHI	DELHI	110052	Delhi	NIKHIL GANDHI	sales@king-international.in
8	KRM CORPORATION	1H/31A NIT FARIDABAD	FARIDABAD	121001	Haryana	RAJINDER KUMAR WADHWA	info@krmcorporation.com
9	KULSWAMINI ENTERPRISES	N11, G2/10 NAVJEEVAN COLONY, HUDCO,	AURANGABAD	431003	Maharashtra	SACHIN KULKARNI	kepl.agd@gmail.com
10	LAM N FAB	PLOT NO. 1/C, KHASRA NO 77/3/2 SWARN PARK, NEAR TATA TELCO WALI GALI,	MUNDKA	110041	New Delhi	HEMANT JINDAL	lamnfab15@gmail.com
11	LAMIFABS PAPERS PVT LTD	A 14 2 MIDC INDUSTRIAL AREA CHIKALTHANA	Aurangabad	431006	Maharashtra	jugalksihor	export.vb@lamifabs.com
12	NATIONAL VINYL INDUSTRIES	PLOT NO. 325 T&S, KIADB INDUSTRIAL AREA, 2ND PHASE, HAROHALLI RAMNAGARA	BENGALURU	562112	Karnataka	PRAYAS SRIMAL	prayas.srimal@nvi.org.in
13	PLASTALLS	NEW NO.202 (OLD NO.1421/A, SATHY, ROAD, POST BOX NO. 2127, GANAPATHY,	Coimbatore	641006	Tamil Nadu	S. Govindarajan	sales@plastalls.com
14	Qrex Flex Pvt ltd	Block No. 464-465, Pipodara, Tal-Madgrol, Dist-Surat,	Surat	394110	Gujarat	Mahendrabhai	qrexflex@gmail.com
15	ROYAL CRAFT EXPORTS	C-9/18, KRISHAN NAGAR,	DELHI	110051	Delhi	SHIV KUMAR ARORA	zoomestates@gmail.com
16	SDRP GLOBAL PRIVATE LIMITED	PLOT NO A81(P) & PLOT NO.A-82 KANDRA IN	DHANBAD	828109	Jharkhand	SUNNY JAIN	gst@mittaltechnopack.com
17	SHREE BAGS	134 PERUMAL KOIL STREET , TACHUR , PONNERI ,	THIRUVALLUR ,	601204	Tamil Nadu	ARUN KUMAR K	vijayakumar-kop@gmail.com
18	SKYI FKUR BIOPOLYMERS PVT LTD	PLOT NO.PAP-S-60,63,64, GROUND FLOOR AND FIRST FLOOR,MIDC, CHAKAN INDUSTRIAL AREA, PHASE II KHED,	PUNE	410501	Maharashtra	THIMAPPA DASARI	thimappa.dasari@skyi.com

19	SUSHILA PARMAR INTERNATIONAL PVT LTD	31, ADINATH SHOPPING CENTRE, PUNE SATARA ROAD, PUNE 411037, INIDA ADINATH SHOPPING CENTRE PUNE SATARA ROAD	PUNE	411037	Maharashtra	ROHIT POPATLAL PARMAR	parmarinternational@gmail.com
20	UNISON TECHPLAST LLP	SHOP1/BLDG 11 ASHOK NAGAR NEAR DADLANI PARK BALKUM THANE WEST	THANE	400608	Maharashtra	VIJAY V AMDEKAR	info@unisontechplast.com
21	VRNG IMPEX	FLAT NO. A4 2nd floor, park avenue, Eswaran Nagar, Pammal	Chennai	600075	Tamil Nadu	VENKATASUBRAMANIAN P	info@vrngimpex.com