PLASTICS INDIA

A journal for the growth and development of plastics trade & industry

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Editorial

Dear Friends,

There has been a global slowdown in most major economies, with India being no exception. Growth in United States, China, European Union and Japan has also gone down in 2019. One of the major contributing factors to the current slowdown in India in 2019 is the crisis in the NBFC sector. Domestic credit conditions remain tight as market concerns in the shadow banking sector have persisted too long. India's GDP growth slipped from 5.8% in January – March'19 to 4.5% in July – September quarter same year after the crisis in the NBFC sector broke out in September '18. Market expects the growth to further slip.

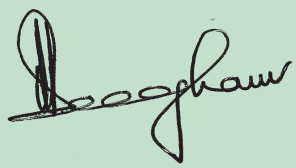
Inflation has taken an upswing owing to a rise in the prices of vegetables owing to untimely heavy rains. However, this is looked upon as a temporary phenomenon. Prices are expected to fall once the new produce enters the market.

Our government has taken a serious note on the slow growth in the economy and rise in prices of essential items. It has already started taking positive steps to raise growth and reduce prices of essential items. Corporate taxes have already been reduced leaving more money in the hands of industry for investment. Imports of food items are in the pipe line to reduce prices. The RBI is also likely to reduce lending rates to make capital more easily available. It will take some time before people feel the benefits of government's positive action.

In spite of all the turmoil in different segments of the economy, the plastic industry will continue to grow as they manufacture everyday items required by the common man.

We look forward to your suggestions on how to improve the quality of this magazine.

Wishing all members A Happy Christmas and Prosperous New Year 2020.



Manish Singhania
Co-Editor

Presidential Address

Dear IPFians,

I wish you all and your family members a very Happy & Prosperous new year.

The preparations for Budget are going on and our Hon'ble Finance Minister, Mrs. Nirmala Sitharaman will present her budget on 1st February, 2020 at 11 A.M.

As you all are aware, the GDP growth rate of Indian Economy has plummeted to 4.5% in the second quarter (July-September) of the year 2019-20. The GDP growth seen in the last quarter was slowest in more than six years. The previous low was recorded at 4.3 per cent in the final quarter (January-March) of 2013-13.

Despite the measures taken by the government in form of Corporate tax cut, incentive to banks to increase lending, infusion of capital to public sector banks etc, these seem to be inadequate to spur the demand. It is argued that the declining demand is among the prime reasons for economic slowdown.

It is expected that the Finance Minister may incorporate a number of measures to kick start the slowing economy. The corporate leaders, in their budget wish list, have sought initiatives to support job creation besides enhanced spending on infrastructure and politics for agricultural sector.

Hon'ble Finance Minister Nirmala Sitharaman had earlier hinted at providing some relief to the common man in the form of tax cuts. The top five things on common man's wish list are :-

1) One of the key expectations is the increase in the threshold level not under taxation from existing Rs. 2.5 lakh to 5 lakh. This slab between 2.5 lakh and Rs 5 lakh invite a 5% tax. This would leave more disposable income in the hands of the people. People falling under the highest tax slab rate of them all are expecting at least a 5% cut from the existing 30% rate.
2) Enhancing the limit of deduction under Section 80C of the Income-Tax Act, 1961. The current limit stands at Rs.1.5 lakhs. The deduction under Section 80C provides relief in investments such as Personal Provident Fund (PPF), fixed deposits, insurance, home loan repayment etc. This would also increase investments benefiting the government.
3) Medical expenses are also a big worry area for a common man. To make it more affordable and inclusive the government should consider increasing exemptions limit to Rs. 35000 from current Rs. 25000 levels. Expenditures made in this regard fall within the purview of Section 80D of the Act.
4) The government should also consider reintroducing the deduction for investment in Infrastructure Bonds with higher limits. Deduction for investments in Infrastructure Bonds was previously introduced in 2011 and later discontinued with. It allowed exemptions up to the investment of Rs. 1 lakh.
5) Last but not the least. The exemption on long-term capital gains from sale of equity and equity-oriented mutual funds should be increased from Rs. 1 lakh to at least Rs. 2 lakh.

Experts have predicted the fiscal deficit to rise to 3.6-3.8 per cent of the GDP during the current fiscal, owing to weak revenue collections and an estimated Rs. 1.45 lakh crore dent due to 22 per cent corporate tax cut.

However, many economists are of the view that breaching fiscal deficit target would not harm the economy as much as lower consumer demand and growth.

Nobel Laureate Abhijit Banerjee recently said, "Fiscal deficit has been breached by a huge margin already. In that sense, I don't think that it's a big deal to breach it more. I wouldn't be supporting fiscal tightening right now." While the government has been focused on maintaining fiscal discipline since 2014, many experts believe that the Nirmala Sitharaman will announce additional expenditure plans to revive demand in 2020-21.

For additional spending, the government has the option of invoking the escape clause under the Fiscal Responsibility and Budget Management (FRBM) Act. This clause allows slippages of up to 50 basis points or 0.5 per cent of the GDP in exceptional conditions. Considering the current economic conditions and forecasts, the government has been urged by many economists to invoke the escape clause and spend more to bring the economy back on track.

Another key task for Nirmala Sitharaman will be to address slow growth in some key sectors including real estate, construction and manufacturing. There are multiple reasons why the concerns of these mega sectors need to be addressed. All of these sectors employ a large number of labourers, leading to generation of large-scale employment. However, all these mega sectors have faced significant losses, leading to a decline in their contribution to the GDP and reduced labour employment.

While many of the players in these labour-intrusive sectors continue to suffer from legacy issues like land acquisition and higher tax bills, all of them were struck by a severe jolt after a prolonged period of liquidity crunch through 2019. As for the present situation, the government needs more than presenting long-term plans to mobilise these sectors rather than opting for an easier route by cutting personal income tax. While it has emerged as a popular demand among salaried individuals, only a small margin of people pay income tax in the country. Therefore, economists have urged the government to spend more on initiatives like job creation, infra structure and incentives to auto sector while ensuring smooth and easy flow of credit to trade and industry.

With warm wishes

Ramesh Kr. Rateria
President

Secretary Message

Dear Members,

On behalf of Indian Plastic Federation and my own behalf, I extend my warm wishes to all our members and readers for the New Year 2020. Wishing you all a year filled with joy, prosperity and best of health.

The year 2019 ended on a high note with IPF members participating in the EKAL Marathon on 22.12.19 at Godrej Water Side, Salt Lake by setting up Plastic Bottle Shredder Machines running LIVE on spot. The Federation had booked a slot for 25 members to run for a cause. Members chose between 10 km and 5 km run. Many members joined the Marathon run.

The year was quite challenging for the plastic industry with our Hon'ble PM announcing a ban on use of single use plastics. This announcement had caused lot of confusion amongst processors manufacturing such products regarding the future of the business. The Federation took up the grievances of its members and after several rounds of discussion with senior officials in the government we have been able to stay any drastic action that hurt our members.

The 9th National Awards for Technology Innovation in Petrochemicals and Downstream Plastic Processing Industries was held on 7th January 2020 at Chennai under the Chairmanship of Shri Kashi Nath Jha, Jt. Secretary (PC), DCPC, MoC&F, New Delhi. The Award programme was held at CIPET Headquarters, Chennai. Shri Lalit Agrawal, Hony. Treasurer of the Federation was a member of the jury to select candidates eligible to receive the Award.

During Year 2019 membership strength increased with the induction of 43 new members into the IPF fraternity. Acceptance of new membership forms will remain open till 31st March 2020 after which it will remain closed for some time. Members desirous of getting their acquaintances get new membership may kindly convey this message to them.

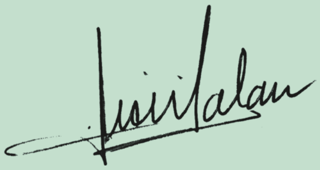
The Federation has decided to take a delegation to Chinaplas 2020 being held from April 21 -24, 2020 at the National Exhibition and Convention Center, Hongqiao, Shanghai, PR China. Shri Gautam Ladha, of M/s Garima Polymers has been appointed as Convenor Chinaplas 2020. Members interested in joining the Chinaplas 2020 tour may keep in touch with Shri Gautam Ladha (M:9331008193). Details of the tour package are being worked out and once the same is finalised, members will be intimated of the tour package through email.

The Federation in association with West Bengal Pollution Control Board (WBPCB) will hold a Seminar on 'Plastic Waste Management' at Rotary Sadan, Kolkata on 28th January 2020. The speakers will all come from WBPCB. The Chairman, WBPCB and Member Secretary, WBPCB have consented to be the Chief Guest and Guest of Honour during this Seminar.

The Federation along with Indian Plastics Institute (Kolkata Chapter) jointly organised an Endowment Lecture on Digital Marketing on 7th January 2020 at IPF Conference Hall. The speaker was Mr. Harshavardhen Daga, Visiting Professor, (Marketing & OB at BBA Colleges in Kolkata under Calcutta University & Jadavpur University). The programme was well attended.

The Union Budget for 2020-21 will be presented by our Hon'ble FM Mrs Nirmala Sitaraman on 1st February 2020. Members may look forward to a budget 2020 with expectations that the government will do what is takes to get the economy back on track.

With best wishes



Sisir Jalan
Hony. Secretary

ENDOWMENT LECTURE ON DIGITAL MARKETING

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ROOT OUT PLASTIC BAG LESS THAN 50 MICRONS: NATIONAL GREEN TRIBUNAL

The National Green Tribunal has asked Central Pollution Control Board to ensure that no plastic bag less than 50 microns of thickness be manufactured,stocked, sold and used across the country.

The green court also asked CPCB to ensure that no unregistered plastic manufacturing and recycling unit is in operation and no unit is running in non-conforming or residential areas.

A bench headed by NGT chairperson Justice Adarsh Kumar Goel said a national framework for extended producers liability be finalised and enforced as far as possible within three months and a report furnished by the Union ministry of environment and forests (MoEF).

"Thermocol or polystyrene cups, plates, etc, used extensively and haphazardly littered are properly regulated. Special environment squads may be set up for enforcement to oversee and ensure that no litter of plastic waste takes place at historical, religious, public places and dumping of plastic waste on drains, river, banks and sea and no burning of plastic takes place in open," the bench noted. The green court also asked states and Union territories to submit their compliance reports on the issue of plastic waste management to CPCB quarterly in a cumulative format, failing which compensation of Rs 1 lakh per quarter shall be levied by the apex pollution control board.

"CPCB may compile and file its consolidated report on quarterly basis before this tribunal.First quarterly report to be filed before April 29,the next date by e-mail," the bench said in a recent order. NGT had earlier said there was no proper mechanism for plastic waste management in the country and directed CPCB to take necessary action in this regard.

Source: Time of India.

THE EUROPEAN UNION VOTES TO BAN SINGLE-USE PLASTICS BY 2021

As reported by BBC News, the European Parliament has voted to ban single-use plastics across the board in an attempt to stop the unending stream of plastic pollution making its way into the oceans.

Such plastic products include things like straws, plates, cups and cotton buds, and can take several centuries to degrade in the oceans where they are increasingly observed to be consumed by marine life. According to the European Commission, such plastics make up 70 percent of all marine litter.

A ban was proposed in May after the public outcry and awareness over the issue reached a new zenith. A vote at the European Parliament was held earlier this week, with a huge majority of MEPs – 571 yays to 53 nays, with 34 abstentions – agreeing to enforce the ban by 2021.

The ban is, at a glance, comprehensive. Aside from the 2021 complete ban on plenty of single use products, the use of plastics for which no alternatives currently exist – mostly food packaging – will have to be cut down by 25 percent by 2025. Beverage bottles will also required to be collected and recycled at a rate of 90 percent by 2025. Cigarette butts, remarkably resilient components of plastic pollution, will have to be reduced by 50 percent by 2025, and 80 percent by 2030.

As researchers scramble to work out precisely what negative effects it may afflict on those that inadvertently eat them – especially marine mammals, many of which can suffer from just consuming one small fragment of plastic – news reports keep cropping up that remind us that we are increasingly reaping what we sow. Just in the last week or so, it was confirmed that plenty of table salt contains microplastics, as does human poop.

Things clearly can't stay the same, and an increasingly multidisciplinary approach to dealing with the problem is at least appearing to gain steam. There are, in crude terms, three major prongs to this: engineering, political action, and public awareness.

This latest move seems to be a rare political action that might end up making a difference. Although plenty of national governments appear to want to do something, what usually happens is dissenting, powerful voices manage to weaken proposals that otherwise might provide an effective, united front.

Back in December 2017, for example, a UN resolution was tabled that aimed to prevent any plastic from entering the waterways of the world. Originally legally enforceable, protestations from the US rendered it non-mandatory and far less sweeping in its scope. At the G7 summit in Quebec this summer, a similar agreement was put forward. Although it focused on the wider issue of ocean health, it also made a point about the importance of scaling back the use of plastics that inevitably end up in the sea. The US and Japan, sadly, failed to sign on to that section of the blueprint.

The politics as to why various nations prefer not to pull their weight are complex, and worthy of writers with more specialized expertise than myself. The perception of who is to blame, and who should handle the problem, certainly plays a role, though. China, until recently a bit of a dumping ground for much of the world's potentially recyclable rubbish, no longer accepts the world's non-industrial waste. Plastics that were once repurposed are now being sent to landfills. Somewhat happily accepting so much waste for a fairly long period of time, the Chinese government has now decided that it shouldn't keep taking on yang laji – "foreign trash."

Lest we forget, the plastic manufacturing industry is a colossus that has a huge influence over countries' various decisions over plastic. Certainly, public awareness of the problem is a good thing – even if things like bans on plastic straws are probably misleading the public as to the true scale (and causes) of the crisis – but individual action will only go so far. Unless there's an industry-wide change, vast quantities plastic will still make it into the oceans.

That's where engineering comes into the story. There are research groups all over the world currently working on ways to rid ourselves of single-use plastics once and for all, with some projects showing more promise than others. There are some that suspect that making plastic 100 percent recyclable is the way forwards, and proof-of-concept, low-energy intensive plastics that can achieve this have been invented. Others suspect that biodegradable plastics, those that break down quickly after use and can't pollute, may be our best bet.

It must be stressed that such projects are still very much early days endeavours, so right now, it seems clear that stopping plastic getting into the oceans in the first place is of the utmost importance. Based on the track record of such actions, it's understandable to have a bit of healthy skepticism about the EU's approval of a sweeping ban. After all, it's not clear how enforceable it will be at present - and the proof, as they say, is in the pudding.

Source: Forbes

INDIAN OIL CORPORATION CLOSE TO PLASTICS-TO-OIL TECH BREAKTHROUGH

According to an official from Indian Oil Corporation, the organisation is working on putting such a system in place that can produce oil from plastics waste since plastics are derived from petrochemicals and thus take a step forward in addressing the rising problem of plastic pollution.

Indian Oil Corporation (IOC), the country's largest PSU (Public Sector Unit) refiner and retailer, is about to complete a research that could throw up one of the biggest breakthroughs and help the government eliminate all single-use plastics from the country by 2022. The company is finalising the research, undertaken over the past few years, for liquefaction of toxic plastics waste. It would mean that IOC could put systems at its refineries and petrochemical complexes to commercially produce oil from plastics waste.

An IOC official said, The initial research on plastic liquefaction has been encouraging. We now have to take this research to the proof stage, which will also help us develop processes for commercial extraction of oil from plastics waste.

Since plastics are derived from petrochemicals, the idea of converting its waste back into oil by pyrolysing has been pursued globally. In fact, plastic-to-oil commercial production is on in countries, like China and Japan, where yield levels varies from 38-63 per cent. It means 38-62 tonnes of oil is produced using 100 tonnes of plastics as feedstock.

But for the process to get wider acceptance, the price of crude oil will be a critical factor. Crude oil below $60 a barrel would not support the high cost of plastics liquefaction and would negate investment in commercial-scale plants. Moreover, the process will also have to work to reduce carbon emissions.

According to IOC chairman Rajiv Singh, while liquefaction initiative is being pursued aggressively, the company is making other initiatives also to find a permanent solution for these toxic waste.

Among other measures, the company is looking at converting used cooking oil (UCO) to fatty acid methyl esters (FAME), which has fuel properties similar to crude-based diesel and hence called biodiesel. Thus UCO could also become a major source for production of biodiesel. The potential of biodiesel from UCO in India is estimated at 3.5 MMTPA.

IOC has also constructed 0.85 km of bituminous road paved with different concentrations of single-use plastics wastes at Faridabad as a pilot project. It has also introduced CRMB 55P — special grade bitumen made with plastics waste — and has issued expression of interest (EOI) for plastics wastes procurement.

In another breakthrough, IOC has been successful in developing soluble polybags made from single-use waste plastic for bitumen packaging. It eliminates the need to carry bitumen, used in road construction, in steel vessels.

Bitumen is packed in two-layered specially designed polybags — one inner liner bag for filling and another outer (raffia) bag with handle for ease of handling. At the user's end, the outer bag is removed and bitumen along with the inner bags can be charged into the bitumen hot-mix plant.

During the bitumen melting process at the road construction site, the inner bag melts and homogenises with bitumen, which can be used in the same way as conventionally packed bitumen.

Source : Plastics News

CMA AWARDED FOR ITS EFFORTS ON SINGLE USE PLASTIC WASTE MANAGEMENT

Cement Manufacturers Association awarded by the Government of India for its country wide efforts on single use plastic waste management under Swachhata Hi Seva 2019 campaign.

The Cement Manufacturers Association (CMA) was felicitated at an event organised by the Department of Drinking Water and Sanitation, Government of India, on November 19, 2019 at New Delhi.

The award was presented to Mahendra Singhi, President, CMA and Aparna Dutt Sharma, Secretary General, CMA, by the Ministry of Jal Shakti. Shri Sadananda Gowda, Union Minister, Ministry of Chemicals and Fertilisers; Rattan Lal Kataria, Minister of State, Ministry of Jal Shakti and Social Justice and Empowerment; and, Parameswaran Iyer, Secretary, Department of Drinking Water and Sanitation, Ministry of Jal Shakti were the distinguished guests at the Event.

It may be recalled that the Prime Minister during his Independence Day speech on August 15, 2019, had spoken of the need to reduce Single Use Plastic in the Country.

Subsequently, the Ministry of Jal Shakti led the Swachhata hi Seva campaign, with the Prime Minister Shri Narendra Modi launching it on September 11, 2019.

CMA was identified as a valuable partner for its potential role in the management of non recyclable single use plastic waste under the Swachhata hi Seva campaign.

The campaign involved collaboration in two phases, viz, awareness creation in Phase I, and plastic waste disposal in Phase II.

During the first phase of awareness creation, from September 11 till October 1, 2019, over 3.25 lakh people were directly sensitised about the ill effects of single use plastic, which encompassed 545 activities conducted across 377 villages in 17 states by the Cement industry.

In addition, CMA proactively reached out to the masses to spread awareness through school visits, radio jingles, Ramlila campaigns and through an international conference CONSERVE 2019, which was well attended by renowned experts, Industry leadership, and policymakers.

During the second phase of the SHS campaign, CMA effectively facilitated disposal of 7,835 tonnes of plastic waste through its Member Companies in a short duration between October 1 to 25, 2019, which translates to approximately 313 tonnes of plastic disposed of every day across 15 states.

Speaking on the occasion, Mahendra Singhi, President CMA and Managing Director and CEO, Dalmia Cement (Bharat) Limited stated, “The Cement Industry is proud to be part of such a noble national initiative of the Government of India. The Swachhta hi Seva campaign has successfully delivered on its objective. I applaud the commendable efforts made by CMA and our Member Companies through active collaboration.”

Aparna Dutt Sharma, Secretary General, CMA, highlighted” CMA and our Member Companies extended full solidarity to the national campaign seamlessly coordinating with stakeholder Ministries and Municipalities across India. Our Member Companies were completely in sync with the Campaign objective right from the start, created mass awareness and effectively disposed of almost 7,800 tonnes of plastic waste in just about three weeks.”

Source : Plastics News

ALL PLASTIC WASTE COULD BECOME NEW, HIGH-QUALITY PLASTIC THROUGH ADVANCED STEAM CRACKING

A research group at Chalmers University of Technology, Sweden, has developed an efficient process for breaking down any plastic waste to a molecular level. The resulting gases can then be transformed back into new plastics—of the same quality as the original. The new process could transform today’s plastic factories into recycling refineries, within the framework of their existing infrastructure.

The fact that plastics do not break down, and therefore accumulate in our ecosystems, is one of our major environmental problems. But at Chalmers, a research group led by Henrik Thunman, Professor of Energy Technology, sees the resilience of plastic as an asset. The fact that it does not degrade makes it possible for circular usage, creating a true value for used plastic, and therefore an economic impetus to collect it.

“We should not forget that plastic is a fantastic material—it gives us products that we could otherwise only dream of. The problem is that it is manufactured at such low cost, that it has been cheaper to produce new plastics from oil and fossil gas than from reusing plastic waste,” says Henrik Thunman.

Now, through experimenting with chemical recovery via steam cracking of plastic, the researchers have developed an efficient process for turning used plastics into plastics of virgin quality.

“Through finding the right temperature—which is around 850 degrees Celsius—and the right heating rate and residence time, we have been able to demonstrate the proposed method at a scale where we turn 200 kg of plastic waste an hour into a useful gas mixture. That can then be recycled at the molecular level to become new plastic materials of virgin quality," says Henrik Thunman.

The experiments were carried out at the Chalmers Power Central facility in Gothenburg.

In 2015, around 350 million tonnes of plastic waste were generated worldwide. In total, 14 percent was collected for material recovery—8 percent was recycled into plastic of lower quality, and 2 percent to plastics of similar quality as the original. Around 4 percent was lost in the process.

Overall, around 40 percent of global plastic waste in 2015 was processed after collection, mainly through incineration for energy recovery or volume reduction—releasing carbon dioxide into the atmosphere.

The rest—about 60 percent—went to landfill. Only around 1 percent was left uncollected and leaked into natural environments. Though only a small percentage, this nevertheless represents a significant environmental problem, since the amount of plastic waste is so high overall, and since the natural degradation of plastic is so slow, it accumulates over time.

The current model for recycling plastic tends to follow what is known as the 'waste hierarchy.' This means the plastic is repeatedly degraded, to lower and lower quality before finally being burned for energy recovery.

"Instead of this, we focused on capturing the carbon atoms from the collected plastic and using them to create new plastic of original quality—that is, back to the top of the waste hierarchy, creating real circularity."

Today, brand new plastics are made by shattering fossil oil and gas fractions in a device known as a 'cracker' in petrochemical plants. Inside the cracker, building blocks consisting of simple molecules are created. These can then be combined in many different configurations, resulting in the enormous variety of plastics we see in our society.

To do the same from collected plastics, new processes need to be developed. What the Chalmers researchers now present are the technical aspects of how such a process could be designed and integrated into existing petrochemical plants, in a cost-effective way. Eventually, this kind of development could enable a hugely significant transformation of today's petrochemical plants into recycling refineries of the future.

The researchers are continuing their work on the process.

"We are now moving on from the initial trials, which aimed to demonstrate the feasibility of the process, to focusing on developing more detailed understanding. This knowledge is needed to scale up the process from a few tonnes of plastic a day, to hundreds of tonnes. That is when it becomes commercially interesting," says Henrik Thunman.

The process is applicable to all types of plastic that result from our waste system, including those that have historically been stored in landfills or at sea.

What makes it now feasible to use collected and sorted plastics in large-scale petrochemical plants is that a sufficient volume of material is collected, meaning that the plants can theoretically maintain the same output. These plants require around 1-2 million tonnes of sorted plastic waste per year to convert to match the production levels they currently derive from oil and fossil gas.

Sweden's total amount of plastic waste in 2017 was around 1.6 million tonnes. Only around 8 percent of that was recycled to lower quality plastics.

The Chalmers researchers therefore see an opportunity to create a circular use of plastic in society, as well as free us from the need for oil and fossil gas to produce various high-quality plastics.

"Circular use would help give used plastics a true value, and thus an economic impetus for collecting it anywhere on earth. In turn, this would help minimise release of plastic into nature, and create a market for collection of plastic that has already polluted the natural environment, says Henrik Thunman.

End-of-life bio-based materials like paper, wood and clothes could also be used as raw material in the chemical process. This would mean we could gradually reduce the proportion of fossil materials in plastic. We could also create net negative emissions, if carbon dioxide is also captured in the process. The vision is to create a sustainable, circular system for carbon-based materials.

Source : Environment News

HIGH-PERFORMANCE MEDICAL ELASTOMERS VITAL FOR SAFETY

Intended as a guideline for manufacturers and users of plastics for medical products, the VDI guideline 2017 regulates the requirements qualified MGPs have to meet, from basic requirements to formulation consistency and change management through to withdrawal terms.

The VDI 2017 is an important first step toward harmonizing the range of performance that a medical grade plastic must fulfill, and it creates obligatory guidance in the communication between manufacturers of MGPs and OEMs and/or the manufacturers of medical, pharmaceutical and in vitro products.

The new guideline explicitly provides scope for the respective material suppliers and their customers to make broader arrangements. One of the main consequences of VDI 2017 is a restriction of the range of raw materials and auxiliary agents permitted for MGPs, which means that some manufacturers have to adjust their materials formulations.

The new guideline also regulates the controlled continuity of the composition of specific compounds based on a documented change control management system, which ensures that the compounds are suitable for use for a long-term period and makes costly checks unnecessary.

Certified compounds for TPE/PA composite applications

With its new MC/AD/PA THERMOLAST M series, KRAIBURG TPE launched one of the first thermoplastic elastomers (TPEs) that not only hold certifications for healthcare applications in accordance with EU and FDA standards but can also be combined directly with polyamides.

The MGP-compliant TPE compounds that have been available in the market so far do not provide adhesion to polyamides (PA) and thus cannot be used for many sophisticated applications.

KRAIBURG TPE's new MC/AD/PA THERMOLAST M series closes this gap. The compounds are fully certified and suitable for a variety of attractive medical devices, including those used for in vitro diagnostics.

The compounds of the new TPE series meet the recently adopted VDI 2017 guideline that regulates the criteria for MGP-compliant materials – from basic requirements to formulation consistency and modification management. They comply with the Commission Regulation (EU) No. 10/2011 and the Code of Federal Regulations Title 21 (21CFR) of FDA.

KRAIBURG TPE further ensures alignment with the new VDI 2017 that the manufacturing processes are also included in the change control management system and the original formulation of such a compound will remain available in parallel with the new type for minimum 24 months after a possible change or withdrawal notification.

The new TPEs also meet the requirements for human compatibility in accordance with the specifications of the ISO 10993-5 and 10993-11 standards. All types can be sterilized using beta or gamma radiation, or ethylene oxide (EtO).

Like all THERMOLAST M products, the MC/AD/PA compounds are free of latex, PVC, and phthalates, and they are produced without the use of heavy metals. Types with a hardness range between 60 and 70 Shore A are currently available.

Breathable PU materials for wound care and wearables

Covestro has developed an array of solutions for medical care. For all layers of modern wound dressings, Covestro offers holistic material solutions Polyurethane (PU) adhesive components from the Baymedix A range characterized by breathability – an important prerequisite for moisture management in advanced wound dressings. The adhesive system can also be easily removed from the skin without sticking to the hair (low trauma).

Covestro Baymedix FP also provides polyurethane raw materials for foams with absorption and retention properties. By directly coating the carrier film with the adhesive system or foam, process and laminating steps can also be saved in production which increases efficiency. Special thermoplastic polyurethane films (TPU) from the Platilon range with a particularly mat surface round off the range.

Wearable electronic patch devices are already being used in a variety of medical applications, including monitoring, diagnostics and drug delivery. They help patients gain greater mobility.

The wearables must be worn on the skin around the clock for a prolonged period of time so they need to be particularly kind to the skin, comfortable, but also adhere firmly to the skin. Among other things, Covestro has developed special breathable TPU films from the Platilon range for this purpose.

The company also supports customers in the manufacturing with a process that allows wearables to be efficiently produced from roll to roll.

Customizable and flexible silicone tubing for implants

At the COMPAMED 2019 trade fair held in Düsseldorf, Trelleborg Healthcare & Medical showcased medical silicone tubes for long-term implants.

Due to their biocompatibility and physical resistance, silicone tubes play an important role in medical applications, both as conduits to transport liquid or as insulators for cables and sensors. The products must meet high precision, control and process stability demands, and also be implantable for up to several years.

The tubes from Trelleborg are available in a full range of sizes and are designed jointly with customers to meet their individual application needs.

Trelleborg's patented Geo Trans technology enables a significantly greater variation in the geometry of tubing, supporting customer-specific designs. For example, one lumen can be separated into two lumen (or two into one) during the extrusion process, eliminating the need for a molded component between the different segments.

Additionally, lumen can be stopped and restarted or the dimensions of the tubing can be changed, which is often necessary for wound drains. Reducing the process steps in manufacturing saves time and decreases potential sources of failure, thereby reducing costs and mitigating risk.

Also on show were Trelleborg's silicone sheeting and film capabilities. Trelleborg has, in partnership with a customer, developed drug-eluting silicone film, which can be used to treat chronic wounds and burns.

Depending on the medical application, wafer-thin silicone gel films containing active pharmaceutical ingredients are being increasingly used in place of more traditional burn and wound care treatments.

The silicone film can be combined with antibiotics or decongestants, which can potentially replace epidermally applied medication.

Source: CPRJ Editorial Team

NEW BREAKTHROUGH SOLUTIONS FOR HIGHER QUALITY COMPOUNDING

In order to produce high-quality compounding products, highly precise and efficient processes have to be ensured. In view of this, new technologies and equipment play an important role in compounding lines. Many new solutions are also capable of processing recyclates.

Smart controlled compounder increases profitability

BUSS, a Swiss specialist in compounding systems for demanding applications, has been adopting smart control for its machines years ago.

The company's advanced COMPEO compounder easily and thoroughly mixes significant volume of additives, and is suitable for production of high quality compounds, increasing the profitability of the compounding sector.

COMPEO is put together from standardized modules and the series permits cost-effective configuration of specifically optimized compounding lines for a range of processing tasks and temperatures.

These extend from traditional segments such as PVC and cable compounds via highly filled polyolefins to engineering polymers with processing temperatures of up to 400°C.

In addition, the COMPEO compounder can combine conventional three or four-flight kneading elements with new elements comprising two or six flights and use them at any position in the process section.

BUSS's new COMPEO 88 and COMPEO 110 kneaders for plastics and elastomers were introduced at K 2019. They join the smaller COMPEO 55 which was launched to the market around one year ago. All three models are available with process lengths from 13 L/D to 25 L/D, the model size indicating the screw diameter in mm.

Typical throughputs for processing thermoplastics are 150-300 kg/h (COMPEO 55), 600-1200 kg/h (COMPEO 88) and 1200-2400 kg/h (COMPEO 110). This gives operators the opportunity to use a system size optimally adapted to their requirements and thus work with maximum efficiency.

The new COMPEO 110 presented at the company booth is the current largest system, with a processing length of 18 L/D, including a downstream side feeder alongside their new conical twin screw discharge unit. In this configuration the system is suitable, among other things, for compounding filled and reinforced thermoplastics, including natural fiber-reinforced and bio-based plastics as well as HFFR cable compounds.

With a process length of 25 L/D, the new COMPEO 88 is optimized for compounding black or colored masterbatches and it can be fitted with one or two additional side feeders if required.

Conversion of recyclates into high quality compounds

Coperion has acquired an excellent reputation in markets where compounds are made from recycled plastics. The company designs systems which ensure the smooth interaction of all process steps from material handling to feeding, twin screw extrusion, pellet treatment (cooling, drying and homogenization) and finished product handling.

Depending on the materials, Coperion and Coperion K-Tron systems have high achievable throughput rates of up to 6,000 kg/h. The produced high quality recycled compounds are used, for example, in the automotive and packaging industries.

Coperion's ZSK and STS twin screw extruders are the heart of the recycling process. The extrusion systems are used for the upcycling of the recyclates, such as for the reprocessing of PET, PP or HDPE.

With their good processing properties and high devolatilization performance, they are suitable for the processing of all types of ground products or recyclates as well as mixing of these materials.

When it comes to inline processing of PET, Coperion has developed a technology which neither pre-drying of the materials nor crystallization and agglomeration of recyclates are necessary in comparison with conventional PET processing techniques. This direct extrusion process enables the production of semi-finished products in one process step.

There are various advantages of processing PET with twin screw extruders in comparison with the single screw method. The twin screw extrusion ensures high quality of the end product because only a minimum iV degradation occurs during processing and the crystal clear material does not become yellowish.

Besides, the process offers high flexibility because recipes and colors can be changed quickly due to the good self-cleaning behavior of the twin screw extruder.

At the same time, a much simpler logistics is necessary because pelletized new product and different regenerates (ground product, agglomerates, flakes) can be processed together even if they have different iV values.

For feeding equipment, Coperion K-Tron offers a wide range of products for accurate feeding of raw ingredients including twin screw feeders, single screw feeders, bulk solids pumps, vibratory feeders, etc. The K4G blending station allows up to six feeders to be arranged closely around an extruder inlet.

One-stop shop for new material handling solutions

With the new products SPECTROPLUS, METROFLOW, LUXOR CA A and the new material loader range METRO SG, motan presents the one-stop shop for new material handling solutions.

The new synchronous dosing and mixing unit SPECTROPLUS was developed for extrusion and compounding and will replace the previous GRAVIPLUS range. With their modular design it is suitable for a large range of different materials – from powders, granulates and regrinds to liquids and flakes.

Additionally, the synchronous dosing unit can be augmented with the SPECTROFLEX dosing modules, which are also available as gravimetric or volumetric versions.

The SPECTROPLUS is controlled with the brand new SPECTROnet control, which can control both the volumetric and gravimetric SPECTROPLUS dosing modules as well as external dosing units.

The METROFLOW gravimetric material loaders are used in pneumatic conveying systems, for example to convey material from a silo to a drying bin or to the processing machine.

With their precise weighing technology, the METROFLOW loaders are particularly suited for monitoring material consumption in real time, which means that the units are predestined for use in an Industry 4.0 environment.

The new compressed air dryer LUXOR CA A with optimized control and integrated ETAplus technology is designed for small to medium material throughputs.

The dryer operates in a temperature range from 30 to 180°C. It can be installed directly on top of the processing machine or on a mobile frame. The dryer is available in four sizes with bin volumes of 8, 15, 30 and 60 litres respectively.

motan has extensively reworked and expanded the METRO range of material loaders. The new material loaders METRO G (Granulate) for large material throughputs is now available in three sizes with 60, 100 and 150 litre capacities respectively.

The METRO R (regrind) is specifically designed for processing regrind, and is also available in the three sizes 60, 100 and 150 litres.

The METRO F (Flakes) loaders units are designed for processing flakes and are also available in the same three sizes. As a non-free-flowing material, flakes are prone to bridge-building. This is why these material loaders are equipped with an extra-large outlet flap.

Meanwhile, with the METRO SG material loaders, motan offers an affordable range in the usual motan quality for standard applications that is quick and easy to install.

The new METROVAC SG conveying station with conveying control, blower and central dust filter, which can supply up to eight material loaders and four purging valves, is compatible.

In addition, new conveying control METROnet SG provides the matching control, from which eight material loaders and one stand-by blower can be managed via its color touchscreen display.

Source: CPRJ Editorial Team

LATEST ADDITIVE SOLUTIONS FOR MEDICAL DEVICES AND PACKAGING

Additives and colorants play an important role to the aesthetics, performance and production efficiency of plastics. As such, major producers have been dedicated to develop advanced solutions for various applications, such as medical and packaging.

Adhesives enhance performance of skin-contact medical devices

Dow DuPont Specialty Products Division has introduced its new DOW CORNING MG 7-1020 soft skin adhesive, the latest addition to its growing portfolio of solutions for skin-adhered medical devices.

Based on advanced silicone technology, this unique product delivers strong adhesion and extended wear, as well as design and production flexibility, while avoiding the skin irritation and discomfort more common with the removal of acrylic adhesives.

The product can be used with fabric backing and addresses the healthcare industry's growing focus on biologic drugs that call for innovative delivery mechanisms such as patch pumps.

It also provides the strongest adhesion available from Dow DuPont Specialty Products Division's soft skin adhesive portfolio, making it suitable for wearable monitoring devices, medical tape and medical device attachments. Besides, it also delivers extended wear time up to more than one week.

Specially designed to be gentle, DOW CORNING MG 7-1020 is especially suitable for patients with delicate, compromised or sensitive skin and is specifically designed to minimize irritation, sensitizing and cytotoxicity.

Its high degree of penetration into the skin surface enhances conformability and patient experience. Further, unlike traditional acrylic adhesives, it does not cause discomfort during removal.

Furthermore, the new product allows devices to be repositioned several times. This allows the product to be used in wearable devices and gives patients the ability to easily reposition their device if needed for comfort.

Allow design flexibility and extended wear time

Also targeting medical devices, 3M has added the 3M Extended Wear Medical Transfer Adhesive 4075 to its lineup of advanced adhesives for medical devices.

Designed to laminate many substrates, the product features an extended wear pressure sensitive transfer adhesive. It offers excellent initial skin adhesion with up to a 14-day wear time, depending on the backing material used.

As introduced, the product provides greater design flexibility by allowing a wider selection of backings. In other words, offering design engineers more patient-friendly adhesive options that provide comfort and a strong, reliable bond.

3M Extended Wear Medical Transfer Adhesive 4075 meets requirements to use on intact skin. It has been tested to ISO:10993-5 and ISO:10993-10, which assess the in vitro cytotoxicity and a product's potential to produce irritation and skin sensitization, respectively.

Breathable, absorbent and repositionable

Scapa Healthcare, a leading strategic outsource partner of skin friendly turn-key solutions, announced the availability of Scapa Soft-Pro Hydrocolloid Gen II, a proprietary breathable, absorbent and repositionable adhesive for ostomy and medical device fixation, advanced wound care and first aid applications.

Due to its acrylic chemistry, the adhesive is highly breathable, helping the device to stay on the skin for several days. The technology also offers high absorption properties which make it excellent for applications where the adhesive comes in contact with fluids.

The technology is suitable for users with sensitive skin as the formulation is made of non-animal derived ingredients, colophony and is latex-free.

The product can be removed and reapplied multiple times without losing adhesion properties, making it possible to be used on sensitive skin without causing further damage. Due to the adhesive coat weight, the technology can be used in challenging anatomical areas including skin folds, elbows, knees and ankles.

Novel masterbatch increases productivity of bottle makers

Sukano launched a masterbatch for injection stretch blow molded (ISBM) PET bottles, allowing bottle makers and brand owners to run their conveyor-belt systems and production robots at maximized speed without the need for a spray coating.

The new solution, believed to be the first commercially available for this application, is provided as a solid PET masterbatch that is blended with virgin PET or rPET material during molding or processing.

Even at low concentrations, the masterbatch disperses consistently through the PET material, reducing its coefficient of friction and modifying the surface texture with a microstructure.

It produces a silicone-like mobility aid effect in PET material, yet has been engineered to preserve material clarity with minimal impact on haze. It is well suited to clear, translucent, and colored bottles produced for personal care, household and cleaning, cosmetics, as well as food and beverage applications.

PET material containing the new masterbatch can be run on existing ISBM bottle production equipment without modification.

In addition, the consistency and even distribution of the masterbatch lead to improved performance. It preserves secondary processing steps that require adhesion, like labelling and printing. It also helps eliminate the cost and cleaning requirements associated with spray coatings, which leave a waxy residue on bottles and packaging equipment that must be removed through regular cleaning.

Besides, the masterbatch avoids the potential risk of microbiological contaminations of bottle surfaces by aqueous-based coatings, which may require additional additives or application in a clean-room environment.

PET recyclability is essential in an increasingly environmentally conscious world, and Sukano's innovative mobility aid makes no compromises in this area, as it is formulated according to the European PET Bottle Platform (EPBP) guidelines.

With the masterbatch, bottle makers and brand owners can improve productivity and maximize yields.

High gloss metallic effect colorants for packaging

Impress High Gloss Metallic Effect Colorants by PolyOne create a high gloss, metallic effect look with no flow lines for polymer packaging, in a limitless range of vibrant colours. They are developed for PET and are available in both liquid and solid formulations.

Creating high gloss, metallic effect involves varying the amount of colorants and the thickness of packaging walls, enabling infinite options for a variety of fantastic packaging looks.

According to PolyOne, the process is easy to implement with traditional packaging polymers using standard stretch blow moulding machinery.

The colorants are formulated using an additive that adds a brilliant ultra-glossy appearance to packaging made with semi-crystalline polymers.

The additive creates tiny bubbles inside the semi-crystalline resins which, when stretched during blow moulding, reflect light and shine for a high gloss, metallic appearance.

Source : China Plastic & Rubber journal

FINNISH RESEARCHES CREATE BIO-BASED POLYMER WITH COMBINATION OF WOOD FIBERS AND SPIDER SILK

Achieving strength and extensibility at the same time has so far been a great challenge in material engineering: increasing strength has meant losing extensibility and vice versa. Now Aalto University and VTT Technical Research Centre of Finland researchers have succeeded in overcoming this challenge, inspired by nature.

The researchers created a truly new bio-based material by gluing together wood cellulose fibres and the silk protein found in spider web threads.

The result is a very firm and resilient material which could be used in the future as a possible replacement for conventional plastic, as part of bio-based composites and in medical applications, surgical fibres, textile industry and packaging.

According to Aalto University Professor Markus Linder, nature offers great ingredients for developing new materials, such as firm and easily available cellulose and tough and flexible silk used in this research.

The advantage with both of these materials is that, unlike a lot of types of conventional plastic, they are biodegradable and do not damage nature the same way micro-plastic do.

Research Scientist Pezhman Mohammadi from VTT said they used birch tree pulp, broke it down to cellulose nanofibrils and aligned them into a stiff scaffold. At the same time, they infiltrated the cellulosic network with a soft and energy dissipating spider silk adhesive matrix.

Silk is a natural protein which is excreted by animals like silkworms and also found in spider web threads. The spider web silk used by Aalto University researchers, however, is not actually taken from spider webs but is instead produced by the researchers using bacteria with synthetic DNA.

“Because we know the structure of the DNA, we can copy it and use this to manufacture silk protein molecules which are chemically similar to those found in spider web threads. The DNA has all this information contained in it,” Linder explained.

“Our work illustrates the new and versatile possibilities of protein engineering. In future, we could manufacture similar composites with slightly different building blocks and achieve a different set of characteristics for other applications. Currently we are working on making new composite materials as implants, impact resistance objects and other products, said Pezhman.

Source CPRJ Editorial Team (SC)

ENGINEERING PLASTICS POWER INNOVATION IN CONSUMER ELECTRONICS

The market for engineering plastics in electronics applications is seeing good growth—in fact, according to a business report from Marketsand Markets, it is projected to be valued at $115.10 billion by 2023. I can’t say I’m surprised. I attended the Consumer Electronics Show (CES) in Las Vegas for several years, and it is a wonderland of plastics applications. The annual event is currently underway in the city that really never sleeps through Jan. 10.

HP Inc. hit the CES show floor running with its introduction of a variety of new PCs, displays and accessories, including the world’s first notebook and sleeve made from ocean-bound plastic materials.

“We are passionate about creating devices and computing experiences that lead us into the future and enable more freedom in how the next generation creates, consumes content and collaborates,” said Alex Cho, President, Personal Systems, HP Inc.

While plastics are taking a hit for consumers’ use-and-toss attitude, plastic materials continue to offer greater functionality for electronic devices. HP’s Elite Dragonfly is connected securely with 5G and has smart signal technology to boost antenna performance. Privacy mode can be activated with the press of a keyboard button to instantly block prying eyes from viewing the screen. Best of all, HP’s Elite Dragonfly reportedly is the world’s first notebook made from ocean-bound plastic material; also, more than 82% of the mechanical parts are made from recycled materials.

Sustainable accessories offer users the opportunity to participate in helping create useful products with plastic waste and ocean-bound plastic, one of HP's big initiatives. The HP Renew Sleeve is created with knit recycled plastic bottles and knit-to-shape with minimal manufacturing waste.

Additionally, the HP Renew series of accessories include a backpack, top-load tote and slim brief made from 100% recycled PET, or plastic bottles.

Lenovo unveiled full details of its revolutionary foldable PC at CES. ThinkPad X1 Fold is the first fully functional PC with a folding OLED display. Designed to offer unprecedented productivity, it offers a ground-breaking new form factor that will re-imagine mobile computing, said Lenovo in its announcement. As it "morphs" through multiple modes, from a small footprint device into a fully flat 13.3-inch display, X1 Fold will deliver laptop efficiency with smartphone portability, added the company.

While no information was available on the type of plastic used for the foldable screen, a report from plastemart.com noted that new polymer grades, additives and fillers have been developed to meet thin-wall, high-temperature requirements in electronic devices.

"Plastic electronics, based on inherently conductive polymers and flexible substrates, will herald a new era in the electronics industry," said the report. In the future, we can expect to see "roll-up displays used with computers and mobile phones," as well as flexible films, new materials such as carbon nanotubes and organic molecules with semi-conducting properties that "will enable a new generation of plastic electronic displays for cell phones and other portable devices."

Source : Clare Goldsberry

ARE PLASTIC RECYCLING PROGRAMS RUBBISH?

Once an admirable goal for plastic packaging and single-use plastic products, recycling of late has been called "garbage" (New York Times Magazine), "greenwashing" (Greenbiz) and "The Great Recycling Con" (New York Times). In the latter article, authors Tala Schlossebers and Nayeema Raza call recycling "propaganda" because the industry "wants to trick us into thinking we can use as much plastic as we want so long as we recycle."

Gee, Tala and Nayeema, tell us how you really feel about recycling!

Recycling seems to have hit a brick wall primarily because of problems associated with the incompatibility of various plastics. "Current plastic recycling and sustainability goals are limited by the intrinsic incompatibility of many polymers and the negative effect of fillers and impurities on end-product properties, thus requiring a high degree of expensive sorting, separating and cleaning," Sal Monte, President of Kenrich Petrochemicals Inc. (Bayonne, NJ), told PlasticsToday. Another barrier is that the melt processing of polymers causes "chain scissoring," resulting in recycle and regrind materials having inferior properties compared with virgin resins.

That is why sorting—a labor-intensive activity that results in a lot of waste—is necessary. Monte noted that the reason for separating #1 (PET) and #2 (HDPE) from #5 and #7 is because of the incompatibility between the materials, "unless you use titanium/aluminum additives that perform in situ catalysis of polymers and coupling of fillers," he said. Using innovative additive technology that permits co-mingling of plastic materials into a single waste stream and deriving value from these materials to produce new products is the Holy Grail of recycling.

Monte said that current compatibilizers offered to recyclers are based on co-polymers or maleic anhydride (MAH) modified polymers. "Co-polymer compatibilizers require extensive sorting to match up the polarities of the recycled materials, and maleic anhydride often depolymerizes condensation polymers such as PET and nylon, obviating their use in post-consumer recycle," explained Monte. "MAH technology claims to be a coupling agent, which is true for rebuilding polymer molecular weight, but it's a misnomer when applied to coupling filler and organic interfaces."

But the real problem is money, noted Monte. For recyclers, it's unlikely that they will spend a penny more on additives to compatabilize co-mingled polymers. He said that sustainability goals such as a circular economy using curbside recyclate in new plastic parts are not achievable economically absent subsidization and legislation because of:

- Shale oil—virgin is cheaper;
- China's National Sword—no market;
- quality—Industry 4.0/automation;
- product liability litigation—specs must be met;
- additives are expensive—recyclers will not add a penny to their material costs unless extensive and expensive on-site experimentation is allowed to demonstrate economic and technical efficacy;
- curbside recyclers are not polymer chemists—it's complicated.

Monte agrees with what I've written several times in my previous blogs. "Bulk recycling has pretty much been a confusing mess since it started," he said.

Monte has several ideas and suggestions when it comes to the recycling conundrum:

Landfill. A lot of plastic goes direct to landfill or it winds up in landfill after the cleaning and sorting process because there is no market. Landfills can range from garbage dumps to controlled environments, where moisture levels are maintained to help microbes do their work and the released methane gases are harnessed for energy.

Organic recycling; composting/ biodegradation. Microbes do the work of degradation and fall into five distinct classes from aerobic (oxygen loving) to anaerobic (oxygen hating). Microbes, corrosion and so forth are nature's way of regenerating itself.

Waste-to-energy/incineration. It works, but it's not optimal in capturing the investment in technology needed to make a discarded plastic part.

Chemical / depolymerization of select streams. This requires major capital investments to install the chemical plant and a supply infrastructure. It works for commodity plastics such as PET water and soda bottles that can be regenerated into rPET for bottle use. But if the rPET is made into carpet fiber, it needs pigments for color and about 40% $CaCO_3$ for heft and wearability. When the carpet needs to be replaced, the $CaCO_3$ is viewed as a contaminant and goes to landfill.

Recycle sources, curbside or post-industrial. "I believe post-industrial recycling, such as car bumpers to produce materials for decking and large parts, will be the current market, with curbside recycling programs coming in time," Monte said.

IDTechEx (Cambridge, UK) has just released a new report, "Green Technology and Polymer Recycling 2020-2030: Technology for a Sustainable Circular Economy in Plastic Waste," authored by Dr. Bryony Core. The report homes in on some of the same issues related to physical/mechanical recycling that Monte addressed. IDTechEx said that the "downsides of mechanical recycling are that sorting prior to melting is imprecise and prone to impurity inclusion.

"Although steps have been taken to increase impurity removal with new optical sorting techniques such as near infrared, the primary route to reducing contamination relies upon the individuals producing the waste to sort it correctly into constituent materials at the point of generation," said the report. "Even if the input polymer is free from contamination, the very act of heating to melt the polymer can impair the properties of the recycled output polymer, as heat can break down the polymer backbone for certain polymer types."

I'm assuming that means that consumers—the point of origin of much plastic waste—need to know what they're throwing into the recycling bin. That requires a lot of education and, as Monte commented, "Can we really educate consumers enough so that they begin to care about what they put into the blue bins?"

These issues, along with the economic considerations cited by Monte, have "acted as barriers to widespread recycling implementation," notes the IDTechEx report. And, I might add, they have impacted the decision of many municipalities to curtail recycling programs. It's no wonder so many are starting to see recycling as part of the problem rather than a solution.

IDTechEx said, however, that "innovations in the field of polymer recycling are helping to address the technical hurdles to increasing recycled polymer quality." These new processes fall into three categories: Solvent extraction, a physical process, and plastic-to-fuel conversion or depolymerization, which are both chemical methods. "The more mature technology, plastic-to-fuel conversion, uses mixed polymer waste, which is otherwise very challenging to recycle, and outputs fuel fractions using chemical reactions such as pyrolysis or gasification," said the report.

Monte believes that making recycled polymers compatible is key to the long-term success of recycling. There is already an extensive infrastructure in place and recycling companies have made huge investments in the latest and greatest machinery and sorting technology in place. "It's important for recyclers to know these [compatibilizing] technologies because the more you compatibilize, the less you have to clean and sort, allowing for more favorable economics in producing a functional recycled plastic part," Monte said.

Monte will show companies that have pledged to achieve "sustainability" goals how to "walk the walk after they've talked the talk" at an upcoming Plastics Recyclates Forum on March 3 and 4, 2020, in Darmstadt, Germany. "You pledged your company to sustainability goals, such as increasing plastic recycle content and reducing the carbon footprint, but how do you get there? There's more to plastics technology innovation than Industry 4.0," Monte said. "There's just so much you can do with software and hardware. Optimization cannot be achieved without first making more efficient use of the materials in the products you make."

Source : Clare Goldsberry

HIGH HEAT POLYESTER COMPOUNDS OFFER ALTERNATIVE TO PA IN AUTO STRUCTURAL APPLICATIONS

At the recent K Show in Düsseldorf, Germany, material supplier Sabic launched of Xenoy HTX resin, a polyester-based, high-heat technology that can enable the production of light, impact resistant and high performing structural automotive applications. Xenoy products are alloys of a thermoplastic polyester (PET or PBT) and polycarbonate.

Xenoy HTX resin is especially relevant for today's automakers, who need new polymer solutions for the production of structural components capable of withstanding higher temperatures, including those of e-coating lines operating above 180°C. Relevant applications include body-in-white components, structural reinforcements and battery protection systems for electric vehicles (EVs).

Xenoy HTX resin is available in unfilled and glass-filled grades and offers significant weight savings compared to steel and aluminum. The new family of thermoplastic materials from Sabic also provides a drop-in alternative for polyamide (PA) 66 compounds and alloys, which has recently seen frequent supply shortages and price fluctuations.

"We are strongly committed to investing in the future of the automotive industry by developing technologies that can deliver greater value and help our customers either meet new requirements or stretch the limits of performance," says Amanda Roble, Global Leader of SABIC's Automotive Business. "A good proof point of that commitment is our new Xenoy HTX resin portfolio, which answers the call for material solutions that can allow structural reinforcements to go through the e-coat process and maintain their energy absorbing properties and other performance attributes over a wider temperature range."

The first products of this new high-heat resin technology to be introduced and available for sampling include unfilled Xenoy HTX 950 as well as two glass fiber reinforced grades, Xenoy HTX 975 and Xenoy HTX 575.

The unfilled resin is modified to absorb significant energy and withstand plastic deformation in the event of a crash. Sabic is targeting the material for use as a lightweight metal replacement solution in new safety applications, including side rockers designed to offer protection for battery modules mounted to the floor of EVs.

At K 2019, Sabic displayed the structural lightweighting capabilities of the new technology with a 3D printed prototype of a rocker panel reinforcement designed for EV battery side protection.

When exposed to temperatures of -30°C, many competitive engineering plastics tend to become brittle and fracture under load. Xenoy HTX can deliver low-temperature ductility and a very high elongation that enables stable performance under such conditions. In addition, the new technology provides enhanced flowability, resulting in greater design freedom for complex geometries and cost-efficient part consolidation.

Hybrid honeycomb designs with Xenoy HTX can potentially save up to 60 percent of the weight normally associated with traditional all-metal based, multi-piece steel or extruded aluminum crash counter measures, without compromising on dimensional stability, rigidity and mechanical strength.

The glass-filled grades are particularly suitable for demanding body-in-white structures that must be capable of enduring e-coating cycles of 30 minutes at temperatures between 180°C and 220°C. The grade can also be used to produce other structural parts subjected to high service temperatures, including front-end modules, front brackets and under-the-hood components.

The significant lightweighting potential of Xenoy HTX is not only instrumental for improving the fuel efficiency of combustion engine vehicles, but also for offsetting some of the substantial weight added by battery modules in EVs.

Source : Stephen Moore

POLYCARBONATE IS BASED ON CERTIFIED RENEWABLE FEEDSTOCK

Sabic has launched its polycarbonate (PC) based on certified renewable feedstock—a first in the industry, providing Sabic and its direct and ultimate customers with a solution that has the potential to reduce both CO2 emissions and the use of fossil feedstock during production.

"Sabic's market-leading move into the arena of polycarbonate based on certified renewable feedstock – part of its Trucircle initiative of circular solutions, is linked to the commitments of our customers, who increasingly require sustainable solutions in response to both consumer and regulatory demands", said Abdulrahman Al-Fageeh, Executive Vice President Petrochemicals, Sabic. "This major milestone in Sabic's strategic sustainability pathway now extends our offering beyond polyolefins, where we already have our existing certified circular and certified renewable portfolios", he added.

"Sabic's PC cradle-to-gate LCA study" reveals potentially significant reductions in carbon footprint (up to 50%) and fossil depletion impacts (up to 35%) for the production of polycarbonate resin based on the incorporation of renewable feedstock, in comparison to fossil-based polycarbonate production.

Polycarbonate – more specifically Lexan resin – forms part of Sabic's extensive engineering thermoplastics (ETP) portfolio. Customers can use the polycarbonate resins that are based on certified, renewable feedstock on their existing equipment, under identical process conditions. Thus potentially contributing to a reduction of the carbon footprint of their products.

"At Sabic we have engaged our value chain and unique position in Europe to produce polycarbonate using second generation renewable feedstocks that are not in competition with the food chain, to make a resin with equal performance to that produced from fossil naphtha," said Lennard Markestein, Director ETP BU Petrochemicals, Sabic.

Sabic worked closely with The International Sustainability and Carbon Certification (ISCC) to provide proof of the incorporation of renewable feedstock in our PC production and the resulting sustainability claims, verified by independent third party auditors. In addition, CEPSA – the Spanish multinational oil and gas company – is a strategic value chain partner in this project, supporting Sabic through the production of renewable intermediates.

Sabic's polycarbonate based on ISCC PLUS certified feedstock will be produced initially at its manufacturing facilities in Bergen op Zoom, The Netherlands, with global availability in the future.

The certified PC resin may be used for applications in all market segments, such as automotive, consumer, electronics and electrical, building & construction and healthcare, currently served by the company's existing PC portfolio.

Sabic has completed a detailed LCA study that is currently in the process of third party ISO Critical Review. However, the study has passed Sabic Internal review that relies on Sabic protocols for LCA quality control. As is typically the case with the use of bio-based feedstock, the LCA study results show environmental trade-offs with respect to eutrophication and water consumption. These environmental impacts may be mitigated through sustainable management practices in the upstream value chain. Only a part of the feedstock used in polycarbonate production is from renewable feedstock. The LCA study has assessed the environmental performance of the renewable route in comparison to the fossil-based route at "Cradle to Gate" as well as "Cradle to Gate + End of Life" scope levels and relies on PAS 2050 methodology for biogenic carbon accounting.

Source : Stephen Moore

MILLENNIALS ARE TURNING CEOS OF THEIR OWN LIVES

Dr. Devdutt Pattanaik

How many of us convert corporate behaviour into self-help lessons? Considering that corporate behaviour is shaped by the knowledge and experience of many hundreds of management experts, surely it makes sense to use corporate principles as guidelines to build our life? For example, how many of us have a plan for 2030 for our lives? How many of us have sat down with our family members and asked where do we want to be 10 years from today? How do we double the family income, or halve the family expense, buy a house, or car, or retirement home? How many of us have set up goals – get married, get children married, have a corpus for education, or a corpus that allows for early retirement? How many of us really do this? How many of us resent wealth managers who force us to think ahead? How many of us actually strategize our lives – have Garuda-drishti, or bird's eye view of what our vision of life is a decade from now? And how many of us think tactically? How many of us bother with Sarpa-drishti as corporates do? Do we have personal goals for the year, for every quarter? Targets to meet – be it health goals (lose weight, reduce carbohydrates), or lifestyle goals (go on frequent dates with spouse and children and parents), or financial goals (more savings, more investments, less spending)?

Do we think in terms of planning and execution? How do we hire talent in our lives – cooks, drivers? Do we treat them as HR managers are supposed to, with respect? Do we give them bonuses on time, and adequate rewards and recognition? Do we reward and recognize our spouses and our children and our parents? Do we have family meetings to track family time and money management? Do we compete with family or collaborate with them? Who is the CPO of our family, managing relationships within and without, with friends and neighbours and extended family?

Who is the CFO of the family who manages the treasury – cash in hand, investments, debts, equities? Who is the CEO taking the final decision? Do we value gender diversity in decision making? Are we invested in skill development of the family members?

Is our family a firm with strong foundations? Is it a partnership or a feudal organisation, where everyone obeys the patriarch, or matriarch? How do we on-board new family members: sons-in-law, daughters-in-law, new neighbours, new staff ? How do we terminate relationships, nicely or nastily? Do we document the family history – who keeps records of birthdays, and anniversaries and photos to be archived for future reference, when all that survives is family. What are the family values? The family policies? Are they driven top-down or democratically? What is the Standard Operating Procedure? Are there fixed mealtimes, family rituals, to increase bonding? How does home ensure there is work-life balance? Do we counsel each other through stressful times? How we nurture family dividend? How does the family create its brand equity? Do neighbours love us or shun us or indifferent to us? Are we part of the building society's efforts to build a good neighbourhood? Is that the family equivalent of Corporate Social Responsibility?

Do we have annual meetings to review the past year – an annual general meeting? Are the shareholders happy or just waiting to exit? Just as religion is not out there, in the temple, or in the guru's ashram, but in our homes and hearts, even workplace is not out there at the workplace, but at home, in our lives. We are CEOs of our life, responsible for the shareholder, and for the employees, who create the organisation, we call family.


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MEMBERS ARE REQUESTED TO SEND THEIR GRIEVANCES/PROBLEMS FACED ON GST/SUBSIDY/VARIOUS LICENCES AND ANY OTHER ISSUES TO THEIR RESPECTIVE INDUSTRY IN DETAILS ALONGWITH SUPPORTING DOCUMENTS TO THE IPF SECRETARIAT SO THAT WE CAN PUT THE SAME TO THE CONCERNED AUTHORITIES.

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8B, ROYD STREET, 1ST FLOOR, KOLKATA – 700 016.

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