



Plastic Tomorrow

BI- MONTHLY MAGAZINE, BI - LANGUAGE ENGLISH & GUJARATI PLASTIC INDUSTRY PERIODICAL.

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PLASTIC COMES TO HUMAN RESCUE DURING COVID 19



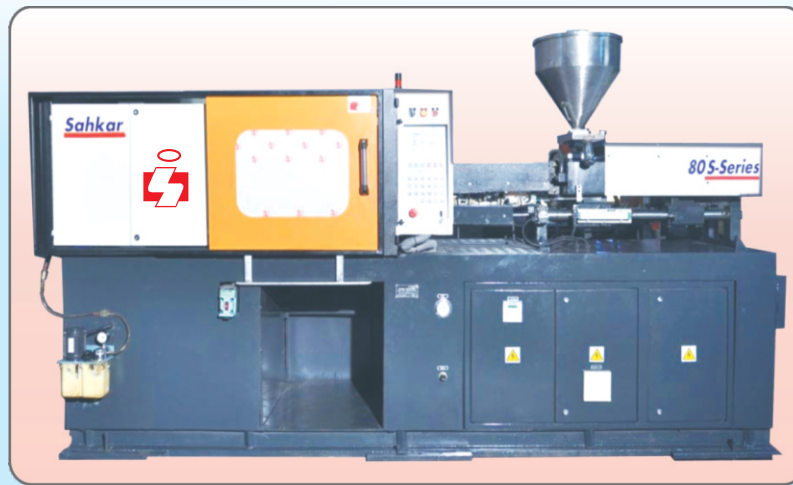


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Online Rotogravure Printing Machine



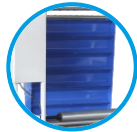
Application:

- ▶ LD HM Liners
- ▶ Carry Bags & Shopping Bags
- ▶ Garbage Bags
- ▶ Compostable Bags
- ▶ PP Liners or Bags

Features:



Oscillating Doctor Blade Movement Facility



Drying Blower Facility



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Main Shaft Power Transmission Facility



Air Pneumatic Pressure Rubber Roller



Frequency Drive And Control Panel With CE Std Components Fitted



Technical Specification:

Model Name	Min. Print	Max. Print	Min. Print Repeat	Max. Print Repeat
OLP 16	150 mm	400 mm	250 mm	660 mm
OLP 22	250 mm	550 mm	250 mm	660 mm
OLP 28	250 mm	700 mm	250 mm	660 mm
OLP 32	300 mm	800 mm	250 mm	660 mm
OLP 42	380 mm	1060 mm	380 mm	760 mm
OLP 52	380 mm	1320 mm	380 mm	760 mm
OLP 62	500 mm	1570 mm	500 mm	880 mm



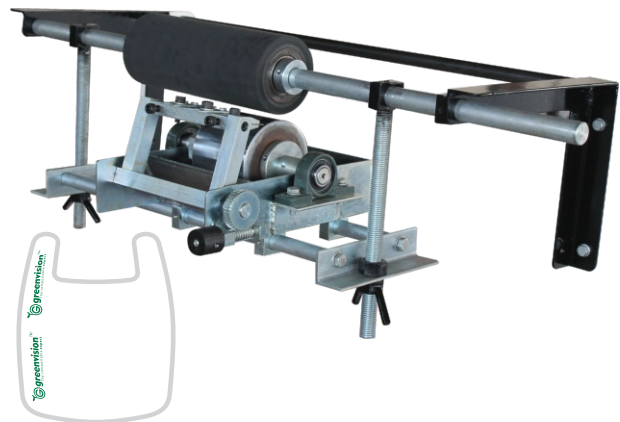
Online Mini Rotogravure Printing Unit

Application:

- ▶ Warning Signs
- ▶ Company Information
- ▶ Film Specification
- ▶ Product's Material Property Details
- ▶ Legal Informations

Features:

- ▶ Rotogravure Cylinder Based Concept
- ▶ Sharp Printing Quality
- ▶ Printing Facility Available On Any Left Or Right Corner Of The Film



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STAY SAFE, STAY INDOOR

Dear Industry Colleagues,

GREETINGS FROM PLASTASIA-2020 !!!!!

Please refer to our earlier mail in connection with the postponement of our eagerly awaited 7th PLASTASIA-2020 Exhibition organized in association with PMMAI due to the prevailing circumstances on account of COVID 19.

The confirmed new dates are from 12th to 15th October 2020; the venue and the Halls being the same- BIEC, Bangalore- Hall Nos. 4 & 5.

These changes had to be affected due to miscommunication with Bangalore International Exhibition Centre (BIEC) due to the prevailing circumstances & pressure on our sides. This date is now confirmed and there will absolutely be no changes whatsoever.

Let us move forward with positivity in our approach to break this chain of Covid 19 by following the safety guideline to protect us and our families. Also let us pray for and support all those who are serving our Nation to fight against this pandemic that we together will be victorious !!!

We continue to be accessible to the entire industry and can look forward to our support and assistance at any given time.

Stay Safe, Stay Indoor.

Warm regards,


Cyril Pereira
Managing Director
Triune Exhibitors Pvt. Ltd.

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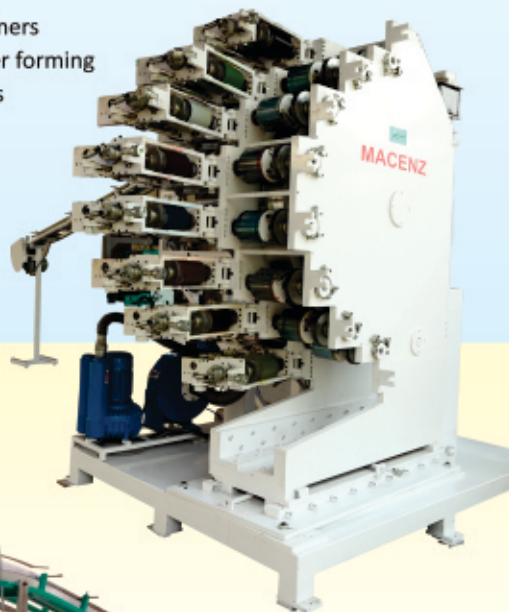
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Prevention

Be a responsible citizen



Wear face mask when you are stepping out of home

Maintain a safe distance, at least 6 feet

Wash your hands frequently with soaps, Handwash or Sanitizers

Contec, Inc., Milliken partner to produce Sporicidin® brand disinfectant qualified to kill coronavirus

Leading manufacturers work to fill high demand for antibacterial cleaning solutions



Spartanburg, S.C. –
The demand for
antibacterial

cleaning supplies continues to climb in response to the COVID-19 pandemic, and healthcare institutions are looking for effective alternatives to traditional solutions. To fill this need, Contec, Inc., the industry leader in critical cleaning products and cleanroom supplies, is scaling up production of its Sporicidin® brand disinfectant, most often used for mold and water damage remediation, and turned to diversified global manufacturer and materials science expert Milliken & Company to help produce mass quantities.

Since 1978, Sporicidin brand disinfectant products have been used for infection and contamination control by hospitals, medical and dental offices, veterinary clinics, and restoration professionals. The EPA-registered intermediate level disinfectant cleans, disinfects and deodorizes, and it provides 100% kill of pathogenic vegetative organisms, including MRSA, VRE and Avian Influenza A Virus (H9N2 and H1N1) with continuous residual activity for up to six months. Compatible with plastics, wood, glass and metals, alcohol-free Sporicidin brand disinfectant is non-staining, non-abrasive and non-corrosive. Notably, the disinfectant carries a Category IV EPA toxicity rating the lowest toxicity rating given to antimicrobials.

“Milliken immediately came to mind when we decided to bring on a new manufacturing partner,” shared Jack McBride, Contec, Inc. CEO. “Milliken is a trusted, key community player with the mass production, quality



systems and speed-to-market capabilities needed to help us provide critical cleaning solutions to healthcare facilities without delay.” Sporicidin production at Milliken began on Tuesday, May 12, after a record ramp-up of only four weeks. Typical similar partnerships require three to six months to arrange. “Companies are adapting their core competencies to meet the global challenges brought on by COVID-19,” said Halsey M. Cook, president and CEO of Milliken & Company. “Partnering with Contec, Inc. was a natural fit, and gave Milliken the opportunity to quickly reconfigure our manufacturing capabilities and rapidly solve problems for our customers and communities.”

Milliken quickly undertook an intensive technical process to manufacture Sporicidin brand disinfectant on behalf of Contec, Inc. Enabled by its research, development and manufacturing expertise, Milliken completed all EPA requirements and implemented training and protocols to safely produce a quality disinfectant.

Sporicidin brand disinfectant is available in ready-to-use 32 oz (0.65L) spray bottles, 1-gallon (3.8L) containers and pre-saturated wipes.

FOR MORE INFORMATION
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chemical.milliken.com

Courtesy

ELIX Polymers joins the fight against COVID-19 with biocompatible ABS grades for medical devices

Leading ABS producer ELIX Polymers is collaborating with a large group of companies within ClusterMAV, the Advanced Materials Cluster of Catalonia, Spain, in the fight against COVID-19. The partners are working in collaboration with the National Federation of Innovative Business Groups and Clusters (FENAEIC), which



focuses on promoting collaboration between federations, clusters and their partners, within the European Cluster collaboration platform.

ELIX Polymers is donating a medical-grade material, ELIX ABS 3D-FC, in response to high demand from hospitals for medical masks, valves for ventilators and other medical devices. This product, developed for transformation into filaments for FFF (Fused Filament Fabrication) 3D printing, is now being used by Ford Motor Company (which has switched some of its production in automobiles to medical equipment),

research organization AIMPLAS, and two Spanish plastics processors, PESL and SIIM.



Materials developed by ELIX Polymers for the healthcare sector are compliant with the ISO 10993 and USP class VI biocompatibility standards. They have been included in Drug Master Files (DMF) for use in medical and food contact applications in both Europe and the USA.

“Many companies with 3D printing capability are putting their equipment at the disposal of the community to produce medical parts,” says Luca Chiochia, – Business Development Manager at ELIX Polymers. “Demand for 3D printing filaments in Spain is being channelled through the 3Dcovid19.tech digital platform, an initiative linking hospitals’ needs and 3D printing production resources, as well as ClusterMAV, and FENAEIC. Ford and Aimplas are both producing filaments in ELIX ABS 3D-FC, and are also making masks and face protection components in their own AM departments.”

Ford is using 15 3D printers at its facility in Valencia to produce protective face shields at a rate of 300 units a day. Filaments, produced on extruders operated by volunteer employees, are used to print head supports for protective face shields. Assembled shields are shipped to an ozone disinfection centre coordinated by the Ministry of Health in Valencia and then distributed to hospitals and care homes.

Logistic support of the 3Dcovid19.tech initiative, in coordination with leading plastics distributor Nexeo Plastics in Barcelona, is enabling distribution of ELIX ABS 3D-FC filaments to several 3D printing companies in the network. They are producing various parts that are in high demand, including ventilator adaptors and manifolds. One such company is Noumena, a tech company that specialises in the manufacture of additives and uses ELIX ABS 3D-FC in its WASP 3D printing machines to produce different types of protective masks with interchangeable filters for the subsequent supply thereof to hospitals. In some cases,



injection moulding is also being used; for this, ELIX Polymers is providing another medical grade, ELIX ABS M203-FC.

Fabian Herter, – Marketing Manager at ELIX Polymers, says: “The availability of specific moulds that could be used for such medical applications has been the key factor, together with the availability of material, to make the injection moulding production feasible so that production volumes can be easily ramped up. But 3D printing has been key in enabling the fast delivery of a solution: it is extremely versatile, so it can produce highly diverse medical device components, without the need for specific tooling. Plus, production can be carried out very close to the hospitals.”

ELIX ABS 3D-FC is being processed on several brands of 3D printers, including open-chamber types like Prusa and Ultimaker, and closed-chamber printers like WASP. Temperature fluctuation is reduced in a closed chamber, but open-chamber 3D printers have also given excellent results.

The downloadable printing profile for ELIX ABS 3D-FC, which is compatible with Cura software widely used in FFF 3D printing, has helped in identifying the most suitable settings for the material; standard Prusa settings for ABS have also been useful.

With a reduced layer height (0.15mm), it is possible to achieve very good part resolution with ELIX ABS 3D-FC. With an Ultimaker 3, for example, the material can be printed at the recommended ABS processing temperature. Good adhesion between the first layers of material and the build plate is achieved with a spray adhesive.

The performance characteristics of ABS, together with the fact that it can be adapted and customised to meet each specific need in its final use, as well as the safety and reliability of the different types of ABS manufactured by ELIX, have made it an essential material for many medical equipment manufacturers.

www.elix-polymers.com

Courtesy

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DOMO and Ultrapolymers extend pan-European distribution partnership to include all Technyl solutions

- Ultrapolymers has been appointed as the pan-European distributor for DOMO's Technyl® products
- The agreement complements the existing partnership between the companies
- From May 1, Ultrapolymers will distribute the complete DOMO portfolio of PA6 and PA66, PPA and PPS based technical polymers
- The move allows DOMO to reach end users across all European countries and to fulfill the needs of SMEs

DOMO Chemicals, a leading producer of engineering materials and Ultrapolymers, the pan-European distribution company, have announced a European distribution partnership. The acquisition of Solvay's European Performance Polyamides Business (Polytechnyl) by DOMO initiated a change in Technyl® products distribution structure. From May 1, 2020, in addition to offering DOMO's historical range of products, Ultrapolymers will operate as the pan-European distributor for the company's Technyl® products.

Ultrapolymers, part of the Ravago Group, is a leading polymer distributor, which was established in Belgium in October 2002. With 27 legal entities across Europe, Turkey and South Africa, Ultrapolymers sells to customers in over 40 countries. Their 45 warehouses are located in strategically close proximity to customers to ensure safe and fast deliveries.

Marc Swatosch, European Product Manager at Ultrapolymers states: "Through this partnership with DOMO, one of the largest players in the polyamide market, we will be able to broaden our offering with a top quality PA6 and PA66 portfolio into all European countries[1]. Ultrapolymers' existing DOMAMID® and ECONAMID® customers can expect to enjoy the same standards of service, but with an even broader offering." From May 1, Ultrapolymers will distribute the complete DOMO portfolio of PA6 and PA66, PPA and PPS based technical polymers sold under the TECHNYL®[2], DOMAMID®, THERMEC™ and ECONAMID® brands. Besides being the number 2 polyamide producer in Europe, DOMO has focused on the development of sustainable solutions. With the Polytechnyl acquisition, the company's sustainable product range has expanded significantly.

It has added the Technyl® 4Earth® grades to the portfolio, which has been developed using recycled airbag fabric wastes.



Ron Bult, EP Global Sales Director at DOMO, says: "The partnership we have with Ultrapolymers has been very successful from the outset. Ultrapolymers is reliable, easy to work with, professional and always looking to provide commercial and technical solutions. By extending our partnership to include the Polytechnyl business, we can now reach end users across all European countries and respond quickly to fulfill the needs of small to medium sizes customers across the continent."

The transition to Ultrapolymers will take two months. In order to ensure a seamless transition for customers and business continuity, the two companies have created a Q&A document which outlines all the practical details of this important change.

[1] Ultrapolymers distributes in all European countries with the exception of Serbia and Russia.

[2] DOMO does not sell or distribute any Technyl® grades to customers and distributors outside the European Economic Area and Switzerland. TECHNYL® is a registered trademark of DOMO.

For More Information

www.domochemicals.com

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Clariant starts monthly production of 2 million liters of disinfectant in Gendorf to support vital institutions during COVID-19 outbreak

- State of Bavaria aims to provide a total of 10 million liters over the next three months to regional hospitals and other vital institutions
- Clariant to produce 2 million liters of disinfectant on a monthly basis, representing close to two-thirds of the monthly total
- Production conducted in cooperation with CropEnergies, other partners and the State of Bavaria

Clariant, a focused and innovative specialty chemical company, today announced it has started monthly production of 2 million liters of disinfectant at its facilities in Gendorf, Germany. This disinfectant is then directly or via repacking partners provided to regional hospitals and other vital institutions in Bavaria, who are currently facing limited availability of this critical product during the COVID-19 outbreak.

At its facility in Gendorf, Clariant is able to use its available infrastructure to blend the necessary ingredients into disinfectant at a large scale. This allows the company to fulfill close to two-thirds of the monthly target demand of the Bavarian State, which aims for a total of 10 million liters of disinfectants to be produced over the next three months. Costs associated with this program are financed by a crisis fund set up by the State of Bavaria, Clariant offered its contribution at cost price. "At times like this, it is vital that everyone, be it individuals or companies, contributes in every way possible to reduce the spread of the virus. We at Clariant have the capability to support those working the hardest to protect all of us. Therefore, our employees acted decisively to ensure it was done", said Hans Bohnen, Chief Operating Officer of Clariant.

In order to realize the production of such large volumes of disinfectant, Clariant has cooperated with several other companies. The main ingredient, ethanol from renewable sources, was provided by CropEnergies AG. Their facility in Zeitz, Saxony-Anhalt, one of Europe's largest production sites for renewable ethanol, produces the ethanol and ships it to Clariant in Gendorf. For this process, support was given by several logistics and infrastructure partners. After inspection and approval, the ethanol is then mixed with other ingredients in Clariant's production facilities to produce disinfectant according to an official standard of the World Health Organization (WHO). Upon completion, the disinfectant is filled into large tank containers. Other partnering companies fill packaging in suitable sizes, ranging from 1 to 1,000 liters, after which the disinfectant is distributed to regional hospitals and other vital institutions.

Thanks to all these contributions, it was possible to support the Bavarian authorities and establish a stable supply chain for disinfectant on short notice and of large proportions. The total of 10 million liters would represent approximately 750 ml. of disinfectant for every resident of Bavaria.

Stephan Trautschold, Head of Operations for Clariant's Industrial and Consumer Specialties business, added: "Being able to establish production of such large quantities of disinfectant so quickly is an impressive achievement. I am very proud of our entire team at the Gendorf site, Clariant's service functions and very appreciative of the support from all other partnering companies and the Bavarian authorities. Together we can make a difference by supporting those in need."

FOR MORE INFORMATION.

www.clariant.com

Related images



Clariant's team at its facilities in Gendorf, represented here by Franz Aigner, Alex Fink and Alexander Ellmann, produces approx. 2 million liters of disinfectant on a monthly basis, which is made available to regional hospitals and other vital institutions in Bavaria during the COVID-19 outbreak.

(Photo: Clariant)

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Fourth Industrial Revolution and Plastic Industry Sector

New technology revolution always has its impact on every segment and sector of Industry. Industry 4.0, the fourth industrial revolution has raised concerns as well as explored opportunities of growth in industry. Whether you call it the Internet of Things (IoT), the Industrial Internet of Things (IIoT), or Industry 4.0, one thing is clear; it's revolutionizing every form of industry and production

In order to understand what exactly Industry 4.0 is; we first need to understand and dive into basics of this technology revolution. Industry 4.0 is a network of physical objects, systems, platforms and applications that contain embedded technology to communicate and share intelligence with each other, the external environment and with people.

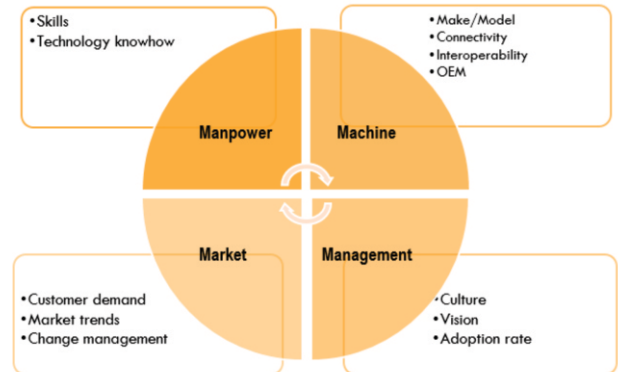
Out of several definitions, the one significant fact derived is that Industry 4.0 is focused on DATA and processes in an industrial scenario. This DATA could be in form of Facts, Information, Statistics, Knowledge, Numbers, Measurement etc. which are generated from primarily two sources; People and Things

Industrial environment consists either or combination of green-field and brown-field scenarios. A green field project is a situation where the factory assets and processes are capable of exchanging the data. Machines can 'TALK' with machines and can share data. Contrast to it is brown field project where most of machines are legacy machines and require external software and hardware which enables it to communicate to external and internal environment

In current industry about 70% of assets are not connected or not connectable, reporting is based on instinct or history of operations, person dependent activities and shop floor and other activities acting as Silos

CHALLENGES IN TECHNOLOGY ADOPTION

There are different challenges in this technology adoption which are concerned with 4 M's



HOW INDUSTRIAL IOT IS USED IN PLASTIC INDUSTRY

The plastics industry in India has developed and diversified significantly since its inception in 1957. The Indian plastics industry market has now grown to become one of the leading sectors in the country's economy, consisting of over 30,000 firms and employing more than 4 million people

As domestic plastics demand and consumption in India continue to grow at about twice the rate of India's overall economy, polymers are one of the highest segments with an expected growth rate of between 8-12% a year through 2020. India's plastics industry believes the market will see more than double its polymer consumption by 2025, reaching 20 million metric tons

In order to meet growing demand Plastic industry should focus on optimization of assets and look for scalable and sustainable solutions in technology adoption.

If we consider production assets in this industry, majority will come under

- Injection molding
- Blow molding
- Sheet extrusion
- Pipe extrusion

Though the raw material is plastic, operations and key parameters to be monitored differs with each asset. Few

KPI's which needs to be monitored are, Production (length, shots, pieces/kg), Rate of production (m/s, kg/hr), Actual v/s planned production, Mold analytics(mold life , mold management) Machine run hours, OEE (Availability, Performance, Quality), Downtime analysis (planned, unplanned), Rejection analysis, Energy consumption analysis, Specific energy consumption, End-to-end material traceability (raw material, inventory to finished goods to customer), Maintenance (preventive, condition based, predictive)

Industry 4.0 addresses the pain/ focused areas in technology adoption which results in following outcomes:

- Data capture – key data points out of data pool generated from machines
- Data latency – Real time data for “ data based decision making”
- Data Authenticity – eliminating manual data entry
- Real time actionable insights – Reducing cost of maintenance, achieving quality production and JIT
- Reduced operational cost – planning and benchmarking machines and manpower to achieve agility as per market demands and maximize uptime
- ROI – track of operational cost with ref to investment and production. Milestone based approach

- Scalable and Sustainable approach of manufacturing – Cloud based or premise based model for data and single window view for stakeholders
- Industry 4.0 technologies and implementation provide benefits for your customers, too. With the collected and reported data, consumers can receive important and highly accurate timing information on their order, increasing customer satisfaction and communication. The Industrial IoT can turn your company into a smart company; it can transform the issues faced by manufacturing into the incredible benefits of smart manufacturing

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EXHIBITION DETAIL

EXHIBITION	COUNTRY	DATE
COMPLAST	ADDIS ABABA- ETHIOPIA	19-21 JUNE 2020
MITEC	KUALA LUMPUR (MALASIYA)	16 TO 19 JULY-2020
COMPLAST	YANGON- MYANMAR	2-4 JULY 2020
COMPLAST	NAIROBI- KENYA	14-16 JULY 2020
COMPLAST	COLOMBO - SRILANKA	20-22 AUG 2020
INDIA PLASTICS SHOW-2020	GANDHINAGAR	20-22 SEPT 2020
PLAST ASIA 2020	BIEC - BANGALORE	OCT - 2020
COMPLAST	LAGOS - NIGERIA	1-3 DEC 2020
PLAST SHOW	AHMEDABAD	17-20 DEC 2020
IPAMA	GREATER NOIDA	3-8 FEB 2021
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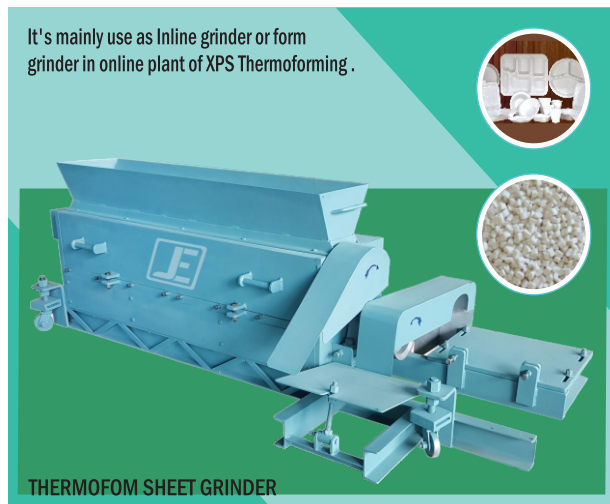


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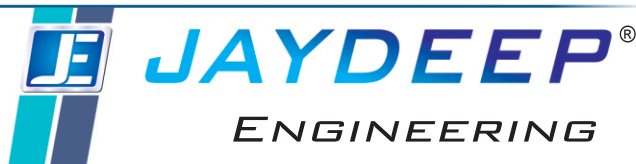
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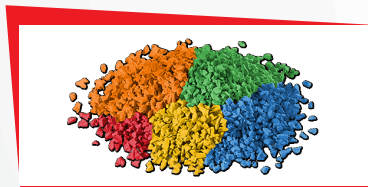
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NEW PROJECT INJECTION MOULDING



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INJECTION MOULDING MATERIALS

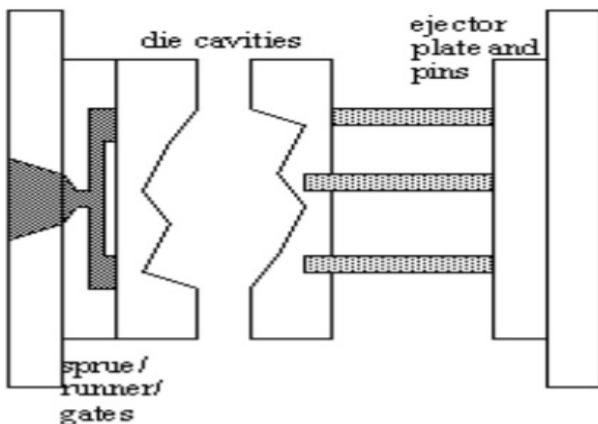
Material/Applications/Properties

Continue From Last Edition

Material :	Example Applications :	Properties :
Acetals Acrylics A.B.S. Cellulose Acetate Nylon Polycarbonate Polyethylenes - low density Polyethylenes - high density Polypropylenes Polystyrenes - general Polystyrene - high impact PVC - rigid PVC - plasticized SAN	gears, bearings lenses, reflectors appliance housings glass frames bushes and bearings safety helmets Kitchen Containers milk crates shovel handles cosmetic containers plastic model toys pipes kitchen flooring disposable cutlery	tough, natural to opaque white similar to wood strength, transparent tough, opaque flexible to rigid, tough, transparent very tough, almost opaque tough and resilient, transparent tough and flexible, waxy look tough and stiff, waxy look tough and stiff, waxy look brittle, transparent tough, translucent tough, transparent or opaque tough and flexible, transparent or opaque brittle, transparent

Injection Moulding Moulds

Moulds :
 Injection moulds are mainly made of steels and alloys steels.
 A simple mold is shown below.



Different Parts of Mould

- **Locating ring** - guides the injection nozzle into the mold.
- **Sprue Bushing** - where the injected material enters the mold cavities.
- **Clamp front plate** - Secures the front cavity, locating ring, and other components to the stationary platen.
- **Front cavity** - holds half of the negative of the shape to be molded. Guide pin holes are put in this plate.
- **Rear cavity** - the mating half for the front cavity that completes the negative of the final part. Guide pins are mounted on this to ensure correctly aligned cavities.
- **Spacer Blocks/Rails** - used to separate the rear cavity from the rear clamp plate.
- **Ejector housing** - contains the ejector pins to knock the parts out of the mold and

forces the cavity back when the mold is closed.

- **Rear Clamp Plate** - Supports the rear half of the mold on the moving platen, and provides rigidity under molding pressures

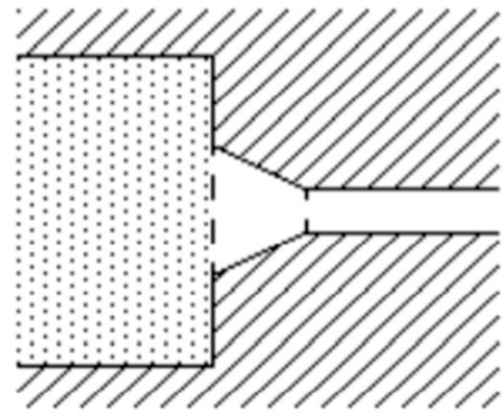
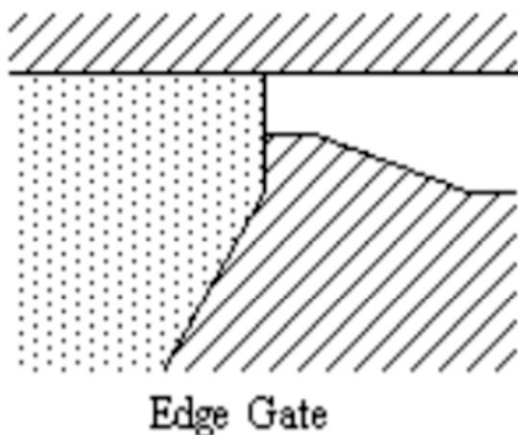
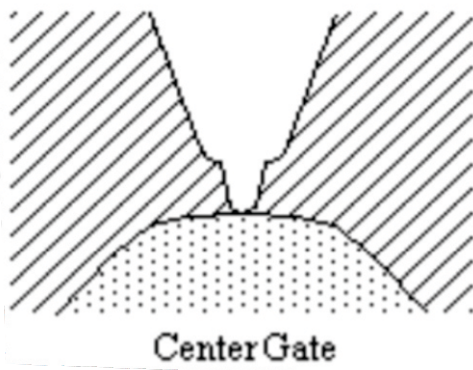
- **Components to consider in mold design,**

- part design
- material
- machine used

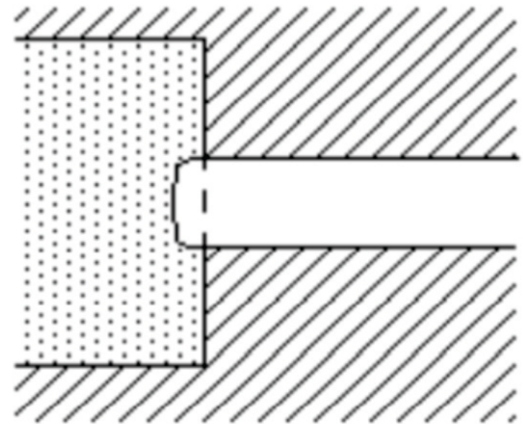
- **Factors that are often altered in the design are,**

- gating
- runners
- mold cooling
- ejection

Gating can be done a number of ways
Img.



Fan Gate



Tab Gate

- **Runner gates** and are often considered disposable or reusable. Typical runner systems are,
 - cold runner
 - hot runner
 - insulated runner
- **Cooling systems** allow rapid uniform cooling to increase cycle times, and reduce scrap. Typical techniques are,
 - water lines
 - baffles
 - fountains
 - thermal pins
- **Ejection systems** will push the part out of the mold when it is opened.
 - knockout pins
 - blades
 - stripper rings
 - air
 - hard stripping

Injection Moulding Process Troubleshooting

Black Speck

Due to contamination or thermal damage dark punctiform or lamellar deposits are visible on the surface of the thermoplastic moulding (particularly distinct when the plastic material is transparent).



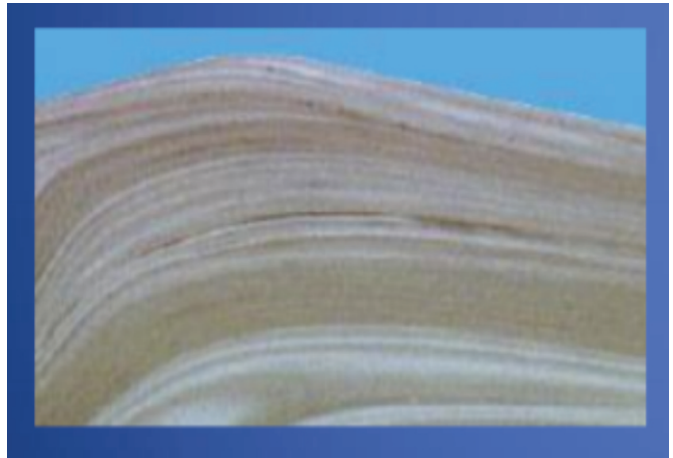
Proposals for Solution

- Clean the injection moulding machine thoroughly before a change of material.
- Check whether the powdered pigment or masterbatch used is suitable for the plastic to be processed.
- Check for any leaks, dirt deposits or wear in the material conveyor system if there is one.
- Go through all of the steps of the process systematically one by one from opening the containers through processing on the injection moulding machine. Try to establish at what stage the impurities appear.
- Reduce the time in which the material is openly exposed to the ambient conditions.
- Reduce the temperature of the polymer melt.
- Reduce the screw speed and/or the back pressure.
- Check the condition of the coating, if

there is one, on the plasticating unit and/or mould.

- Check the shot weight. The entire shot weight (moulding + sprue system) should not be less than 10-20 % of the maximum shot weight of the machine.
- Check the route of the plastic melt in the cylinder and mould for dead corners.

Charring streaks



Charring streaks are visible on the surface of the plastic moulding in the form of silvery or light brown to dark brown discolourations. The cause is severe thermal damage to the polymer melt. The gaseous substances liberated form bubbles which during the injection phase arrive at the cavity wall where they are smeared out. Charring streaks can be limited spatially to the sprue region or be spread irregularly over the surface of the moulding. Light to dark brown discolourations often indicate severe thermal damage to the plastic melt due to oxidation or decomposition (often occurs after relatively long machine stoppages with the cylinder heating switched on). On the other hand, silvery streaks usually result from excessive friction limited to a particular region, e.g. small nozzles or a narrow flow cross section

Proposals for Solution

- Check whether there was a machine stoppage before streaks started to form.
- Check with a needle thermometer whether the temperature of the melt on leaving the injection nozzle is within the recommended processing range and if necessary reduce this.
- Check whether the temperature of the melt on leaving the hot runner, if present, is within the recommended processing range and if necessary reduce this.
- Check the plasticating unit used and if need be change over to a smaller or larger unit.
- Raise and lower the screw speed. Assess the effects on the charring streaks.
- Reduce the back pressure and assess the effect of streak formation.
- Reduce the residence time of the melt in the hot runner if possible by lowering the cycle time.
- Reduce the injection speed.
- Check the gate geometry and if necessary make a correction.
- Optimise the flow cross sections of the hot runner and/or the injection nozzle.
- Eliminate if possible any narrow flow cross sections and sharp transition zones in the mould cavity

Cold Slug



Due to unfavourable temperature conditions portions of the plastic melt solidify in the gating system or the nozzle before the cavity is filled and then come into the cavity on the next injection operation. This is discernible, especially in thinwalled or transparent parts, from marks, usually close to the sprue, in the form of a comet's tail. If the slug does not

melt it can block the flow cross section so much that the melt stream has to divide and a weld line is formed. In extreme cases the blockage of the gate can completely prevent filling of the cavity. If the cold slug does not fuse properly with the rest of the melt mechanical properties are also adversely affected.

Proposals for Solution

- Increase the temperature of the nozzle. In doing so, however, the recommended maximum limit for the polymer melt temperature should not be exceeded.
- Reduce the back pressure.
- Improve the retraction of the screw. After feeding slowly pull the screw back a few millimeters (decompression) so that no melt escapes from the nozzle.
- Increase the cross section of the nozzle. Since, however, this can give rise to other consequences (e.g. ragged tearing) you should contact your hot runner manufacturer without fail before making any change.
- Use a shut-off nozzle.
- Shorten the time that the machine nozzle is in contact with the colder mould.
- Divert the cold slug into a dead-end channel.

Coloured streaks



- Differences in colour on the surface of moulded plastic parts are called coloured streaks. They can cover large areas, be close to the gate, remote from the gate and frequently appear in regions of flow lines

Apart from choosing unsuitable processing parameters (e.g. low melt temperature) or incorporating the pigments by means of an unsuitable plasticating unit (e.g. incorrect L/D ratio), the cause of the poor distribution can also be incompatibility between the carrier and colour component and the plastic to be coloured.

Proposals for Solution

- Check with reference to the data sheet from your masterbatch supplier whether the masterbatch is suitable for the plastic to be used.
- Using the operating instructions check the metering unit for defects. Compare the masterbatch concentration set with the details from the producer of the masterbatch.
- Increase the speed of injection.
- Check whether it is possible to shift the gate or alter the wall thicknesses.
- Check whether the temperature of the polymer melt on entering the mould is too high or too low.
- Check if necessary whether the temperature of the hot runner is within the processing window of the masterbatch. Check the control and temperature sensor of the hot runner system.
- Check whether the shot weight, the number of shots per minute and the volume of the cylinder are in the correct ratio relative to one another. For this purpose compare the residence time determined with the details from the raw materials manufacturer. Check whether a particular screw configuration is specified (L/D ratio, shear and/or mixing section required, etc.).

- Reduce and increase the screw speed. Evaluate the effects on streak formation.
- Increase the back pressure.

Deformation on Demoulding



- The plastic part is deformed due to excessively high forces or the unsuitable application of force during ejection. This may cause tears, fractures or excessive strain in the material. In contrast with warpage, which sometimes looks similar, the greatest deformations are usually found in the region around the ejectors or at undercuts which are difficult to demould. Scratches or ridges in the demoulding direction may also appear.

Proposals for Solution

- Change (increase or decrease) the cooling time.
- Modify the hold-on pressure.
- Reduce the temperature of the mould core.
- Optimize the point at which the changeover to hold-on pressure is made: Switch over to hold-on pressure shortly before filling is complete (about 98 % full).
- Provide the cavity with a nonstick or slip coating.
- Check the drafts and if necessary enlarge them.
- Improve the ventilation of the core by providing possibilities for air to flow through gaps, parting surfaces or special inserts into the region between the core and moulding.
- Increase the temperature of the mould but not beyond the recommended maximum limit.



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PLASTICS RECYCLING IN THE NEW NORMAL

EARTH 2020

WHERE DO WE GO FROM HERE ?

- Plastics play a key role in protecting people, especially frontline workers, during the COVID-19 pandemic.
- Informal waste pickers are particularly vulnerable to the coronavirus pandemic.
- Corporations are rethinking recycling plans and sustainability commitments in the face of economic turmoil.
- The increase in single-use plastics will have long-term impacts. However which single use plastics will be not banned needs to be seen
- Affordable, omnipresent and versatile these plastics have been essential to keeping hospitals running and protecting our frontline workers during the COVID-19 pandemic. They're the backbone of the medical equipment and protective gear. They're even at the heart of innovative cross-industry collaborations to combat the virus; the luxury auto brand Ferrari, for instance said that it will produce the thermoplastic components needed for respiratory valves.

Apple designed plastic face shields for medical professionals and is shipping millions of them across the United States every week.

The demand skyrockets for masks, gloves, gowns and disposable bags, one thing is clear: plastics are indispensable, especially during a pandemic impact of COVID-19 and the extraordinary measures taken around the world

have led to some tough questions for those working to combat plastic pollution. How do we support those in our community hit hardest by the outbreak? Can the recycling industry survive COVID-19? Can we still achieve a circular economy for plastics? And, how can we keep our work going in a world in which "normal" still seems so far away?

Yet with a general lack of job security or health benefits, waste pickers are also facing unprecedented threats to their safety and their livelihoods.

Polystyrene, a.k.a. Styrofoam, the non-recyclable plastic that was being phased out pre-pandemic, is having resurgence as manufacturers such as Ineos Styrolution in Germany and Trinseo in the US see "double-digit percentage sales increases" in the food packaging and health care sectors, Bloomberg Green reports.

The pandemic could even reshape long-term behavior. In a 17-page draft document currently under review, the US Centers for Disease Control and Prevention recommends that reopening restaurants switch to disposable menus, plates, and utensils, and swap in single-portion condiments. Who knows how long these and other policies will stick?

Environmentalists also claim that the plastics industry is exploiting Covid-19 fears to demonize reusable's as potential vectors for the virus.

Indeed, the plastics industry is currently waging a "PR war" through front groups, corporate-

funded research, and misrepresented medical studies in an effort to repeal existing and upcoming bans, says John Hocevar, director of Greenpeace's oceans campaign. THE oil prices, which makes virgin plastic cheaper to churn out than ever, aren't helping.

The plastic industry has really treated the Covid-19 emergency as an opportunity and is preying on people's fear to scare them into believing that single-use plastic is the best way to stay and so far, there isn't any independent scientific research that supports that."

Unlike disposable plastics, reusable bags and cups, he says, can be easily disinfected by washing with regular soap and hot water or throwing them in the dishwasher. Grocers might consider letting shoppers bag their own groceries or placing checked-out produce back in the cart so shoppers can load them straight into bins or bags in their cars.

In the new times personal protective equipment (like disposable face masks and gloves) and single-use packaging, discarded carelessly and left to flutter around the environment, pose the bigger threat to public health (not to mention generate even more plastic pollution.)

The concerns about the sanitation workers having to handle so much of this single-use plastic, including PPE, but also food and beverage packaging and bags are to be addresses

Because we're staying at home more, we're generating more trash Disposable plastic bags are only the tip of the landfill, though without comprehensive audits it's impossible to find out with any certainty if plastic consumption in the country is going up, headed down, or canceling itself out as reduced plastic

employment by idling businesses makes up for increasing residential use. But we can extrapolate some trends.

With most restaurants shuttered and Americans hunkered down at home amid widespread lockdowns, takeout and food delivery services — which often employ disposable plastic containers — have skyrocketed in popularity. In the first quarter of 2020, the delivery marketplace Grubhub netted \$363 million, a 12 percent jump in revenue over the same period last year. Its number of active diners currently hovers at around 23.9 million, a 24 percent increase from the 19.3 million who placed orders in the first quarter of 2019.

Amazon, which shipped more than 3 billion packages a year pre-pandemic, saw its revenue spike by 26 percent to \$75.5 billion in the first three months of 2020 after it became a lifeline for shelter-at-homers scrambling for essential goods (toilet paper, Clorox wipes, hand sanitizer) and not-so-essential Most of those deliveries will come swaddled in plastic air pillows, shrink wrap, and poly-bags.

It seems an impossible situation. Some of the world's largest corporations promised to quickly slash their use of virgin plastic packaging. Yet the recycled material available to make bottles, bags and boxes has become harder to find and more expensive.

Markets already jagged from COVID-19 saw the price of crude oil drop below zero for the first time April 20, which also dragged down the value of virgin plastics. In the last three months, pricing nose-dived by 42 percent for high-density polyethylene (HDPE) used in laundry bottles, by 43 percent for polypropylene used in yogurt tubs and by 14 percent for PET used in

water bottles, according to RecyclingMarkets.net. Post-consumer recycled plastics look about as budget-friendly as diamonds

"It's the circle of life but not quite a circular economy," said GreenBiz Co-founder J

Where does this leave the businesses embracing circularity in plastics? More than 450 organizations have signed on to the New Plastics Economy commitment, sparked in 2018 by the Ellen MacArthur Foundation (EMF) and the U.N. Environment Program.

But have rock-bottom oil prices and the pandemic doomed the market for recycled plastics? In North America, already the supply of post-consumer plastic resin could only meet 6 percent of the demand, Closed Loop Partners Executive Director Allison Shapiro, who specializes in circular economy investments, said at a webinar in May 2020. If every company set a goal of 25 percent post-consumer content, they simply could not meet it. At the same time, the end market drives everything upstream.

Push for reduction and re-use: Rather than perpetuating the cycle of producing plastics for one-time use, even if they're composed of recycled material, companies should explore alternative business models for delivering products. Innovations such as Terracycle's "zero-waste" Loop service exemplify the opportunity. Even though Starbucks is rejecting reusable cups during the pandemic, Loop is still set to go national in summer of 2020

It's important, especially in this time, is to think about the reuse ecosystems that are potentially very risky that we're very comfortable with. The fundamental difference here is not that single-use or disposable is

inherently safe, or that reuse is inherently unsafe: It's how you deploy those systems. Now is the time really to think act and do what the circular economy we talked of The following steps are needed

1. Cooperation is the starting point and a requirement for progress

Change is difficult to achieve without listening to all stakeholders, securing broad commitment and encouraging ownership of the process. Invest in the dialogue in different ways

2 Form a conceptual framework

Invest time in formulating a comprehensive situational picture or conceptual framework to have a baseline understanding of your country or area.

3 The road map must be agile to stay relevant

Continuous adaptation through supplemental actions is necessary to address changing needs.

4 Create measurement indicators, monitor development and set stages for the journey

Establish a clear set of indicators to measure progress toward goals and assess progress on a regular basis to capture lessons learned and adjust as needed

5 Invest in the execution

Make participation possible

Plastics Recyclers Europe (PRE) issued a statement on May 15, 2020 urging the EU and member states to include recycling as one of the sectors supported by their recovery plans and to continue implementing measures under its Circular Economy umbrella because of the current pressure on the industry.

PRE warned that the plastics recycling industry is closing production as a result of the crisis, citing low demand on the back of converter closures, and the low price of virgin plastics along with decreased global activity.

It is certainly true that the recycling industry is facing significant short-term disruption and strain as a result of the COVID-19 pandemic including financial pressure not seen since the global economic downturn in 2008.

Packaging demand in April 2020 fell by 20-30% across European recycled polymers because of substitution back to virgin, despite underlying packaging demand remaining strong due to home workers using more packaged goods.

Demand for non-packaging applications has ground to a virtual standstill due to widespread closures, particularly from key end-uses such as automotive and outdoor furniture, which have been most severely affected. In recycled polymer markets such as recycled polypropylene (R-PP), for example, where the majority of end-use is for non-packaging applications such as automotive, outdoor furniture, construction and flower pots - almost all European flower pots are now made from R-PP - demand in April fell by around 50% year-on-year.

For maturing recycling markets such as recycled polyolefins (R-PO) growth in 2020 had been expected to be strong because of increased use from the cosmetics and household goods packaging sectors.

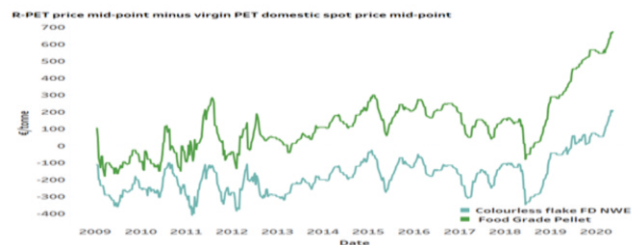
Delays to investment now make it increasingly likely that there will not be enough material to hit 2025 brand and regulatory targets, resulting in increased competition for material and an increased disconnect between virgin and recycled material pricing.

Strong demand and lack of supply had already resulted in a disconnect between virgin and recycled polymer prices for grades most attractive to the packaging sector. A two-tier market between packaging applications - where

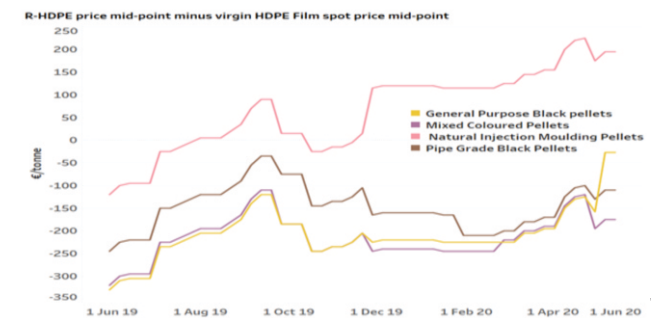
prices are now largely driven by demand and sustainability factors- and non-packaging applications - where prices remain driven by cost-saving against virgin, had arisen.

The charts here show the spread between virgin and recycled polymer grades - with zero on the graph representing price parity, above zero meaning recycling prices are more expensive than virgin and below zero meaning they are cheaper.

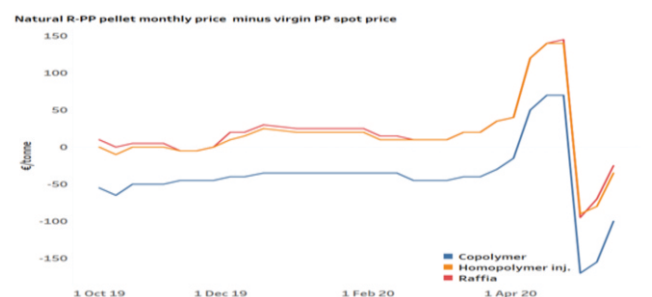
The first is the spread between R-PET colourless flakes and food-grade pellets and Virgin PET spot values



price spreads with virgin HDPE film spot prices



price spreads with virgin PP (virgin and a mix of homopolymer and copolymer) and the various grades of virgin spot prices.



All three graphs show the increase in volatility since the spread of the pandemic in March. This volatility has increased uncertainty in the market, and multiple players have switched from contract to spot pricing as a result - particularly in France where pre-pandemic post-consumer waste prices were typically agreed on a quarterly basis but are now typically being concluded on a spot basis across all recycled polymers.

FMCG brands remain committed to their recycling targets, with no delay so far announced. Some regulations, such as the Italy plastics tax that was due to come in to effect in June, have been pushed back. There has been an absence of new legislation, but no regulation has been abandoned and there has been no sign of any shift in regulatory approach once the coronavirus crisis has been overcome. There has also been no signal of any change in consumer attitudes to recycling, with the pressure to avoid waste remaining high.

Indeed, the economic fallout from COVID-19 may make further legislation more likely in the mid-term since plastic taxes, deposit return schemes and extended producer responsibility initiatives are simultaneously potentially revenue generating and unlikely to draw negative public reaction at a time when central governments are looking to recoup emergency expenditure. This could make them an attractive option for governments across the globe once the economic recovery is under way.

Virgin polymer prices have fallen sharply in response to COVID-19, particularly following the crash in crude oil values. This has placed significant pressure on non-packaging recycling grades in April and May, and a growing disconnect between virgin and recycled values has also added pressure on packaging grades so that recycled values do not price too high above virgin.

Nevertheless, even outside of R-PET, substitution back to virgin is not the sole result of low virgin values. It is also being driven by security of supply concerns, ease of use, and limited workforces.

This reduction in demand may well prove to be a short-term consequence of COVID-19 logistics disruption, with consumption returning alongside workforces once lockdown restrictions ease.

The specific potential opportunities in the present crisis lie with brand owners and petrochemical firms.

The sustainability agenda is unlikely to subside in the mid-to-long term. Without investment, shortages are likely, and some firms can be expected to miss their targets.

Brand owners and petrochemical firms can no longer ignore sustainability without facing significant consumer backlash, regulatory consequences and potential lost business.

At the same time, it would in the longer-term ensure these firms achieved their targets and embed them more deeply in supply chains at a time when investment is likely to come at a discount. It would also signal a deep-seated commitment to the sustainability agenda.

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આખું ગામ અત્યારેફક્તપીવીસીફોર્ડબનાવવા માટે,છાશવારે ચાઇનાદોડો જાય છે.પ્લાયવૂડની કેટલી માંગ છે એ કોઇને ખબર છે? એની સામે આપીવીસીફોર્ડવેચવાના છે.

નોન-વોવનબનાવવા માટે મશીનલઇઆવનારાનીશીદશા થઇ એ ગામ આખુંભૂલીગયું છે.

માટાંકીભાંડો લોકીભૂલી જાય છે,એટલે આ વાત બહુસામાન્ય છે.

પણ ફરેકયુગમાંદરેકવાતનુંપુનરાવર્તન થયાંકરે છે.એટલે ફવે, નોન-વોવન પછી પીવીસીફોર્ડનો વારો છે.

લોભીયા ફોય ત્યાં ધૂતારા ભૂખેનામરે. એટલે છાશવારે, બેગ ભરીનેચાઇના ઉપડીજતી પ્રજાને લાલબત્તીબતાવવાનો આ પ્રયત્નસમજવો.ચાઇના, આપણાજેવાસસ્તંખરીદનારાલોભીયાંની રાફ જોઇને, જાળ પાયરીને રાફ જુએ છે. આપણીલગભગ અભણ અનેકફેવાતી ભોળી પ્રજા ને એરપોર્ટથી લાવે, લઇ જાય, મસાજકરાવી દે, ફોટલેથી લાવવા-લઇ જવાનીસગવડઆપે એટલે આપણી પ્રજા ભરાય.

ત્યાં જઇને, આપણને, પરોપજીવીવેલોનીજેમ,મક્તમાં ખાવા-પીવાથી લઇને, ફરવા-ફરવાં સુધીનું મળી જાય એટલે આપણા બાપ જન્મારેયકોઇ જાણકારીનફિકોવાં છતાંયે, જે મળે એ ઉચકીલાવવુંએવીઆપણીબાલીશફરકતોનો, ચીનાઓ લાભ ઉઠાવે છે, અને એ આપણને ભાન પડેત્યાં સુધી ઘણું મોડું થઇ ચૂક્યું ફોય છે.

સુધરી જાવ, આપનાપિતાજી એ બહુમેફનતકરીનેરુપિયાભેગાંકર્યાફશે. આલેખ, ગુજરાતીમાંફોવાનુંકારણ ચોક્કસ છે.

જયફિંદ.

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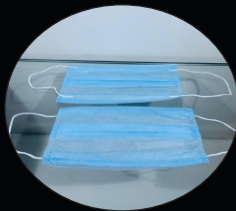
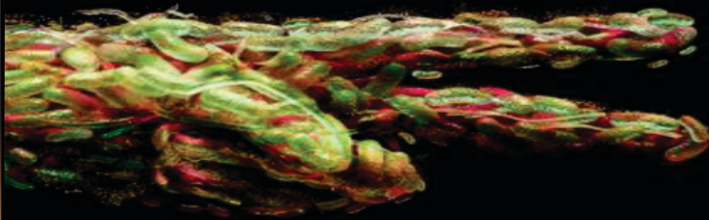
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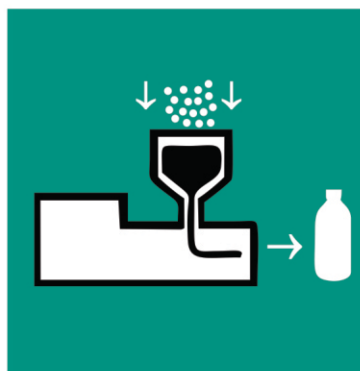
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