



R.N.I. No. MAHENG/2012/45652

PLASTISCOPE

The Official Journal of the Organization of Plastics Processors of India

Volume No. 13

• Issue No. 01

• Mumbai

• July 2024

GLASSWARE

VACUUM STEEL BOTTLES

LUNCH PACKS

FRIDGE BOTTLES

COOKWARE

STORAGE

APPLIANCES

INSULATED BOTTLES

HOT POTS

VACUUM STEEL FLASK

CLEANING AIDS

DINNERWARE

cello®

**A WIDE RANGE OF
HOUSEWARE PRODUCTS
IN INDIA**

*Choose from the 3000 exquisite household
products from the world of Cello*

All Cello Products are made from BPA Free food grade plastic.

For Corporate Enquiries:

(WEST) # Maharashtra / MP Manish 9699624460, Samir 98336 05023 # Gujarat Vimal 89055 79701
(NORTH) Deepak 9810398963, # Punjab Vipin 9780086965 (SOUTH) # Tamil Nadu, Kerala Karnataka, AP &
Telangana Linessh 9324253013 (EAST) Surajit 9007477833

Email: cello.sales@celloworld.com

To know more about our range visit www.celloworld.com



STEER **FOR COLOURS**



omega 1.71 Do/Di



megaSPECIAL 1.55 Do/Di

ADVANCED CO-ROTATING TWIN SCREW EXTRUDERS

OVER 400 LINES WORLDWIDE

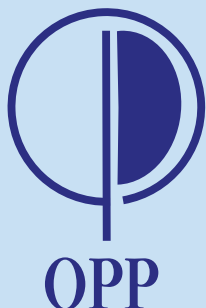


STEER Global Contacts: USA: Sean Doran, +(1) 231 357 1829, sdoran@steeramerica.com | Europe: Sija Kuttan, +(44) 203 290 4949, sija.kuttan@steerworld.com
 India, South East Asia & Pacific, Turkey: Sunil Dutt, +(91) 99001 01518, sunil.dutt@steerworld.com | China: S. Prasanna Kumar, +(86) 135 856 05228
prasanna.kumar@steerworld.com | Japan: Kazuhiro Ushirokawa, +(81) 080 3012 9993, k-ushirokawa@steerjapan.com

www.steerworld.com

FROM THE PRESIDENT'S DESK

Mr. Dilip Parekh



Dear Members,

Greetings from Organization of Plastics Processors of India!

The Finance Minister has announced the Union Budget 2024 – 2025 proposals on 23rd July 2024.

The only proposal in the Union Budget 2024 – 2025 pertaining to Petrochemicals is as given below:

Quote

“The tariff rate of CTH 3920 and 3921 has been increased to 25%. Consequently, from 24.07.2024, PVC Flex Films / Flex Banners will attract 20% by virtue of declaration under Provisional Collection of Taxes Act 2023. However, Notification No. 50/2017 – Customs has been amended to maintain the exiting rate 10% / 15% on items other than PVC Flex Films / Flex Banners.”

Unquote

The Key Features of Union Budget 2024 – 2025 were sent to you on WhatsApp on 23rd July 2024.

As you are aware Mr. Sasha Mirchandani, Managing Director and Founder of Kae Capital and Co-Founder of Mumbai Angels has kindly consented to be the Chief Guest at our 40th Annual Meet scheduled on Friday, 9th August 2024 at 6:30 p. m. at Suite 204 A+B, Jio World Convention Centre, BKC, Mumbai.

Mr. Sasha Mirchandani will deliver a talk on “The Ecosystem of Start-ups in India.”

The young entrepreneurs will find the talk inspirational and motivational. I strongly recommend the youngsters above 16 years of age in your family should be encouraged to attend the OPPI Annual Meet. They will find the talk highly useful in planning their future career.

The Invitation Card is for one nominee of the Company. The participation fees will be Rs. 2000 + GST @18% per additional person.

I look forward to interact with you at OPPI Annual Meet.

With Best Wishes,

Dilip Parekh
President

CONTENTS

From the President's Desk	3
News From India	23
Plastic Products and New Technologies	34
Plastic Raw Materials	49
Plastic Machinery	55

Printed, Published and Edited by:

DEEPAK LAWALE on behalf of **ORGANIZATION OF PLASTICS PROCESSORS OF INDIA**, Printed at **DESIGN WORLD CREATIONS**, Unit No. 204, A-Wing, Suashish IT Park, Off. Dattapada Rd, Borivali East, Mumbai - 400 066 and Published from ORGANIZATION OF PLASTICS PROCESSORS OF INDIA, 404/405, Golden Chambers, New Link Road, Andheri (West), Mumbai 400 053.

Editor: **DEEPAK LAWALE**



OPP

Organization Of
Plastics Processors Of India

REGISTER NOW

Seminar On

“CRUCIAL ROLE OF SMART AND EFFICIENT MAINTENANCE IN PLASTIC PROCESSING INDUSTRY” On Friday 20th September 2024 At The Park Hotel, 17, Mother Teresa Sarani, Taltala, Kolkata From 8:30AM To 5:30 PM

SEMINAR OBJECTIVES

- Practices to achieve Zero breakdown
- Maintenance Cost Reduction
- Good Maintenance practices
- Reduction in servicing cost for Machinery Manufacturers
- Factors to be considered by designers of processing Machines

PRESENTATIONS

- Adding Life to Your Machines: The trends to best practices
- Best maintenance practices for improving the productivity and reliability of injection moulding machines
- Adding New Lease of Life to Old Machines with Energy Conservation - Alternatives for conventional systems
- Increase your Uptime and Profitability by Automatic & Accurate Dosing
- Managing Ageing Plants
- Mould Maintenance
- MobilSerV Solutions - Beyond Lubrication
- Elevate Manufacturing - Operational Excellence through Digitalization
- Advancements in the Ease of Robot Programming For Injection Molding Machines
- Selection and Sizing of Power unit with Servo System for Injection Molding machines

* The titles of the presentations may change depending on the Speakers

Participants Shall Include

Plant Heads, Design Engineers of Machinery, Operations and Maintenance In-Charge, Maintenance Engineers, Production Heads.

Participation Fees

- Fees per participant - Rs. 2500/- +GST @ 18%.
- Registration fee includes training documentation, lunch, tea/coffee during the training.
- Payment is required with registration.

Group Registration

10% DISCOUNT TO OPPI AND IPF MEMBERS.

- If 3 or more delegates register from the same
- Company, 10% discount will be applied. If 5 delegates register from the same company, 6th delegate registration is FREE.

DEEPAK LAWALE, SECRETARY GENERAL ORGANIZATION OF PLASTICS PROCESSORS OF INDIA



404/5, Golden Chambers, New Link Road, Andheri (W),
Mumbai - 400 053 INDIA



MOB:- +91 9322591715
Tel.: +91-22-66923131/32

✉ secretarygeneral@oppindia.org
🌐 www.oppindia.org

Designed By Polymerupdate.com

SAUDI 4P
21-23 OCTOBER 2024
Dhahran International
Exhibition Centre Dhahran,
Saudi Arabia
www.saudi4p.com



ABOUT SAUDI 4P

The Saudi 4P Expo is a B2B platform showcasing the latest technologies, products, and services in the 4P industries of plastics, printing, packaging, and petrochemicals. The event provides a chance for businesses to network, establish partnerships, and explore new markets. It's an opportunity to stay updated on the latest developments in the sector and expand the reach of businesses with a growing demand for 4P products in the Middle East and beyond.



WHY SAUDI ARABIA?

Investing in the plastics, printing, packaging, and petrochemical industry in Saudi Arabia is amply supported by the country's abundance of raw materials. With proven oil reserves of approximately 266 billion barrels and estimated natural gas reserves of 293 trillion cubic feet, the petrochemical industry has become a major contributor to Saudi Arabia's economy, accounting for around 67% of the country's non-oil exports. Additionally, the Saudi government has established economic zones to support the industry's development, making it an attractive destination for investors looking to establish manufacturing facilities in the region.

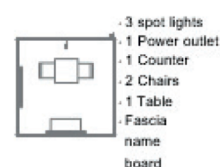
OPTION 1

- **SPACE ONLY**
(MIN. SPACE - 36 SQM.)
US\$ 320 /SQM

POWER SUPPLY IS
CHARGED SEPARATELY.

OPTION 2

- **SPACE WITH STANDARD (MIN. SPACE - 9 SQM.)**
SHELL SCHEME PACKAGE US\$ 365 PER SQM



PERSPECTIVE VIEW

ORGANIZATION OF PLASTICS PROCESSORS OF INDIA



404/5, Golden Chambers, New Link Road, Andheri (W),
Mumbai - 400 053 INDIA



MOB:- +91 9322591715
Tel.: +91-22-66923131

✉ secretarygeneral@oppindia.org
🌐 www.oppindia.org

Designed By Polymerupdate.com

UV Life - Light Stabiliser Masterbatch

- Prevents adverse reaction with fumigants.
- Low resistance against sulphur used to increase crop yield.
- Effective light stability and longer service life.

Compliant
with RoHS,
FDA
&
ASTM D882-09

An ISO 9001:2015 Certified

Welset Plast Extrusions Pvt Ltd
Arvind Mehta Group Company

8, New Metalage Industrial Premises,
Subhash Marg, Off Caves Road,
Jogeshwari (E), Mumbai 400 060
Maharashtra, INDIA,

☎ : +91-22-6822 6822
☎ : +91 77158 17733
✉ : marcom@welset.com
🌐 : www.welset.com



THE SHAKTI
PLASTIC INDUSTRIES

Turning waste to value

India's **Largest Recycler** and Waste Management Company

WE RE-VALUE YOUR WASTE

Products / Services:

- Recycled Plastic Granules
(rPP, rHD, rLD, rPS, rPC, rABS)
- EPR - Plastic, Battery & E-waste
- Industrial Waste Management
- Waste-to-Value Products

Certifications



ISO 9001:2015



ISO 14001:2015

SEDEX REGISTERED

Our Plants

- Maharashtra, India
- Karnataka, India
- Madhya Pradesh, India
- Dubai, UAE
- Gujarat, India

Tel: 02/01/49671500 (022) 91+

email: info@shaktiplasticinds.com

**FUTURE
NEXT**
We are future ready to
make it possible.



STAR Series

Toggle Injection Moulding Machines

NEW LAUNCH



100 T, 150 T, 200 T

TECHNICALLY SUPERIOR YET COST-EFFECTIVE

Star is yet another product innovation from Windsor, designed specially to cater to promising markets like Toys, Automotive, Electrical components and many more at a competitive price range.

- Fast, Smooth, Reliable and Repeatable
- Enhanced Machine Specifications
- Sub-flighted Screws for Superior Melt Quality
- Low Energy Consumption
- High Uptime



WINDSOR MACHINES LIMITED

Corp. Off.: Plot No. 5402 - 5403, Phase-IV, GIDC Vatva, Ahmedabad - 382 445. Gujarat, (INDIA).

Phone: +91 79 2584 1591/2/3, 3500 2700 | info@windsormachines.com | www.windsormachines.com

INJECTION MOULDING MACHINES | PIPE EXTRUSION LINES | BLOWN FILM EXTRUSION LINES

UNISON



Redefining the Future

FUELLING A POLYMER REVOLUTION

OPaL is fuelling the next revolution in Petrochemicals. Through in-depth insight, latest technology and robust infrastructure, OPaL is playing a key role in the growth of polymer industry and addressing its increasing global demand across a wide range of consumer goods from packaged foods to automobiles.



HDPE Dedicated
(340kTPA)



HDPE / LLDPE
Swing (720kTPA)



Polypropylene
(340 kTPA)



Benzene
(150 kTPA)



Butadiene
(115 kTPA)



PyGas
(165 kTPA)



CBFS
(70 kTPA)

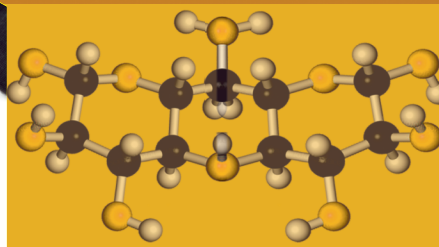
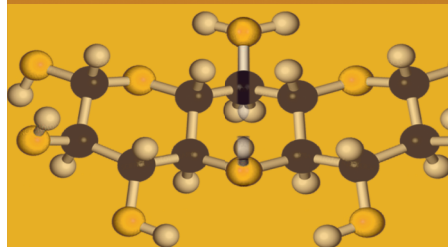
ONGC Petro additions Limited

Reg. Off.: 4th Floor, 35, Nutan Bharat Co-operative Housing Society Limited, R. C. Dutt Road, Alkapuri, Vadodara - 390007, Gujarat, India.

www.opalindia.in



KLJ GROUP
SINCE 1967



Total Solution in Plasticizers & Polymer Compounds

PLASTICIZERS

PHTHALATES | ADIPATES | TRIMELLITATES | CITRATES | STEARATES | SEBACATES |
DIBENZOATES | TERE PHTHALATES | MALEATES | POLYMERIC |
BIO PLASTICIZERS | ESBO

CHLORINATED PARAFFIN (CP)

vLCCP | LCCP | MCCP | SCCP

POLYMER COMPOUNDS

POLYPROPYLENE | ENGINEERING POLYMER | PVC | XLPE-SIOPLAS | XLPE-PEROXIDE |
SEMI CONDUCTIVE | EPR/XLPO | ZHFR | PO | HDPE | TPR | TPE | EVA |
MASTERBATCH - PVC, PE, UNIVERSAL & FUNCTIONAL (UV, AT, AR, FR)

BENZ PRODUCTS

BENZYL ALCOHOL | BENZALDEHYDE | BENZYL CHLORIDE | DI BENZYL ETHER |
BENZYL BENZOATE | BENZYL ACETATE

CHLOR ALKALI

CAUSTIC SODA PRILLS | CALCIUM CHLORIDE | CHLORINATED PARAFFINS
| HYDROCHLORIC ACID | SODIUM HYPOCHLORITE

ACID & ACID ANHYDRIDES

PHTHALIC ANHYDRIDE | MALEIC ANHYDRIDE | BENZOIC ACID

PETROCHEMICALS & POLYMER DISTRIBUTION | REAL ESTATE DEVELOPMENT

Corporate Office:

KLJ House, 8A, Shivaji Marg, Najafgarh Road, New Delhi-110 015, India
Tel.: +91 11 41427427/28/29, Email: delhi@kljindia.com



Branch Offices:

Mumbai | Chennai | Kolkata | Ahmedabad (India)
Singapore | Dubai



Plants:

Silvassa | Bharuch | Agra (India)
Thailand | Qatar

www.kljindia.com

Collective Growth. Shared Success.

Embracing the ethos of growing in collaboration, **Reliance Polymers** is committed to being your ally in propelling forward. Offering a rich array of polymer solutions for diverse applications across industries, our products are exported to over 60 countries globally.

Our carefully cultivated **innovations in polymers**, exemplify our dedication to fostering a meaningful sustainable ecosystem, as we pledge to stand beside you as your growth partner.



www.reliancepolymers.in



Reliance
POLYMERS

Shibaura Machine

View the Future with You

Sustainable Technology for Future

All Electric Injection Molding Machine



30 – 3000T

Fast. Precise. Consistent.

Save Time
Earth
Workforce



Contact Us



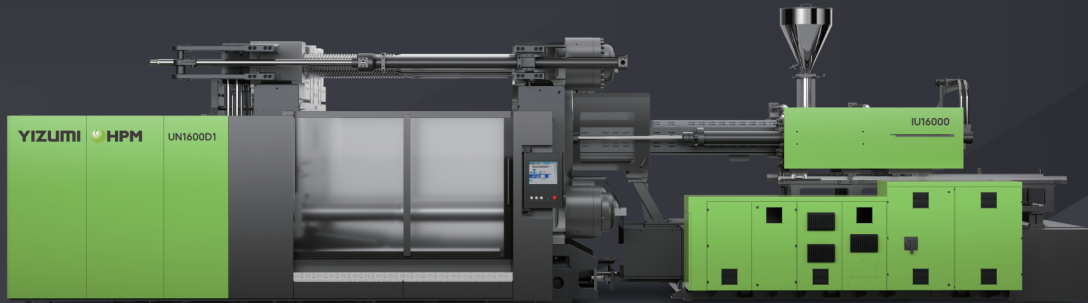
shibauramachine.co.in
sales@shibauramachine.co.in

YIZUMI | HPM

140+ Years of Experience

160+ Patents

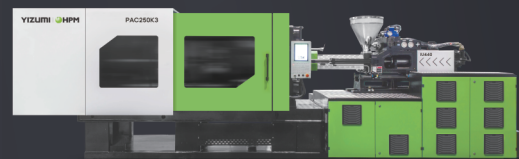
200+ Honors



D1 Series Two-platen Injection Molding Machine



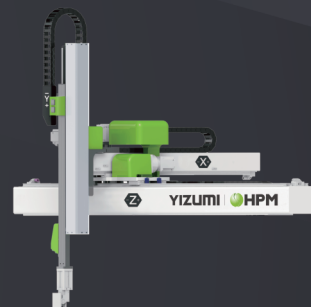
SKIII Series General-purpose Injection Molding Machine



PAC-K3 Series Thin-wall Injection Molding Machine



VM Series Vertical Plastic Injection Molding Machine



YR Series YIZUMI Robot for Injection Molding Machine

YIZUMI Precision Machinery India Pvt. Ltd.

Address: Plot No.1062-1063, GIDC-II, Sanand, Ahmedabad, Gujarat – 382170.

Contact No. : +91-90999 06175

Email address: info.ind@yizumi.com

Website: www.yizumi.com



Innovation to **PROPEL** India



Our **PROPEL** brand of petrochemicals provides comprehensive solutions.
Product Slate Includes:

- Polypropylene (PP)
- High Density Polyethylene (HDPE)
- Liner Low Density Polyethylene (LLDPE)
- Linear Alkyl Benzene (LAB)
- Purified Terephthalic Acid (PTA)
- Mono Ethylene Glycol (MEG)
- 1,3-Butadiene ● Butyl Acrylate



facebook.com/ioclBD

X.com/iocl_pbd

instagram.com/ioc_bd/





OPP
Organization Of
Plastics Processors Of India

THE 17TH BANGLADESH INTERNATIONAL

Plastics, Packaging and Printing Industrial Fair

12th ~ 15th February, 2025

Venue: Int'l Convention City Bashundhara (ICCB)

Organizers: Yorkers Trade & Marketing Service Co., Ltd. Bangladesh Plastic Goods Manufacturers & Exporters Association

2024 KEY FIGURES

18,000 SQM / 800 BOOTHS / 354 EXHIBITORS / 18 COUNTRIES AND REGIONS / 25,974 INT'L BUYERS

- **Plastic:** Plastic Bending Machinery, Blow Molding Machines, Extruding Machines, Plastic Compounding Equipment, Plastic Cutting Machines & Cutters, Die Cutting & Casting Machines, Plastic Dryers & Mold Heaters, Injection Molding Equipment, Mold Cleaning Equipment, Spin Casting Equipment, Thermoforming Machines.
- **Quality Detection Instrument and Equipment:** Measuring & Detection Equipment, Temperature Controller & Components, Electronic Automatic Instrument, Monitoring Device.
- **Machinery Parts and Accessories**
- **Packaging:** Converting Machinery, Packaging Machinery, Packaging Materials, Raw Materials & Auxiliaries, Fiberboard Packages, Paper Bags and Folding Cartons, Rigid Packages, Glass Bottles & Tin Cans. Flexible Packaging, Quality Control Systems, Dosing, Coding & Marking Systems, Physical Distribution Systems, Logistics, Research Centers, packaging Magazines & Associations.
- **Printing:** Printing Machinery & Accessories, Packaging Print & Process Systems, Printing Materials & Supplements, Post-Printing Machinery & Equipment, Coating Equipment.

PLASTIC

- ✓ Local annual sales is around TK28,000 crore (US\$3.25\$ billion)
- ✓ Export in the first 5 months of FY22 is %29.8 higher compared to the same period of FY21
- ✓ New investments focus on personal protective equipment, medical equipment and toys
- ✓ Government promotes industry-friendly policies to develop skilled manpower, attract foreign investment, ensure technological advancement and the overall development

PRINTING

- ✓ Printing market size in Bangladesh is around TK12,000 crore (US\$1.39\$ billion)
- ✓ Earnings from paper sector in the July - November period of FY22 is %15.3 higher than that of FY21
- ✓ Workplaces and educational institutions reopening after pandemic make the demand for paper and paper products increase
- ✓ The country's first printing industrial park will come into operation in 2024, expected to propose more new investments

PACKAGING

- ✓ Export surges bring in new possibilities for Bangladesh packaging market
- ✓ The budding e-commerce accelerates digital economic growth and supports corrugated packaging
- ✓ Packaging paper market revenue size is projected to grow at a CAGR of %5.2 during 2027-2021
- ✓ International leading packaging enterprises such as Tetra Pak and ALPLA plan to build factories in Bangladesh to seize market share and provide innovative packaging solutions in food & beverage, personal-care, and pharmaceuticals sectors

BOOTH PRICES

- ✓ **Corner fee: Surcharge 10 %**
- ✓ **The prices below do not include %5 VAT**

**Shell Scheme: USD\$ 320/sqm,
Min.9sqm=3m x 3m= 9 sqm =
USD2880\$**

9sqm including : carpeting, 3 folding chairs, 1 reception desk (with lock), 1 round table, 3 spot lights, 1 waste basket, wall partitions, fascia name, one -5AMP power point

**Bare Space
USD\$ 290/sqm, Min. size 18sqm**

DEEPAK LAWALE, SECRETARY GENERAL ORGANIZATION OF PLASTICS PROCESSORS OF INDIA

5/404, Golden Chambers, New Link Road, Andheri (W),
Mumbai - 053 400 INDIA

MOB:- 9322591715 91+
Tel.: 32/66923131-22-91+

secretarygeneral@oppindia.org
www.oppindia.org

Designed By Polymerupdate.com

VIETNAMPLAS 2024

22nd Vietnam International Plastic & Rubber Industry Exhibition

16th to 19th October 2024

Saigon Exhibition & Conference Center (SECC)

Ho Chi Minh City, Vietnam

We have the pleasure of
inviting you to
participate in Vietnam
Plas 2024 scheduled
from 16th to 19th October
2024 at Saigon
Exhibition & Conference
Center (SECC),
Ho Chi Minh City,
Vietnam

**Subsidy
under IC Scheme
of Ministry of
MSMEs
available**

SHOW REPORT 2023

GROSS SPACE	23,000 M2
EXHIBITORS	625
BOOTHS	1,100
COUNTRIES & REGIONS	22
VISITOR	18,507
EXHIBITOR SATISFACTION	94%
VISITOR SATISFACTION	93%

PARTICIPATION FEES:

- ✓ Shell Scheme (Minimum 9 sqm): USD 330
- ✓ Including Needle Punch Carpet:
Wall Partitions, Carpet, Company Fascia, 3
- ✓ Folding Chairs, 3 Spotlights, 1 Reception
Table, 1 Round table, 1 Dustbin, 1 Single
Phase 5 amp/ 220v Plug.
- ✓ Raw Space Only (Minimum 36 sqm):
USD 300/sqm

Please fill up the contract form attached herewith and Email scanned copy of filled Application form to secretarygeneral@oppindia.org

GET IN TOUCH Deepak Lawale, Secretary General, ORGANIZATION OF PLASTICS PROCESSORS OF INDIA



MOB:- +91 9322591715
Tel.: +91-22-66923131/32



secretarygeneral@oppindia.org
www.oppindia.org



404/5, Golden Chambers, New Link Road,
Andheri (W), Mumbai - 400 053 INDIA

Designed By Polymerupdate.com



Organization of Plastics Processors of India

404/5, Golden Chambers, New Link Road, Andheri (West), Mumbai - 400 053

Mob:- +91-9322591715

Email : secretarygeneral@oppindia.org Website : www.oppindia.org



8th International Plastics, Rubber, Petrochemicals, Chemicals, Fertilizers,
Plastics Recycling, Printing and Packaging Industry Exhibition & Conference 2024



Venue:



OMAN CONVENTION
& EXHIBITION CENTRE
مركز عُمان للمؤتمرات والمعارض



Organization Of
Plastics Processors Of India

ORGANIZATION OF PLASTICS PROCESSORS OF INDIA

37

YEARS OF
SERVICES TO
PLASTICS
INDUSTRY

SERVICES OFFERED BY OPPI



Deepak Lawale, Secretary General
ORGANIZATION OF PLASTICS PROCESSORS OF INDIA,
404/5, Golden Chambers, New Link Road, Andheri (West), Mumbai – 400053.

Tel: +91-22-66923131 / 66923132 | Fax: +91-22-26736736 | Email: secretarygeneral@oppiindia.org | Website:- www.oppiindia.org



**SPACES ARE SELLING FAST!
BOOK YOURS NOW!**

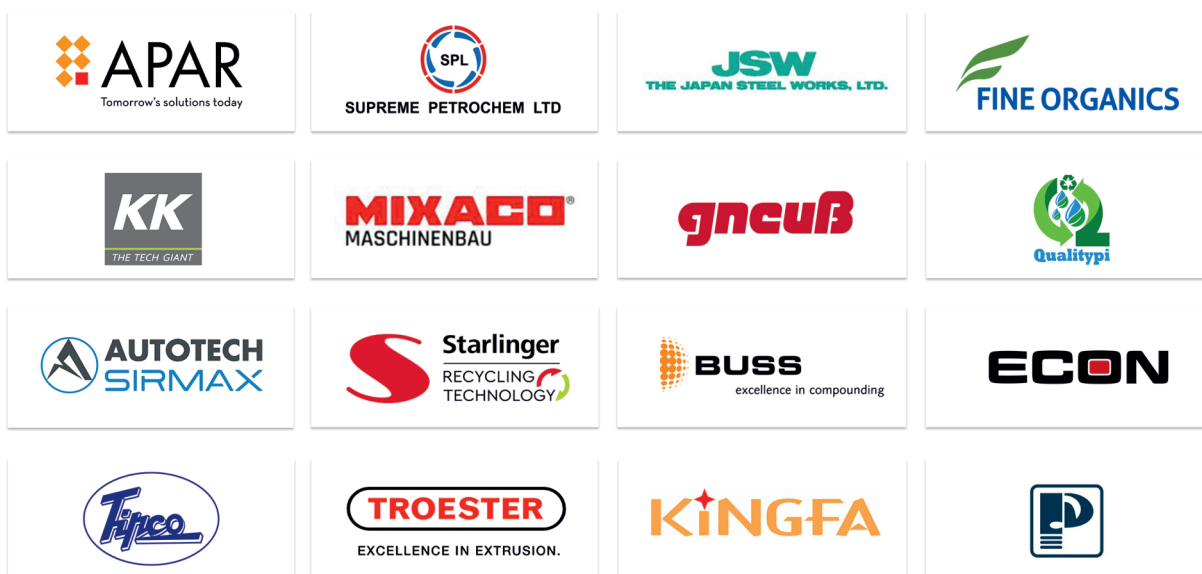
compoundingexpoindia.com

plasticsrecyclingexpoindia.com



14 – 15 MAY 2025 | BEC, NESCO, MUMBAI, INDIA

WE ARE DELIGHTED TO ANNOUNCE



AND MANY MORE...

AS EXHIBITORS AT THE EVENT

INDUSTRY ALLIANCE PARTNER



ASSOCIATION PARTNERS



BROUGHT TO YOU BY



ENQUIRE NOW

📞 RESHMA JADHAV +91 98330 50254 | ✉ reshma.jadhav@polymerupdatesales.com



OPP

Organization Of
Plastics Processors Of India



OPPI DIRECTORY 2023 IN PEN DRIVE

With the fast changing business environment and the growing competitive world, it becomes important for all those connected with the Plastics Industry to have data of Plastics Industry with them.

Organization of Plastics Processors of India Membership Directory 2023 is now available in Pen Drive Format.

Secretary General,
Organization of Plastics Processors of India

404/5, Golden Chambers, New Link Road, Andheri (West),
Mumbai 400053 INDIA

Tel.: +91-22-66923131/32

secretarygeneral@oppindia.org

www.oppindia.org



COST OF
PEN DRIVE –
RS.700/-
(INCLUSIVE
OF ALL)



OPP

Organization Of Plastics Processors Of India

ADVERTISEMENT IN DIGITAL **PLASTISCOPE IN WEB EDITION AND FLIP BOOK FORMAT**

Reach your targeted customers with
Advertisement in Digital Issues of Plastiscope.

Digital Plastiscope is read by 1,50,000 readers
consisting of Directors/Owners, Production
Managers, Maintenance Managers/ Engineers,
Sales & Marketing Managers, Materials Managers,
etc. of Companies connected with Plastics.

ADVERTISEMENT

THE TARIFF +

The tariff for
Full Page - 18.5 cm. X 23.5 cm.
multi-coloured Advertisement
on the inside pages of monthly
Digital Plastiscope is only
Rs. 5000/- + GST @5%.

**For Booking Advertisement
Please Contact**

Deepak Lawale, Secretary General
**ORGANIZATION OF PLASTICS
PROCESSORS OF INDIA**

404/405, Golden Chambers, New Link Road,
Andheri (West), Mumbai - 400053.

MOB:- +91 9322591715,

Tel.: +91-22-66923131/32

Email: secretarygeneral@oppindia.org



prS | MIDDLE EAST & AFRICA

Plastics Recycling Show

The MEA's Biggest Event Dedicated to
Plastics Recycling is Back for its 2nd Edition!

10 11 12
SEPTEMBER 2024

SHEIKH SAEED
HALL 1 & 2
& TRADE CENTRE
ARENA, DWTC

REGISTER TODAY

www.prseventmea.com





HPCL Plans Big Investments in Petrochem

HPCL is setting up petrochemical complex in Rajasthan with a 26% intensity index, which is highest in India: Chairman

Hindustan Petroleum Corporation is actively pursuing large - scale investments to build petrochemical manufacturing capacities through joint ventures and expanding its petrochemical portfolio, said Shri. Pushp Kumar Joshi in the company's latest annual report.

HPCL is building India's first integrated grassroots refinery - cum - petrochemical complex at Pachpadra in Balotra district of Rajasthan. The refinery, HPCL Rajasthan Refinery (HRRL), is a joint venture company between HPCL and the Rajasthan government.

"The refinery cum petrochemical complex has a petrochemical intensity index of 26%, which is the highest in India. The project is in the advanced stage of completion," said Shri Joshi.

In 2023-24, HPCL established a separate strategic business unit of petro - chemicals to ensure a focused business strategy in expanding the petrochemical portfolio, the company said.

It also incorporated a wholly-owned subsidiary, HPCL Renewable & Green Energy, to enhance focus on sustainability, leverage market opportunities and

manage risks more effectively. The objectives is to expand the company's footprint in green energy businesses including biofuels, renewables, green hydrogen, carbon offsets, green mobility and alternative energy solutions, it is said.

The subsidiary has begun supplying renewable energy from its newly commissioned 5 MW solar power project in Jhansi (Uttar Pradesh).

HPCL's renewable energy portfolio has reached a total capacity of 208 MW. A total of 17,618 HPCL retail outlets have been solarized, the company said.

(Source: The Economic Times / 30th July 2024)

Adani to Launch 1st Phase of \$4b PVC Project by '26

The Adani Group will commission the first phase of a \$4 billion PVC project by December 2026, making its foray into the petrochemicals sector that is marked by a mismatch between domestic demand and supply, sources said.

Polyvinyl chloride (PVC) the third-most common synthetic plastic polymer made worldwide is used to make products such as raincoats, shower curtains, window frames, pipes for indoor plumbing, medical equipment wire & cable insulation, bottles, credit cards, and flooring.

India's annual PVC demand is roughly 4 million tonne but domestic production capacity is only about 1.5 million tonne, resulting in a supply - demand mismatch. With this disparity between domestic production and consumption is expected to widen with an increase in consumption. Adani Group is looking to tap into the sector.

Adani Enterprises, the group's flagship firm, is setting up a petrochemical cluster in Mundra in Gujarat. Within this cluster, it aims to set up a PVC plant with a capacity of a 2 million tonne per annum, to be executed in phases, two sources with direct knowledge of the matter said.

The initial phase, with a capacity of 1 million tonne per annum, is slated for commissioning by December 2026, they said.

The group had in March last year halted the project saying it had decided to hold major equipment procurement and site construction activities pending financial closure.

(Source: The Economic Times / 29th July 2024)

Nayara Energy Achieves Key Milestone at Petrochemical Unit in Vadinar, Gujarat

Nayara Energy, a leading downstream energy company, has successfully dispatched its first consignment of Polypropylene from its new petrochemical unit at the Vadinar refinery in Gujarat. The unit, with a capacity of 450,000 tons per year, starts this year is strategically located in Western India to meet the growing demand for Polypropylene.

The project, with an investment outlay of ~ ₹6,000 crores, includes a Propylene Recovery Unit, an upgraded FCC Unit, and a Polypropylene Unit. Polypropylene manufacturing and marketing operations are under stabilization with aim to achieve highest quality of product and services to Indian customers.

The Polypropylene Unit is based on an advanced UNIPOL® technology platform, using the latest generation phthalate-free catalyst. The usage of latest generation phthalate free catalyst for production of entire range of Polypropylene grades aids in producing cleaner products which is advantageous for application in Pharma, Health & hygiene industry.

Despite challenges like the Covid pandemic and semiconductor shortages, the unit is being completed and achieved an impressive safety performance clocking more than 31 million man hours without any Lost Time Accident demonstrating a strong commitment to worker health and safety. With its strategically located refinery in Western India, the largest petrochemical consumption region of the country and its proximity to its jetty, Nayara Energy is well positioned to make a strong entry into this high growth segment.

As a major downstream player, delivering ~8% of India's refining output, Nayara Energy fuels the country's dreams and aspirations, contributing significantly towards India's energy security. Nayara Energy is "in India and for India"- highly driven and committed to fueling the nation's growing demand for energy.

(Source: Adfactors PR / July 24 2024)

Union Budget 2024 – 2025

The only proposal in the Union Budget 2024 – 2025 pertaining to Petrochemicals is as given below:

Quote

"The tariff rate of CTH 3920 and 3921 has been increased to 25%. Consequently, from 24.07.2024, PVC Flex Films / Flex Banners will attract 20% by virtue of declaration under Provisional Collection of Taxes Act 2023. However, Notification No. 50/2017 – Customs has been amended to maintain the exiting rate 10% / 15% on items other than PVC Flex Films / Flex Banners."

PIU Vapi Gets AICTE Approval

Plastindia International University (PIU) is India's first private university dedicated to Polymer Engineering and Sustainability. PIU is based at Vapi and established by Plastindia Foundation. PIU has received Letter for Approval (**LOA**) from All India Council of Technical Education (**AICTE**).

AICTE approval ensures that the institution adheres to strict standards in terms of infrastructure, faculty qualifications, teaching methodologies, and overall educational excellence. PIU gets this approval from

the inception. The University's School of Engineering will offer B. Tech in Plastics and Polymer Engineering with 60 Seats from current Academic Year 2024-25 at its 32 acre State - of - the - Art campus at Vapi, which is a hub of Plastic Processing in India.



The AICTE approval will help to conduct symposiums, seminars and developmental programs in the field of Polymers and Plastics which will benefit the Industry, Researchers, Faculty Members and Students in this field.

Sources at PIU said that AICTE approval right from the inception of the program resonates their commitment to quality education from which student who aspires to study engineering at PIU will be benefitted immensely. PIU will not only provide world-class Plastics & Polymer Engineering academic programs but also focus on strong research development on Sustainability & Polymer recycling.

(Source: PLASTINDIA FOUNDATION / Dated: 18th June 2024)

Cosmo Films Showcases New and Diverse Product Ranges at Drupa 2024; Expanding its Distribution Network

- Cosmo Films showcases a wide range of thermal lamination films, Cosmo Synthetic Paper, Cosmo Sunshield films and other Graphic application products.

: Cosmo Films, a global leader in specialty films participated in Drupa - World's largest printing exhibition. Started from 28th May in Dusseldorf Germany, Cosmo Films showcased a wide and diverse range of products across its verticals 7.

In recent past, to cater market demand, Cosmo Films has introduced several new products to further expand its diverse product portfolio. Alongside showcasing diverse products from newly launched verticals including Cosmo Plastech (Rigid Plastics), Cosmo Specialty Chemicals (Specialty Chemicals, Adhesives and Coatings), the key focus products and ranges at Drupa are:

- **Thermal Lamination Films (TLF):** Compatible with all types of thermal laminating machines available worldwide. The range includes: Printable Polyester Metallized Thermal lamination Films, Holography films, ID lamination, Balloon films, Laminating pouch films, and Digital lamination.
- **Cosmo Synthetic Paper (CSP):** Alternative to traditional paper in applications and known for its durability and longevity. This can be used for commercial printing, tags & labels, retail & packaging, identification & credentials, and outdoor applications. The ranges are available for both wide and narrow format which are used in several types of industries.
- **Cosmo Sunshield:** Premium window film suitable for both architectural and automotive applications. Designed to reduce 95% heat effect and save 10% in air-conditioning bills. Safety films to strengthen the glass and protect against shattering and UV ray protection; privacy films offering versatile and stylish way to maintain privacy and aesthetics.

Kömmerling Compounding Centre of PROFINE Group Inaugurated

The PROFINE Group celebrated the inauguration of the latest milestone in its international production network: the "Kömmerling Compounding Centre" at the Vadodara extrusion plant in India.

The state-of-the-art mixing plant marks a significant step in the PROFINE Group's expansion in India. The company has been successfully producing country-specific profile systems in Vadodara since 2013 and moved into a new own 20,000 square meter factory in 2017 to meet increasing demand. The system provider is currently producing on five extrusion lines with additional capacity for foiling the profiles in the factory.

The “Kömmerling Compounding Centre” has an annual capacity of 9,000 tons and sets new local standards in terms of technology and quality assurance. Likewise, the investment underlines PROFINE Group's ongoing commitment to meeting the needs of Indian customers while ensuring that every product meets the highest quality standards.

PROFINE GmbH – International Profile Group is a worldwide leading manufacturers of PVC-U profiles for windows and doors and a renowned provider of shutter systems and PVC sheets.

(Source: PROFINE / Kömmerling Germany / Dated: 2024/05/06)

PLEXCONNECT 2024 Exemplifies India's Prowess in the Plastics Industry



PLEXCONNECT 2024, organized by the Plastics Export Promotion Council (PLEXCONCIL) from June 7-9 at the Bombay Exhibition Centre. The three-day exhibition hosted more than 400 international buyers from 55 countries. The event was inaugurated by Chief Guest Shri Ravish Kamath, PLEXCONCIL Chairman Shri Hemant Minocha; Vice Chairman Shri Vikram Bhadauria; past Chairman Shri Arvind Goenka; Plexconnect 2024 convener Shri Dhruv Sayani, and Executive Director, Shri Sribash Dasmohapatra, Executive Director Arvind Goenka, Past Chairman.

Speaking at the inaugural, Chief Guest Shri. Ravish Kamath said, “PLEXCONNECT 2024 exemplifies India's prowess in the plastics industry, showcasing our innovative capabilities and strengthening global trade relationships. This event reaffirms India's position as a premier destination for high-quality plastics products and machinery. The demand

for polymers in India is outpacing GDP growth, projected to hit \$30 billion by 2047, up from \$3-4 trillion in 2022. With ₹5.5 lakh crores worth of new projects underway, the Indian petrochemical industry is pivotal in the nation's aim to become a \$1 trillion economy. This sector's significance is underscored by government initiatives and international collaboration efforts.”

The Indian Govt's free trade agreements and the new Foreign Trade Policy have significantly boosted the MSME sector's growth. GOI's incentives and schemes, including those from the MSME Ministry, DoC, etc have further empowered businesses by facilitating exports. These strategic initiatives are propelling the Indian plastics industry towards remarkable growth and global market expansion.

Packaging will continue to Perform, Says CRISIL Indices Report

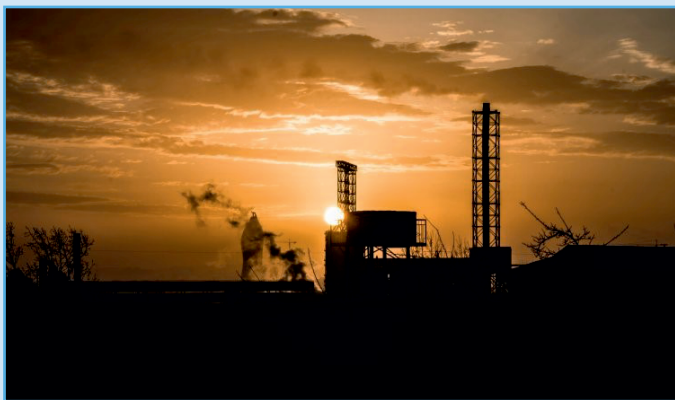
CRISIL has published the latest numbers for the AIFMP-CRISIL indices, a trusted source of input cost data for the print industry in India. PRIDEX and CARDEX are at 157.50 points and 156.70, respectively. These indices are crucial indicators of the health and performance of India's commercial printing and carton packaging industry.

According to CRISIL, both indices show a year-on-year drop; Pridex's has dropped by 4.83% and Cardex's by a mere 0.76%. Through FY 2024 (Q1 2024 to Q4 2024), Pridex recorded an input cost reduction of 3.55%, and Cardex showed an increase of 1.10%. Owing to many factors, consumer price inflation has remained well-controlled in India through FY 2024. With a base value of 100 for the fiscal year 2013-2014, these indices were updated quarterly on the AIFMP-CRISIL indices' page.

(Source: Print Week / 01 Jul 2024 | By Charmiane Alexander)

ONGC Leads India's Renewable Push with Rs. 2 Trillion Roadmap

India's largest oil producer ONGC is making a major move towards net-zero emissions with heavy investments to offset carbon and invest in renewables.



ONGC has made a major announcement as part of its net-zero emissions roadmap, with the state-owned company planning to offset 9 million tons of carbon dioxide equivalent emissions by 2038. This ambitious plan will cost the company a staggering Rs 2 trillion, as per an announcement on Tuesday. ONGC, India's largest oil and gas producer, is now the first fossil fuel company in the country to outline a detailed plan to reduce greenhouse gas emissions over a fixed period. While other major Indian PSUs, including Indian Oil, Indian Railways, and Coal India, have pledged net-zero targets, they have yet to share concrete plans, according to the global Net Zero Tracker portal.

ONGC's move aligns with India's larger targets of achieving net-zero emissions by 2070. The 200-page roadmap presented by ONGC carries significant weight for the country's overall climate goals. Other companies are likely to be encouraged to follow suit, taking cues from the nation's leading oil and gas producer. The substantial investment in renewable energy sources, such as green hydrogen and offshore wind, will not only reduce ONGC's carbon footprint but also bolster India's clean energy transition.

Technology Integration and Innovation

ONGC is also focusing on integrating cutting-edge technology and fostering innovation to achieve its net-zero goals. The company plans to leverage advancements in carbon capture and storage (CCS) technologies, which can significantly reduce emissions from its existing operations. Additionally, ONGC is investing in research and development to explore the potential of biofuels and advanced battery storage systems, ensuring a diversified and resilient approach to sustainable energy.

As part of its plan, ONGC has pledged a significant push towards renewable energy. By 2029-30, it aims to establish 3.89 gigawatts of renewable capacity across various projects in Maharashtra, Gujarat, Andhra Pradesh, Tamil Nadu, and Assam. This includes hybrid, offshore wind, and small hydropower plants. Over the next decade, this renewable capacity is envisioned to reach 6.03 GW, ultimately replacing reliance on natural gas and grid electricity for internal power generation.

Community and Environmental Impact

ONGC's commitment to sustainability extends beyond carbon reduction. The company is prioritizing the well-being of communities and the environment through various initiatives. It aims to undertake extensive afforestation projects, which will not only sequester carbon but also improve biodiversity and support local livelihoods. Furthermore, ONGC is implementing stringent environmental safeguards and monitoring mechanisms to minimize the impact of its operations on surrounding ecosystems.

The financial commitment is substantial, with a planned investment of Rs 97,000 crore by 2030. This will be followed by additional expenditures of Rs 65,000 crore and Rs 38,000 crore by 2035 and 2038, respectively. Green hydrogen takes the lion's share of the Rs 2 trillion investment plan, with Rs 80,000 crore allocated. Offshore wind energy projects follow closely at Rs 49,000 crore, while onshore wind and solar projects will receive a combined Rs 30,000 crore.

To accelerate its journey towards net-zero, ONGC is forging collaborations with global energy leaders and technology providers. These partnerships are designed to share expertise, technology, and best practices, enabling ONGC to implement the most effective and efficient solutions. By working with international partners, ONGC aims to stay at the forefront of the global energy transition and contribute to the worldwide effort to combat climate change.

India's Energy Goals

India has set ambitious targets of net-zero carbon emissions by 2070 and is heavily deploying resources to meet these goals. The government's first priority is to reduce coal usage in the total energy share. India is making strides in this direction, as the share of coal in total power capacity

dropped below 50% for the first time since 1966 in May this year. However, adverse weather conditions and surging power demand mean the country continues to rely on coal for over 70% of its electricity generation.

On the other hand, renewable energy accounted for 71.5% of the record 13,669 megawatts (MW) power generation capacity added by India in the January-March period, according to the POWERup quarterly report from the Institute for Energy Economics and Financial Analysis (IEEFA). ONGC's massive investment in renewable energy is expected to generate substantial economic benefits and create numerous job opportunities. The development of renewable projects will stimulate local economies, providing employment in construction, operation, and maintenance. Additionally, the focus on green technologies will foster the growth of new industries and skill sets, contributing to India's economic diversification and resilience.

Renewable Energy Sector

The focus of the government and policymakers is now to increase the share of renewable energy, leading to a booming renewable energy sector. India issued a record-breaking 69 gigawatts (GW) of tenders for utility-scale renewable energy projects in fiscal year 2024, significantly surpassing the government's ambitious target of 50 GW.

India is also performing exceptionally well in solar energy, ranking third globally for solar power generation, surpassed only by China and the US, according to Ember's fifth annual Global Electricity Review of 80 countries. This achievement underscores solar power's dominance as the world's fastest-growing electricity source for the 19th consecutive year. As India sets its sights on achieving energy independence by 2047, the adoption of green hydrogen and its derivatives has also become crucial.

Energy Outlook by 2030

Driven by investor-friendly policy initiatives, India today ranks fourth globally in renewable energy installed capacity. Solar and wind are leading India's energy transition journey. By 2030, India appears well-prepared to achieve its renewable energy target of 500 GW installed capacity and reach 50% cumulative electric power installed capacity from

clean energy sources. India's energy scenario by 2030 is expected to be a mix of both renewables and conventional sources, with a gradual shift towards cleaner energy.

ONGC's net-zero roadmap is closely aligned with the supportive policies and incentives provided by the Indian government. The company benefits from various government schemes promoting renewable energy adoption, including subsidies, tax benefits, and simplified regulatory processes. This policy support is crucial for ONGC to achieve its ambitious targets and for India to meet its national climate commitments effectively.

Bobst Interview at DRUPA – Significant Expansions in India

Leading an industry is not easy, especially when battling climate change. But this is what Jean Pascal Bobst is taking on when the packaging industry's solutions are neither simple nor solvable by a single company. From our understanding of what the Bobst Group has been saying and doing for the past several years, the company wants to help define the framework of packaging's future - - edited excerpts of our interview with the CEO of the Bobst Group at drupa24.

PSA's Shardul Sharma and Naresh Khanna - In the company's press conference at drupa, you spoke about the addition of consultancy and software to the company's products. Please expand a bit on these.

Jean Pascal Bobst - Yes, we are becoming more and more a software company, and as I said at our press conference, one of our recent strategic moves is the strategic partnership with French company Packitoo, whose web - based sales tool HIPE automates the generation of quotations, manages packaging projects, and supports web - to - pack Shops for printers and converters. The partnership aligns with the strategy to digitalize and be part of the connection within the packaging value chain, from brand owners to converters and equipment suppliers. For instance, other clouds in the supply chain are linked to Bobst Connect, everything centered on the 'job recipe which is designed, produced, consumed, and recycled.

Our investment in developing a consulting organization will encompass all technologies and entire installations, including technologies from other manufacturers.

My people are experts in the equipment, but they are not professionals in consulting. There are customers who trust us and are willing to invest in our innovations because they see our company and our support systems. They say ok, let's go for it.

We may have sold a machine, but the client is interested in the implementation of the solution. I think every converter understands change and they are looking for how to promote evolution and transformation within the organization. We all know we have to employ new technologies, but the question is how to use them and transform the business. Consulting with quality time can help us convince the client why they should use Bobst Connect or use this technology by click, or by performance. This is all about the human interface, trust, and, in the end, increasing performance.

The tools for this have also changed. For instance, right from this room, I can streak a live demo of a vacuum metallize in Manchester in the UK, or indeed anywhere. We can do a showcase where the customer in this conference room can operate the machine by controlling and driving it from a screen and see it running over the Internet.

PSA- Do you see the need for the industry to align or standardize its communication and objectives for automation, data integration, connectedness and sustainability, to the cloud? Is this a concern for your company?

Jean Pascal Bobst - I know it sounds ambitious, but someone has to start. To have a common protocol is a big question. When you ask key people in many industry. Leading businesses to define future structures, they push their solutions to be the standards. For instance, in labels, there is a standard and it is our job to meet it. However, when you talk about folding cartons and flex pack, we have tried to talk to some of the leaders, but we don't have a standard or a smart solution today.

There are always challenges, but with the current level of digital technology, unlike in the past, with the clouds we have the advantages of APIs (application program interfaces) from each of the players in the industry. As such, we can create intuitive connections, such as we are doing with Esko. Its protocol can be integrated with Bobst Connect with a "three-click

strategy." This is an opportunity for the industry, and we should have a common digital backbone, but that's not yet done.

Additionally, there are many areas where we need to have a common approach or language, such as in color management or the discussion about the migration of inks or recyclability. As a company, it is a concern for us and we also have the willingness to reach some kind of common understanding of these strategic and important hot topics for the industry and consumers.

PSA - What are some of the implications of the geopolitical situation for the packaging industry?

Jean Pascal Bobst - The packaging industry has to adjust and adapt, whatever geopolitical event is popping up, and there will be more challenging times ahead for Jean Pascal Bobst - The packaging industry has to adjust and adapt, whatever geopolitical event is popping up, and there will be more challenging times ahead for sure.

As far as macroeconomics and macro geopolitics, we have to anticipate and remain agile and mitigate the risks. This is one reason we have invested more in India, where Bobst will have 800 to 1,000 people. We migrated to our second production space in February of this year and now we have another space, nearby, just ten minutes away.

Mitigating the risks is why we have invested more in our beautiful location in Pune. We have made folder gluers and modules for corrugators for many years. We will expand this first manufacturing plant to overcome some of the supply chain challenges by producing more in-house and increasing our knowledge training center and apprentice capacity.

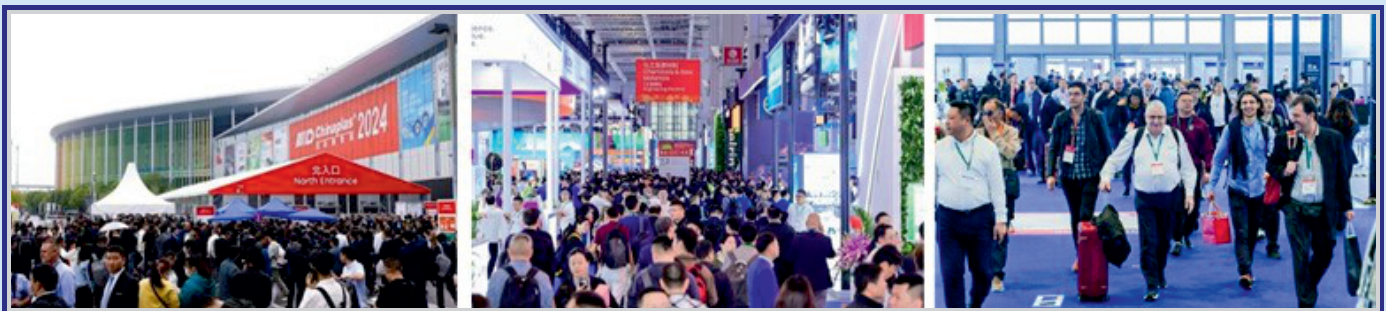
In February, we migrated to our second factory where we are producing the entry level K5 metallizer and the first machines are already in production. In Q4 this year, we will produce the first Nova FFG line, while in 2025, we will establish our third plant in Pune for flex pack machines such as our gravure presses, and we will manufacture label presses as well.

Our 800 to 1,000 people in Pune will include the 100 people we already have for R & D in mechanics, IT software and other development function.

CHINAPLAS 2024

Record - Breaking Attendance of Over 320,000 Visitors Perfect Conclusion to CHINAPLAS 2024 Return to Shanghai

CHINAPLAS 2024 successfully concluded on April 26 at the National Exhibition and Convention Center (NECC) in Shanghai, drawing significant global attention from the plastics and rubber industries. The event featured 4,495 exhibitors from 38 countries across 380,000 sqm and achieved a record-breaking attendance of 321,879 visitors from over 170 countries, marking a 29.67% increase from the 2023 Shenzhen exhibition. Notably, 73,204 of the visitors were from overseas, a 157.50% increase compared to the previous year.



Highlight on Global Plastics and Rubber Market Trends

Focusing on the four main themes of "Circular Economy," "Innovative Materials," "Digitalization" and "High-End Technologies from China," the exhibition showcased innovative technologies presented by global exhibitors. It highlighted keywords such as carbon reduction, energy efficiency, cost reduction, intelligence, efficiency and high quality, directly addressing customer pain points and demands, and getting a lot of attentions in the fairground.

Exhibitors at the show introduced various innovative achievements, including bio-based plastics, biodegradable plastics with exceptional performance, single-material solutions, post-consumer recycled polycarbonate, chemically recycled medical-grade ABS materials, additives to enhance the performance of recycled plastics, carbon capture technologies, 100% recyclable closed-loop production lines for bottle caps, and online granulating recycling technologies. These innovations fostered deep exploration and collaboration within the industry.

Innovative materials were prominently featured at the exhibition, including a wide range of materials for PV storage and charging applications, such as ETFE films that enhance the power generation efficiency of PV modules, adhesives, back sheets, and energy storage solutions; and fast-charging materials. There was also a significant increase in solutions for fuel cell stacks, hydrogen production, and hydrogen storage, supporting the green transformation of energy. Additionally, the application of lightweight, flame-retardant, and thermal management materials for new energy vehicles (NEVs) continued to advance, while high-strength plastics and composite materials demonstrated their capabilities in the emerging low-altitude economy.

CHINAPLAS 2024



Several booths showcased automated and unmanned high-efficiency production and cutting-edge technologies, such as smart high-speed rotogravure printing machines, all-electric high-performance injection molding machines, precision molding of optical lens, one-shot process for injection molding and painting with high-gloss surfaces, robot automatic tool changers, AI bottle chip sorting systems, layered injection molding and automation for molded optical lens, solutions for the molding and packaging of 384-channel medical pipette heads, MES digital smart management systems and more demonstrated the enormous possibilities offered by "Digitalization" within the plastics and rubber industries.

(Source: PRA)

Introduction to BIS

In the dynamic landscape of Indian trade and industry, ensuring quality and adherence to standards is paramount. At the forefront of this regulatory framework stands the Bureau of Indian Standards ('BIS'), the National Standards Body of India, governed by Ministry of Consumer Affairs, Food and Public Distribution. The Bureau is primarily tasked with formulating standards, certifying products, and safeguarding consumer interests.

“Standards are the new patents. BIS, as the National Standards Body, to act as a facilitator for Zero Defect, Zero Effect policy...” - Shri. Piyush Goyal, Union Minister of Consumer Affairs, Food & Public Distribution, Textiles, and Commerce & Industry.

The statement was made in reference to the 'ZED' strategy, pitched by the Hon'ble Prime Minister for 'Make in India'.

By zero defect, he means that the quality of the products must be very high and by zero effect, he means that there should be no adverse effect on the environment by manufacturing. For both these aspects, the standardization scheme of BIS is crucial in ensuring positive results.

This first article under the BIS series by LKS delves into a detailed overview of the standardization body and various crucial aspects surrounding it.

Historical Background and Establishment

Pursuant to a resolution in 1946, the Indian Standards Institution (ISI) was established by the Central Government. It was followed by the enactment of the Indian Standards Institution (Certification Marks) Act, 1952.

However, due to lack of adequate provisions and powers, the same was replaced by the BIS Act, 1986 (now replaced by the BIS Act, 2016). It also paved way for the establishment of a new standards body, i.e., the Bureau of Indian Standards (BIS) in 1987. Indian Standards are formulated by BIS in accordance with the BIS Act.

Significance of BIS for the National Economy

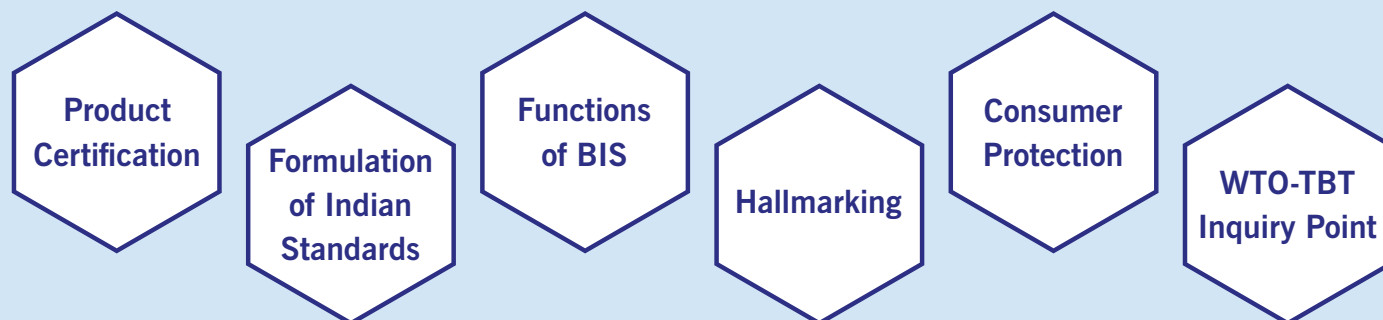
BIS has been instrumental in providing traceability and tangible benefits to the Indian economy in several ways. These include:

- i . Providing safe reliable quality goods;
- ii. Minimizing health hazards to consumers;
- iii. Promoting exports and imports substitute; and
- iv. Exercising control over proliferation of varieties, etc., through standardization, certification, and testing.

Various line ministries, in consultation with BIS, also mandate compulsory BIS certification for some specific products by issuing Quality Control Orders ('QCOs'). As such, it becomes extremely crucial for businesses in India to understand the role and significance of BIS, along with its relevant legal provisions and operational mechanisms.

BIS Know - How

Compliance with BIS standards will assist such businesses in efficiently catering to the customers' interests, enjoying competitive advantage, and thriving in India's global ecosystem.



• Regulatory Framework for the Standards, QCOs, and Licenses

Indian Standards

The Bureau is tasked with establishing, publishing, reviewing, and promoting standards, in relation to any goods, article, process, system, or service. As a signatory to the WTO-TBT Agreement, the standards formulation activity of BIS is aligned with the 'Code of Good Practice for the Preparation, Adoption and Application of Standards'.

BIS has, till date, formulated more than 22,000 + Indian Standards.

Quality Control Orders

BIS certification scheme is essentially voluntary in nature. However, for some products, compliance to Indian Standards is made compulsory by the Central Government under various considerations including:

- Public interest,
- Protection of human health,
- Animal or plant health,
- Safety of environment,
- Prevention of unfair trade practices, and
- National security.

QCO is a gazette order, issued by the Central Government in consultation with BIS, under Section 16 of the BIS act.

Penalty for Contravention of QCO

Any person who contravenes the provisions of a QCO shall be punishable under the BIS Act with imprisonment or with fine or with both.

BIS (Conformity Assessment) Regulations, 2018

These regulations lay down Schedules and different Conformity Assessment schemes for Grant of License (GoL) or Certificate of Conformity (CoC) to use Standard Mark.

(Source: Lakshmikumaran Sridharan Attorneys / July 2024)

PLASTIC PRODUCTS AND NEW TECHNOLOGIES



FM VISION Develops Palletizing System for Pharmaceutical and Beverage Industries

Italy's FM VISION has created a system that loads rows of vials or bottles in cases, with picking heads that will adjust automatically to the number and the spacing of containers.



In the Full Palletizing System (FPS), two robot arms operate in a highly space-restricted layout, which posed challenges in terms of engineering and programming, says the company. The system can be applied to bottles or vials in the pharmaceutical or beverage industries.

One of two robots inserts rows of containers into reusable crates or cases, while the second supplies empty crates for filling and places completed ones on the output pallet. FM Vision says the specially designed crate-gripper is symmetrical and force-

controlled to ensure a secure grip on both full and empty crates, stacking them where appropriate. There is a dedicated feeding system for empty crates, and the entire cell can be managed by a single operator. With an input accumulation table for vials or bottles, the complete system measures 3m x 4m. A vision system inspects each filled crate. If an anomaly or defect is detected, the robot automatically places the affected product in the reject area.

Vacuum cups fitted on to telescopic pistons integrated into the gripper allow the robot to complete the palletizing process by placing a lid on each crate. Radio Frequency Identification (RFID) tags on the reusable crates are said to allow for the serialization and aggregation of the contents of each crate and pallet. The gripper on the robot arm handling bottles or vials will automatically adjust to suit the number of containers being picked and the spacing between containers. FM Vision is an Omron Solution Partner and is represented in the UK by Packmatech.

In similar news, Baumer hhs has developed an anti-slip hot melt adhesive to secure palletized transport and shipping boxes in transit – a move set to reduce plastic film consumption and packaging waste. The solution is said to be especially beneficial for in-house transports, negating the need for pallet wrap in many cases.

VIDEOJET has launched its new 9560 PL pallet labelling system, aiming to streamline operations and reduce errors. Apparently, the system can

cover up to three sides of a pallet, apply up to four labels, and process up to 120 pallets per hour across various applications.

New HolyGrail 2.0 Project Marks and Sorts Dutch HDPE Milk Bottles

In a new project under the HolyGrail 2.0 Initiative, ALPLA, Farm Dairy, and Pellenc ST will help test the feasibility of FiliGrade Sustainable Watermarks' CurvCode watermarking technology in closing the loop on HDPE milk bottles in the Netherlands.



As the upcoming Packaging and Packaging Waste Regulation mandates minimum percentages of recycled content in plastic packaging, the HolyGrail 2.0 Initiative aims to harness digital codes to help sort and recycle plastic waste correctly – keeping it

within a material loop and out of landfill or incineration.

The first phase of its new project will run sorting trials in a semi-industrial setting. Sample HDPE milk containers will be produced by ALPLA and marked with a CurvCode watermark, then contaminated with milk and labelled to simulate post-consumer use. At this point, they will be delivered to Pellenc ST's headquarters to be tested.

The HG2.0 technical team will oversee FiliGrade and Pellenc ST's prototype sorting module as it sorts around 4,000 items over the course of the summer, ideally separating the test samples from standard packaging waste. Upon successful completion of the trial, the CurvCode technology will be brought to TRL 7, with the HG2.0 Technical Management Team producing and distributing a report to relevant Dutch stakeholders across the HDPE milk container supply chain in preparation for the next phase of testing.

Last October, the HolyGrail 2.0 initiative entered its final phase of R&D trials to prepare for market entry and the launch of a pilot market in France in 2024. Digitally watermarked polypropylene flexibles produced by

PepsiCo and LDPE flexibles by Essity and P&G underwent granular sorting trials at Hündgen Entsorgung's Materials Recovery Facility. A panel was also held at the Sustainable Packaging Summit 2023 to discuss HolyGrail 2.0 to discuss the progress of the project, next steps, and the future of the Initiative in the context of an open, competitive market in developing a circular economy.

(Source: Packaging Europe / 27 June 2024)

Graham Packaging Commercializes Technology for Light weighting Blow Molded Handle ware

Graham Packaging's "AccuStrength" technology for selectively reinforcing extruded parisons with vertical ribs now has a commercial application in laundry detergent.

First announced in 2021, a proprietary technology for light weighting extrusion blow molded polyolefin containers by selectively reinforcing parisons with vertical ribs has now reached commercial fruition. Graham Packaging reported last month that it launched a commercial bottle using its patented "AccuStrength" technology last fall in collaboration with a prominent maker of laundry detergent.



AccuStrength technology from Graham Packaging adds vertical ribs of extra material at selected locations on the parison. The ribs can be continuous or intermittent, providing reinforcement that enables light weighting of up to 15%. Source: Graham Packaging

As reported previously, AccuStrength helps in light weighting by providing extra material exactly where it is needed to provide strength against buckling and deflection, and resistance to damage such as

denting. It supplements conventional parison programming, which applies more or less material in horizontal bands on the parison. In contrast, AccuStrength adds material to the parison just before it leaves the extrusion head to create vertical ribs that can start and stop as desired.

This technology is aimed particularly at larger oval or rectangular containers, such as handle ware for home care and automotive products. This selective reinforcement has enabled up to 11% weight reduction in gallon containers. Graham says up to 15% weight savings are possible.

(**Source:** Plastics Technology / Published on 7/12/2024/ Matthew Naitove)

IFCO Launches Marina, the Digitally Enabled Reusable Fish Crate

Designed in close collaboration with key stakeholders in the fishing industry and retailing. Features track-and-trace Bluetooth Low Energy tags and QR codes to enable real-time data collection and analysis. Strong, isothermal construction with a tight-fitting lid for superior insulation and excellent cold chain management.



IFCO, a leading provider of reusable packaging containers (RPCs), launches Marina, the smart reusable IFCO Fish Crate. Designed in close collaboration with the fishing industry, Marina brings greater protection, efficiency and sustainability to the fresh fish and seafood supply chain. Featuring track-and-trace Bluetooth Low Energy tags and QR codes, the Marina Fish Crate enables real-time data collection, improving the cold chain management of fresh and chilled products along the entire fish and seafood supply chain, from ship to all points of sale (POS).

Single-use expanded polystyrene (EPS) boxes can break down into micro plastic pollution and contaminate the marine food chain and human health, so governments around the world are increasingly tightening regulations and introducing EPS bans. As a result, many producers, wholesalers and retailers in the fishing industry have made eliminating EPS boxes and switching to sustainable packaging a priority. The IFCO SmartCycle pooling system ensures the switch to Marina is simple, seamless and sustainable.

Sustainable packaging for fish and seafood supply chain

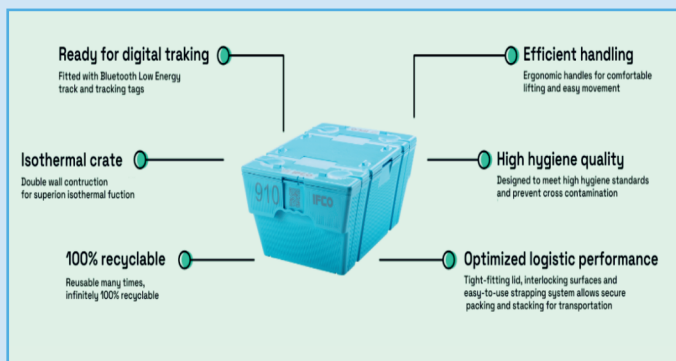
To secure long-term higher logistics efficiency and sustainability gains for the fishing industry, wholesalers and retailers, Marina is available exclusively through the IFCO SmartCycle circular pooling system. This means that the IFCO Fish Crates are efficiently reused up to 120 times, and that the empty crates are easily returned, reused and, once they can no longer be used, sustainably recycled.



Crucially, IFCO ensures that the reusable fish crates are washed according to international standards of food safety and hygiene and efficiently pooled for sharing and reuse. As required in the fishing industry, IFCO ensures a response time and delivery within 24 hours.

Designed for automated logistics and the fishing industry

Nestable when empty, securely stackable when full, the Marina Fish Crate saves space on ships and on shore, cutting carbon emissions in transport and improving handling conditions. Its uniform dimensions are compatible with existing supply chains, automated logistics systems and the IFCO Plastic Pallet Dora.



Francesca Amadei, Vice President Southern Europe at IFCO, highlights the unique advantages of the Marina Fish Crate: "Marina is the result of intense collaboration across the fishing industry. We've taken on board the unique demands of every step of the fresh fish and seafood supply chain in our R&D efforts."

Circular model for reusable, 100% recyclable fish crate

The Marina Fish Crate offers a sustainable and efficient complete packaging solution. Like all IFCO Reusable Packaging Containers (RPCs) Marina uses fewer natural resources throughout its life cycle compared to single-use packaging. And, unlike conventional fish boxes made from expanded polystyrene (EPS) that are typically sent to landfills or end up as marine pollution, Marina is 100% recycled at the end of a long service life into new products.

Inigo Canalejo, Vice President ESG and Strategic Marketing at IFCO, highlights the long-term benefits of Marina for the fishing industry and the planet: "We see it as our responsibility to improve the environmental sustainability of every category of the fresh grocery supply chain. Our Marina Fish Crate is a smart, innovative packaging solution that will have a lasting positive impact on the fresh fish and seafood supply chain. We're proud to have designed a sustainable and more efficient alternative to harmful expanded polystyrene containers."

(Source: written by IFCO SYSTEMS, 6th June 2024)

Engineered Solutions Elevate Battery System Safety

Oerlikon presents a full range of innovative customized safety components for Battery Electric Vehicles (BEVs), including pioneering heat shields, gas

guidance systems, and cell separators. In the event of a battery fire, they improve the heat protection and electrical and mechanical strength of the batteries, which can save passengers' lives.



Heat resistant parts such as Oerlikon's high performance customizable heat shields with superior thermal and electrical insulation increase the safety of battery systems. (Image source: OERLIKON)

Thermal runaway poses a significant challenge in high-performance battery systems and can potentially cause extensive vehicle damage or endanger passengers. "Oerlikon is renowned in the automotive market for its engineering expertise and materials innovation. Now we combine carefully engineered cutting-edge heat-resistant materials with an intelligent design to create thermal insulation systems that are redefining industry standards," said Marcus Spreckels, Head of Technology TIS.

Highly heat-resistance yet thin and lightweight

The portfolio covers all critical components, from heat shields and gas guidance components to cell separators, to address the needs of any battery system and risk level. They are highly heat-resistant, mechanically durable, and yet ultra-light and thin. They insulate the critical high-voltage infrastructure of the batteries electrically and thermally, thus reducing the likelihood of battery fires spreading to the passenger area at an early stage.

From meeting the basic regulatory standards of the UN Electric Vehicle Safety Regulation (GTR 20) and their often more stringent adoption in individual countries, to exceeding the advanced requirements with Stop/Zero TP and limp-home functionality, the components are both versatile and reliable.

No compromise: customized solutions for any requirement

Unlike other manufacturers, Oerlikon does not offer standard products. Marcus Spreckels: "We develop customized solutions in terms of material and design,

taking into account the specific safety requirements of each battery concept without compromising on space or weight.”

This is where Oerlikon's experience in automotive engineering comes into play: all components are 3D-moldable, so they can be optimally tailored to the design of the battery system and the vehicle, for maximum protection. Each solution is fully customized and ready to install according to individual requirements.

Combining materials science know - how and automotive experience

Oerlikon's thermal insulation solutions across all safety concepts and battery types on the market represent a new standard in the industry. With their deep knowledge in material science, Oerlikon's engineers have created heat-resistant materials with new properties. Furthermore, Oerlikon's decade - long experience in the automotive market allows customers to benefit from customized solutions from a certified manufacturer who is well-versed in the challenges associated with designing vehicles. Series production for the entire portfolio has started at the Bremen site in the first quarter of 2024.

IATF 16949 certified and using only mica - free materials in its solutions, Oerlikon is committed not only to advancing vehicle safety, but also to environmental responsibility and ethical materials sourcing.

(Source: Oerlikon Thermal Insulation Systems Bremen, Germany, June 6, 2024)

AHREND Partners with ENVALIOR to Deliver Remode - the Sustainable Office Chair Made with AKULON® Repurposed

- Structural components of Remode, a sustainable office chair from Ahrend, are made of Envalior's Akulon® RePurposed.
- The mechanical recyclate from old fishing nets closes Remode's value chain designed for recycling and reduces emissions.
- Akulon® RePurposed meets stiffness and strength requirements in Remode's loadbearing chair parts.

Envalior announced it has supported the Dutch based manufacturer Ahrend to deliver Remode, a sustainable office chair. The chair's structural seat components, backrest mechanism and the star base are manufactured from Akulon® RePurposed, a versatile, high-performance polyamide, made from recycled fishing nets. The mechanical recyclate from ghost fishing nets closes Remode's value chain designed for recycling and reduces Co2 emissions.

The new Remode office chair from Ahrend weighs just 15 kilograms and more than two-thirds of its weight is attributed to Envalior's 30% glass fiber-reinforced recyclate Akulon® RePurposed RE30, offering a superior mechanical property profile. Akulon® RePurposed RE30 contains a minimum of 62% recycled content, consisting of 50% ocean-bound plastic and 12% pre-consumer recycled content. "By using this sustainable material, we can close the Remode value chain, which is designed for recycling, and reduce our CO2 emissions," said Arnoud Vlieger, Head of Product Development at Ahrend. "In addition, the material enables a lightweight component solution with high material efficiency, which also contributes to lower CO2 emissions."

A hallmark of all Ahrend furniture is its modular design. This allows the furniture to be repaired, which extends its lifespan. At the same time, it is easier to disassemble the furniture, so that the raw materials can be recycled as part of a circular economy. "This cradle-to-cradle philosophy, together with the eco-design of our furniture, is the basis of our circular product design and was the reason we chose Akulon® RePurposed for our Remode chair," explained Vlieger.

One of the strengths of the recyclate, which is reinforced with 30% short glass fibers, is its superior mechanical property profile. "Our material doesn't need to shy away from comparison with virgin material upon proper application," explained Dr. Dannie van Osch, Business Development Manager of Specialties at Envalior. "It's stiffness, strength and toughness are so high that it could even be used to construct structural components of the seat, the backrest mechanism and the star base, which are subject to high static and dynamic loads. This has helped to make the Remode lighter."

Project partners receive development and production support

Envalior provided Ahrend and other project partners with comprehensive support during the development of the office chair. In addition to providing advice on

the material choice, Envalior also helped to determine the optimum processing parameters for injection molding the components from Akulon® RePurposed. "We helped to set up a stable and materialfriendly production process that enables efficient and economical manufacture with good surface quality of the plastic parts," said Van Osch.

Giving a new life to ghost fishing nets

Currently Envalior collects and recycles more than 3,000 tons of polyamide 6 ghost fishing nets that accumulate in Indian coastal regions. The company works closely with local partners to this end. The nets are cleaned, sorted, shredded, mixed with post-industrial waste and extruded into Akulon® RePurposed regranulate. "In this way, we protect the marine environment and additionally contribute to social welfare by creating jobs and strengthening the local economy," said van Osch.

(Source: Envalior)

Origin Materials Introduces World's First Tethered PET Beverage Cap for Improved Recycling Circularity

The world's leading carbon negative materials company with a mission to enable the world's transition to sustainable materials announced another innovation in its PET caps and closures portfolio: the world's first tethered PET cap.

"Cap tethering mandates are coming into effect later this year in Europe through the EU Single-Use Plastic Directive. Further mandates are anticipated around the world," said John Bissell, Origin Co-Founder and Co-CEO. "Tethered caps are designed to stay connected to the container and thereby improve cap collection rates for recycling. We have already seen strong demand for our tethered caps, which we have developed in conjunction with our PET caps and closures initiative, while the regulatory environment continues to evolve and incentivize tethered solutions."

The new tethered cap complements Origin's previously announced PET closure, which is the world's lightest CSD (carbonated soft drink) cap compatible with the PCO 1881 neck finish. Our

PCO 1881-compatible cap is the first of its kind ever to be commercially produced with 100% PET. Origin PET caps, including our tethered cap, may be produced with any kind of PET material, whether it's virgin PET, recycled PET (rPET), or bio-based PET.

Bissell continued: "Cap tethering is poised to transform beverage packaging and we are well-positioned to lead in this arena. First, whether tethered or not, our PET caps offer better performance than traditional HDPE and polypropylene caps, extending product shelf life and enabling light-weighting.

Second, our technology enables mono-material tethered PET products, meaning cap and container are both PET and can be recycled together seamlessly with no need to separate the two material streams, offering clear advantages when tethering. Third, more PET in the recycling stream means higher value bales of recycled material, which is good for recyclers and increases the supply of recycled PET. Fourth, our solution can expand the use of recycled content – specifically recycled PET – something global beverage brands are eager to do."

"We are enhancing the circularity of the recycling system in ways that were previously thought to be impossible. And we are excited to show our PCO 1881-compatible PET caps alongside our partners in their booths this week at the NPE2024 conference in Orlando, Florida," added Bissell, who will speak at the conference today, Tuesday, May 7.

Origin's first-of-its-kind, high-throughput production system will make the world's first PET caps and closures at commercial scale. Our PCO 1881-compatible caps will be available beginning in Q4 2024, with PCO 1881-compatible tethered caps to follow afterward.

Our PET caps and closures are a leap forward in packaging, improving recyclability, enabling light-weighting, expanding the use of recycled content, and extending product shelf-life while addressing a greater than \$65 billion market. In conjunction with world-class partners, we are solving the most difficult sustainability challenges, in alignment with our core mission to help transition the world to sustainable materials.

(Source: May 7, 2024 - Origin Materials ("Origin"))

STAHL Launches New STAHL YMAGINE® Edge Paint for Luxury Accessories

Waalwijk, the Netherlands, 10 June 2024 – STAHL, a leading provider of specialty coatings and treatments for flexible materials, has announced the latest addition to its edge paint portfolio: a high-performance, bio-based edge paint for luxury accessories.

This latest addition to STAHL's edge paint portfolio has been developed with environmentally conscious consumers in mind, who increasingly seek more sustainable fashion choices. The STAHL YMAGINE® range combines Stahl's edge paint expertise with the latest innovations in renewable raw materials.

STAHL YMAGINE® addresses the current lack of bio-based solutions in the edge paint category while continuing to meet the needs of technically demanding brands and manufacturers. It offers the same excellent performance as STAHL's other premium edge paint products, including the following benefits:

- Excellent ageing and hydrolysis resistance
- High solids content, requiring fewer coats
- Suitable for leather and synthetics
- ZDHC and REACH compliant
- Over 2,000 colors developed and color matching capabilities as per customer requests

Georges Fonseca (Global Business Manager Shoe Finish & Leather Care at Stahl) said: 'STAHL YMAGINE® is the result of years of intensive research and development, during which it showed exceptional performance under a wide range of conditions. And with its bio-based formulation, it demonstrates Stahl's tangible progress on our ESG Roadmap to 2030. This high - quality edge paint product is a great source of pride for our team. It feels great and is kind to the planet, delivering on both facets of our purpose, 'Touching lives, for a better world.'

The range is part of the STAHL YMAGINE® family of renewable carbon solutions – a key part of STAHL's efforts to de-fossilize the coatings value chain. All STAHL YMAGINE® products contain between 25%

and 70% renewable carbon content, so customers can be confident that by choosing a STAHL YMAGINE® product they are reducing their dependence on fossil-based raw materials.

(Source: STAHL/ JUNE 10, 2024)

BERRY Launches Fully Recyclable, Customizable Domino Bottle Available with Recycled Plastic

Rectangular bottle is fully recyclable and allows for customized branding on all four sides. Global sustainable packaging leader Berry Global Group, Inc. has launched a customizable, rectangular Domino bottle available with up to 100% post-consumer recycled (PCR) plastic for the beauty, home, and personal care markets.

The 250ml Domino bottle includes a 75-millimetre-wide front face and customizable side panels. This allows all four sides of the container to be printed, maximizing opportunities for brands to create unique packaging experience with high impact shelf presence. The side panels can be further customized with distinctive, textured embossing or de-bossing to create a tactile experience for consumers.

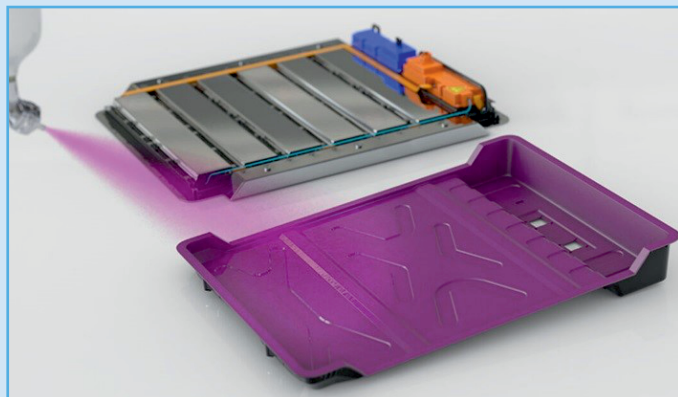
Manufactured in high density polyethylene (HDPE), the Domino bottle is fully recyclable where appropriate collection schemes exist. And the neck is suitable for a variety of caps and closures, including the recently launched Wave2cc all plastic dispenser. The rectangular bottle shape also allows for more efficient stacking, minimizing wasted space on shelf and during transportation and storage.

The Domino bottle is available through Berry Agile Solutions, which specializes in rapid sample delivery, low-cost customization options, and low minimum order quantities - to help brands stay on top of the latest consumer trends.

EVONIK Drives Safety for EVs with TEGO® Therm Fire - Resistant Coatings for Battery Housings

- TEGO® Therm with superior thermal insulation and fire resistance mitigates the risk of thermal runaway in EV batteries.

- Technology provides improved safety while meeting reliable mechanical properties and flame-retardant standards, particularly UL 94 V-0 classification.
- Easy spray application ensures complete and efficient coverage of the entire battery housing.



Essen, Germany - EVONIK is expanding its TEGO® Therm product range to provide heat protection and fire-resistant coatings for electric vehicle (EV) battery housings and covers. In the rapidly growing EV market, safety standards for lithium-ion batteries are becoming increasingly stringent. Coatings based on EVONIK's TEGO® Therm products are a robust solution to the industry's demand for effective thermal insulation barriers, which are essential for preventing thermal runaway in EV batteries.

Dr. Benjamin Schaeffner, Global Head of Market Segment Industrial and Transportation Coatings at EVONIK Coating Additives: "With the electric mobility sector accelerating, the safety of lithium-ion batteries in EVs has never been more crucial. TEGO® Therm is our response to the industry's call for reliable thermal barriers that not only meet but surpass the stringent safety standards of today."

The TEGO® Therm toolbox includes a variety of components, each meticulously engineered to enhance the performance of thermal insulation and fire-resistant coatings. Among these, TEGO® Therm HPG 4000 granules boast a micro porous silica core, which provides superior low thermal conductivity, high hydrophobicity, and reduced flammability. TEGO® Therm HPG 6806, a finer silica - based granule, not only excels in insulation but also strengthens mechanical performance and ensures smooth, even surfaces of insulation coatings. The waterborne polysiloxane hybrid binder, TEGO® Therm L 300, further enhances the thermal stability and fire resistance of protective coatings. Coatings based on this range of products meet the

UL 94 V-0 fire safety standards, providing a new level of protection for EV batteries. The versatility of TEGO® Therm allows for spray application on complex three - dimensional substrates, ensuring complete and efficient fire resistance of the coverage of every contour of the battery housing.

EVONIK's commitment to safety and innovation is demonstrated by rigorous testing. When subjected to a propylene flame with more than 1000 °C, TEGO® Therm - based coatings protected the substrate effectively, with the temperature on the back of substrate remaining moderate, even with a thin dry film thickness. These results underscore the effectiveness of TEGO® Therm in insulating against intense heat and highlight its suitability for applications where space is at a premium.

The expansion of TEGO® Therm products represents a significant advancement in EV battery safety. As the electric mobility market continues to expand, EVONIK's commitment to providing cutting-edge, reliable, and efficient coating solutions will play a pivotal role in shaping a safer and more sustainable future for the automotive industry.

EVONIK's Coating Additives business line provides a broad range of specialty additives for the coatings and inks sector. The business has decades of expertise in pioneering products for a range of coatings markets, including decorative coatings, industrial coatings, automotive coatings, and printing inks.

Translucent Colorants for Injection Molded Parts

Ampacet's Artemis master batch collection evokes the beauty of celestial phenomena.

A new series of translucent color and effects have been developed by Ampacet for injection molded parts that are meticulously crafted to evoke the beauty of celestial phenomena. The Artemis Collection of master batches is said to harness the dazzling look of backlighting or dead - fronting, leveraging advanced pigment technologies to create three-dimensional, crater-like surfaces.

Compatible with PS and PP polymers, the Artemis Collection is suitable for a wide range of applications, including consumer electronics, home goods and décor, caps and closures and lighting.



Choose from Lunar Gold and Dark side, two softly shimmering pearlescent that echo the pockmarked surface of lunar landscapes or bask in the red-violet intensity of Amethyst Supernova. Midnight Stardust, Aurora Emerald and Cosmic Noir capture the ethereal depths of the night sky.

(Source: Plastics Technology / Edited By: Lilli Manolis Sherman / Published 6/17/2024)

Borealis Glass Fiber - Reinforced Polypropylene with PCR for Automotive Applications

BORCYCLE™ GD3600SY will appear in Peugeot vehicles.

Borealis has introduced BORCYCLE™ GD3600SY, a glass-fiber-reinforced polypropylene (PP) compound with 65% postconsumer recycled (PCR) polymer content. It will first be used in automotive interiors delivered in partnership with Plastivale, a thermoplastic injection specialist and Tier 1 supplier to the automotive sector, and Stellantis, the owner of 14 automotive brands, including Jeep, Ram and Peugeot.



BORCYCLE material is being used in the newest Peugeot 3008 vehicle. (Source: Stellantis)

BORCYCLE GD3600SY is part of the BORCYCLE™ M portfolio of mechanically recycled polyolefins for demanding applications. It contains 30% glass fibers, meaning that most of the polymer fraction of the product is made from postconsumer recycled PP. It will initially be used in center console carriers for the interior of the new Peugeot 3008, a crossover SUV.

Borealis has introduced BORCYCLE™ GD3600SY, a glass-fiber-reinforced polypropylene (PP). The forthcoming European End-of-Life Vehicles regulation is expected to stipulate that 25% of the plastic used in new vehicles must come from recycled sources (see Chapter 2, Article 6 of the proposal). Given that polypropylene accounts for about one-third of the plastic in cars, compounds like BORCYCLE GD3600SY will play a critical role in achieving these circularity goals. Historically, mechanically recycled plastics from postconsumer waste streams have been of low and inconsistent quality, making them unsuitable for demanding automotive applications. By combining sorting, cleaning and extrusion steps, the BORCYCLE M mechanical recycling technology converts household waste streams into high-quality PCR polymers that meet the standards of the automotive industry.

CFAs for Polycarbonate & High Temperature Resins

Chemical Foaming Agents for Polycarbonate and Other High Temperature Polymers... Weight Reduction, Sink and Warp Removal in Injection Molding and Extrusion Bergen International offers Foamazol™ 1002 and Foamazol™ 1001 Chemical Foaming Agents specifically formulated for Polycarbonate and other high temperature polymers. Our Foamazol™ 1002 Chemical Foaming Agent is intended for weight reduction. Foamazol™ 1002 provides maximum density reduction, sink mark removal, and warp reduction in injection molding, and is formulated to NOT produce any moisture, eliminating brittleness due to polymer degradation. It may be used in Extrusion applications and is an exothermic decomposition CFA, supplied as white pellets.

Our Foamazol™ 1001 Chemical Foaming Agent is intended for sink mark removal and warp reduction in Injection Molded parts and may also be used in Extrusion processes. Foamazol™ 1001 CFA is also an exothermic decomposition CFA and is supplied as white pellets.

Both Foamazol™ 1002 and Foamazol™ 1001 Chemical Foaming Agents are excellent choices for component housings and large or small structural parts in Polycarbonate and other high temperature polymers in Molding or Extrusion applications.



Use of Foamazol™ 1002 and Foamazol™ 1001 CFAs allow injection molders and extruders to:

- Achieve Maximum Density Reduction
- Reduce Sink Marks and Blemishes in Injection Molding Applications
- Reduce Warping in Injection Molding Applications
- Eliminate Brittleness from Polymer Degradation

Custom Chemical Foaming Agent Products and Customer Assistance

Bergen International can also work with you to customize CFAs for your Polycarbonate or high temperature resin injection molding or extrusion process. Our staff has extensive formulating and processing experience and can assist you in developing a CFA to best meet your requirements.

(Source: BERGEN International)

ALUFLEXPACK AG Develops 4∞ Form, an Innovative and Sustainable Blister Pack

ALUFLEXPACK AG (the "Group"), a leading manufacturer of premium circular flexible packaging and barrier solutions, has developed a sustainable packaging innovation, which will be primarily used in the pharmaceutical industry, but could also find its application in a wider context.



4∞ Form is a blister pack made entirely of lacquered aluminum, which means that it is perfect to recycle, has a low CO2 footprint and impressive protective properties. In addition, 4∞ Form complies with the soon - to - be - introduced EU Packaging and

Packaging Waste Regulation (PPWR). The product is intended primarily for the pharmaceutical industry, where it can replace existing multilayer solutions such as OPA/AL/PVC (cold form) or PVC/PVDC (thermoform) used in packaging of tablets, capsules and similar products. It is also fully adapted to all the individual needs of customers, from shape to printing.

CONSTANTIA FLEXIBLES and ExxonMobil Launch Recyclable Freezer Films for BONDULLE that are Designed for Recyclability*



CONSTANTIA DRUKPOL, one of the Polish plants of leading flexible packaging converter CONSTANTIA FLEXIBLES has teamed up with ExxonMobil, a prominent supplier of polyethylene resins, to develop an innovative freezer film for the ready-to-use plant based food brand BONDULLE.

This collaboration led to the development of a mono-material polyethylene (PE) solution designed to replace traditional multi-material metalized films, which can make the packaging easier to recycle and better suited for a variety of vegetables. The new film can address the packaging needs for both "easy to pack" vegetables such as peas and green

beans and "challenging to pack" vegetables like spinach and broccoli, which were the primary focus of this project due to their tougher packaging requirements.

Arnaud Warusfel, Packaging Development Manager at BONDULLE Europe Long Life, highlighted the project's goals and achievements, stating, "For our retail Frozen Bag Category, we aimed to replace our historical multi-material metalized film, which can be difficult to recycle. We selected a mono-material PE solution without adhesives to facilitate easier recycling compared to multi-material solutions. Throughout the development process, we encountered numerous challenges but successfully overcame them with the technical expertise of CONSTANTIA DRUKPOL and ExxonMobil."

In the lab, the reinforced solution for "challenging to pack" vegetables demonstrated superior puncture and tear resistance, encouraging BONDULLE to conduct a factory trial. The film performed excellently on BONDULLE's vertical form fill seal (VFFS) packaging line, showing robust abrasion resistance and maintaining high speeds, which were key to its adoption in addition to a Marketplace acceptance for BONDULLE brand to stand out on shelves.

CONSTANTIA DRUKPOL was selected for its strong HD Flexography printing expertise and experience in blown coextrusion film, lamination, laser cutting, and pouch-making. "ExxonMobil was responsible for polymer production, and our team at CONSTANTIA DRUKPOL focused on film production and excellence in printing. The results were impressive: The new packaging has also been positively welcomed by the market in terms of quality and aesthetics", explains Marc Rademacher, Executive Vice President of Consumer Commercial at CONSTANTIA FLEXIBLES.

***Recyclable in communities with programs and facilities in place that collect and recycle plastic film**

Adding Value – What does It Mean for the Automotive Supply Chain?

Key Highlights:

- Suppliers can approach a project in one of two ways: they can review a specification and provide a solution that meets it or they could look at it from first principles and ask probing questions.

- Added value can be hard to define in a sentence, but it is immensely powerful. It is the difference between mediocre customer service and excellent customer service, and between OEMs competing and having a competitive advantage.
- Follow on technical support and guidance throughout the project lifecycle, from design to testing and implementation, can help OEMs get more out of a solution and ensure they get long lasting value.

As cost pressures tighten and demands for improved quality increase, OEMs and others in the automotive supply chain are increasingly looking for 'added value' from strategic supply partners as a way of delivering innovative solutions effectively and reducing overall costs without compromising quality.

Wayne Matthews, head of sales at Tecman, addresses what 'adding value' means. What does it involve? And how do you know if you're getting a value-added solution? A tale of two approaches

Suppliers can approach a project in one of two ways.

They can review a specification and provide a solution that meets it, with a focus on improving a specific aspect of the design that impacts performance, functionality or cost. Or they could look at it from first principles and ask probing questions. Are the material choices the right ones? Has every eventuality been considered? What is the end use scenario? What conditions does the part need to operate in? What is the customer trying to achieve? This consultancy approach is the kernel of a value-added methodology.

That is because adding value is about creating more than the sum of the parts. The output should not just be designs and manufactured products, but advice and support to help OEMs and customers to rethink and reengineer potential solutions. This leads to a collaborative, partnership-style approach that delivers value above and beyond what would have been possible via a traditional approach.

Getting the process right

To offer consultancy effectively, suppliers need to have a strong design and development process in place. It is the process, as well as the use of the most effective advanced materials, that is important when considering how they can add value to projects. When this process is complemented by hands-on,

practical manufacturing knowledge and expertise, OEMs gain invaluable insights about project scalability and the application of different material options.

Done well, this should involve collaboration between supplier and customer to understand needs, challenges and expectations and engaging in co-design and co-development with OEMs to generate ideas and prototypes.

During my career I have seen how this 'first principles' approach can lead to the development of ground-breaking solutions. We recently worked with a customer in the automotive sector, where we applied lessons in thermal management from the electronics sector, to develop a product that exceeded objectives and is now being integrated across their EV range.

OEM engineers working on niche or siloed challenges are often experts in that particular field but can find it difficult to integrate broader knowledge to enable concepts to become reality. Strategic partners add value by bringing perspective, cross-industry insights and practical knowledge to help OEMs contextualize their challenges and adopt a contrarian approach to identifying solutions.

It is this kind of approach, rooted in practical knowledge that fosters long term relationships, which in turn helps unlock innovation and leads to the development of superior solutions that deliver a competitive advantage.

Added value can also be capability driven in some cases. For example, we worked with an injection molder whose supplier could no longer supply a particular component.

In this context, adding value involved reverse engineering a part to understand how it was constructed and where improvements can be made. The ability to do this augmented the customer's internal capabilities and was a source of added value on what was a broader project.

Interpret beyond the specification

In addition, a broad interpretation of the project objectives can be a tangible source of added value. If automotive suppliers factor in issues like durability, aesthetics and the environmental impact

of a solution, as well as adhering to the core specification criteria, they can develop better end products that have greater longevity as the priorities of OEMs shift over purchasing cycles. This long-term view helps create an atmosphere of trust between engineering teams that long outlives an individual project and can have powerful cultural effects. Close collaboration and teamwork are the missing links in many projects that limit how much value can be delivered, especially when both parties look at a relationship as transactional and price driven. Cost is an important factor, but it doesn't have to come at the expense of quality and innovation – the two are not mutually exclusive.

Ongoing support

Finally, adding value is a comprehensive, end-to-end process. I talked about how it starts at the design stage – rethinking the spec from first principles – but it also carries on after the project has been completed and products have been delivered.

Follow on technical support and guidance throughout the project lifecycle, from design to testing and implementation, can help OEMs get more out of a solution and ensure they get long lasting value. This after sales service boosts customer satisfaction and loyalty, and just like the broad interpretation of objectives, helps to create a bond between the two parties.

Final thoughts

When two companies work together, there is a fork in the road at the very start of the relationship.

One pathway leads to the development and manufacture of a part, according to a tightly defined spec, and is transactional in nature.

The other is more conversational and collaborative. It involves understanding, questioning, probing and the development of new ideas. OEM and supplier come together as partners willing to innovate and rethink old solutions.

Adding value means choosing the second pathway.

More than this though, it requires a rigorous design and development process designed to evaluate, test and refine different solutions that are scalable and affordable.

It also requires suppliers to do some of the intellectual heavy lifting – interpreting the specification beyond the narrow confines of particular materials and anticipating OEM needs that may not have been explicitly set out.

Added value can be hard to define in a sentence, but it is immensely powerful. It is the difference between mediocre customer service and excellent customer service, and between OEMs competing and having a competitive advantage. If you're serious about it, my advice is to invest in working with a partner with capabilities and expertise. They are radically different to a 'supplier'.

(Source: Interplas Insights / 05 July 2024)

A Break - Through in Micro - Manufacturing: Combining Micro Injection Molding and 2PP μ -3D Printing

Impossible, micro-parts within two weeks? Rapid micro tooling is the solution

Through the combination of the high precision 2PP μ -3D printing and the performance of the Micro power 15t micro injection molding machine from WITTMANN BATTENFELD, NanoVoxel has successfully reduced the fabrication timeline of high precision micro-parts to two weeks. Integration of these micro-manufacturing methods allows for swift prototyping and opens new possibilities in engineering and design across industries. With initial applications in biomedical and consumer electronics, the breakthrough includes the production of intricate micro parts with unprecedented accuracy and design freedom. NanoVoxel, based in Austria, has innovated this approach that marks a significant advancement in the landscape of efficient and customized micro manufacturing. High precision micro parts are finding increasing relevance in different sectors including biomedical, consumer electronics, and many others. Most of the applications being developed require designs that require high precision, fast iterations, and challenge conventional design freedom.

For example, current manufacturing methods such as CNC, EDM, mask-lithography, and SLA 3D printing struggle to quickly or precisely produce parts like micro-diffusers for acoustic applications featuring 70 μ m 3D details (see picture 1); micro-lenses with

a roughness below 10 nm; micro-needles with 5 μ m tips; micro-nozzles with apertures under 20 μ m; and micro-fluidic chips with specialized filters.

However, this is made possible when two advanced technologies in micro manufacturing are combined: 2PP μ -3D printing and micro-injection molding. This expertise is NanoVoxel's forte, a start-up founded in Vienna in 2022 to disrupt the industry standard of such micro-components.

About two decades ago, machine manufacturers, including WITTMANN BATTENFELD with its Micro Power 15 t, pioneered specialized injection molding systems. These systems were tailored for precision micro-scale parts, offering industrial modularity and significant economic benefits. Despite this versatility and precision, the bottleneck in micro-part production persisted by their injection cavities, resulting in prolonged lead times of up to 20 weeks. Clients reluctantly accept larger tolerances ($\pm 30 \mu$ m), but there's a growing need for shorter lead times, and smaller features, especially in prototype development. The time-consuming precision mold production lingers as the chief bottleneck.

The breakthrough in precision combined with economic efficiency has been achieved in recent years with the 2-photon printer of UpNano, a start-up also based in Vienna and a partner of NanoVoxel. This printer is based on the principle of non-linear absorption of photons, called two-photon polymerization (2PP). A femtosecond laser emits a narrowly focused beam to excite a photosensitive resin. The scanner unit moves the laser beam via Galvano mirrors and lens systems to cure the resin. Like SLA/DLP 3D printing, when the light is absorbed, it triggers a chemical reaction in the resin, causing it to polymerize and solidify at the focal point of the laser beam. However, in a deviation from established 3D printing technologies, 2PP achieves full control of z-dimension polymerization, so holes and cavities are precise and round. The 2PP printing process offers unparalleled precision and resolution to most other manufacturing techniques, enabling the creation of complex 3D micro-structures with sub-micron accuracy, even down to the nanometer range. This makes it ideal for applications requiring particularly intricate detail with high surface quality. A variety of photosensitive resins are available for 2PP printing, including photopolymers and hybrid materials. These materials can be tailored to specific applications and offer a wide range of mechanical, optical, and chemical properties.

Using 2PP printers, micro parts can be printed within hours from a 3D-CAD file with a precision that cannot be achieved by conventional toolmakers, even with the most advanced machinery. Tolerances below 1 μm , structures down to 200 nm, and surface finishes with an average surface roughness better than 10 nm can be produced quickly and economically with this advanced additive manufacturing. Geometries that cannot be produced through injection molding, due to undercuts for example, can be produced quickly with 3D printing. Picture 2 shows an example of 2PP printed micro needle prototypes, emphasizing sharp edges and micro - hollow structures. Provisionally, the disadvantage of this technique is its capacity for high volume production, making it uneconomical for parts larger than a few mm.

The limitations of both micro-molding and micro 3D printing pose the question: What changes can expedite lead times, keep high precision, and still maintain high productivity? To answer this question NanoVoxel GmbH combines the best of both worlds, establishing the union of 2PP printing with micro-injection molding its core business. By using 2PP 3D-printing to quickly produce a high-precision mold for the microinjection, it replicates the precision and the resolution of 2PP in molded micro-parts with highest efficiency. Picture 3 shows an example of a micro-gear molded from one of these printed cavities.

NanoVoxel aims to become a one-stop service platform offering flexible and multiple manufacturing solutions and strives to become one of the most innovative companies in the micro manufacturing world. NanoVoxel's multi - disciplinary team of experts combine these different technologies to offer prototypes through to high volume production as a service provider. This remarkable accomplishment compresses the timeline for structure fabrication into an incredible two - week span.

NanoVoxel has since achieved a breakthrough in the molding of micro - parts that was previously impossible to fulfil, enabling the molding of small, detailed structures with high accuracy and repeatability within tolerances of a few microns. In addition, high precision 2PP 3D-printing to create mold cavities enables larger parts with single digit micron features, which would otherwise be time-consuming, expensive, or impossible to produce.

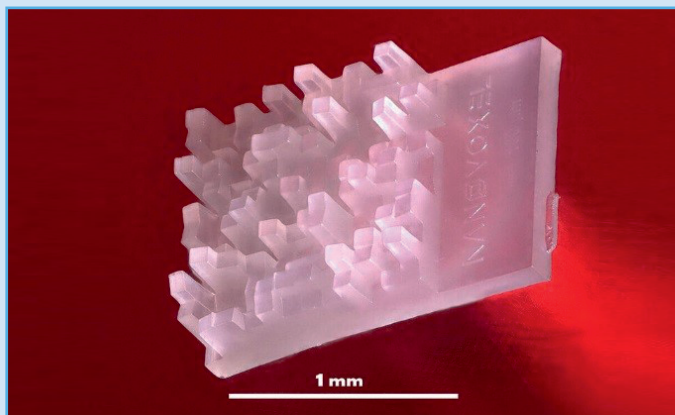
An example of NanoVoxel's service is the development and manufacturing of an endoscope for the aiEndoscope company (Picture 4): the segments of the endoscope have been initially printed in different design variations at the prototyping stage for geometrical tests and optimization. Upon design validation from the customer, the quickly molded parts were produced and enabled functional and mechanical testing. All the manufacturing process and iterations on this project were completed within 5 weeks. The capabilities of combining different processes including mastering, casting, and sintering, allow NanoVoxel to create molds with the highest precision, not only from 3D printing materials but also with more robust materials like glass, ceramics, and metals.

To leverage the highest precision of the molds, NanoVoxel uses the Micro Power 15 t (Picture 5) from WITTMANN BATTENFELD, a leading manufacturer of injection molding machines and automation solutions. With a clamping force of 150 kN, the machines of the Micro Power series are designed for the economical production of exceedingly small and micro parts with maximum precision and repeat accuracy. A two-stage screw-piston injection unit with a shot volume of 1.2 to 6.0 cm³ injects a thermally homogeneous compound. This makes it possible to produce parts with outstanding precision, extremely stable production, and exceptionally short cycle times. The distinctive design of the machine allows the injection plunger to nearly reach the parting line of the mold.

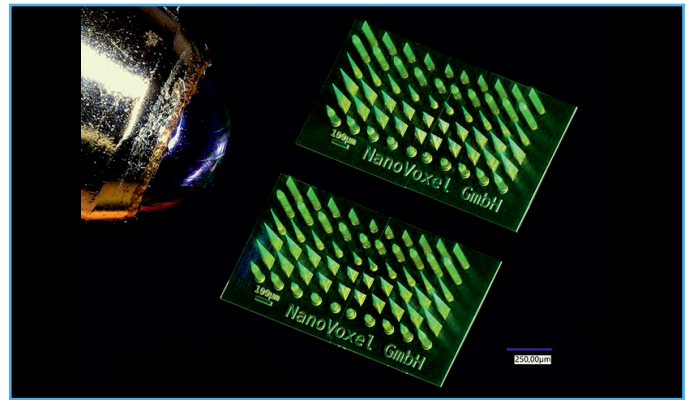
This reduces the mass cushion to a minimum. In addition, the standard version of the machine is already ideally suited for production under clean room conditions: it is designed with an enclosed housing cell. The housing cell offers enough space for the integration of equipment options like a rotary table, robot, material drier, and temperature control units. Robots and peripheral equipment from WITTMANN are specially adapted for this machine. All drive modules of the all-electric drive system, including all mechanical components, are encapsulated in easy - to - clean housings. The extremely well controlled injection of thermally homogeneous thermoplastics in exceptionally small quantities is necessary for successful injection molding of precise and quality consistent mass production of micro - parts.

The combination of 2PP printing and μ -injection molding is not limited to only the high precision rapid tooling process. NanoVoxel GmbH brings a significant addition to the micro manufacturing industry with its capacity to 2PP print directly on parts of different materials manufactured with other processes. This print can be made onto many materials including glass, ceramics, carbon substrates, metals, and plastics. Moreover, the ability to combine varied materials for different functions offers customizability ideal for rapid prototyping, product development, and mass manufacturing. This enables customers to imprint detailed functional features directly onto bulky and larger parts obtained from more efficient processes. Initial applications have been successfully applied in the microfluidics world, where NanoVoxel printed un-moldable features into commercial chips, using their advanced printing process only where needed.

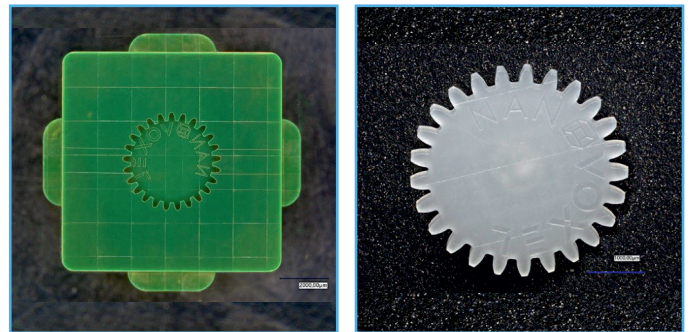
NanoVoxel's efficiency with the micro manufacturing process unlocks new creative avenues for designers and engineers across diverse industries and revolutionizes the way in which to approach design and fabrication of intricate, customized, and functional micro - scale parts. Through its commitment to advancing micro manufacturing technologies and reimagining solutions, NanoVoxel welcomes unconventional part geometry and strives to provide a creative, efficient, and yet simple approach to manufacturing.



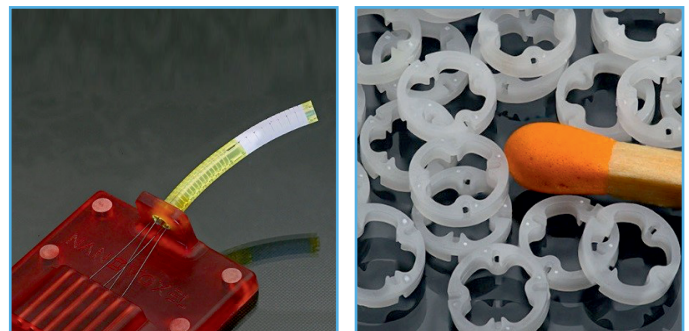
Picture 1: Injection-molded micro acoustic diffuser measuring 1 x 1 mm. Intricate features, as seen here, can be reliably replicated with a mold produced via 2PP printing for injection molding. Such The 70 μ m column features are impossible to create through traditional mold production methods. (Photo: NanoVoxel)



Picture 2: 3D printed micro-needles array compared to the tip of a ball pen. High precision 2PP printing is allowing unmatched sharp edges (0.5 μ m radius). (Photo: NanoVoxel)

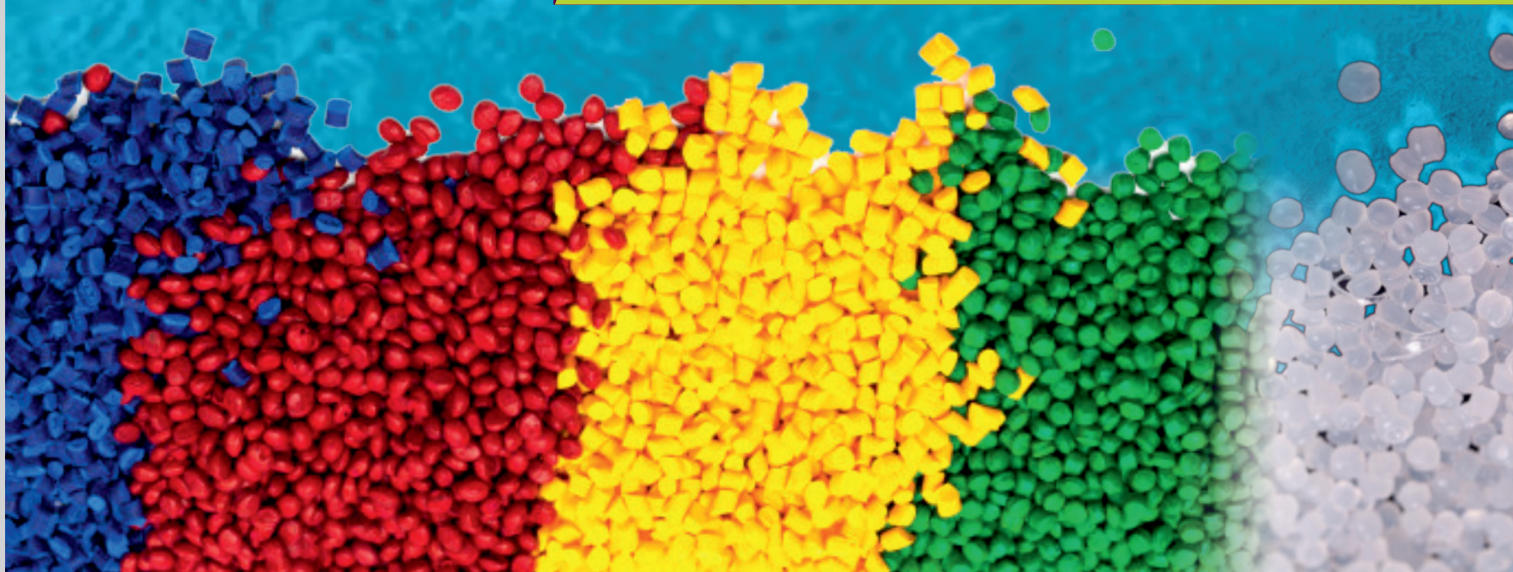


Picture 3: Direct printed cavity insert (left) and POM molded 4 mm micro-gear (right). This cavity has been able to generate 50 parts with an accuracy of $\pm 5 \mu$ m. (Photos: NanoVoxel)



Picture 4: End arm of a prototype endoscope developed for the company aiEndoscopic. The yellow translucent section is made of 3D printed segments, while the white ones are POM molded segments.

PLASTIC RAW MATERIALS



ExxonMobil Introduces Enable 1617 Performance Polyethylene

Exxon Mobil on 16 July 2024 announced the launch of its Enable 1617 performance polyethylene (PE) grade. Ideal for thin-gauge hand wrap applications, the new resin is designed to help provide high tenacity and consistent extrusion, as well as help enable the incorporation of high loading levels of post-consumer recycled (PCR) content.

Key potential benefits are incorporation of PC content, which means it can provide a performance boost to help enable the incorporation of high levels of PCR content.

It is claimed to be efficient and help to achieve high production speed, offering a cost-effective extrusion process that can maximize output while maintaining quality, making it ideal for high volume production environments. It can help to deliver high tenacity, strong holding force, and reliable load stability, which can help wrapped products remain secure and intact during transportation and storage and help reduce the risk of damage.

An Enable performance polyethylene resin based solution can help to deliver high tenacity, contribute to high holding force and great load stability, ExxonMobil said in a press release. The new Enable 1617 performance PE resin can combine seemingly

opposite features: high flow and high tenacity. This unique combination can result in great cast film processing, exhibited by fast line speed, low pressure and low motor load.

With its flow properties, Enable 1617 resins can be run in coextruded structures as discrete layers, contrary to some of the lower melt index high tenacity resins that require blending in order to be processed. The balanced properties can provide opportunities for stiff, thinner gauge film, while offering consistent extrusion and high throughput rates, up to 650m/min for 8um film thickness.

To help support value chain participants' goals of reducing their use of raw materials, Exxon Mobil has developed a solution for down gauged, tough hand wrap films that can include the incorporation of PC content. In high-tenacity hand wrap applications, Enable 1617 resin can make the incorporation of 30+% PCR content possible, while maintaining high processability and good film quality.

The incorporation of PCR content can make predicting gel content and quality consistency difficult. The Enable 1617 performance polyethylene resin is especially well-suited as a blend partner for the incorporation of PCR content. The high melt strength of Enable 1617 can contribute to process stability, while the high Dow attributes can help enable the processing of thin gauge film at high extrusion rates.

"Film properties can be affected by the quality of the incorporated PCR content, however, Enable 1617 resins can be instrumental in helping to maintain acceptable film properties for the application without need to up gauge. Exxon Mobil is committed to collaborating with our customers to understand their needs and to help them create compelling potential solutions for the industry. Our new resin not only can enhance performance but also can support the incorporation of recycled content," said Justin Schmader, market development manager, Exxon Mobil. "We believe this product will help our customers achieve their operational objectives more efficiently such as helping support their goals of reducing raw material use."

ExxonMobil, one of the largest publicly traded international energy companies, uses technology and innovation to help meet the growing energy needs. Exxon Mobil holds an industry-leading inventory of resources, is one of the largest refiners and marketers of petroleum products, and its chemical company is one of the largest in the world.

(Source: by PSA Desk / 19 July 2024)

Recycled PE Grades with up to 100% PCR for Shrink Films

Dow's new Revolooop grades was a collaboration with European shrink film manufacturer RKW Group.

An innovative family of recycled PE resins has been launched by Dow and is the result of a collaboration with long-time customer RKW Group, a leading European shrink film manufacturer. The company says its new Revolooop resins mark a milestone in their commitment to advancing circularity. By 2030, Dow aims to "Transform the Waste" and commercialize three million metric tons of circular and renewable solutions annually.

Two new grades of Revolooop Plastics Resins are launched and are approved for non-food contact packaging applications. One contains 100% postconsumer recycled (PCR) and the second one is a formulated grade which contains up to 85% PCR derived from household waste. Until now, the plastics industry has struggled to maximize recycled



plastics household waste to reach demanding applications such as collation shrink films, as it is more prone to contamination than waste from commercial or industrial sources.

The Revolooop launch addresses these challenges, marking an exciting evolution in the recycling narrative. Through its collaboration with RKW, both parties are achieving new circularity and low-carbon milestones with the use of the new resins. By combining Dow's material science expertise with RKW's extrusion and printing expertise, they are maximizing the value of recycled plastics household waste streams to achieve historically demanding applications.

Said RKW's director R&D and application engineering Konrad Noniewicz, "This collaboration brings a brand-new collation shrink film to the market. By integrating Revolooop 100% PCR and Revolooop containing recycled plastics household waste with virgin materials, we create a flexible packaging solution that meets the requirements for mechanical recyclability, ensuring compatibility with existing recycling processes and contributing to the transition towards a circular economy."

The final product is a collation shrink film containing PCR, partially derived from recycled plastics household waste, which meets the high requirements of well-known brand owners around the world.

New Master Batch Carrier System for High - Performance Polymer PPA

PPAX is a new color master batch carrier system from Tosaf Color Service which is based on the high-performance polymer PPA (polyphthalamide) and whose specially selected pigments allow high

processing temperatures. This makes it possible to color products made from it in many different bright colors without affecting this material's special properties. Unlike PA66-based master batches, which are often used as an alternative for cost reasons, the high thermal stability, very good strength, stiffness and toughness values, low moisture absorption and high chemical resistance are also retained in colored injection moldings. All 28 standard stock RAL colors in the PPAX product range can be laser marked and provide a high-contrast color change.



Processors using PPAX can take advantage of the high melt temperatures possible with PPA, for example to shorten cycle times, without being limited by the color master batch. Testing carried out by Tosaf Color Service at processing temperatures of up to 340°C yielded outstanding results. Even higher temperatures are possible, but must first be confirmed by the processor's own testing. PPAX-colored samples have demonstrated their high light fastness and weather resistance. All the colors combine elevated long-term thermal stability with an ability to withstand transient exposure to very high temperatures, for example during soldering.

As Rudolf Reinhart, Product Manager at Tosaf Color Service, explains: "PPAX enables us to meet the requirements of industries in which electrical and electronic components are exposed to high thermal loads. These include, in particular, the automotive industry with its focus on e-mobility, as well as manufacturers of kitchen appliances and white goods, which require color-coded plug connectors for a wide range of electrical outlets. This new high-temperature carrier system with its 28 standard colors makes it possible to prepare virtually any conceivable shade and so, of course, also match a manufacturer's brand colors."

LyondellBasell Expands PP Compounding Production in China

LyondellBasell (LYB) announced the start-up of an additional production line at the Dalian site of its Advanced Polymer Solutions (APS) business, further expanding its presence in China. The new production line will produce a wide range of high-performance, high-quality polypropylene compounds, mainly supplying the automotive industry. As the second production line at the Dalian site, with an annual capacity of 20,000 tones, the new production line will double the site's current production capacity, enhancing the company's ability to meet the growing market demand.

Established in 2015, the Dalian site can produce 80,000 tons of PP compounded products at full capacity with four production lines, supplying to end applications including bumpers, instrument panels, interior trims, under-the-hood applications or structural parts and body panels for the automotive industry. Currently, the APS business operates five sites in China, with a portfolio of PP compounding, engineered plastics and master batch products.

(Source: LyondellBasell / Dalian, China, June 14, 2024)

COCA COLA EUROPACIFIC PARTNERS Netherlands Announced that Iconic Red Crates will now be with 97% Recycled Plastic



COCA COLA EUROPACIFIC PARTNERS Netherlands has announced that its iconic red crates will now be made with 97% recycled plastic. 1

This innovative move is a collaboration between CCEP, local recycler Healix, and crate producer Schoeller Allibert, using 85% old red crates and 15% recycled tulip nets, which are usually difficult to recycle.

Circular Crates and Refillable Glass Bottles - the red crates are specifically designed for the company's returnable glass bottles, which in turn are designed to be reused at least 25 times. The glass bottles are cleaned and refilled in the COCA-COLA factory in Dongen, Brabant, before returning to the Dutch wholesale and hospitality. This goes for all the company's brands in returnable glass, amongst which Fanta, Sprite and Fuze Tea.

Reducing Virgin Plastic - The introduction of these recycled crates is expected to have a significant impact on the Dutch market. This year alone, 150,000 recycled crates will be introduced, with the goal of gradually replacing the entire fleet of crates in the country as the current crates naturally reach the end of their useful lives.

The move aligns with CCEP's ongoing efforts to reduce its use of virgin plastic. In the Netherlands, the company already uses recycled plastic for its plastic bottles, transport packaging, 2 and has introduced the Keelclip as a cardboard alternative to plastic shrinks.

1. EuCertPlast certificate of compliance, SachverständigenbüroWidmayer Widmayer GmbH + EuCertPlastic certificate Healix 04/12/2023

2. D&D Test center Material release 400926, 05-04-2024, Schoeller Allibert.

(Source: COCA COLA EUROPACIFIC PARTNERS / 10th June 2024)

Eco - Friendly Flame - Retardant Synergist

CAI Performance Additives' ST-FR322 effectively replaces antimony trioxide in several thermoplastics.

A new flame-retardant synergist is said to show a powerful synergistic effect when combined with halogenated flame retardants and it effectively replaces antimony trioxide in equal amounts in various plastics, including nylons, PBT, ABS, HIPS, PS, PVC, PP, PE and EVA for a variety of plastic applications.



Source: Chroma Colors

The environmentally - friendly ST-FR322 flame retardant synergist is available from CAI Performance Additives, the sole distributor of high-performance additives produced by China's Starbetter Chemical Materials. The ST-FR322 material is a unique organic and inorganic complex substance, free from harmful heavy metals. As such, this additive offers a compelling alternative to traditional flame retardants containing antimony trioxide, which raise environmental and health concerns.

Remarkably, ST-FR322 achieves the same level of flame retardancy as antimony trioxide while offering several additional benefits:

- Reduced smoke production
- Anti-dripping effect
- Cost savings (antimony trioxide prices have been rising)
- Improved processing
- Excellent thermal stability

Understanding the Incumbent Resin Effect

When you are looking to replace an existing resin with a new one, in trials sometimes the "incumbent" resin will cause gels and other defects. Here's what look for.

New and innovative products are constantly produced on pilot and manufacturing lines using a variety of processes, including PE blown and cast films using

single-screw extruders. Many times, these films will be sent to end users for evaluation. Acceptable quality and properties of the films are key to the success of the new product. Most of the time, the new film produced has acceptable quality (very low gels) and great physical properties. These new products are produced by replacing the incumbent resin with a new resin or challenger resin. Often, the new resin decreases the cost of the product.

The incumbent resin effect starts off by running a single-screw extruder for extended periods of time with the same resin (incumbent) during typical production. Here, the extrudate and film appear acceptable with only a few gels and black specks in the film product. These gels and black specks are generated in stagnant regions of the screw. Most of the degraded resin, however, is attached to the screw and is stable. That is, not separating from the screw and appearing in the film product at a rate high enough to alarm the quality specialists in the plant.

Next, as a short trial or prototype run, the incumbent resin is switched with a challenger resin. Even though the challenger resin may be very similar, it will likely process slightly differently than the incumbent resin. This slight difference in processing is often enough to cause the old and degraded material that is adhering to the screw to separate from the screw and contaminate the extrudate. The old degradation will start to come out of the die, typically in about five minutes after the switch for blown film lines. The initial discharge of gels is sometimes viewed as a gel shower, and then a high level of gels will continue to be observed for the short duration of the trial run.

In many cases, plant personnel will unknowingly blame the high level of gels on the last change — in this case, the switch to the challenger resin. That is, the challenger resin is incorrectly blamed for the high level of gels. In severe cases, the trial is stopped and the challenger resin is eliminated as an acceptable resin for the application. The incumbent resin continues as the preferred resin. The root cause for the gels, however, is a poorly designed extruder screw and not the challenger resin.

A necessary condition for the incumbent resin effect is minor design flaws on the screw. These flaws are regions where small amounts of resin can stagnate, degrade and then separate from the screw, causing

defects in the film product. The level of gels is manageable at steady-state conditions for the incumbent resin. However, the slight upsets that occur by introducing a challenger resin can cause the degraded material to separate from the screw at a faster rate. If the challenger resin was processed for an extended period, likely the same level of gels would eventually occur as that for the incumbent resin. Typically, the challenger resin is extruded for only short trials and is incorrectly blamed for the higher level of gels.

Most screws designed and operating in North America for PE resins are single-flighted designs with a barrier melting section and a downstream Maddock style mixer. The most common flaws include flight radii in the metering channels that are too small and improperly designed flutes on Maddock mixers. If the design of the screw is proper, the incumbent resin effect will not occur.

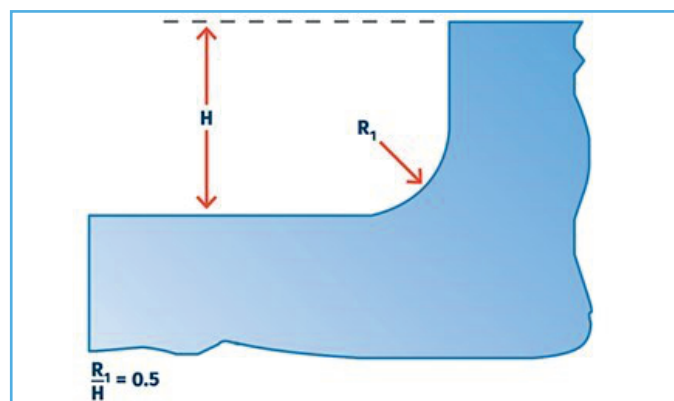


FIG 1 Schematic of a flight radius with a size ratio of 0.5. Source (all images): M. Spalding

The most common defect on screws built for PE resins is the size of the flight radii. Most manufacturers design screws with flight radii that are about half of the depth of the channel. In many cases, the size of the flight radii is even smaller. Figure 1 shows the flight radius for an improperly designed screw. Channels with small radii can cause regions where the residence time is extremely long, leading to resin degradation due to the formation of secondary recirculation flows known as Moffatt eddies. Photographs of resin degradation due to small flight radii are shown in Figure 2. Flight radii that are large at about 1.5 times the local channel depth will not allow Moffatt eddies to form, eliminating degradation at this location.

Maddock-style mixers are designed into most screws for PE extrusion processes. Their widespread use is due to their low cost to build, simplicity of the

design, and their ability to trap, melt and disperse solid polymer fragments from incomplete melting. Poorly designed Maddock mixers, however, can cause resin to stagnate and degrade. Proper design of the devices was discussed in my March 2024 column.



FIG 2 Degraded resin due to small flight radii because of Moffatt eddies.

A common design flaw is to position too many flute pairs on the device, creating the need to cut these flutes very deep such that pressure consumption is acceptable. The deep flutes can cause resin to degrade on the sides of the channels, as shown in Figure 3. Like the degradation shown in Figure 2, the degradation in the Maddock mixer will be released from the screw slowly for the incumbent resin but will release at a higher rate for the challenger resin due to differences in rheology and processing stability.

As previously stated, the degraded resin in the extrudate is typically first observed within one residence time after switching to the challenger resin or typically less than five minutes for film processes. If the challenger resin was the source for the degraded resin (gels) then the gels either had to come from the resin manufacturing plant or the challenger resin would need to degrade in five minutes or less to a hard carbonaceous material. However, much longer times are required to degrade PE resins.

Modern resin manufacturing processes exclude oxygen from the system and are very streamline such that process areas with long residence times do not exist. As such, cross linked and oxidative gels are likely not generated by the manufacturer. Moreover, modern quality control techniques are typically in place to monitor gels, preventing off-

specification resin from leaving the plant as prime. Other sections of the process can also contribute to a higher rate of degraded material in the product for a challenger resin. These include transfer lines that are deigned too large in diameter, and dies and screen packs that are not streamlined. All can contain regions where a low shear stress at the metal wall can occur, creating regions that can cause resin to stagnate and degrade.

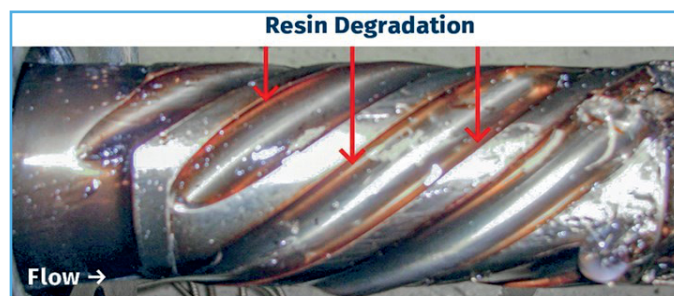


FIG 3 Maddock mixer with flutes that are too deep cause resin degradation at the pushing and trailing sides of the flutes.

There are two technical solutions to mitigate the incumbent resin effect for PEs. The first and long-term solution is to design a new screw that does not contain regions where the resin flow will stagnate. This means the flight radii must be large enough in the liquid-filled sections of the screw to eliminate Moffatt eddies, and mixers must be streamlined such that stagnant regions do not exist. Designing and building a new screw will take six weeks or more for delivery. The new and properly designed screw will enable a nearly gel-free product.

The second and short-term technical solution is to remove and clean the existing screw before the challenger resin is introduced to the extruder. For this solution, the extruder may operate without producing degradation products for several hours. After this induction period, the degradation products that are formed may be stable and attached to the screw, causing only a low and manageable level of gels. This gel level would be essentially equivalent to the level produced by the incumbent resin.

(Source: Plastics Technology / Published 7/24/2024 / Mark Spalding)



INEOS Commissions Film Line for Development of Recyclable Films

Technology aimed at reducing complexity of multilayer packaging films.

INEOS Olefins & Polymers Europe successfully commissioned a new pilot blown film line with machine direction orientation (MDO). The company intends to use the line to co-develop multilayer recyclable packaging films with its customers.

The new multilayer, blown film line with MDO has been installed at INEOS' R&D center in Brussels, Belgium. It enables customers to carry out full-scale tests without losing production capacity on their own lines. The first collaboration projects are already under way, developing new films that can be applied directly to customer production lines.



New film line supplied by Hosokawa Alpine will support recyclable film development at INEOS. Source: INEOS

Flexible films provide lightweight, low-emission packaging for transporting goods, increasing the shelf life of food products.

However, today's multi material packaging films combine different polymers, each performing different functions, but which in combination make the film difficult to recycle. Making simpler films with the same performance means the new packaging can be more easily recycled, to meet the requirements of the EU Packaging and Packaging Waste Regulation.

Rob Ingram, CEO at INEOS Olefins & Polymers Europe, says: "Flexible packaging films play a valuable role in society, but we recognize and share people's concerns about plastic waste. Every day we work alongside stakeholders across the value chain who share our commitment to a circular economy, developing more sustainable solutions to consumers' needs. Fully recyclable films are a big development and I'm excited about the possibilities created by our investment in this new MDO line." The state-of-the-art technology, supplied by Hosokawa Alpine, heats and stretches polymer films to improve their physical and barrier properties, enabling them to be used in different product applications.

Rajoo Engineers Unveils Proex Series Blown Film Extrusion Line at Balaji Multiflex

Inauguration of 5-layer blown film line attended by Indian and global experts

Rajoo Engineers held an event on 4 and 5 July 2024 in Rajkot, to launch the Proex Series, the latest in its blown film extrusion technology, at Balaji Multiflex. The 5-

layer blown film line was officially inaugurated on 5 July at Balaji Multiflex's plant in an event attended by guests from India and abroad.

The line in commercial production can produce film at 900 kilograms an hour, with a 22-micron thickness and a 2,800 mm lay flat width. The Relax 4.0 extruders, which boast a low shear heat design, showcased energy efficiency and high yield. The CSD 4.0 die, the heart of the line, is capable of delivering film thicknesses from 20 to 200 microns across a width of 2,800 mm with low gauge variation. The new blown film line at Balaji achieved line speeds of 150 meters a minute running at a width of 2750 mm

With the addition of the Proex Series blown film line, Balaji Multiflex will produce about 1,500 tons of blown film per month. When it comes to laminates, the Balaji plant currently produces about 2,400 tons per month.

Bhalara said Balaji Multiflex plans to add an MDO line. "The rate at which we are growing, I think we will need to expand our plant. So, let us see. That is the target we have in mind," he stated.

Khushboo Chandrakant Doshi, Managing Director of Rajoo Engineer, said the Proex Series blown film line is a world-class offering and can compete with the best at a very attractive price point.

"Not only is this a great technology at an Indian price, but we can offer post-sales support at a reasonable cost. When Indian customers opt for imported lines, they have to bear the high costs of after-sales service. Because Rajoo Engineers is based in India, we can offer 24/7 support. Our promptness in solving customer issues cannot be matched by foreign suppliers," Khushboo Doshi said.

Doshi said Rajoo Engineers will work on further improving the Proex Series technology. "Our idea is to fine tune this technology and keep making it better."

E-Power Meets Flexibility the All-Electric PX Series

The PX series is the answer to your requests for more flexibility while increasing productivity. You can assemble your PX precisely to your production requirements from a wide selection of components based on a modular design.



Highlights:

Optimized clamping unit design

- Mold fixing platens with generous dimensions
- More flexibility for mold use
- Options are available to expand certain attributes, such as the mold installation height
- Lower investment costs thanks to modular design
- Maximum platen parallelism

Ejector with a large stroke

- Great selection of ejector versions between robust hydraulic standard ejector and precise electric ejector
- Fast and easy setup
- Large ejector stroke provides a great deal of flexibility for any mold
- Perfect accessibility
- Optional: increase of ejector force of 50 %
- Optional: in order to optimize the removal of free-falling parts, the ejector speed can even be increased by 100 %

APC plus (Adaptive Process Control)

- Zero - defect production
- Compensation for troublesome fluctuations in the manufacturing process during injection molding even faster and with greater precision
- Ideal for cascade injection molding

MC6 Control System

- Perfect overview
- Individual user interface
- 19"-Touch-screen
- Optional: 24"-Multitouch-screen
- Simple and clearly arranged operation
- Split Screen and Eco function

High - Performance Injection Unit

- Flexible combination of injection unit
- High injection capacity
- Optional: more injection speed
- Optional: more nozzle contact force
- Increase of screw drive capacity available
- Optional: double the injection unit speed of any PX to 100 mm/s

Optimized Free Space

- Generous free space below the clamping unit for integrating conveyor belts
- Optimal utilization of the production space

Flexible control cabinets and power control cabinets

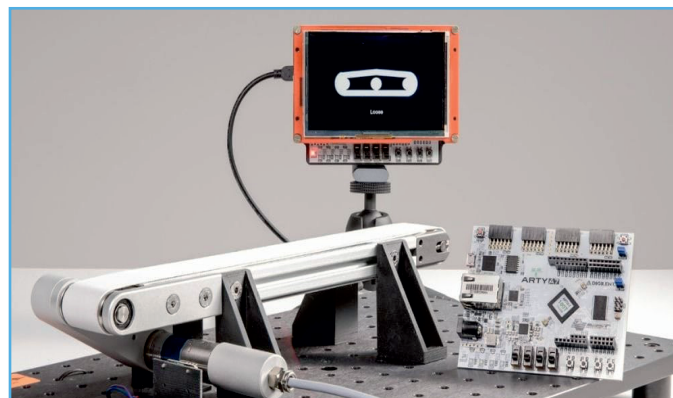
- The highest safety standards
- Space and capacity reserves for retrofits
- Efficient energy management with recuperative mode

(Source: Krauss Maffei)

FRAUNHOFER IPMS Develops Smart Demonstrator for Predictive Plant Maintenance

The FRAUNHOFER Institute for Photonic Microsystems IPMS presents a groundbreaking demonstrator for predictive maintenance of industrial equipment. The demonstrator uses

advanced sensor technology combined with artificial intelligence (AI)-based data processing to detect potential machine damage at an early stage and avoid costly downtime.



Building on the results of the iCampus project ForTune, FRAUNHOFER IPMS has developed a new demonstrator that combines sensor technology, data acquisition and AI-based data analysis for condition monitoring and predictive maintenance. This opens up new possibilities for the preventive maintenance of systems and machines. FRAUNHOFER IPMS uses its expertise in edge computing and real-time data transmission. Dr. Marcel Jongmanns, head of the project at FRAUNHOFER IPMS, explains: "Our solution enables precise condition monitoring of machines through the use of sensors and intelligent data analysis. The integration of AI into the sensors enables us to detect damage before it occurs, thereby optimizing maintenance intervals and minimizing downtime."

The ShowCase displays a miniaturized conveyor belt and demonstrates the performance of a new type of toolbox for monitoring industrial plants. Multimodal sensors are used in the demonstrator. The sensor function records accelerations in the spatial directions and the corresponding rotation rates. In addition, magnetic field sensors and acoustic or ultrasonic sensors are used to monitor the system. The system offers two main functions: The detection of belt tension and the detection of blockages. The AI models are based on extensive data analyses and enable the precise prediction of damage. To increase the accuracy of the models, real-time calibrations can be performed to adapt the system to new environments.

The FRAUNHOFER IPMS system solution aims to combine the in-house sensors with its own edge computing unit based on the RISC-V architecture for efficient data processing directly at the point of use.

This enables complex AI operations and real-time analyses. Changing environmental influences can thus be modeled directly or taken into account in the analysis. This enables the integration of a large number of sensors and significantly increases the accuracy of predictions about the condition of the industrial plant. Existing limitations in computing power for real-time modeling in embedded systems are overcome.

The expertise of FRAUNHOFER IPMS in the field of sensor technology and AI evaluation enables the continuous further development of the technology. Existing partnerships with companies, such as Vetter Kleinförderbänder GmbH, show the industry's interest in such solutions.

During the SENSOR+TEST trade fair from June 11 to 13, 2024 in Nuremberg, visitors will have the opportunity to view the demonstrator at FRAUNHOFER IPMS booth 1-317. The scientists will be on site to answer questions and provide insights into the research work. Appointments for personal discussions can be made in advance on the FRAUNHOFER IPMS website.

About FRAUNHOFER IPMS

The FRAUNHOFER Institute for Photonic Microsystems IPMS stands for applied research and development in the fields of intelligent industrial solutions, medical technology and mobility. Research focuses on miniaturized sensors and actuators, integrated circuits, wireless and wired data communication as well as customer-specific MEMS systems. Research and development takes place on 200 and 300 mm wafers in the two clean rooms. The services offered range from consulting and process development to pilot series production.

The Right Roller Gate for Your Application



Lorenz roller gates provide a dust-tight seal in high-cycle gravity flow applications for up to 36-degree configurations. The unique blade bonnet seal keeps

the blade clean each cycle and the cam rollers are adjustable maintaining a tight seal in operation.

Revisiting the '5 M's' of Molding

All injection molding ultimately comes down to the "Man, Mold, Machine, Material and Method." But those key aspects can be viewed differently if you're auditing mold changes before startup or troubleshooting changes for an already validated process.

Injection molding can be a real challenge if you don't follow the "Five M's": Man, Mold, Machine, Material and Method. Our goal of 100% efficiency, zero scrap and repeatable processes can sometimes be hindered by poor setups or changes in the molding process.

Over the years, I have developed two separate "5M" systems. One applies to auditing mold changes before startup, while the second applies to troubleshooting changes within a validated process. This article will explain the application of both systems and how they can be used to consistently identify and correct molding problems.



The second "M" is Mold: A worker verifies the diameter of an o-ring prior to its installation. (Photo: Garrett MacKenzie)

Auditing a Mold Change

This 5M configuration is used when auditing a mold change before startup. It serves as an outline for the entire audit process, and if it is

repeated every time a mold change is audited, it can help prevent poor setups leading to poor startups. Here are the steps taken for each:

Man: This applies to area setup and notification of the supervisor that the press is about to start. This gives the supervisor time to schedule the operator and get him or her into place when parts start moving down the belt. Cell layout is verified as being correct for the new job. All old packaging, labels and components are verified as removed from area, and all required components are confirmed to be in place.

WE LIKE SHOWING OFF OUR **TRUE COLOURS!**



MASTERBATCHES • COMPOUNDS • TOLL COMPOUNDING • BIOPOLYMERS



■ Innovation ■ Technology ■ Precision ■ Performance

+91 - 22- 66929701 | info@rajivplastics.com | www.rajivplastics.com



Milacron India Reaches a Historic Milestone

Celebrating the handover of its 25,001st machine - a testament to innovation and excellence



We genuinely appreciate our customers' unwavering support and collaboration in helping us achieve this significant global milestone.



Dear Valued Customers,

I am delighted to share with you a significant achievement at Milacron India – the delivery of our 25,001st machine. This milestone stands as a testament to your unwavering support and trust in our brand.

Your partnership has been pivotal in propelling us towards continuous innovation and excellence. Together, we have forged a legacy of quality and distinction in the plastics industry.

Throughout this journey, we have consistently prioritized innovation, quality, and aftermarket support-essentials that matter most to you, our valued customers:

- Innovation is pivotal to our journey at Milacron, driven significantly by your invaluable feedback. One standout example is M-Powered, our suite of IIoT solutions, which can greatly enhance shop performance. Such innovation not only underscores our commitment to excellence but also highlights your integral role in shaping our technological advancements.
- Quality is fundamental to our operations, driven by continuous improvements that are conceived through valuable customer input. One notable achievement is our commitment to rigorous standards, ensuring every product meets the highest benchmarks. This dedication not only exemplifies our pursuit of excellence but also underscores our reliance on your insights to refine and enhance our solutions.
- Aftermarket support is essential to ensuring that your operations run efficiently and effectively. Our industry-leading response times to service requests help you achieve your production targets.

As we look forward, we are excited about the future. Our vision remains resolute – to be the leading plastics processing technology company creating and inspiring a sustainable future.

Once again, I extend our heartfelt gratitude for your patronage and partnership. Together, We **Shape What Matters For Tomorrow™**.



Bill Shukla

Managing Director,
Milacron India Private Limited,
Ahmedabad

www.milacron.com