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DYES & CHEMICAL MARKET

Connecting the Chemical Industry Together !

A MONTHLY MAGAZINE DEVOTED TO

DYES CHEMICALS PHARMACEUTICALS API TEXTILE AUXILIARIES PAINTS SOLVENTS COSMETICS

Global Manufacturers Are Choosing India Over China What does the Road Ahead Look Like for India Now -pg76

Indian Oil Aligns with National Hydrogen Mission Through Panipat Project -pg73

Kishore Kumar

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3.	Benzoyl Chloride	CAS RN. 98-88-4
4.	Benzotrichloride	CAS RN. 98-07-7
5	Chloroethylene Carbonate	CAS RN. 3967-54-2
6.	Dichloromethane	CAS RN. 75-09-2
7.	Aniline	CAS RN. 62-53-3
8.	Aluminium Chloride	CAS RN. 7446-70-0
9.	Chlorinated Paraffin-52	CAS NO. 106232-86-4
10.	Chlorinated Paraffin-70	CAS RN. 106232-86-4
11.	Sodium Hypochlorite	CAS RN. 7681-52-9
12.	Methyl Methacrylate	CAS RN. 80-62-6
13.	Methacrylic Acid	CAS RN. 79-49-4
14.	Diethyl Oxalate	CAS RN. 95-92-1

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2	CPhI Frankfurt	Oct 28-30, 2025	Messe Frankfurt
3	CPhI Middle East & Africa	Dec 8-10, 2025	Riyadh, Saudi Arabia
4	CPhI China- Virtual CPhI	June 24-26, 2025	Shanghai New International Expo Center
5	CPhI Japan	Apr 21-23, 2026	Tokyo, Japan
6	CPhI Korea	Aug 26 - 28, 2025	COEX, Seoul, Korea
7	CPhI India	Nov 25-27, 2025	Noida, India
MECS (Coating Show)			
1	Asia Pacific Coatings Show	Sept 3-5, 2025	Indonesia
2	Saudi Arabia Coatings Show	2027	Dammam Saudi Arabia
3	Middle East Coatings Show	Apr 14-16, 2026	Dubai World Trade Centre
4	Coatings For Africa	June 24-26, 2026	Johannesburg, South Africa
DYE+CHEM			
1	Dye+Chem Morocco International Expo	Nov 5-7, 2025	Morocco
2	51st Dye+Chem Sri Lanka International Expo	March 5-7, 2026	Colombo Sri Lanka
3	Dye+Chem Bangladesh International Expo	Sept 3-6,2025	Bangladesh, Dhaka
4	50th Dye+Chem Brazil International Expo	Nov 2025	Brazil
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1	Bangladesh Int'l Dyes, Pigments and Chemicals Expo	Sept 10-13, 2025	Dhaka, Bangladesh
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2	Paint Istanbul TURKCOAT	2026	Istanbul
3	Paint Expo Eurosia	Oct 01-03, 2025	Istanbul Expo Center / Istanbul Fuar Merkezi
Other Exhibitions			
1	Paint India	Feb 19-21, 2026	Bombay Exhibition Centre, Mumbai
2	Expo Paint and Coating	TBD 2026	Dhaka, Bangladesh
3	CIPI	TBD	Mumbai, India
4	Chemspec Europe	May 6-7, 2026	Koelnmesse, Germany
5	ChemUK Expo	May 20-21, 2026	NEC, Birmingham, UK
6	American Coatings Show	May 5-7, 2026	Indianapolis
7	China Coat China	Nov 25-27, 2025	China Import & Export Complex, Guangzhou
8	Interdye China	TBD	Shanghai, China
9	Paint Expo Germany	Apr 14-17, 2026	Messe Karlsruhe Germany
10	India Chem	Oct 2026	Mumbai Exibition Centre, India
11	Water Expo	Apr 24-26 2026	Pragati Maidan, New Delhi
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Chemical Market

(A Monthly Magazine)

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EDITORIAL

CHEMICAL MARKET

A MONTHLY MAGAZINE DEVOTED TO THE DYES, CHEMICALS, PHARMACEUTICALS, TRADE & INDUSTRY SINCE 1982

A Complex Juncture for Chemicals: Navigating Slow Growth and Rising Pressures

Entering mid-2025, the global chemical industry is at a crossroads. After facing headwinds in recent years—weak demand, volatile energy costs, and geopolitical uncertainty—the sector is seeing tentative signs of recovery, yet structural challenges persist.

According to MarketsandMarkets, global chemical sales edged up from USD 6.18 trillion in 2024 to an expected USD 6.32 trillion in 2025—a moderate 2.3% increase. The American Chemistry Council projects a slightly stronger uptick of around 3.5%. But growth is uneven: specialty chemicals and industrial segments continue to lag, while end-use sectors like agriculture and consumer products are picking up momentum.

Regional Divergence:

In the U.S., momentum is building—chemical output is projected to grow nearly 1.9% in 2025. Key drivers include lower interest rates, increased capital spending (up 4.1% in 2024), and rebound demand in semiconductors, automotive, and housing. By contrast, Europe remains under stress. The EU chemical sector remains weak in Q1 2025—high gas prices, low output, and low capacity utilisation are inhibiting competitiveness Germany's VCI recently downgraded its 2025 outlook, forecasting stagnation or ~1% contraction due to tariffs, energy costs, and geopolitical uncertainty. Yet companies are adjusting operations—shifting production footprints to lower-cost regions and expecting ~5% profit growth in 2026.

Supply Chain & Pricing: Inflation, Disruptions, Inventories

Despite deeper inventory levels earlier in the recovery, U.S. chemical inventories-to-sales remain above pre-pandemic measures—1.14 in April 2025 versus 1.11 a year ago—suggesting cautious restocking. Recent April chemical exports dropped 6.3% following March's uplift, while imports declined 9.8%, pushing the trade surplus higher.

Producer prices show early signs of easing: down 0.5% in May, offsetting prior inflation in agri, inorganic, and coating chemicals, even as organic chemicals and resins remain under pressure.

However, certain commodities are roaring. Sodium benzoate—a common food and cosmetic preservative—is experiencing steep price hikes due to ongoing supply-chain bottlenecks and surging demand. Other bulk segments, such as rock phosphate and sulfur used in fertilizers, are pressuring margins across agrochemical players

Specialty Growth Areas: Green, Rubber, Herbal, Pharma

On the bright side, several niche sectors are experiencing strong expansion:

- Organic herbal hair colors, harnessing plant-based dyes like henna and amla, are growing at ~8% CAGR—forecasted to reach USD 2.77 billion by 2032
- Rubber chemicals are benefiting from automotive, healthcare, and construction demand, with rising interest in sustainable, high-performance additives
- The pharmaceutical chemicals segment is sizeable (USD 232 billion in 2024) and expanding steadily (~4.9% CAGR to 2030).

Sustainability & Innovation: ESG on All Fronts

Sustainability is no longer optional. Industry-first multi-stakeholder efforts—such as Together for Sustainability, now with 57 members—are standardizing greener supply-chain practices.

Green hydrogen is gaining traction. India, for example, is hosting sessions on "Developing a cost-effective ecosystem" for green hydrogen in June 2025, signaling long-term decarbonization aspirations. Meanwhile, EU is advancing action on "forever chemicals" like TFA—a byproduct of PFAS—amid debates between industry resistance and health advocates

Digital transformation is accelerating—IoT, AI/ML and supply-chain digitization are being deployed in petrochemical plants, OCSR systems, and logistics optimization.

- Rajiv Parikh

CHENNAI PRICE TREND – 27.05.2025

Inorganic Chemicals	No/ of Units Per Pack	Price Rs.
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Alum- Ferric	50Kgs	23.00
Ammonium Bicarbonate	25Kgs	24.00
Ammonium Bi fluoride	50Kgs	178.00
[sugar-grade]	50Kgs	178.00
Ammonium Carbonate	50Kgs	92.00
Ammonium Chloride	50Kgs	20.00
Ammonium Nitrate	50Kgs	30.00
Ammonium Phosphate (Mono)	50Kgs	135.00
Ammonium Sulphate	50Kgs	22.00
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Soda Ash Light	50Kgs	30.00
Sodium Bicarbonate	50Kgs	33.00
Sodium Bichromate	50Kgs	165.00
Sodium Bisulphite	50Kgs	52.00
Sodium Chlorite 50% (India)	50Kgs	240.00
Sodium Chlorite 80% (India)	50Kgs	280.00
Sodium Cyanide	50Kgs	650.00
Sodium Fluoride	50Kgs	150.00
Sodium Formate	50Kgs	53.00
Sodium Hexameta Phosphate 68%	50Kgs	128.00
Sodium Hydrosulphite [China]	50Kgs	180.00
Sodium Metabisulphite	50Kgs	35.00
Sodium Nitrate	50Kgs	52.00
Sodium Nitrite (China)	50Kgs	60.00
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Sodium Sulphide 58-60% (Flakes)	50Kgs	52.00
Sodium Sulphite 92%	50Kgs	50.00
Sodium Tri polyphosphate	50Kgs	92.00
Titanium Dioxide Anatase	25Kgs	210.00
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Dioctyl Phthalate	200Kgs	130.00
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EDTA Disodium	25Kgs	188.00
EDTA Tetrasodium	25Kgs	188.00
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Formaldehyde	65Kgs	26.00
Formic Acid	35Kgs	72.00

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n-Hexane	160Litrs	70.00
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Isopropyl Alcohol	160Kgs	130.00
Isopropyl Alcohol (Refill)	160Kgs	112.00
Maleic Anhydride	25kgs	105.00
Methyl Ethyl Ketone	166Kgs	120.00
Methyl Isobutyl Ketone	160Kgs	145.00
Methyl Isobutyl Ketone (Refill)	160Kgs	145.00
Methylene Dichloride	250Kgs	44.00
Methylene Dichloride (Refill)	250Kgs	38.00
Mineral Turpentine Oil	50kgs	92.00
Monochloro Phenol	50Kgs	120.00
Nitrobenzene	200Kgs	108.00
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Oxalic Acid (Punjab)	50Kgs	62.00
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Perchloroethylene	320Kgs	92.00
Phenyl Liquid	230Kgs	108.00

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Product	Quantity	Grade
Hydroxypropylcellulose (HPC) Details : HPC 25KG Ashland make only Bhiwandi CLICK HERE TO VIEW Bhiwandi, Maharashtra, India	**25 Kgs**	**Any**
Sodium Periodate Details : Urgent Requirement. CLICK HERE TO VIEW Telangana, India	**100 Kgs**	**Chemical**
n-Butyllithium solution 2.5 M in THF Details : Quantity: Minimum possible package ×1 Grade/ Document Required: COA (Certificate of Analysis) requested CLICK HERE TO VIEW Poland	**1 Pkt**	**Any**
Zinc Sulphate Details : Di ethylene Glycol CLICK HERE TO VIEW Bhiwandi, Maharashtra, India	**3000 Kgs**	**Industrial**
METHYL TRICHLOROSILANE Details : We Request You To Send The Quotation, Specification And Delivery Period As Early As Possible CLICK HERE TO VIEW Mumbai, Maharashtra, India	**200 Litres**	**VirginPure**

BUY INQUIRIES

Product	Quantity	Grade
Spent Tributyl Tinchloride (TBTC)	**2000 Kgs**	**Any**
Details : We are looking to buy Spent Tributyl Tinchloride (TBTC).		
		CLICK HERE TO VIEW
Hydrabad, India		
Toluene 99.9	**30 Tonnes**	**Industrial**
Details : Urgent Requirement.		
		CLICK HERE TO VIEW
Uttar Pradesh, India		
Triethyl Amine LR	**200 Litres**	**Any**
Details : acid value 195 min.		
		CLICK HERE TO VIEW
Telangana, India		
DEG	**20 Kg**	**Technical**
Details : Di ethylene Glycol		
		CLICK HERE TO VIEW
India		
SODIUM METHYL ESTER SULPHONATE	**200 Kgs**	**Industrial**
Details : We want this chemical on urgent basis. The requirement would be montly recurring. Usage - Textile and Detergent.		
		CLICK HERE TO VIEW
Mumbai, Maharashtra, India		

BUY INQUIRIES

Product	Quantity	Grade
Xanthan Gum	**200 Kgs**	**None**
Details : Application - Cosmetic Use . Xanthan Gum transparent Make- Jungbunzlauer CAS No:- 11138-66-2		
		CLICK HERE TO VIEW
Ghaziabad, Uttar Pradesh, India		
Cyanuric Acid CAS#: 108-80-5	**1 Tonnes**	**Industrial**
Details : Need it to export to China on a repeat basis.		
		CLICK HERE TO VIEW
Chennai, Tamil Nadu, India		
Epibromohydrin CAS No:- 3132-64-7	**100 Kgs**	**Industrial**
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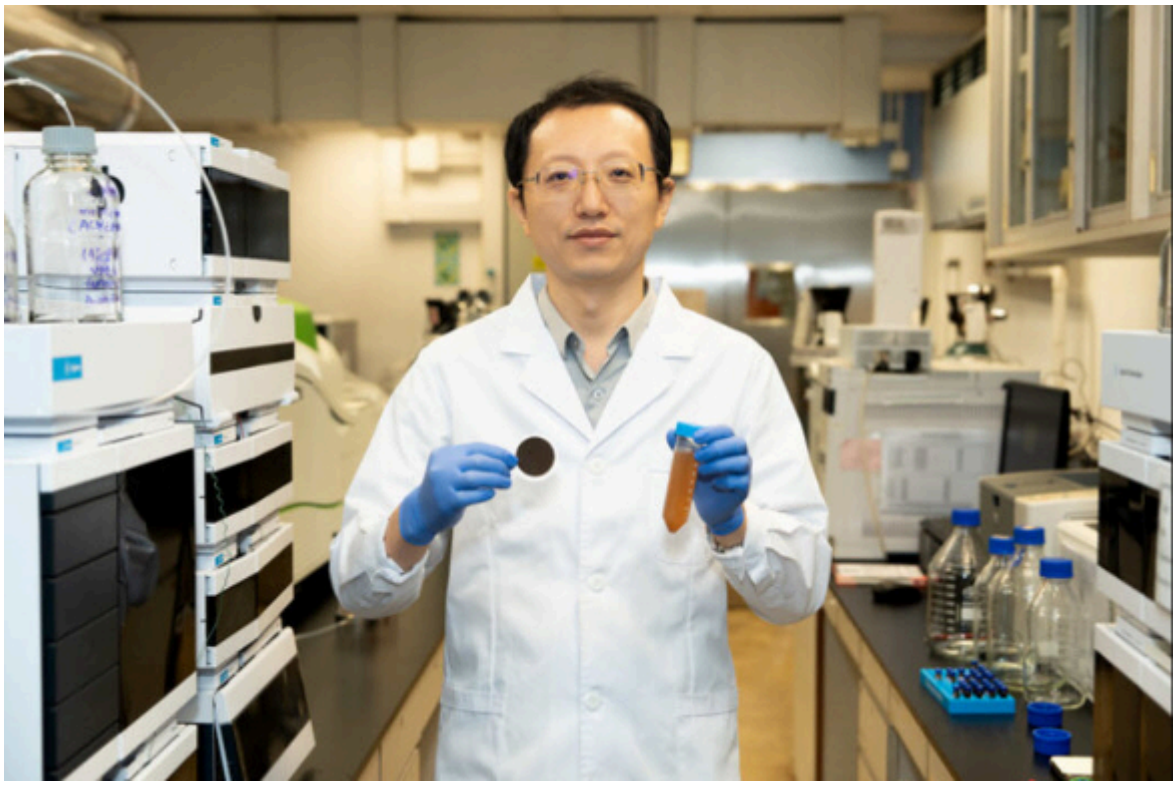
HKBU develops new catalytic membrane that boosts efficiency of cleaning wastewater using oxygen



HONG KONG, May 20, 2025 / PRNewswire/ -- A research team led by Hong Kong Baptist University (HKBU) has developed a novel catalytic membrane that can substantially boost the efficiency of cleaning wastewater using a modified advanced oxidation process (AOP). The invention contributes to the effort of tackling environmental pollution problems by offering a safer, more cost-effective, and environmentally friendly solution for wastewater treatment.

Novel technology targeting phenolic pollutants

Water pollution is a pressing environmental issue. Phenolic compounds are a major group of pollutants that pose a significant threat to the world's potable water supply. They are widely present in industrial effluents, agricultural runoff and municipal wastewater. They can persist in the environment for long periods, accumulate in living organisms and pose significant risks to human health and water quality. Traditional methods for removing phenolic pollutants often require hazardous chemicals or energy-intensive processes.

AOPs have been increasingly recognised and developed over the past few decades to remove pollutants from water. They are a set of chemical treatment methods which activate oxidants into reactive oxygen species (ROS) that can be used to break down pollutants in wastewater. Among these ROS, singlet oxygen (1O2) is particularly effective in targeting phenolic compounds.

More efficient in generating ROS

However, existing methods to generate ROS usually require strong oxidants and energy inputs as catalysts, which can be costly and environmentally unfriendly. Moreover, traditional AOP systems face two significant challenges: the inefficient transfer of molecular oxygen (O2) in water due to its low solubility, and the difficulty in getting pollutants to interact with the catalyst surface due to the surrounding water film as a barrier.

In response to these issues, a research team led by Professor Zhao Jun, Associate Professor of the Department of Biology at HKBU, has developed a novel catalytic membrane named "NGCF-OV". It is made from a composite material that combines two advanced materials, N-doped reduced graphene oxide and cobalt ferrite. This membrane offers a promising solution for AOP and addresses the challenge of

efficiently activating molecular oxygen to become 1O2.

Proven efficacy in degrading bisphenol A

The NGCF-OV membrane contains unique sites (asymmetric Co-OV-Fe sites) that can adjust the bond length of O2, i.e., the distance between the centres of the two oxygen atoms that are bonded together, and thus facilitate faster and more efficient electron transfer. As a result, 1O2 can be produced without the need for other catalytic agents and external energy inputs. Additionally, the membrane also features graphitic nitrogen sites that trap pollutants close to the membrane's surface. The distance between the pollutants and the 1O2 molecules generated is therefore significantly reduced, overcoming the water film barrier issue with reaction efficiency greatly improved.

The NGCF-OV membrane demonstrated superior efficiency in generating and utilising 1O2 for pollutant degradation. Test results show that this novel technology can completely degrade bisphenol A, a common and harmful pollutant, in just 86 milliseconds (one thousandth of a second), outperforming many existing cleanup methods.

More sustainable and efficient wastewater treatment

Professor Zhao said: "This research marks a significant advancement in the field of water treatment and represents a promising strategy for addressing environmental pollution. By effectively integrating the processes of O2 activation and pollutant degradation within a single membrane, this technology offers a more sustainable and efficient approach to treating contaminated water.

"The ability to generate reactive oxygen species without external energy inputs makes this membrane particularly suitable for emergency pollution remediation and everyday water treatment applications," he added.

Application of the NGCF-OV membrane is not limited to the degradation of a specific pollutant like bisphenol A. Instead, its catalytic properties can be harnessed for the degradation of a variety of organic pollutants in wastewater, such as antibiotics, pesticides, dyes, etc. It paves the way for more advanced practical pollution remediation technologies and contributes to the broader goal of protecting public health and preserving the environment.

Read the full report : https://www.prnewswire.com/news-releases/hkbu-develops-new-catalytic-membrane-that-boosts-effi ciency-of-cleaning-wastewater-using-oxygen-302459978.html

If you want your report abstract to be published please contact info@chemicalmarket.net

Rochester Midland Corporation Acquires Comprehensive Chemical And Water Treatment

ROCHESTER, N.Y., May 19, 2025 / PRNewswire/ -- Rochester Midland Corporation ("Rochester Midland"), a leading provider of route-based, technical services and specialty chemical products across water treatment, food safety and other verticals, today announced that it has acquired Comprehensive Chemical and Water Treatment Inc. ("CCWT"), a water treatment service provider based in Saskatchewan, Canada.

Founded in 2016, CCWT provides tailored water treatment programs that maintain and improve efficiencies across heating & cooling systems, including monthly testing and comprehensive water analyses for unique system needs.

Jim White, CEO of Rochester Midland, commented, "The acquisition of CCWT significantly augments Rochester Midland's service footprint across Canada's Saskatchewan province. We look forward to partnering with CCWT in providing world-class service to our combined customer base."

Brodie Toffan, Founder of CCWT, commented, "Rochester Midland and CCWT share a very similar philosophy to water treatment and I couldn't be more excited to partner with them. This partnership will provide CCWT with additional capabilities and resources to better serve our customers across existing and new geographies."

Read the full report : https://www.prnewswire.com/news-releases/hkbu-develops-new-catalytic-membrane-that-boosts-effi ciency-of-cleaning-wastewater-using-oxygen-302459978.html

If you want your report abstract to be published please contact info@chemicalmarket.net

Archroma reimagines iconic denim for a cleaner future

Pratteln, Switzerland, May 19, 2025 - Archroma, a global leader in specialty chemicals, is set to showcase key innovations in denim color and processing to the global denim community at Denim Première Vision Milan on May 21 and 22 and Denimsandjeans Vietnam on June 25 and 26.

Denim has remained a staple in both mainstream and high-end fashion, but traditional manufacturing methods are under increasing scrutiny for their intensive use of water, energy and chemicals.

"With a broad portfolio of textile dyes and chemicals backed by decades of advanced research, Archroma is rewriting the rules for those who love denim. From timeless indigo to trend-driven finishes, we are evolving denim with processing solutions that preserve the fabric's iconic appeal while minimizing its impact," Dhirendra Gautam, VP Global Marketing and Strategy, Archroma, said.

Archroma will demonstrate an array of denim innovations at Denim Première Vision Milan and Denimsandjeans Vietnam, headed by DENIM HALO – a unique pretreatment and dyeing process developed to empower mills to produce highly sought-after distressed denim looks with a significantly reduced environmental footprint.

DENIM HALO combines DIRSOL® RD p, a new product for a special/specific yarn pretreatment, with Archroma's indigo, sulfur or biosynthetic dyes to produce laser-friendly denim with outstanding contrast on intense black and indigo shades – without modifying standard dye recipes or set up. Additionally, the solution reduces yarn shrinkage and improves garment tensile strength, while also saving water and energy, avoiding the use of potassium permanganate, and reducing the need for caustic soda in sulfur dyeing.

Archroma will also be showcasing a brand-new capsule collection at the shows. The collection will present Black Denim that utilizes Archroma's DENIM HALO and DIRESUL® EVOLUTION BLACK and made with premium fabric from Kipas Denim and finished using Jeanologia' s innovative washing technology. The result is a refined, modern take on black denim—combining elevated design with responsible production practices.

With DENIM HALO, trade show visitors will explore breakthrough dyestuffs such as DIRESUL® EVOLUTION BLACK, DENISOL® PURE INDIGO 30 and EarthColors®.

DIRESUL® EVOLUTION BLACK is Archroma's cleanest sulfur black

dyestuff. Manufactured using fewer resources, it has an overall impact reduction of 57% during dye synthesis compared to standard Sulfur Black 1 liquid.*

DENISOL® PURE INDIGO 30 LIQ is an aniline-free** pre-reduced indigo that creates authentic denim colors with the same performance and efficiency as conventional indigo dye, but in a way that can reduce the risk of pollution. Furthermore, it is produced in an aniline-free** process to help enable cleaner denim production.

EarthColors® is a patented Archroma technology that creates high-performance biowaste-based dyes from non-edible food and agricultural waste, leaving the edible part available for consumption. EarthColors® dyes help reduce the industry's overall impact on the water footprint. Since they upcycle waste from other industries, they also help contribute to a circular economy.

Continued on page 37

HIMADRI SPECIALITY CHEMICAL PARTNERS SICONA TO INTRODUCE SICX ANODE TECH FOR LITHIUM BATTERIES IN INDIA

India, May 13 -- Himadri Speciality Chemical, a leading supplier of speciality chemicals and new energy materials, has inked an exclusive technology licensing partnership with Australian battery materials company Sicona.

It may be recollected that it was in June 2023, Sicona had raised AUD 22 million in Series A funding led by Himadri Speciality Chemical.

As per the understanding, Himadri will access, localise and commercialise Sicona's proprietary Silicon-Carbon (SiCx) anode technology in India for lithium-ion battery tech.

SiCx is claimed to be a transformational product that can seamlessly integrated into existing lithium-ion battery anode formulations, offering a scalable and commercially viable path to significantly improved battery performance.

Under the partnership, Sicona will provide complete technical support, including access to its proprietary know-how, engineering expertise, qualification protocols and quality systems for the establishment of SiCx production plant. Himadri on its part will bring its experience in scaling high-precision chemical and material operations to drive localisation and commercialisation of the technology.

Unlike conventional anode materials, Sicona's SiCx material, when used in conjunction with traditional graphite (typically in proportions of 5-20 percent) will significantly enhance energy density (around 20 percent) and charging performance (about 40 percent). This simply put means that EV's using the SiCx battery tech will have higher range and faster charging speed.

Anurag Choudhary, Chairman, Managing Director & CEO, Himadri Speciality Chemical, said, "This partnership marks a turning point in the world's advanced battery materials journey. Sicona's SiCx technology, when used alongside graphite, delivers two core advantages - higher energy density for longer driving range and faster charging capability that dramatically reduces wait time for EV users. By integrating Sicona's technological might with Himadri's proven operational excellence, global scale and strategic intent, we are creating a blueprint for innovation-led clean energy leadership. This partnership not only enables India to meet domestic EV and energy storage demands, but also makes us an exporter of next-generation battery materials to the world."

Christiaan Jordaan, CEO & Co-Founder, Sicona, said, "This partnership marks a transformative moment for Sicona and our SiCx technology. It enables us to commercialise our breakthrough technology at an unprecedented speed and scale. Himadri's world-class manufacturing capabilities and global presence make them the ideal partner for this journey. We are deeply grateful for their unwavering support to our team, our technology, and our mission."

Source : Himadri Speciality Chemical

FORTUM AND VIANODE JOIN FORCES TO RECYCLE GRAPHITE FROM END-OF-LIFE EV BATTERIES

Fortum Battery Recycling and Vianode have signed a Memorandum of Understanding under which the two companies will work together to secure supplies of high-quality recycled graphite concentrate from Fortum's hydrometallurgical plant in Harjavalta, Finland. Both companies will also develop and optimize recycled graphite materials for use in Vianode's commercial-scale anode production.
"Fortum Battery Recycling and Vianode have a shared commitment to a more sustainable and less resource-intensive

EV battery industry. By recovering valuable and critical graphite from used batteries and returning it to the cycle as battery-grade material, we help enable the production of new lithium-ion batteries with a significantly lower environmental footprint," says Tero Holländer at Fortum Battery Recycling.

"Recycling graphite from end-of-life batteries is vital to reduce dependence on virgin raw materials, lower carbon emissions, and build sustainable supply chains. Access to recycled graphite concentrate with potential to scale volumes over time will support Vianode's ambition to deliver high-quality anode materials with an industry-leading CO_2 footprint below 1 kilogram CO_2e per kilogram of graphite by 2030", says Dr. Stefan Bergold, Chief Commercial Officer of Vianode.

Graphite anode material represents the largest component of lithium-ion batteries by weight, typically around 70 kilograms per EV. The majority of graphite used in EV batteries is synthetic graphite, of which around 90% is currently imported from China. Towards 2030, Europe is expected to see a significant increase in battery recycling as the first generation of EVs reaches the end of their life and new EU legislation requires higher recovery rates and the use of recycled materials in new batteries.

Fortum Battery Recycling operates Europe's largest closed-loop hydrometallurgical battery recycling facility in Harjavalta, Finland. In March 2025, Fortum's Harjavalta facility was recognized by the European Commission as a Strategic Project as part of the implementation of the Critical Raw Materials Act (CRMA), aiming to ensure European production of raw materials needed for green transition.

Vianode sets new industry standard for low-carbon anode graphite battery materials

The LCA verifies a climate change impact of 1.9 kilo CO2 equivalents per kilo graphite produced in Vianode's process. Feedstock material production and processing are considered the main emission contributors. This represents a potential CO2 emission reduction of more than 90% compared to conventional fossil-based production according to Benchmark Mineral Intelligence, the latest LCA results, and internal company analysis data.

"Vianode's ambition is to change the way batteries and battery materials are produced. In addition to leading sustainability metrics, our solutions offer high-performance properties that enable faster charging, longer service life and better recyclability of electric vehicles (EVs). We will provide a unique combination of the highest material quality along with the world's lowest emissions for anode graphite solutions. Moreover, we are aiming to enable resilient local value chains by establishing industrial scale production in North America and Europe," says Burkhard Straube, CEO of Vianode.

"Vianode's synthetic anode graphite production offers a very low CO2 footprint and the potential to contribute to significant emission reductions within the battery and EV value chain without compromising on product quality," says Lydia Bridges, senior sustainability consultant and graphite specialist at Minviro, a recognised environmental consultancy specialising in LCA's for the industrial and battery materials industry.

Sustainable production of anode graphite solutions is key for the green transition of mobility. Graphite makes up around 70 kilos per battery pack in an EV and represents up to 40% of battery cell emissions based on the average present-day production.

"Production of high-quality sustainable anode graphite solutions will be a major step towards more sustainable batteries and EVs. Once in full industrial scale production, our contribution to CO2 footprint reductions will be equivalent to more than the emissions of the city of Copenhagen every year," says Andreas Forfang, VP Sustainability and ESG in Vianode.

The LCA is a cradle-to-gate scope 1, 2 and 3 production study of the prospective production of battery-grade synthetic anode graphite at Vianode's planned large-scale production site. This means that the impact is assessed from the point of resource extraction to the factory gate, where the product is packed and loaded onto trucks. Seven internationally accepted impact categories were interpreted in detail: climate change, water scarcity footprint, land use, acidification potential, particulate matter, fossil resource use and mineral and metal resource use. The study has been certified according to the ISO-14040 and ISO-14044 standards.

Vianode has produced anode graphite solutions at its industrial pilot in Kristiansand, Norway since 2021.

Vianode's Technology Center opened in the same city in 2022 and the next milestone is the opening of the first full-scale production plant at Herøya, Norway, in the second half of 2024. Vianode's ambition is to produce high-performance anode graphite solutions for 3 million EVs annually by 2030 across Europe and North America.

Source : Vianode

NAXTRA BATTERY BREAKTHROUGH & DUAL-POWER ARCHITECTURE: CATL PIONEERS THE MULTI-POWER ERA

On April 21, 2025, CATL unveiled three groundbreaking EV battery products at its inaugural Super Tech Day: The Freevoy Dual-Power Battery, Naxtra - the world's first mass produced sodium-ion battery, and the second-generation Shenxing Superfast Charging Battery, as well as an integrated 24V start/stop Naxtra battery for heavy-duty trucks. These revolutionary innovations break through technological boundaries, and officially lead the industry into the "Multi-Power Era".

The Freevoy Dual-Power Battery introduces a pioneering cross-chemistry system design that transcends the limitations of single technology paths to meet customized user needs. Naxtra, the world's first mass-producible sodium-ion battery, breaks resource constraints and strengthens the foundation of the new energy industry. The second-generation Shenxing Superfast Charging Battery, with its peak 12C charging rate, sets a new global record for superfast charging technology.

Naxtra Battery: Beaking Performance Limits, Powering the Future of Energy

CATL's Naxtra Battery breaks through the performance boundaries of the material itself, achieving the mass production of sodium-ion batteries for the first time. With sodium's inherent safety and abundant reserves, it efficiently reduces dependence on lithium resources and strengthens the foundation of new energy technologies, while promoting energy utilization from "single resource dependence" to "energy freedom".

The Naxtra Battery product line includes two categories: the Naxtra passenger EV Battery and the Naxtra 24V Heavy-Duty Truck Integrated Start-Stop Battery. Both are capable of performing across the full temperature range from -40°C to +70°C, redefining the extreme temperature limitations of batteries. The Naxtra passenger EV Battery retains 90% usable power at -40°C. In an extremely low state of charge with only 10% SOC remaining, the Naxtra passenger EV Battery can still achieve no significant power degradation at a temperature of -40 ℃.

CATL's Naxtra passenger EV Battery achieves an energy density of 175Wh/kg, the highest among sodium-ion batteries worldwide, and comparable to LFP batteries. It offers a 500-kilometer range and can achieve over 10,000 cycles, which significantly reduces maintenance costs. In terms of safety, the Naxtra Battery eliminates combustion-supporting factors at the material level, thus achieving a transformative breakthrough from "passive defense" to "intrinsic safety".

CATL's Naxtra 24V Heavy-Duty Truck Integrated Start-Stop Battery boasts over 8 years of service life. It reduces total lifecycle costs by 61% compared to traditional lead-acid batteries. This product offers unique advantages including deep discharge across the entire capacity, one-click starting at -40°C, and the ability to start after being idle for a year. Compared to lead-acid batteries, it is more efficient, eco-friendly, and economical, driving commercial vehicles into a lead-free era where vehicle and battery ages as one.

This significant breakthrough made by CATL in the performance of sodium-ion batteries has filled the gap in the application of batteries in extremely cold environments. The performance breakthrough of sodium-ion batteries is a key development in the full scenario application of batteries. Thus, CATL's Freevoy Dual-Power Battery has emerged.

Freevoy Dual-Power Battery: Ushering in the Multi-Power Era of Energy Freedom

The Freevoy Dual-Power is a breakthrough product that deeply integrates CATL's dual-power architecture and self-forming anode technology. The dual-power architecture means that the battery pack has two powerful "independent energy zones," which enables five dual functions: dual high-voltage, dual low-voltage, dual structure, dual thermal management, and dual thermal runaway safety protection, ensuring the continuity, stability and safety of power output. This dual-power design and innovative

integration of software will provide a more stable and reliable power supply for vehicles in the upcoming L3 and L4 autonomous driving era.

The "self-forming anode technology" represents a disruptive breakthrough at the atomic level, meaning the volumetric energy density of the battery can increase by 60%, and the gravimetric energy density by 50%. This also means that more power can be engineered into the same battery pack space, supporting longer range. This technology can be flexibly paired with various material systems, and when combined with NCM systems, the energy density can be increased to over 1000Wh/L.

The "dual-electric range extension" technology pioneered by the Freevoy Dual-Power Battery can intuitively regulate the allocation strategy of two energy zones based on the vehicle's driving status and users' driving habits. The main energy zone of the dual-power battery can use different chemical systems of battery cells according to the users' driving habits and scenarios, meeting daily driving needs; The extended range energy zone can adopt high specific energy self-forming anode technology to provide greater capacity to meet users' long-distance travel needs.

Three dual-power solutions across different chemical systems were released on site:

- Sodium-LFP Dual-Power Battery - It combines Naxtra with a LFP self-forming anode battery, fully utilizing the low-temperature performance of sodium-ion technology to provide users with an exceptional experience that excels in cold conditions while delivering extended range.

- LFP-LFP Dual-Power Battery – It pairs the second-generation Shenxing Superfast Charging Battery with the LFP self-forming anode battery. It easily achieves 1,000 kilometers of pure electric range in sedans with a 3-meter wheelbase, reducing the commuting cost per kilometer to as low as 0.1 yuan.

- NCM-LFP/NCM-NCM Dual-Power Battery – It integrates an NCM battery with an LFP self-forming anode battery, achieving a peak charging rate of 12C for the NCM battery in the main energy zone, providing over 1 megawatt of power. Even when SOC drops to 20%, it can still output over 600KW of power. The upgraded version of the product, consisting of an NCM battery and an NCM self-forming anode battery enables a capacity of over 180 kWh in sedans with a 3-meter wheelbase, breaking through the 1,500-kilometer pure electric range barrier.

- CATL's Freevoy Dual-Power EV Battery puts users' needs at its center, enabling different chemical systems to "collaborate and complement each other" and overcoming the technical bottlenecks that prevent single chemical systems from adapting to all scenarios. This makes customized battery performance possible across different cost segments and application scenarios.

The innovative architecture from dual power to multi power will not be limited to the field of electric passenger vehicles, but will also be implemented in all fields such as electric buses, heavy-duty trucks, airplanes, ships, as well as industrial and commercial applications, accelerating the industrialization of renewable energy across all scenarios. At the same time, it will also accelerate the application process of cutting-edge technologies such as solid-state batteries.

Second-Generation Shenxing Superfast Charging Battery: Setting New Global Records

CATL launched its Shenxing 4C Superfast Charging Battery in 2023, ushering in the era of superfast charging. The release of CATL's second-generation Shenxing Battery once again pushes the limits of superfast charging performance and sets new world records for charging rates.

CATL's second-generation Shenxing Superfast Charging Battery is the world's first LFP battery featuring both an 800 km range and a 12C peak charging rate. With a peak charging power of 1.3 MW, it achieves 2.5 kilometers of range per second of charging, virtually eliminating the frustration of waiting. In low-temperature environments of -10°C, the second-generation Shenxing Superfast Charging Battery can charge from 5% to 80% SOC in just 15 minutes, 100% faster than the industry's highest current charging level.

Additionally, CATL's second-generation Shenxing Superfast Charging Battery provides robust power across all temperature ranges and states of charge. Even in a low-charge state, it maintains an output power of 830kW. In the demanding environment of -10°C with low charge, it can still easily meet the power requirements for 0-100km/h acceleration.

The essence of multi-power batteries means bringing power batteries from the "parameter driven" stage to the "demand driven" stage. CATL is constantly exploring and breaking through the boundaries of technology, ushering in the multi-power era in the new energy industry - a truly user centric era.

Source : CATL

MIRAI BIO ANNOUNCES PARTNERSHIP WITH THERMO FISHER SCIENTIFIC TO ACCELERATE DEVELOPMENT OF GENETIC MEDICINES

CAMBRIDGE, Mass., May 20, 2025 / PRNewswire/ -- Mirai Bio ("Mirai"), the industry's innovation partner for the co-creation of fully optimized genetic medicines, today announced a strategic collaboration with Thermo Fisher Scientific, the world leader in serving science, to benefit the life sciences and genetic medicines marketplace. Under the terms of the collaboration, Thermo Fisher's developmental and current Good Manufacturing Practice (cGMP) services, commercial manufacturing capabilities and global capacity will be paired with Mirai's innovative technology platform for optimizing the design, delivery and development of novel nucleic acid therapeutics.

Mirai was founded by Flagship Pioneering to provide industry partners with fully integrated end-to-end services. Its proprietary machine intelligence-based platform enables the high-throughput design and in vivo testing of ideal tissue-targeted delivery vehicles and facilitates seamless, rapid industrialization of development candidates.

"Thermo Fisher is a trusted industry leader with deep technical expertise and proven developmental and GMP services and commercial manufacturing capabilities. Coupling these with Mirai's unique delivery and genetic medicine optimization technologies will support accelerated program development and commercialization for our life science partners worldwide," said Travis Wilson, Executive Chairman of Mirai and Growth Partner, Flagship Pioneering. "We're thrilled to enter into this collaboration to further strengthen Mirai's platform and fully realize our vision of co-creating targeted, potentially curative programmable medicines with end-to-end optimization."

Vincent Hingot, president, Drug Substance, Pharma Services, at Thermo Fisher added, "Mirai is on a journey to break down the barriers currently limiting the full potential of genetic medicines and offer fully integrated design, delivery and manufacturing capabilities to innovative partners. We're excited to combine our life sciences expertise and manufacturing capabilities with Mirai's machine intelligence-powered platform to help bring the next generation of medicines to patients in need."

Mirai's collaboration with Thermo Fisher is a new strategic engagement that will initially leverage the capabilities of Thermo Fisher's state-of-the-art facility for RNA and Advanced Formulations. This collaboration includes a direct investment into Mirai as part of Flagship's existing partnership with Thermo Fisher that seeks to jointly develop transformative capabilities for the industry.

"This collaboration is an expansion of our long-standing relationship with Thermo Fisher and a reflection of our shared vision for accelerating the development of enabling technologies to develop first-in-class therapies," said Justine Levin-Allerhand, Ph.D., Executive Partner, Origination and Corporate Development at Flagship. "In this case, the combination of Mirai's innovation in targeted delivery and cargo design and Thermo Fisher's deep technical and commercial manufacturing expertise will maximize opportunities for the co-creation of novel medicines and help realize the full potential of both enterprises."

Source : Mirai Bio

INSTANT HYDRATION AND PROTECTION FOR THE EYELIDS AND SKIN AROUND DRY EYES WITH THE

NEW OPTASE® LIFE SENSITIVE EYE DAILY RENEWAL CREAM

NEW YORK, May 21, 2025 / PRNewswire/ -- Leading eye care company, Scope Health, is proud to introduce the newest addition to the highly effective and extra-gentle OPTASE® LIFE range, the Sensitive Eye Daily Renewal Cream. Eye Doctor and Dermatologist approved with advanced ingredients, including active Ionized Water, this eye cream is designed to complement and enhance skincare routines for people with dry and sensitive eyes.

Recent research of the ever-evolving landscape of both beauty and eye care reveals that 83% of women frequently experience eye issues such as dry, sensitive, watery, and itchy eyes on a weekly basis, yet 79% continue to wear eye makeup and skincare regularly.1

Eyelids have the thinnest skin making it the most vulnerable and sensitive area of the body. The eyelids act as a barrier to protect our eyes while enduring significant environmental and cosmetic exposure. The eyelids require special care as they lack natural fats and oils and have a weak moisture barrier, so they are highly prone to dehydration, yet many skincare products warn against use on the eyelids due to the lack of testing and sensitive nature of the periocular skin.

To combat this, the new OPTASE® LIFE Sensitive Eye Daily Renewal Cream is formulated by eye experts to be extra-gentle, making it suitable for use around the delicate eye area. It provides instant, long-lasting hydration and protection against dryness for 48 hours while repairing and replenishing the skin's natural barrier and moisture, helping minimize the appearance of fine lines.

"When it comes to taking care of our eyes, we often don't think about the eyelids. This is an incredibly sensitive area with delicate skin that faces many challenges such as sun and allergen exposure as well as cosmetic wear that can leave the skin dry and irritated. OPTASE® LIFE Sensitive Eye Daily Renewal Cream is especially well-suited to address these challenges as it helps restore hydration, soothe irritation, and reestablish the protective barrier function of the skin all while being safe and gentle to use around the eyes," Cory Lappin, OD, MS, FAAO

This eye cream has a clean ingredient formulation using only 13 ingredients. It is also fragrance, preservative, and phosphate-free to minimize irritation and help reduce skin dryness, which also causes itch and redness around the eyes.

Lisa Hornick, OD, MBA, FAAO , said "Patients who suffer from dry eye and ocular surface disease have red, irritated eyes but the skin around their eyes can very often be adversely affected as well. Traditionally, as eye care providers, we did not have great products for the delicate, sensitive skin around the eyes. That all changes with OPTASE Life Sensitive Eye Daily Renewal Cream! This special eye cream is thoughtfully formulated with dry, sensitive eyes in mind. It is fast absorbing, non-greasy, soothing and hydrating. It contains safe, effective ingredients like glycerin, vitamin E and ionized water to help boost hydration and even smooth fine lines. I've had the pleasure of using this product myself and some of my patients have as well. I love it and my patients do too!"

The key ingredients are all focused on strengthening and hydrating the periocular barrier – the Active Ionized Water actively boosts hydration, strengthening the skin's natural protective barrier and penetrates deeply into the skin to help ceramide production, Glycerin deeply hydrates and improves moisture retention, and Vitamin E, a gentle yet powerful antioxidant that revitalizes the skin for a healthy appearance.

Lin Yang, Brand Manager for OPTASE® LIFE, said, "As a brand dedicated to advancing eye health and comfort, we are thrilled to introduce another essential solution for those suffering from dry, sensitive eyes. OPTASE LIFE Sensitive Eye Daily Renewal Cream is a fast-acting, preservative-free eye cream that hydrates the sensitive eye area with the cleanest, gentlest ingredients. We're proud to offer a product that finally allows everyone, even those with the most sensitive eyes, to confidently include effective eye care in their daily skincare routine." The OPTASE® LIFE Sensitive Eye Daily Renewal Cream is suitable for daily morning and evening routines and complements the use of the OPTASE LIFE Sensitive Eye Makeup Remover, leaving the eyes truly cleansed, hydrated, and feeling soothed. For best results, use twice a day.

The OPTASE® LIFE Sensitive Eye Daily Renewal Cream is available on Optase.com, Amazon.com, and Walmart. MSRP $19.95. For additional information, visit OPTASE.com and follow us @OptaseUS on Instagram for updates.

Source : Scope Health Inc

CLARIANT TO SHOWCASE INNOVATIVE SYNTHETIC LUBRICANT SOLUTIONS AT INTER LUBRIC 2025

- Clariant will present its comprehensive portfolio of fully synthetic metalworking fluids at Inter Lubric 2025, June 4-6 in Shanghai
- New Hostagliss™ products will be highlighted: Hostagliss SEE, Hostagliss 1520, and Hostagliss LS, offering superior performance in water-based lubricant applications
- Clariant's innovative solutions deliver on the company's commitment to comprehensive and efficient metalworking fluid technologies

SHANGHAI, May 28, 2025 - Clariant, a sustainability-focused specialty chemical company, will showcase its latest innovations in synthetic metalworking fluids at Inter Lubric 2025, taking place June 4-6 at the Shanghai New International Expo Centre. Visitors to Clariant's booth N5E05 in Hall N5 will discover the company's comprehensive portfolio of lubricant solutions designed to meet the evolving needs of modern industrial applications.

Under the slogan "Clariant fully synthetic metalworking fluids: Wear Zero, Perform Hero" the company will highlight three groundbreaking lubricant that

additions to its Hostagliss product line that deliver enhanced performance. These innovations address the growing market demand for water-based alternatives to traditional mineral oil-based products, delivering the high performance required in today's competitive manufacturing environment.

Next-generation self-emulsifying technology

Hostagliss SEE, a self-emulsifying ester-based lubricant, represents a significant advancement in water-based lubricant technology. This innovative product forms exceptionally stable emulsions with a narrow particle size distribution and fine particles when dissolved in water. The unique formulation allows manufacturers to reduce the amount of emulsifiers in their formulations, resulting in lower overall costs without compromising performance, while its excellent lubricating properties combined with superior calcium soap dispersibility make it an ideal choice for modern metalworking applications.

Advanced polyether ester technology for improved efficiency

Visitors to Clariant's booth will also learn about Hostagliss 1520, a self-dispersing ester-based water-based addresses common challenges in industrial applications. Unlike traditional synthetic esters, Hostagliss 1520 maintains a stable acid value and offers near-neutral pH, making it compatible with a wide range of formulations, while its excellent hard water tolerance and superior calcium soap and iron powder dispersing capabilities ensure consistent performance across varying conditions. With smaller particle size compared to similar products, Hostagliss 1520 delivers improved cleaning performance while generating less foam than castor oil derivatives, enhancing operational efficiency.

Synthetic ester innovation for superior compatibility

Completing the trio of highlighted products is Hostagliss LS, a new synthetic ester lubricant specifically designed for enhanced compatibility with water-based metalworking fluids. Developed using an innovative combination of long-chain fatty acids, polyols, dicarboxylic acids, and branched fatty acids, Hostagliss LS retains a high degree of hydrophilic groups during synthesis, resulting in

excellent film-forming properties and superior lubrication performance in water-based systems.

"Our fully synthetic metalworking fluid additives are designed to help customers achieve their performance goals," explained Adam Yin, Head of Industrial Applications, Greater China. "By offering comprehensive and efficient solutions, we're supporting the industry's transition toward more advanced manufacturing practices."

Beyond the highlighted Hostagliss products, Clariant will showcase its broader portfolio of lubricant additives and metalworking fluids designed to enhance performance across various applications.

Source : Press Release

AUSTIN ELEMENTS ACHIEVES ANOTHER FIRST IN US BATTERY RECYCLING - ISO 17025 ACCREDITATION

AUSTIN, Texas, May 29, 2025 / PRNewswire/ -- Austin Elements Inc. (AEI) (www.austinelements.com), a leader in high purity critical mineral refining, is proud to announce its attainment of ISO 17025 accreditation, marking a historic milestone as the first U.S. company to achieve this rigorous certification specifically for analytical testing of battery-grade materials, including black mass, lithium carbonate, iron phosphate, and metal sulfates. This achievement underscores AEI's position as a technical pioneer in producing high-purity critical minerals vital for the global energy transition.

The ISO 17025 certification provides customers and partners with unmatched confidence in the quality of Austin Elements' products from recycled materials. Achieving the certification is a validation of AEI's proprietary first-principles based analytical processes which deliver the exceptional precision, consistency, and reliability required in the lithium-ion battery industry.

As a U.S.-based leading recycler, AEI is transforming the battery recycling industry by closing the loop on critical minerals, reducing dependence on foreign supply chains, and advancing sustainability. This certification is a testament to AEI's dedication to solving the technical hurdles in lithium-ion battery recycling, ensuring the production of high-quality materials that power the clean energy ecosystem. With its forthcoming commercial production facility in Texas, equipped with proprietary recycling technologies, AEI is scaling production of high-purity lithium carbonate, iron phosphate, and other critical minerals to strengthen domestic supply chains and support national electrification objectives.

"Achieving ISO 17025 accreditation is a landmark moment for AEI and critical mineral production in the U.S.," said Bhavin Rena, VP Q&A of Austin Elements. "With this certification we're not just meeting today's demands—we're redefining standards for tomorrow."

Join AEI in advancing a sustainable, secure, and electrified future. For more information, visit www.austinelements.com or contact info@austinelements.com.

Source :Austin Elements Inc

CAROLLO ENGINEERS LAUNCHES "THE ABCS OF WATER REUSE" TO SUPPORT PUBLIC UNDERSTANDING OF RECYCLED WATER CONCEPTS

WALNUT CREEK, Calif., May 20, 2025 /PRNewswire/ -- Carollo Engineers, a leading North American water engineering and consulting firm, today announced the launch of "The ABCs of Water Reuse," an educational resource specifically designed to demystify water reuse concepts for non-technical audiences.

The book addresses the growing need for clear communication about water reuse as communities across North America seek alternative supply options amid increasing water availability challenges. Using an A-to-Z format, the resource transforms complex water engineering principles into straightforward language that bridges the gap between water professionals and the broader community.

"Water reuse is essential for our future, but its success hinges on public understanding and acceptance," said Carollo Communications Director and Vice President Diana Leonard, who led the book's development. "We created 'The ABCs of Water Reuse' after recognizing the common challenge of communicating these concepts in layman's terms. This book transforms technical information into visually engaging, easy-to-understand content, helping utilities build the public trust needed for successful water reuse programs."

Each of the 26 highlighted water reuse components features striking graphics and custom illustrations that use relatable metaphors to explain complex engineering concepts. The vibrant visual approach makes technical information approachable while maintaining scientific accuracy, ensuring it serves as both an educational tool and a conversation starter at public events.

Following a soft launch earlier this year, "The ABCs of Water Reuse" has generated tremendous interest from water agencies far and wide. Utilities from California to Florida and as far as Australia have ordered copies to use in community outreach programs, board meetings, and educational initiatives.

"Water reuse is an intuitive concept, but it involves technical aspects that can be challenging to explain to the public," said WateReuse Association Interim Executive Director Brian Biesemeyer. "This book offers both the language and the visuals that elected officials and utility staff need to build community confidence in these critical projects. I expect this book to become an essential resource for communities working to advance the public acceptance of water recycling."

Available in print and digital formats, "The ABCs of Water Reuse" can be ordered through print-on-demand services or downloaded online. The digital version enables easy integration into websites, presentations, and social media campaigns.

The resource is designed for multiple applications, including public meetings, facility tours, school programs, and as an educational resource for elected officials who need to explain water reuse fundamentals to constituents.

Source : Carollo Engineers

EVONIK CONTRIBUTES TO MALAYSIA'S FIRST BIOMETHANE INJECTION SITE, STARTING A NEW CHAPTER IN SUSTAINABLE ENERGY

Evonik and Gas Malaysia recently signed a Memorandum of Collaboration, focusing on upgrading biogas into biomethane, positioning Malaysia as a leader in sustainable

energy.

- SEPURAN® Green membranes designed to upgrade biogas into high-quality biomethane that can be directly fed into local natural gas grids
- Evonik's advanced membrane technology requires relatively little energy and does not need any auxiliary materials or chemicals
- Gas Malaysia is a leading gas provider in the nation, committed to

driving sustainable energy solutions

Kluang, Malaysia. Evonik and Gas Malaysia recently signed a Memorandum of Collaboration, focusing on upgrading biogas into biomethane, positioning Malaysia as a leader in sustainable energy. The pivotal agreement underscores Evonik's commitment to advancing biomethane technology, and was concluded during the official inauguration of the nation's first biomethane injection site, owned by Gas Malaysia. The festive ceremony was attended by YB Datuk Seri Johari bin Abdul Ghani, Malaysia's Minister of Plantation and Commodities, and marked a historic milestone recognized by the Malaysia Book of Records.

A global leader in specialty chemicals, Evonik is a forerunner of sustainable energy solutions. Its SEPURAN® Green membranes represent a cutting-edge technology designed for efficient biogas upgrading, enabling the production of high-purity biomethane. Utilizing an innovative three-stage separation process, these membranes maximize methane recovery while minimizing energy consumption, setting them apart from traditional methods.

"With SEPURAN® Green, we are transforming biomethane production. By integrating our advanced membrane technology into Malaysia's energy infrastructure, we are paving the way for lower carbon emissions and expanding green energy opportunities," said Dr. Jan-Olaf Barth, head of Evonik's High Performance Polymers business line.

"Integrating SEPURAN® Green into biomethane upgrading is a key part of Evonik's commitment to advancing Malaysia's renewable energy initiatives," said Kenneth Kwok, Managing Director and Country Head of Evonik Malaysia. "Through our collaboration with Gas Malaysia, we strive to support the nation's long-term sustainability objectives and contribute to a cleaner, greener future."

Widely adopted in over 1,300 biogas plants worldwide, SEPURAN® Green membranes have played a critical role in helping industries transition to cleaner energy sources. The technology, which enables biomethane to be injected into natural gas grids and used as a climate-neutral fuel, holds enormous potential for industrial applications and reinforcing circular economies across the globe.

Evonik: Leading beyond chemistry

Evonik goes beyond the boundaries of chemistry with its combination of innovative strength and leading technological expertise. The global chemical company, headquartered in Essen, Germany, is active in more than 100 countries and generated sales of €15.2 billion and earnings (adjusted EBITDA) of €2.1 billion in 2024. The common motivation of the approximately 32,000 employees: to provide customers with a decisive competitive advantage with tailor-made products and solutions as a superforce for industry, thereby improving people's lives. In all markets. Every day.

About Advanced Technologies

The Advanced Technologies segment includes Evonik's market-leading businesses that leverage technological expertise and process know-how. These businesses feature high-performance polymers and crosslinking agents, hydrogen peroxide and silica, as well as feed ingredients. In 2024, the segment generated sales of €6.1 billion with = 8,000 employees.

Source : Evonik

CLARIANT'S SHIFTMAX™ 100 RE CATALYST POWERS INERATEC´S GROUNDBREAKING E-FUELS PLANT

- Clariant supplies its innovative ShiftMax 100 RE catalyst for INERATEC's first commercial-scale e-Fuels plant in Industry Park Hoechst, Germany
- The catalyst enables efficient conversion of green hydrogen and CO_2 into syngas for e-Fuel production, demonstrating Clariant's key role in sustainable fuel technology
- The pioneering ERA ONE facility recycles around 8,000 tons of CO_2 annually to produce up to 2,500 tons of sustainable e-Fuels, primarily targeting the aviation sector

MUNICH, June 3, 2025 - Clariant, a sustainability-focused specialty chemical company, today announced that its ShiftMax 100 RE catalyst is powering INERATEC's advanced e-Fuels production plant, “ERA ONE” in the industrial park Frankfurt Hoechst, Germany. The facility, officially opening on June 3, will recycle approximately 8,000 tons of CO_2 annually and transform it into up to 2,500 tons of synthetic fuels and waxes. This production capacity represents one of the largest Power-to-Liquids operations globally, positioning both companies at the forefront of sustainable fuel technology innovation.

Georg Anfang, Vice President at Clariant, said, "Our collaboration with INERATEC demonstrates how Clariant's catalyst technologies are helping to make sustainable fuels a commercial reality. As global demand for sustainable aviation fuels continues to grow, driven by both regulatory requirements and corporate sustainability commitments, our catalyst technologies are helping to bridge the gap between conventional and renewable energy systems."

Tim Boeltken, co-founder and CEO of INERATEC, commented, "Together with Clariant we have formed a strong innovation partnership to ensure highest quality and robustness of our new facility. Their ShiftMax 100 RE catalyst provides excellent activity and stability which is essential for our innovative technology. This enables us to produce drop-in ready e-fuels that meet the demanding standards of the fuel industry. “

Based in Karlsruhe, Germany, INERATEC is committed to defossilizing the world by producing e-Fuels and e-chemicals at scale: low-carbon alternatives to fossil fuels for the aviation, shipping, and chemical industries. Its modular, scalable plants

use renewable hydrogen and biogenic CO_2 to produce kerosene-SAF, synthetic gasoline, e-Diesel or e-Waxes.

Clariant's ShiftMax 100 RE catalyst presents several critical advantages for industrial e-fuels production. Used in the reverse water gas shift process, the nickel-based reforming catalyst offers high efficiency in converting green H2 and captured CO_2 into renewable syngas, the precursor for synthetic fuel. It also excels in selectivity, resistance to coking, and high-temperature stability while offering an extended lifetime. These combined properties enable greater productivity and durability, which are paramount for economic viability.

The e-Fuels produced at the INERATEC facility directly replace conventional fuels. They can be used as drop-in replacements in existing engines and infrastructure without modification, making them an attractive near-term solution for hard-to-abate sectors like aviation, where electrification remains challenging.

Source : Press Release

WANHUA CHEMICAL AND ELEVENES SIGNED A STRATEGIC

AGREEMENT FOR BATTERY MATERIALS: COLLABORATE TO CREATE A LOCALIZED SUPPLY CHAIN OF BATTERY CATHODE MATERIALS IN EUROPE

MEISHAN, China, June 5, 2025 / PRNewswire/ -- Recently, Wanhua Chemical Battery Technology Co., Ltd. (hereinafter referred to as "Wanhua Chemical") and ElevenEs, a leading European manufacturer of lithium iron phosphate (LFP) batteries, successfully signed a Memorandum of Understanding (MOU) in Meishan, Sichuan. Mr. Wang Xiaoxing, General Manager of Wanhua Chemical Battery Technology Co., Ltd., and Mr. Nemanja Mikać, Founder and CEO of ElevenEs, attended the signing ceremony. This collaboration aims to establish a comprehensive supply and technical partnership covering products such as LFP cathode materials, PVDF (polyvinylidene fluoride) binders, NMP (N-methyl-2-pyrrolidone) solvents, etc., to promote the sustainable development of both parties in the new energy industry.

Wanhua Chemical, with its industrial chain advantages and decades of experience in process development and engineering research, has established a battery material integrating battery material technology development, equipment process technology development, and battery cell application technology research. The company has also established a complete technical platform for cathode and anode materials, binders, and solvents.

Under the agreement, the parties express their intention to cooperate on LFP and other high-quality raw materials. At the same time, both parties will jointly form a technical team, exchange technical and market information, and accelerate the development of their products and markets. Wanhua Chemical will utilize its production bases and global supply chain to support ElevenES battery production in Serbia.

Mr. Wang Xiaoxing, General Manager of Wanhua Battery Company, stated:

"This strategic collaboration with ElevenEs marks a significant step in Wanhua Chemical's localization of battery material supply chains in Europe. We will leverage our strengths in material R&D, production processes, and global footprint to provide ElevenEs with high-performance LFP cathode materials and integrated solutions, jointly advancing the sustainable development of Europe's new energy industry."

Mr. Nemanja Mikać, Founder of ElevenEs, stated:

"Wanhua Chemical's profound expertise in battery materials and global production capacity will significantly support ElevenEs in achieving our localized supply chain goals. This partnership not only strengthens our raw material security but also accelerates innovation through technical synergy, delivering more competitive LFP battery products to the European market."

In the future, both parties plan to deepen cooperation in areas such as electric vehicles (EVs) and energy storage systems (ESS), continuously expand cooperation in battery materials, cell products, product and technology development, market expansion, and other fields, and jointly create a win-win situation for both parties to reinforce their leading positions in the global new energy industry.

Source :Wanhua

TORAY ESTABLISHES WATER TREATMENT TECHNOLOGY CENTER IN SAUDI ARABIA TO SERVE THE MIDDLE EAST, AFRICA, AND NEIGHBORING REGIONS

Tokyo, Japan, June 9, 2025 – Toray Industries, Inc., announced today that Toray Membrane Middle East LLC ("TMME") began operations at its Middle East Water Treatment Technical Center ("MEWTEC") in Dammam, Saudi Arabia, in April. The new facility provides integrated technology services, covering everything from membranes through full treatment processes.

MEWTEC caters to surging water demand in the Middle East, Africa, and neighboring regions. It also addresses an increasing need for advanced wastewater reuse and seawater desalination technologies in industrial and urban infrastructure. It enables that subsidiary to swiftly deploy its on-site technological capabilities and spearhead efforts to develop solutions to local water challenges. As part of efforts to bolster Toray's commitment to the Middle East, the center also enhances the rapid, specialized technical support that the company prioritizes after delivery to strengthen trust and long-term partnerships with customers across the region.

Providing access to clean water is pivotal to the Toray Group Sustainability Vision, representing a roadmap to the World as Envisioned by Toray Group in 2050 and embodying Toray Vision 2030, through which the Group seeks to achieve sound, sustainable growth. Toray will continue providing advanced reverse osmosis and other membrane technologies and reinforce its technical services in areas with growing water needs. It will help resolve water shortages worldwide, including in the increasingly industrialized and populous Middle East and Africa.

Source : Toray

BRASKEM AND ARDENT ADVANCE BREAKTHROUGH OLEFIN SEPARATION TECHNOLOGY TOWARDS COMMERCIAL IMPLEMENTATION

NEW CASTLE, Del. & PHILADELPHIA - June 3, 2025 - Braskem (B3: BRKM3, BRKM5, and BRKM6; NYSE: BAK; LATIBEX: XBRK) the largest polyolefins producer in the Americas, as well as a global market leader and pioneer producer of biopolymers on an industrial scale, and Ardent Process Technologies ("Ardent") today announced the successful completion of their joint development program for an innovative olefin-paraffin separation technology , marking a significant advancement in polyolefin production efficiency.

The collaboration, which began in November 2020, centered on the development and testing of Ardent's OptipermTM membrane technology at a dedicated demonstration unit within Braskem's facilities. The rigorous development program has satisfactorily met key performance metrics, including membrane efficiency, durability, and operational stability.

"The successful pilot program demonstrates the tremendous potential of this technology to revolutionize olefin paraffin separation processes," said Bill Charlton, the COO of Ardent and leader of this project. "We are excited to move forward with Braskem towards full commercial implementation."

Following these promising results, Braskem has confirmed its intention to implement this groundbreaking technology across commercial facilities. Engineering and design work have already commenced for the first commercial installation.

"This technology represents a significant step forward in our commitment to innovative and sustainable solutions," said Gus Hutras, Global Process Technology Director at Braskem. "The successful pilot results align with our vision of transforming the chemicals and plastics industry through innovation while advancing our goals toward carbon neutrality. We're excited to move this breakthrough technology into commercial implementation."

Source : Braskem

PALSGAARD INTRODUCES EINAR® 987 ANTI-FOULING ADDITIVE FOR THE PE AND PP POLYMERISATION PROCESS AS A SAFER ALTERNATIVE TO ETHOXYLATED AMINES

JUELSMINDE, Denmark, 10 June 2025 –– Palsgaard A/S, a leader in plant-based additives for the plastics industry, has introduced a safe, sustainable anti-fouling additive for the polypropylene and polyethylene polymerisation process. Developed from renewable raw materials, the food-grade additive Einar® 987 has been developed to address concerns about the ethoxylated amine (EA) chemistry currently used.

The active compound of Einar® 987 –– which is supplied as a clear, viscous liquid –– is a polyglycerol ester (PGE) blend of fatty acids from vegetable oils. As a non-toxic and food-contact-approved anti-fouling additive, it offers a drop-in, regulatory-compliant solution to replace the incumbent EAs.

When developing Einar® 987, Palsgaard drew on its extensive knowledge of anti-static and food-safe chemistries. We considered a number of parameters when developing this new formulation, focusing on creating an additive that would offer at least equal performance while also being both safer and more sustainable than currently available options.

"Polyolefin resin producers stand to benefit directly from this technology, as its anti-static properties help to ensure the polymer powder does not cling to the reactor wall during polymerisation. This serves to stabilise the reaction temperature, sustain a high production performance and enable consistent product quality," said Laura Juhl, Application Manager for Palsgaard's Bio-Speciality Additives.

Safety concerns over amine chemistry have led resin makers to seek alternatives for some time now. Einar® 987 is effective at low dosages of just 100-300 ppm and helps to deliver long catalyst mileage without any compromise in performance.

Palsgaard, which has been developing plant-based solutions since 1917, has already conducted several successful trials of Einar® 987 with resin producers. Additional evaluations can be supported by the company's technical team to facilitate smooth adoption of the new, safer chemistry.

Einar® 987 is one of several products that Palsgaard will be showcasing on its booth at the upcoming K 2025 trade show in Dusseldorf, Germany. Visit us there from October 8-15 in Hall 7, Level 1, Booth C15, to meet our product and market specialists and discuss the sustainable benefits and superior performance of Einar plant-based polymer additives.

Source : Press Release

Continued from page 22

Meet Archroma denim experts at Denim Première Vision Milan 2025

Held twice a year, Denim Première Vision is a celebration of denim trends, markets and culture. The May 2025 event will present the latest innovations and Autumn-Winter 2026-2027 collections from leading manufacturers and suppliers.

Visit Archroma at Booth A25 at Superstudio Più, Milan, Italy from May 21 to 22, 2025.

Meet Archroma denim experts at Denimsandjeans Vietnam 2025

Now in its seventh year, Denimsandjeans Vietnam attracts large denim producers from Vietnam and other leading textile manufacturing hubs. The show is organized by Denimsandjeans.com, a website dedicated to the global denim industry since 2007.

Visit Archroma at Booth 06 at Riverside Palace, Ho Chi Minh City, Vietnam from June 25 to 26, 2025.
Source : Press Release

Haldia Petrochemicals Dollar 10 Billion Bet Transforming Tamil Nadu into a Petrochemical Powerhouse

Vinodhini Harish

Introduction:

Haldia Petrochemicals Ltd., a flagship company of the Chatterjee group(TCG), is on its transformative journey with its proposed $10 billion Oil to Chemicals complex in Cuddalore, Tamil Nadu. This mega-scale project is set to produce 3.5 million metric tonnes per annum of essential petrochemical building blocks such as ethylene and propylene. Now the project holds the promise of generating substantial employment, attracting ancillary industries and stimulating regional economic development in Tamil Nadu. We have explored the challenges and lessons that could be learnt by companies setting themselves on this path. Are you ready for this interesting short read?

Big announcement from Haldia Petrochemicals Ltd (HPL):

Haldia Petrochemicals Ltd made an announcement about a substantial investment in an oil-to-chemicals complex in Cuddalore, Tamil Nadu. The goal of the project is to increase polymer production, that includes ethylene and propylene. There is a growing demand for polymers and this project is expected to meet the demand and proportionately reduce the reliance on imports.

Haldia Petrochemicals Ltd has just begun its transformative journey with its proposed $10 billion Oil to Chemicals complex in Cuddalore, Tamil Nadu. This project is all set to produce about 3.5 million metric tonnes per annum of petrochemical building blocks like ethylene, propylene and a few others.

The Chief Executive Officer of HPL spoke at the launch of this ambitious project, where he stated that the core objective of the project is to directly convert crude oil into high-value chemicals like ethylene and propylene. He also mentioned that they are actively exploring investors that could lift the project's progress, yet he also mentioned that they are engaged in discussions with the central government for incentives to support the project's development.

Now, ethylene and propylene are critical building blocks that are used in the production of a wide array of end-products that include shopping bags, automotive components, and water and sanitation piping. It is expected that the state-of-the-art HPL facility is projected to achieve an annual production capacity of 3.5 million tonnes of these essential polymers upon completion.

The underlying intention is to strengthen the nation's self-sufficiency in petrochemical manufacturing.

Observing the strategies that come with the project:

HPL Ltd. is integrating refining and petrochemical production to improve the margin resilience and reduce dependence on crude markets. There are other Indian firms, such as Indian oil, BPCL and HPCL that are on the same path, and have larger potential to understand the importance of maximizing value from refining streams.

The idea of establishing a plant in southern India aids the company to diversify petrochemical zones while stimulating state-level industrial policies to attract more chemical and refining investments to the project.

The project directly supports the Make in Indiainitiative. It is interesting to witness how it does that. Due to the production of ethylene and propylene opens up downstream value chains. This help in the manufacturing of plastic products like packaging, pipes, textiles and more. This helps the nation to make more of these productions locally instead of importing from other countries. Nevertheless the demand for ethylene, propylene, acrylates, elastomers are all crucial due to the growing demand and urbanization of the country.

We can't overlook the challenges ahead:

There are some critical challenges that lie ahead. HPL should explore opportunities to secure long-term crude or naphtha sourcing. With the global volatility and geopolitical situation, the margins are affected, and there is a massive feedstock risk associated in carrying out the project.
HPL should also look for strong partnerships for reliable technology licensing and partnerships with firms like Lummus, Technip, Honeywell UOP, etc.

The country is moving towards decarbonization and bio-based alternatives, this factor could sooner dampen long-term demand for traditional petrochemicals. Therefore, the company must include sustainability, circularity, such as plastics recycling and green chemistry in the project vision.

Indian companies with a similar vision, exploring their strategies:

There are other Indian companies with a similar vision and idea, and analysing them helps in gaining perspective. $10 billion plan of Haldia Petrochemical Ltd. of setting up a large-scale oil-to-chemicals complex in Cuddalore looks very familiar trend as it matches with major chemical and energy players that are operating in Indian as well as globally. They are striving to move away from just refining fuels and focus on more value-added petrochemical production.

- **Reliance Industries at Jamnagar O2C(India):**

Reliance's Jamnagar is a benchmark for scale and integration. They have successfully turned refinery by-products into valuable chemicals, thereby demonstrating that with the right strategy and infrastructure, this shift can be highly profitable. Now, HPL should bring in more flexibility in feedstocks, which ensures strong in-house expertise and invest in logistics. This aspect will help HPL to maximize efficiency and reduce reliance on imports.

- **The Yanbu O2C project by Saudi Aramco & SABIC:**

Saudi Aramco & SABIC jointly developed a project called the Yanbu Oil-to-Chemicals project, which is considered an ambitious effort to redefine how crude oil is used by converting more than 70% of it directly into high-value chemicals. This is a massive leap as the global average is only around 10%. The project integrates advanced refining and chemical technologies to bypass the traditional model for producing mostly fuels, instead of focusing on outputs like propylene, ethylene and paraxylene. There are significant challenges too, which include enormous capital requirements, execution risks due to engineering complexity and vulnerability due to geopolitical tensions.

The Yanbu project stands as a cautionary tale for the HPL project, as it emphasizes the need for solid project management and risk mitigation strategies to navigate technical, geopolitical complexities of mega industrial ventures.

Final thoughts:

Can these capital-intensive projects be handled well when private and public partnerships come to help? Is India ready for this transition from being a petrochemical importer to a global exporter of value-added products? We have to wait to witness the winning, as India has the industrial base, rising domestic demand and governmental support. These strategic projects are stepping stones in this transition. However, mid-sized players must ensure that they strengthen their risk management, diversify their sourcing and build partnerships beforehand for long-term feedstock security. Overall, since the nation is seeking help to strengthen its manufacturing backbone, HPL's project has all the potential to serve as a benchmark for innovation, economic resilience and self-reliance in the chemical sector.

From Naphtha to Ethane How U S Exports Are Powering Asias Chemical Future - Is India Ready

Vinodhini Harish

Introduction:

Did you know that the US reached record levels in ethane production and exports? This is reshaping the global petrochemical landscape. The cost of traditional naphtha feedstock is rising as the profit margins shrink. This slow change is observed by Asian countries like South Korea, Thailand, and China, and thus they are turning towards U.S ethane as a more economical and efficient alternative. This is a great approach. What are all the strategies lying behind this move? Is it only driven by feedstock economies? There are strengthening trade ties, reducing tariffs risks, modernizing infrastructure, and we have researched them all! In this article, we have also covered how the strategic move represents a significant realignment in global supply chains, with the lessons for emerging economies like India. Let's begin!

Asian petrochemical companies are making a major shift:

Asian petrochemical companies are changing their raw materials to manufacture essential chemicals like ethylene. Traditionally, these companies use naphtha, which is a liquid derived from crude oil. But now, these companies are shifting to ethane, especially U.S ethane, as it is available at a cheaper price and is more cost-efficient. This shift is majorly happening in countries like South Korea, Thailand, and China. Especially Thailand PTT Global Chemical is eagerly importing more ethane from the US, not just to save money but to balance trade with the U.S and avoid any future tariffs for Thai goods.

Thailand PTT Global announced that they are planning to start U.S ethane in their plants in Thailand, and they have also signed a deal with Enterprise Products Partners to get 400,000 tons of ethane every year.

In 2024, the United States achieved its record levels in ethane production, consumption and exports. There is a significant increase in natural gas processing and a sharp increase in global demand, especially from the petrochemical sector. U.S ethane production has gone up by 7% from 2023 and it is about 2.8 million barrels per day, which is 3.0 million barrels per day in May 2024 alone, which is highest on the records.

Therefore, Asian countries are making the best use of the situation. Ethane prices in the U.S is much cheaper than Naphtha prices in Asian countries. This is also because U.S has abundance of natural gas and is produced in abundance in U.S. On the other hand, ethane is more efficient than naphtha as it yields more ethylene per ton than naphtha. Ethane results in lower energy costs and fewer byproducts compared to naphtha therefore it saves money during the production processes and afterwards.

The U.S has constructed a well-developed infrastructure for the extraction, processing and exporting of ethane. That is the reason they are agreeing to long term supply deals with countries like Thailand, this factors offers security and predictability to the Asian buyers.

China has recently removed their 125% tariff on U.S ethane, which makes it even more attractive and affordable for the U.S exporters.

Exploring the strategic move- What can Indian companies learn?

Cost optimization amid shrinking margins:

Ethane is way cheaper than naphtha for ethylene production and is more efficient. Ethane-based ethylene production has an ethylene yield of around 78 wt% and is less energy-intensive, 16 GJ per tonne ethylene. Whereas, naphtha-based production yields around 34 wt% and 23 gJ per tonne-ethylene. The chemical margins are shrinking, and the market is becoming more challenging for companies to thrive; therefore, the shift towards ethane as a feedstock is driven by the need to reduce costs. The majority of petrochemical products are responding to these market pressures; they are shutting down their older plants, and they are investing in ethane-fed cracker technologies.

U.S. ethane production and exports are set to benefit from petrochemical firms in Asia shifting feedstock from naphtha to the cheaper ethane as chemicals margins shrink.

Indian companies are largely naphtha reliant, and they have to explore feedstock diversification not just for cost but to enhance flexibility and resilience. Leveraging ethane either through domestic development or imports could boost margins and improve international competitiveness.

Diversification of feedstock sources:

The global oil price volatility has a great impact on the petrochemical industry,

and relying on oil-based naphtha is tied to the volatility of oil prices. Due to this factor, the petrochemical industries suffer a lot. But when the companies shift towards ethane from the U.S, they get to access alternative, stable and often cheaper feedstock that allow them to hedge against oil-related risks.

Trade and geopolitical strategy:

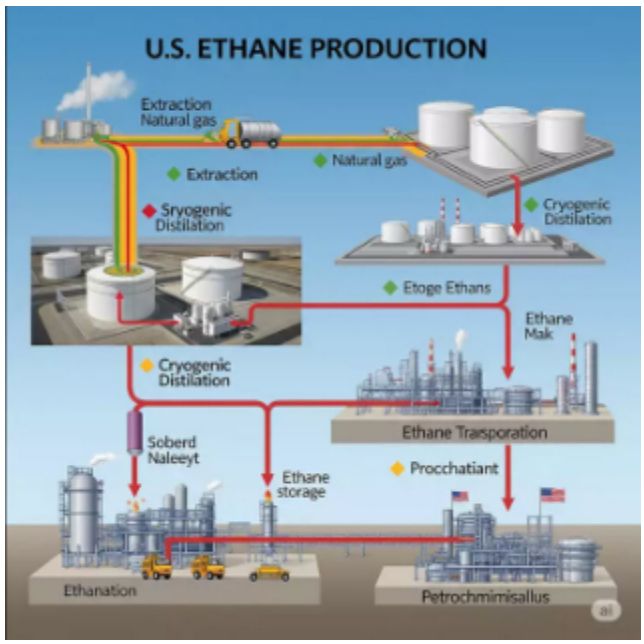
Thailand PTT Global Chemical is using their US imports not just for operational reasons but to balance the trade relations with the U.S and possibly avoid future tariffs. This kind of resource diplomacy helps in strengthening the economic relations and thereby opens the doors to favourable trade policies or FDI opportunities.

Just like Thailand, Indian companies can use the imports of key U.S commodities like ethane to strengthen bilateral trade and gain leverage in negotiations on tariffs, investments or technology transfers.

Signing long-term trade policies ensures long-term supply:

Signing long-term deals with the U.S ethane suppliers like Enterprise Products Partners guarantees reliable access to the raw materials. This factor insulates the operation from regional shortages and logistical disruptions.

Indian companies can negotiate long-term ethane contracts with U.S suppliers to ensure stable prices and supply security, especially as global competition for US ethane increases.



Prepare a future-ready infrastructure:

Asian companies are retrofitting or building new ethylene crackers to handle ethane instead of naphtha, showing a forward-looking investment mindset. In the long run, these assets are more competitive and align with decarbonization efforts, as ethane-based cracking can have a lower carbon footprint.

Indian companies should also make way to bring in more ethane-cracker units or invest in flexible ethane-cracker units. This will be like future-proof assets, and they will act as feedstock for economic shifts as sustainability demands increase.

These investments can be tied to India's Make in India and Atmanirbhar Bharat goals, thereby increasing domestic manufacturing competitiveness.

What can we expect in the future?

The shift toward U.S ethane by Asian petrochemical giants signals a broader transformation in global feedstock dynamics. As more companies prioritize cost efficiency and trade-friendly sourcing, we can expect ethane to play a massive role in the future petrochemical production, especially in the regions that are working to stop the reliance on crude-based naphtha. With the new infrastructure and ethane crackers being developed across Asia and Europe, the demand for U.S ethane is more likely to remain strong. Emerging economies like India possess this trend of exploring ethane integration, modernizing petrochemical operations, and aligning with evolving global supply chains. The landscape is evolving those who adopt early are expected to have a competitive edge in the next wave of petrochemical innovation.

Covestro brings new polymeric substrate concept for security printing to China

For the first time in China, Covestro will showcase its advanced polymeric substrate concept for high-security printing—an innovative film-based solution offering excellent dimensional stability, print clarity, tamper resistance, and long-term durability for secure documents that must endure frequent handling and harsh environments.

Based on thermoplastic polyurethane (TPU) film technology, the concept supports multi-layer security features, high-precision personalization, and compatibility with various printing and finishing techniques. Its recyclability also aligns with the industry's shift

toward more sustainable solutions. Covestro will present the concept at the upcoming 19th Security Document Summit (SDS) in Beijing.

"We are excited to present our TPU-based security printing concept at SDS in China, a key market for Covestro," said Dr. Caroline Wolff, Head of Specialty Films for the Asia-Pacific region at Covestro. "China is not only a global manufacturing hub but also one of the leaders in innovation and adoption of advanced materials. SDS gives us a valuable

opportunity to engage local experts and better align our solutions with evolving needs in secure document applications."

In addition to this new concept, Covestro will present a broad range of specialty films for secure ID documents—including its renowned Makrofol® ID polycarbonate (PC) and Platilon® TPU films. Highlights include:

- Scratch- and tear-resistant passport covers
- Thin, high opaque white PC films for sophisticated clear window designs
- Superlaser PC films enabling Level 3 security post-personalization
- PC films for brighter holograms
- Low-fluorescence PC films
- PC films with color shifting effect and more

Visitors at SDS are welcome to explore Covestro's offerings and speak with technical experts at Booth A062, China National Convention Center, Beijing, May 28–29. Henry Leung, Asia-Pacific Segment Manager, Security and Identification, Specialty Films, will deliver a presentation on "Utilizing Specialty Films to enable all-in-one document concepts and security printing" on May 28.

Source : Covestro

Emerging Opportunities How Europes Chemical Industry Struggles Open Doors for India

Vinodhini Harish

Introduction:

The global chemical industry is changing, the changes are crystal clear. Europe was once dominant in the chemical sector, but now is faltering due to rising energy prices, complex regulations and inadequate investments. But these challenges are opening a strategic window for India. Therefore Indian chemical companies should focus on establishing trade ties, strengthening their manufacturing base and enhancing their governmental policies. Overall India is well-positioned to step in as reliable partners. Nevertheless, India too is facing stiff competition from China and they must navigate shifting dynamics in the EU. In this article, we explored the shifting trends and changing situation in the European chemical industry and examined how India can leverage the situation to their favour. Let's begin.

A recent report from B&K Securities stated that the European chemical industry is facing problems, which presents ample opportunity for Indian companies. At present, European companies are facing high operating costs in the EU, which has hurt production, thereby giving the Indian exporters a chance to step in. This opportunity should not be missed since India has already established a smooth trade relationship with the EU.

Although India is the fifth-largest chemical supplier in the country, the path is not going to be very smooth. China presents itself as a huge competitor to India with its cheaper prices. Furthermore, the demand for chemicals in Europe is falling as the country struggles with higher energy prices, which are currently three times higher than the U.S. Higher energy prices are impacting the cost of production of chemicals in the EU.

India has built smooth trade relations with the EU, as it has exported 11.9 billion euros worth of chemicals to Europe, while also importing about 6.0

billion euros worth of chemicals. This factor shows how big an advantage it presents for the country to utilize the opportunity. But the situation gets favourable to India only when the demand for chemicals in Europe grows and the nation finds a way to deal with the Chinese pricing of chemicals.

What is happening with the European chemical industry?

European chemical industry used to stand as a world leader in the chemical sector, nevertheless dealing with struggles. Experts carried out an analysis and said that the industry would need over 2 trillion euros in investments by 2050 to counteract the climatic goals and the investment isn't pouring enough or fast enough.

The European chemical industry is struggling with high production costs due to high energy and material prices. It is also severely affected due to poor investments in the past 20 years, whereas regions like China, the U.S. and Middle east are investing more on innovation and developments and therefore growing faster.

The European chemical sector is stifled by regulations, they are complicated and the public resistance is heavy as well. These factors make it harder for companies to start new projects. Due to all of these combined, Europe has increased their chemical imports more than their exports, this is a massive change compared to the past.

For instance, the production of eco-friendly ammonia in Europe is expensive with the present energy costs, therefore companies in the EU are importing it from Russia and the investments go to the U.S. instead. Do you know that the chemical production in Europe went down by 20% in the last two years? Since 2021, the country has become the net importer of chemicals, while other nations are building solid

foundations with "Future proof" value chains, Europe is falling behind.

Let's go through the strengths of the European chemical industry:

There is some hope, the light can be seen, still.

Some industries are still strong, like Chloralkali, due to their strong skills and local resources for the chemical. The chemical is extensively used in construction and windmill manufacturing. Although the energy prices are higher, some companies are adopting renewable energy sources like hydro and wind power to match the energy requirements.

Europe is at the forefront of recycling used plastics. They are leading in waste collection and recycling technology, but again it is expensive to carryout recycling in European countries, with the not so competitive petrochemical facilities in the region. Therefore, substantial investment is required to scale up circular production and a lot of changes are expected.

European surfactants are produced from fossil fuels, they are not sustainable. These ingredients are used in personal care and cleaning products. Europe is still developing their bio-based alternatives, yet they don't have flexible sourcing for certain raw materials and needs more investment.

Europe lacks cheap natural gas and that is why they are too dependent on imports, especially from Russia. A cleaner form of ammonia is produced outside Europe and the investment is made outside as well.

Europe is not producing raw materials

like lithium anymore, which are needed for the batteries. Asia dominates this sector, thus European countries have begun to invest in Asia for battery-related production.
Therefore experts throw in some questions in this context:

- Will Europe have access to affordable raw materials?
- Can Europe produce chemicals at a competitive cost?
- Will local industries continue to manufacture in Europe?
- Will there be strong demand in key sectors like construction and automotive?

How do other countries stay so competitive?

Countries like the U.S, China, and the middle east are moving with greater pace in building future ready value chains, they are investing aggressively and protecting their industries. For instance, U.S domestic priorities are set straight through policies like the Inflation Reduction Act and tariffs on imports.

On the other hand, China is expanding their production capacity and the middle east is preparing to be less dependent on fossil fuels.

Some of the massive problems observed in Europe:

The European chemical industry's challenges are multifaceted and they are stemming from factors like high energy costs and regulatory complexities. There are external pressures as well as they are facing severe competition and addressing the issues require coordinated policy efforts, strategic investments and focus on innovation.

Some major chemical plants announced massive closures:

Between 2023 and 2024, about 21 chemical plants in Europe announced shutdowns that reduced by about 11 million tonnes in production capacity. In early 2023, BASF announced permanent shutdowns of several units in the Ludwigshafen site, that is because the company cited high energy costs, weak demand and geopolitical uncertainties.

The Russia and Ukraine war has caused problems in gas supplies and cheaper production elsewhere, regions like China and, middle east. Similarly, some closures occurred due to increasing EU decarbonization targets.

Massive production fall:

European chemical production fell from 14% from 2021 to 2023, which is considered the deepest decline in over 30 years and has only slightly improved in 2024.

A recent report from Cefic – European Chemical Industry Council showed that in 2023 industry report confirmed this drop, blaming the input costs increase, while both domestic and export markets have shown reduced demand for chemicals. There was also a very slow industrial recovery, sectors like automotive and construction which are the big chemical buyers remained weak. The industry was also suffering complex environmental regulations that have added to operational challenges.

Losing competitiveness:

Compared to the US, China, India and Japan, Europe has significant challenges like the natural gas prices are significantly higher. For instance, in 2023, the EU industrial electricity prices were four times higher than US prices and it was hurting the energy-intensive processes like ammonia and ethylene production. EU's REACH regulation and Green Deal mandate strict chemical assessments and carbon neutrality. Companies like INEOS have stated Europe is becoming an unattractive destination for innovation due to overregulation.

Europe is becoming less attractive for investment:

Shell and Dow are ramping up chemical investments in the US Gulf Coast instead of Europe and a 2024 McKinsey report found that investors are shifting their capital towards India and southeast Asia citing better returns and lower operating costs.

BASF's decision to invest about 10 billion euros in a new production complex in Zhanjiang China, reflected their strategic shift towards the regions with more favourable operating conditions.

Another reason is tough regulations. The regulations are complex and are frequently changing in Europe, this is creating uncertainty and hindering investment and innovation.

The REACH, Green Deal and upcoming PFAS restrictions are tightening the environmental regulations. The REACH requires detailed safety data for chemical substances, the Green Deal aims for a Zero-pollution ambition by 2050 and the upcoming PFAS restrictions may lead to the ban of over 10,000 substances used in electronics, medical devices and coatings.

The Struggle of European chemical companies is opening up new opportunities for India:

Although European chemical companies are falling behind, some of the sectors are looking for stable, reliable, and trustworthy suppliers and this is where India has an edge. India has a steady and solid regulatory system with a democratic setup and a good

reputation for consistent quality. The companies are shifting towards more reliable and resilient supply chains and they agree with higher prices when there is a long-term trust and smoother business.

For example, Aarthi Industries is building its nitric acid plant that controls the costs and secures supply. Other chemical companies like Deepak Fertilisers, GSFC and GNFC are producing nitric acid. On the other hand, the international companies are moving away from China and Europe, India can be an attractive alternative. Since India is composed of strong infrastructure, ports and chemical zones, and brings in support from governmental policies like PLI schemes. Indian chemical industry is aiming to reach $300 billion by 2025 and is not ready to fill the gap left by Europe.

Consider some of the major chemical zones like Dahej, Gujarat – which is a top chemical hub with its port. Mangaluru, Karnataka- a coastal city with several refineries and chemical plants. Visakhapatnam, Andra Pradesh is one of the fastest-growing special economic zone. Panipat in Haryana is near major markets in northern part of India and Paradeep, Odisha- is a major port location with strong facilities.

Furthermore, Indian chemical industries can focus on energy-intensive segments like Melamine, methanol, caprolactam, and steam cracking chemical production as these are severely affected as they are energy intensive.

Overall, due to cost advantages, growing capacity, strong export base, and other factors, India can benefit from Europe's challenges and become a reliable and alternative supplier to Europe.

Take away:

Europe is grappling with high production costs, regulatory constraints and shrinking competitiveness. This is the time India can shine and emerge as a strong contender to fill the void in the chemical supply chain. With the supportive infrastructure, increasing capacity, and policy-driven incentives, Indian chemical firms can tap into European demand and this can counteract the pricing of China. The sustainability trends are changing and European countries are turning towards future-ready chemical suppliers. Hence India should seize the opportunity with strategic investments, and innovation and position itself at the heart of the next phase of global chemical trade.

GE Vernova Commits Dollar 16M to Expand Manufacturing in India and Pushes Towards Smarter Greener Power in India

Vinodhini Harish

Introduction:

What are the mechanisms that need to be in place to ensure that investments in grid infrastructure in India translate into sustainable and scalable solutions across Asia? The advanced grid infrastructure market is poised for sustained growth, which is underpinned by the global transition to cleaner energy sources. If there are continued investments in smart grid technologies that are coupled with supporting policies, then India can meet the future energy demands while achieving sustainability goals. In this article, we have talked about a recent investment made by a renowned company called GE Vernova in India. We have discussed the strategies and growth opportunities that lie ahead. Let's begin.

What is the big news?

GE Vernova is willing to expand in India as the demand is driven by the convergence of market opportunity, policy support, technological need and regional strategic fit. India serves as a launchpad for innovation, manufacturing and exports, thereby helping the company meet the surging demand for advanced grid infrastructure both domestically and across fast-developing economies. Thus, GE Vernova announced a USD 16 million investment in India, and this investment is to expand its electrification manufacturing and engineering capabilities, primarily targeting the production of high-voltage equipment critical for modern power systems. The development is a part of GE Vernova's broader "Asia for Asia" strategy and which focuses on building localized capabilities across the region to serve Asian markets more effectively and sustainably.

There is a rising demand for advanced grid technologies in India.

The Indian power sector is witnessing a massive transformation. There are huge reasons too. India stands in third place as a consumer of energy, and there is an unprecedented growth in electricity demand due to rapid urbanization, industrial expansion across the country and rapid utilization of electric vehicles.

There is also a huge demand for digital infrastructure across India as the country is copying trends from the West. Furthermore, the Indian government and construction industry are moving to the next stage and setting ambitious renewable energy targets; to put it precisely, the aim is to achieve 500GW of non-fossil fuel capacity by 2030. Therefore, the country is facing pressure from both sides, the country is moving towards cleaner energy on one side while it has to deal with the growing demand. The solution is to build a modern, yet stable and flexible power grid infrastructure. During this growth, there are going to be some stumbling stones. To put it precisely, integrating the renewable sources is not an ordinary task; the solar energy, wind sources are at an intermittent stage and are dispersed across the landscape.

There is light at the end of the tunnel! There are a few standout companies in our country, like GE Vernova, which are working on connecting renewable sources and power grids through this they ensure sustainable future.

GE Vernova investment of INR 140 crore to expand manufacturing and engineering capabilities:

Companies like GE Vernova use High Voltage Direct Current (HVDC) systems that enable the utilities to transmit power further, while integrating renewables efficiently, interconnect grids and improve network performance. With the help of HVDC technology, GE Vernova addresses the limitations of AC systems, it cuts down on the cost of ownership due to lower energy losses and through the links, it can reduce transmission losses by up to 50% compared to AC!

Through this USD 16 million investment, GE Vernova is expanding its manufacturing and engineering capabilities in India. Their strategy is to focus on expediting the production of High Voltage Direct Current (HVDC) and Flexible Alternating Current Transmission Systems(FACTS) technologies. Through these technologies they can stabilize the power grids, while reducing transmission losses.

The company already has a plant in Chennai, and the plan is to set up a manufacturing line in the existing plant. The line will manufacture the core components of HVDC and FACTS technologies such as Line Commutated Converter valves and Voltage Source Converter STATCOM valves. These technologies are crucial for resilient, flexible and intelligent grids.

The LCC HVDC technology is meant for large capacity systems, the technology is well-established and cost-efficient too. This technology is best suited for remote generation areas where the power needs to be moved efficiently from hydro thermal power plants to consumption centers like cities and industrial clusters.

The VSC-based STATCOM valves aids support and efficiency of AC grids by injecting and absorbing reactive power in real time. They are deployed in dynamic grid environments, and these VSC based STATCOM valves are meant for localized voltage support, renewable integration and aids in improving grid flexibility and responsiveness. Therefore both of these valves play complementary roles in the regional energy landscape.

Establishment of NOIDA Engineering Lab:

The company is also fostering their development in Noida, which features engineering and testing lab and the set up will focus on three critical aspects.

They will focus on the design of next-gen HVDC or FACTS control systems. Along with this, they will carry out System-level validation through simulations and testing in real-world grid scenarios that ensure robust performance. The lab set is expected to be set for operations by the end of 2025. This lab setup will serve as an R&D centre supporting engineering innovation. It enhances the country's capabilities in system integration and software-based grid solutions, improving reliability, responsiveness and adaptability of the grid.

Support for Renewable integration:

The investment includes the plan of strengthening the production of HVDC and FACTS solutions that are critical for integrating renewable energy. These technologies manage the intermittency

of solar and wind power by balancing loads and stabilizing frequency or voltage.

This investment matters a lot to the country as India is already pushing renewable sources towards generating large quantities of energy from remote generation, such as deserts or offshore wind farms, to demand centres like cities and industries. HVDC fulfils the necessity of building efficient and long-distance transmission with minimal losses, and FACTS ensures dynamic grid balancing.

What is the ultimate goal of the investment?

The ultimate goal is to enhance the local production. Localizing the production of complex grid components and reducing imports in this aspect. Supply chain resilience is comparatively weaker in the country, and the goal is to strengthen the supply chain by avoiding delays and disruptions due to international dependencies. The position of our country as an export hub for advanced power electronics and grid control equipment should be stabilized, too. Through this investment, the company is focusing on this aspect too. Investments and initiatives like this encourage local supplier ecosystem developments and technology capability building.

Key takeaways:

No doubt, India's energy landscape is undergoing a dramatic shift, and rapid urbanization, industrial growth, and an ambitious push towards cleaner energy have a lot to do with the shift. Now, companies like GE Vernova are taking big steps in this aspect. This strategic move of USD 16 million investment in expanding the electrification manufacturing and engineering capabilities of GE Vernova comes under the company's broader "Asia for Asia" strategy, and therefore it positions the country as a crucial hub for innovation, manufacturing and export of high-voltage power equipment that are essential for modern power systems. Therefore, other companies in the country can also align their business goals with the country's national ambitions, such as achieving energy targets, working towards infrastructure modernization and unlocking policy support, market access and long-term growth potential.

Textiles Recycling Expo 2025: BASF and trinamiX present solutions supporting textile circularity

- trinamiX showcase its mobile solution for reliable textile identification, including the new handheld spectrometer trinamiX PAL Two
- BASF presents loopamid®, the recycled polyamide 6 based entirely on textile waste
- Joint presence highlights solutions enabling textile sorting, recycling, and circular economy

May 22, 2025 – Ludwigshafen, Germany; Brussels, Belgium – trinamiX GmbH, a leading provider of mobile spectroscopy solutions and a subsidiary of BASF, and BASF SE with loopamid®, a recycled polyamide 6 entirely made from textile waste, will jointly present their solutions for textile sorting and circularity at the Textiles Recycling Expo at booth 2341 in hall 3. The event takes place in Brussels, Belgium from June 4 to 5, 2025. Together, they will showcase approaches to textile circularity – from reliable material identification to the use of recycled polyamide 6 for high-performance textiles.

loopamid: Polyamide 6 made entirely from textile waste

loopamid is a recycled polyamide 6 that is entirely based on textile waste. "The technology behind loopamid allows textile-to-textile recycling for polyamide 6 in a wide variety of fabric blends, including those with elastane," said Dag Wiebelhaus, Head of Innovation Management at BASF's Monomers division and loopamid project lead. BASF recently announced the start-up of the world's first commercial loopamid plant. The production facility at the Caojing site in Shanghai, China, has an annual capacity of 500 metric tons and utilizes industrial textile waste from textile manufacturing and post-consumer waste for producing loopamid. The feedstock includes cutting scraps, defective cuts, offcuts and other production textile waste from the textile industry. These materials are collected and provided to BASF by partners. End-of-life garments made from polyamide 6 and other textile products can also be utilized for the production of loopamid. All these waste materials are challenging to recycle because they typically consist of a mixture of different fibers and materials as well as dyes and additives. Additionally, for post-consumer waste recycling, buttons, zippers and accessories must be removed in advance. BASF works closely with partners and customers to accelerate the development of collection and sorting systems.

trinamiX: Textile identification made easy

trinamiX Mobile Near-Infrared (NIR) Spectroscopy Solution enables fast, reliable and non-destructive identification of a wide range of textiles and blends – such as polyester, cotton, wool or polyamide including PA 6 and PA 6.6. BASF has utilized trinamiX technology to qualify PA 6 waste streams for their loopamid® product.

The system features a robust, portable NIR spectrometer, accompanied by an app that leverages sophisticated cloud-based data analysis, along with a customer portal for managing results, downloading reports, and exporting data.

To meet the specific needs of recyclers, trinamiX offers a flexible solution that accommodates different workflows. Users can choose between a compact handheld device for spot checks or a semi-automated setup that can be seamlessly integrated into a sorting table, allowing for automatically triggered scans for enhanced efficiency.

trinamiX PAL Two – Next generation handheld spectrometer

Visitors will also experience trinamiX PAL Two, the latest generation of trinamiX's handheld spectrometer. Designed for even more convenient, single-handed operation, it features a built-in display for direct, on-device results – making it ideal for use in various environments and industries.

"We're excited to join the Textiles Recycling Expo for the first time and meet the vibrant community. Our innovative solution promotes greater transparency and empowers informed decision-making throughout the textile value chain by providing reliable on-the-spot identification. We are making this accessible to everyone dedicated to creating a more sustainable future for textiles. Together, we can drive positive change and transformation in our industry!", says Adrian Vogel, Team Lead Circular Economy at trinamiX.

Source : BASF

Wanhua Chemical Made a Splash at CIBF 2025, Driving Innovation in Battery Materials

From May 15 to 17, 2025, the 17th China International Battery Technology Conference/Exhibition (CIBF2025) kicked off at Shenzhen. Wanhua Chemical showcased its innovative achievements in lithium battery and sodium battery cathode/anode materials, binders, solvents, hydrometallurgy, and other fields, helping the industry break through technical bottlenecks.

Battery Materials Field

Wanhua Chemical launched a new generation of high tap density LFP cathode materials. Through innovative processes, these materials enhance tap density and energy density, offering stronger power and longer endurance for electric vehicles, while providing longer cycle life and higher energy density applications for energy storage cells.

The artificial graphite anode materials featuring continuous graphitization technology significantly improve production efficiency with leading processes, offering remarkable cost advantages. They also effectively avoid harmful gas emissions, ensuring environmental protection and safety.

A new generation of industry-leading high-capacity and high-tap-density NFPP sodium battery cathode materials was introduced. The products exhibit excellent rate capability, H/L temperature performance, safety, and cycle performance.

In addition, Wanhua Chemical also launched hard carbon anode materials for sodium-ion batteries and other products, keeping pace with industry frontiers and providing unlimited possibilities for future battery technology development.

Battery Chemicals Field

Electrolyte Sector

Electrolyte: High-purity and high-quality lithium hexafluorophosphate (LiPF6) electrolyte products effectively ensure the performance of electrolytes, serving as key materials for the stable operation of batteries.

Green Solvents: Produced using 100% green electricity, the product range covers propylene carbonate (PC), ethylene carbonate (EC), dimethyl carbonate (DMC), diethyl carbonate (DEC), and ethyl methyl carbonate (EMC). With precise production processes and strict quality control, these products guarantee green high-quality features: high purity and low odor.

Auxiliary Materials Sector

PVDF: Possesses excellent adhesive force and chemical stability, enhancing battery safety.

PAA: Helps improve battery cycle and kinetic performance, becoming the preferred solution for leading cell customers.

NMP: With stable high quality, it aids in slurry preparation and ensures efficient battery production.

Hydrometallurgy Field

Relying on advanced hydrometallurgical technology, Wanhua achieves high-purity production of battery-grade nickel sulfate, cobalt sulfate, and manganese sulfate—key raw materials for cathode precursor synthesis. Through a rigorous quality control system, every batch of products complies with the requirements of high-end battery material production.

In the future, Wanhua Chemical will continue to leverage its strong technological R&D capabilities, unique raw material synergy advantages, and park-scale integrated effects to deepen its presence in the battery materials field, providing customers with higher-quality products and services, and injecting continuous momentum into the sustainable development of the global new energy industry.

Together, we will witness the cutting-edge technologies and innovative achievements in the new energy industry and jointly create a bright future!

Source : Wanhua

BASF showcases personal care innovations and sustainable solutions under the "Beyond Beauty: Thrive into Tomorrow" campaign at NYSCC Suppliers' Day 2025

- New campaign introduces innovative and more sustainable ingredient and digital solutions for skin, hair and sun care formulations
- BASF spotlights generational beauty with ingredient solutions tailored for each age group and their unique needs
- Synergistic ingredient combinations enable enhanced texture and sensory appeal in personal care formulations using advanced emulsifiers and biopolymers.

FLORHAM PARK, NJ – May 28, 2025 – BASF's Personal Care business will unveil its "Beyond Beauty: Thrive into Tomorrow" campaign at the 2025 New York Society of Cosmetic Chemists (NYSCC) Suppliers' Day, June 3-4, 2025, at the Javits Convention Center in New York City, booth #721. Embracing the longevity trend, the theme offers a glimpse into the future of personal care, showcasing innovative and more sustainable personalized solutions that cater to every generation. With a focus on both cutting-edge ingredients and advanced digital services, BASF shares its optimistic outlook to shaping the beauty industry for years to come.

"At BASF, improved sustainability and scientific innovation are at the very core of our Personal Care product line. We believe in embracing a journey of transformation, where science and innovation come together to redefine beauty, reflecting the diverse generations that inspire it," said Brandon Crist, BASF Vice President, Business Management, Personal Care North America. "With more sustainable ingredients and digital services, we're focused on crafting personalized solutions for every generation tailored to meet tomorrow's needs. Further, our commitment goes beyond individual products; we collaborate with partners across the ecosystem, leveraging our extensive portfolio and scientific expertise to deliver more innovative and sustainable solutions."

In booth #721, BASF will introduce innovations in beauty and sensory experiences tailored for every generation. The "Generational Beauty"

zone will showcase six unique prototypes that cater to diverse age groups, featuring advanced ingredients like Verdessence® Maize, Lamesoft® OP Plus, Oximony™ and Vitaguard®, highlighting its commitment to inclusive and innovative beauty solutions.

In the "Sensorial Experiences" zone, BASF will highlight the Binding Blocks Toolkit 2.0 and Rheology Toolkit, offering insights into the sensory potential of biopolymer combinations such as Verdessence® Tara, Alginate, and Glucomannan. Attendees can experience the transformative impact of emulsifiers like Emulgade® Verde and discover sensory data that revolutionizes texture, appearance, and feel.

Furthermore, the "APG Synergies" zone explores how alkyl polyglycosides (APGs) biosurfactant-based solutions, made from 100% renewable feedstocks, in combination with other co-surfactants, elevate foam quality by providing a variety of luxurious textures while meeting sustainability demands. Utilizing the company's Surfactant Navigator digital service, BASF combines enhanced AI tools with real lab data and consumer perception studies to showcase the synergies that drive innovation in foam quality and texture. The Surfactant Navigator is part of BASF's digital platform, D'lite, alongside apps like Emollient Maestro and Ingredients Revealed. D'lite provides real-time trend tracking and helps formulators speed up product development. The booth will feature hands-on demonstrations of this premier digital service.

Presentations by BASF experts and "Chemist Confessions" influencers at NYSCC

In the booth on June 3, BASF experts Mallika Tiwari, Digital Services Lead North America, and Joel Basilan, Head of Application Technology, Personal Care North America, will be joined by Instagram's "Chemist Confessions" influencers – Victoria Fu and Gloria Lu – who will discuss using digital services and AI to enhance ingredient synergies and expedite personal care product formulations.

Additionally, on June 3, BASF Applied Sustainability Manager, Prerna Chatterjee, will join the NYSCC Sustainability Round Table discussion on the topic of advancing sustainability in cosmetics and household products.

On June 4, BASF Personal Care experts Andrew Miller, Senior Marketing Manager – Hair, Body, and Oral Care, and Cara English, Senior Chemist – Application Technology, Hair and Body Care, will present on formulating innovative textures with multifaceted and more sustainable ingredients.

Source : BASF

Dow enriches its beauty care portfolio with bio-based and silicone ingredients and introduces carbon-neutral silicone elastomers at New York SCC Suppliers' Day 2025

MIDLAND, Mich. – May 29, 2025 – Dow (NYSE: Dow) will debut a broader portfolio of skin, hair and color cosmetics, and introduce its first low carbon silicone elastomer blends under the Decarbia™ reduced carbon platform. The Company's newest product offering includes targeted products for conditioning and deposition aid, styling, cleanser, film formers for color cosmetics and sun care applications – empowering formulators to create high-performing consumer loved products.

Dow will also unveil inspiring prototypes under the theme 'From Shower to Sensational', designed to elevate everyday routines into indulgent self-care experiences. Complementing this is the launch of the "ProtecTress 2.0 program", focusing on effective hair heat protection options.

"Today's brand owners are eager to ride the wave of trends and go viral – but they also care deeply about the longevity of their established product ranges through continually enhanced performance, just as we do. Consumers demand long-lasting results, whether they're trying out a new product or reaching for a trusted favorite. That is what helps them feel confident throughout the day", said Jennifer Marques, Global Strategic Marketing Leader at Dow Personal Care. "We approach every launch through multiple lenses to ensure we offer the most effective and versatile ingredients. Our scientific know-how, performance testing capabilities, and regulatory expertise aren't just appreciated—they're relied on by our customers who know they can create products that truly resonate with consumers", adds Marques.

It goes hand in hand with industry evolution, which increasingly recognizes

the opportunity to do more for our people and the planet with high-performing products that can make a meaningful difference. In line with this, Dow is introducing its four first low-carbon DOWSIL™ Silicone Elastomers Blends, as part of Dow's Decarbia™ portfolio of reduced carbon materials. These carbon-neutral ingredients are a result of Dow's decarbonization of its silicon metal feedstocks. With a fully integrated supply chain. Dow optimizes every step from raw materials to finished products. Each is backed by verified carbon compensation certification, supported by third party Environmental Product Declarations (EPDs) and certified Life Cycle Analyses (LCAs).

Dow's new featured trade products and programs include:

From Shower to Sensational formulation kit: Composed of 12 thoughtfully crafted formulas powered by innovative ingredients like silicone elastomers, gum blends, organic skin-conditioning polymers, a bio-based SPF booster, and upcycled rice husk silica, this kit is designed to transform everyday routines into a refreshing and inspiring beauty experience.

DEXCARE™ CD-2 Polymer: A low viscosity, dual cationic dextran used as a conditioning agent and deposition aid for silicones and natural oils. It enhances formulations' conditioning power with a bio-fermented polymer, improving dry and wet combing. Supplied in an easy-to-use liquid format, it is non-GMO, biodegradable, and contains over 80% bio-based content.

ACUDYNE™ 2000 Polymer: A low viscosity, water soluble emulsion that is easy to handle and readily disperses in water. This hair styling polymer allows hair product formulators to achieve long lasting style control with high levels of hold, excellent humidity resistance and no flaking.

ACULYN™ F1 Polymer: A rheology modifier for cleansing formulations offering clear transparency and good suspension across a pH range of 3 to 11. Efficient in sulfate-free surfactant systems, it can suspend both beads and bubbles and supports softer preservatives. Cold processable, it ensures smooth flow and clarity in shampoos, facial, and body cleansers.

DOWSIL™ MQ-1610 ID Resin and DOWSIL™ MQ-1650 ID Resin: Two film formers for color cosmetics and sun care applications, offering long wear with good sebum and water repellency. Supplied as a liquid, they support easy formulation and feature a broad compatibility with most cosmetic ingredients, including sunscreen actives.

ProtecTress 2.0: A hair heat protection program that highlights Dow's hair care ingredients, tested for their effectiveness in preventing heat damage and breakage and using most recent test methods.

"The team is eager to engage with the beauty care industry and demonstrate how our forward-looking products can support consumer-driven formulations", commented Jennifer Marques, Global Strategic Marketing Leader at Dow Personal Care. Dow scientists will be available at booth #627 to discuss Dow's innovations

Source : Dow

DuPont Expands Bioprocessing Portfolio with Launch of DuPont™ AmberChrom™ TQ1 Chromatography Resin

WILMINGTON, Del., May 22, 2025 /PRNewswire/ -- DuPont has expanded its bioprocessing portfolio with the launch of DuPont™ AmberChrom™ TQ1 chromatography resin for the purification of oligonucleotides and peptides in support of a wide-range of biopharma applications.

"The introduction of DuPont™ AmberChrom™ TQ1 chromatography resin supports the accelerated development and commercialization of oligonucleotide and peptide therapeutics," said Shane Kendra, Global Bioprocessing Market Leader for DuPont Water Solutions. "In addition to expanding our capabilities, this new anion exchange chromatography resin offers exceptional performance, setting a new standard in this product class and creating new opportunities in high growth therapy

areas."

The new agarose-based chromatography resin offers increased loading capacity, higher throughput, and requires less pressure than comparable competing products within the same class. These characteristics make DuPont™ AmberChrom™ TQ1 chromatography resin an excellent choice for high resolution separations and polishing, offering high purity fractions in biomolecule purifications and the separation of closely-related impurities from target molecules. Its low-pressure build-up, combined with high-yield and purity for peptides and both DMT-Off and DMT-On oligonucleotides, makes the resin suitable for use in benchtop and large-scale commercial purifications.

To support the introduction of the resin, DuPont has published comprehensive internal application studies that used real-world drug feeds to validate performance characteristics; this documentation can also assist with the integration of the product into processes at every phase from drug discovery through commercialization.

"Further expansion of DuPont's bioprocessing portfolio reflects our commitment to providing a comprehensive one-stop shop for the purification and polishing of oligonucleotides and peptides," said Kendra. "Our technical teams and scientists are continually collaborating with customers to design efficient bioprocessing solutions for every stage of the drug development journey."

DuPont™ AmberChrom™ TQ1 chromatography resin can be used in combination with existing AmberChrom™ XT and CG chromatography resins to purify various oligonucleotide feeds, or for the crude purification of peptide feeds in preparation for reverse phase chromatography.

DuPont introduced the new chromatography resin to the market during TIDES USA—a conference dedicated to accelerating oligonucleotide and peptide innovations. Hadi Fares, Ph.D, a bioprocessing application scientist with DuPont, presented application studies to demonstrate the performance capabilities of DuPont™ AmberChrom™ TQ1 chromatography resin, and how it complements existing resins within the DuPont bioprocessing portfolio.

On June 19, 2025, DuPont will host an educational webinar discussing the capabilities of DuPont™ AmberChrom™ TQ1 chromatography resin and how its loading capacity and purification efficacy can enhance purification of oligonucleotides and peptides. Register here.

Source : DuPont

"Clariant Beauty" to showcase innovations inspired by North American trends at NYSCC 2025

- Clariant introduces to North America "Clariant Beauty", the new personal care positioning combining expertise from Clariant and Lucas Meyer Cosmetics by Clariant
- Clariant launches its "#BeautyTok Unboxed" concept, featuring six innovative formulations that bring viral social media beauty trends to life
- Lucas Meyer Cosmetics unveils two regional

innovations: "Calmplexion™ Primer" with Pickmulse™ technology and "Curl Recharge Masque" for curly hair care

CHARLOTTE, NC, May 28, 2025 - Clariant, a leading specialty chemicals company, introduces its comprehensive personal care portfolio to North America under a new name "Clariant Beauty", marking a significant milestone in sustainable and high-performance cosmetic solutions. The combined expertise of Clariant

Personal Care and Lucas Meyer Cosmetics by Clariant enables the company to offer a holistic approach to beauty formulation, addressing trends across skincare, haircare, and cleansing categories. This integrated strategy allows Clariant to provide beauty brands with the tools they need to develop products that resonate with today's socially-connected consumers, while delivering tangible benefits.

At NYSCC Supplier's Day 2025, Clariant unveils its "#BeautyTok Unboxed" concept, a collection of six unique formulations inspired by viral beauty trends from TikTok, Instagram, and Pinterest. This innovative approach transforms popular social media beauty formats into professionally formulated products with proven efficacy, showcasing Clariant's ability to rapidly respond to evolving consumer demands.

"In today's beauty market, trends emerge and evolve at unprecedented speeds," said Lynna Pili, Marketing Manager, North America – Clariant Personal, Home & Health Care. "With '#BeautyTok Unboxed', we're demonstrating how Clariant can help brands stay ahead of the curve, with innovative formats and textures enabled by our formulation experts and high-quality ingredients. Clariant's newest regional concept features a range of unique functional ingredients ranging from multifunctional preservation boosters (Nipaguard™ line), to sensory-enhancing rheology modifiers (Aristoflex™ polymers).

"#BeautyTok Unboxed" spans multiple product categories and textures, ranging from innovative milky toners to overnight hair masks, illustrating the versatility of Clariant's ingredient portfolio and formulation capabilities. Each product in the collection addresses specific consumer desires identified through social media trend analysis while incorporating Clariant's technical know-how to ensure performance and stability.

Clariant will also be debuting two new ingredients at Suppliers' Day: Plantasens™ Emulsifier HP 49, which offers superior stability and skin barrier function for skin care formulations, as well as Nipaguard SCE VITA, a 100% renewable broad-spectrum preservative blend designed for a wide range of cosmetics and toiletries.

Lucas Meyer Cosmetics introduces two regional formulations specifically developed for North American consumers. The "Calmplexion Primer", featuring the company's patented Pickmulse technology derived from quinoa starch, delivers a smooth, matte finish that creates an ideal base for makeup application. This Pickering emulsifier represents Clariant's commitment to innovative ingredients that don't compromise on performance.

Addressing the growing demand for specialized curly hair care solutions, Lucas Meyer Cosmetics also presents its "Curl Recharge Masque". The formulation includes Biophilic™ S MB, which is a critical ingredient that helps to smooth, condition, and enhance curl definition, meeting the specific needs of consumers with curly hair types – a rapidly expanding segment in the North American beauty market.

"Our regional formulations reflect our deep understanding of North American consumer preferences and beauty rituals," commented Isabelle Lacasse, Head of Global Marketing, Product Line Management & Formulation Lucas Meyer Cosmetics at Clariant. "By combining our scientific expertise with market insights, we're able to develop solutions that address current trends while anticipating future needs in the ever-evolving beauty landscape."

Don't miss the presentation entitled, "Activating the Brain-Beauty Connection: A Multipronged Approach" given by technical marketing expert, Sophia Bull, Regional Marketing Manager NORAM Lucas Meyer Cosmetics at Clariant. Her insightful presentation will highlight how cosmetics can do more than enhance appearance—they boost mental well-being. They increase confidence and self-esteem, while beauty routines reduce stress through ritualistic care and physical touch. You will learn how both formulation and active cosmetic ingredients affect the state of the brain and perception of sensory stimuli. The presentation will be given on Tuesday, June 3rd from 10:35-11:00 in Room 3D02.

NYSCC Supplier's Day 2025 takes place June 3-4 at the Javits Convention Center in New York City. Beauty brands, formulators, and industry professionals are invited to visit Clariant at booth 1733 to experience these innovations firsthand and discuss customized solutions for their specific formulation challenges. There will be a pop-up lab featuring live demo sessions showcasing how to create an emulsion with Pickmulse and how to use it as an encapsulation system. Visit our event page for further information

Source : Press Release

Unlocking the safe use of ammonia as marine fuel

Yara Clean Ammonia, the world's largest ammonia shipper, has teamed up with DNV and industry partners to shape new safety standards for ammonia-fueled vessels. This collaboration led to a Recommended Practice (RP) that outlines clear, unified guidelines for safe operations, crew training, and risk management at sea.

As the shipping industry accelerates toward net-zero, ammonia is emerging as a leading zero-carbon marine fuel. With more ammonia-fueled vessels entering the pipeline, ensuring safe operations at sea is now mission-critical.

Low-emission ammonia: A key to zero-emission shipping

Low-emission ammonia refers to ammonia (NH_3) produced with significantly reduced greenhouse gas emissions, making it suitable for use in decarbonization efforts, particularly in industries like shipping.

Unlike conventional fuels, ammonia's chemical profile requires specific handling and robust safety protocols. "Ammonia deserves respect, not fear — safety starts with understanding," says Laurent Ruhlmann, HESQ VP at Yara Clean Ammonia.

DNV's new Recommended Practice (RP) — developed with input from Yara and others — offers a clear framework for safe ammonia fuel handling, addressing crew training, emergency procedures, and risk management.

Addressing the competence gap

Despite its growing adoption, ammonia-specific crew training has lagged. With over 30 ammonia-fueled vessels on order, there's an urgent need to develop targeted training programs — not just adaptations of LNG protocols.

"Maritime can draw on decades of safe ammonia handling from land-based operations," Ruhlmann notes. "Transferring that know-how is key to decarbonizing safely."

Real-world expertise behind the guidelines

Yara Clean Ammonia was a key contributor to the Recommended Practice, bringing deep operational insights from producing ammonia for over a century and managing 15 vessels and 18 global terminals. The company's pioneering project, Yara Eyde, will be the world's first ammonia-powered container vessel — a real-world demonstration of ammonia in action.

Scaling with safety

Global demand for ammonia fuel could double or triple by 2050. Safe scaling requires structured protocols, ammonia-specific risk assessments, and trained crews. Safety must be built into vessel design, operations, and training from the start. Applying best practices from the chemical industry is vital.

DNV's RP serves as a roadmap for training institutions, shipowners, and regulators to build standardized ammonia competence. Flag States can streamline approval processes by referencing the RP, avoiding case-by-case approaches.

Culture of prevention

The transition to ammonia requires a shift towards a risk-based approach, Ksenia Zakariyya, HESQ Manager at Yara Clean Ammonia says: "To ensure safe ship design and operations, dedicated risk assessments are essential for enhanced decision-making and definition of technical, operational, and organizational barriers to effectively control risks throughout the asset's lifecycle".

With structured training and strong safety culture, ammonia can be handled safely at sea. "Operators must implement tailored protocols, drills, and scenario-based training," Zakariyya emphasizes. "Ammonia readiness must be built into daily operations."

Ammonia's role in the future of shipping "Respect for ammonia as fuel begins with proactive safety," says Ruhlmann. "By embedding best practices across the value chain, ammonia can become a cornerstone of maritime decarbonization — safely and at scale."

Source : Yara

EVENTS AND CONFERENCES

ASIA PACIFIC COATING SHOW

Date : Sept, 3-5, 2025

City : Bangkok International Trade & Exhibition Centre Bangkok,

Country : Thailand

Website : https://www.asiapacificcoatingsshow.com

Description : The Asia Pacific Coatings Show is the most influential gathering for the coatings industry in the South East Asia and the Pacific Rim. For three days, the exhibition offers the opportunity to meet new and existing customers from the region; gather insight on the latest technologies available in the market; and have meaningful, face-to-face business interactions.

The event offers the perfect environment for the entire spectrum of the coatings industry to do business, from raw material suppliers to equipment manufacturers, to distributors and technical specialists like chemists and formulators. That's not all – the Asia Pacific Coatings Conference and Business Presentations Hub held alongside the event offers the ideal platform to learn about the latest industry products, innovations and trends; exchange ideas with industry leaders; and build a strong network in the region.

CPHI CHINA - VIRTUAL CPHI

Date : June.24-26, 2025

City : China, Shanghai, Shanghai New International Expo Center

Country : China

Website : https://expopromoter.com/events/178656/?gad_source=1&gclid=CjwKCAjwvr--

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Description : CPHI & PMEC China 2025 is Asia's premier pharmaceutical event for sourcing, networking, learning and innovation with over 20 years' experience of bringing together Chinese and global pharma professionals. In 2025, CPHI & PMEC China will be held in 24-26 June 2025 at SNIEC (Shanghai New International Expo Centre), Shanghai, China. CPHI & PMEC China 2025 will cover more than 230,000 square meters of exhibition area, attract over 90,000 global attendees and 3,500 exhibitors, and hold more than 100 conferences during the exhibition. CPHI & PMEC China 2025 showcases a wide range of pharmaceutical products and services, including: active pharmaceutical ingredients, Intermediates & fine chemicals, excipients, finished dosage formulation, biopharmaceuticals, natural extracts, CMO & CRO, machinery & equipment, packaging & drug delivery, laboratory equipment, cleanroom & pollution control and etc. The event brings together prominent domestic and international suppliers, international companies include: Biocon, Datwyler, Dishman Carbogen, EUROAPI, IFF, Merck Chemicals, OLON SPA, SHL Medical, Stevanato Group, Terumo, TEVA API, United States Pharmacopeia; Leading domestic pharmaceutical companies include: Acebright, FOSUN PHARMA, Huahai, Jiangsu Hengrui, North China Pharmaceutical, QILU PHARMACEUTICAL, Shanghai Pharmaceuticals Holding, SINOPHARM, Yangtze River Pharmaceutical, ZHEJIANG HISUN; as well as machinery companies such as Bio-Link, Canaan, Hanbon Sci.&Tech., HIGHFINE ENGINEERING, Pharma United, SeTAQ®, Shandong Shinva Medical Instrument, Tofflon, Tosoh Bioscience, Welkin Industry, Zhejiang Cosmos and etc.

INACOATING 2025

Date : July, 29-31, 2025

City : JIExpo Kemayoran, Jakarta

Country : Indonesia

Website : https://www.inacoating-exhibition.net/

Description : INACOATING 2025 is the specialized event for coating & paint industry, including paint products, raw materials, resin, composite, manufacturing equipment, environment protection, technology and services, etc. This B2B event offers a comprehensive showcase of the latest paint and coating technologies for the region environmental manufacturing and industrial needs. This annual event presents a prime opportunity to network and form new global partnerships with local and international professional buyers. The 13th edition of INACOATING will be held on 29 – 31 July 2025 and co-located with Chemical Indonesia 2025, Inamarine 2025, and RailwayTech Indonesia 2025 at Jakarta International Expo (JIExpo), Kemayoran, Jakarta-Indonesia. INACOATING 2025 will serve as Indonesia's most prospective one-stop coating and painting exhibition for maritime, eco-building, industrial, automotive, furniture, and related paints & coating industries.

SAUDI ARABIA COATING SHOW

Date : Aug 26-28, 2025

City : COEX, Seoul

Country : Korea

Website : https://www.cphi.com/korea/en/home.html

Description : CPHI Korea is a dynamic meeting place where pharmaceutical suppliers, purchasers and decision makers get together for three days 1of uninterrupted business. Exhibiting companies showcase products from across the entire pharma supply chain: from ingredients and contract services, through to machinery and biopharmaceuticals.

DYE+CHEM BANGLADESH INTERNATIONAL EXPO

Date : Sept 10-13, 2025

City : Bangladesh–China Friendship Exhibition Center, Purbachal, Dhaka

Country : Bangladesh

Website : https://bd.cems-dyechem.com/
Description : Bangladesh - A Global Textile and Apparel Powerhouse: As one of the world's largest garment exporter, Bangladesh is a key market for textile chemicals and dyestuffs. The 48th DyeChem Bangladesh 2025 Expo provides a direct pathway to connect with a $47 billion textile and apparel industry that continues to grow year-on-year. Exclusive Focus on Dyestuffs and Specialty Chemicals: DyeChem is Bangladesh's only international exhibition of the region, dedicated solely to dyestuffs and fine & specialty chemicals. It's the most targeted platform for global manufacturers to showcase their products to a niche and highly relevant audience Access to Decision-Makers and Industry Leaders: The event attracts top executives, procurement managers, and decision-makers from leading textile and apparel manufacturers in Bangladesh and across the globe. It's a prime opportunity to build relationships with those who influence purchasing decisions. Strong Market Demand for Sustainable Solutions: Bangladesh's textile sector is increasingly focusing on sustainability, creating a demand for eco-friendly dyes, chemicals, and innovative technologies. Manufacturers offering sustainable solutions will find a receptive market eager to adopt cutting-edge products. Part of the Prestigious Textile Series of Exhibitions: Organized by CEMS Global USA, the DyeChem Series Expo is a key event in the Textile Series of Exhibitions held across three continents, which has a proven track record of success. It draws participants and visitors from over 30 countries, offering a truly global platform to enhance brand visibility and credibility. Unmatched Networking Opportunities: With thousands of industry professionals under one roof, the 48th DyeChem Bangladesh 2025 International Expo is the ideal venue for networking, collaboration, and forming strategic partnerships. From seminars to live product demos, there are numerous ways to engage directly with potential customers and collaborators. High ROI and Business Potential: Exhibitors at DyeChem Bangladesh benefit from a highly targeted audience, ensuring cost-effective marketing and sales efforts. Whether it's generating leads, building brand recognition, or signing contracts, this event delivers tangible business outcomes.

Ences €12 Million Leap Pioneering Sustainable Cellulose Packaging for a Plastic-Free Future

Vinodhini Harish

Introduction:

What do you think of the most, when you think of packed foods? Are you more concerned about the plastic that wraps the food than the food itself? There is a better world ahead and all it needs is a bit of work in research and development. How often do you imagine your food being wrapped in a compostable container made of plant fibres rather than plastics? This is not a scene from the future but it is already here in the market. The demand for sustainable packaging has never seen this height and the innovation is helping it reach even the implausible heights. In this article, we have discussed the ambitious 12 million euro investment by Ence, a pioneer in sustainable cellulose and renewable energy. They are stepping into the world of eco-friendly food packaging and we have explored the news in detail. Let's begin!

Ence's bold move into sustainable packaging:

Ence is known for sustainable cellulose and renewable energy is now involved in producing eco-friendly food containers. They have announced that they have invested 12 million euros as they are set to produce eco-friendly food containers. These are supposed to replace plastic as they can change the nature of the food that is put inside. Fresh foods and ready meals are supposed to be stored properly if they tend to travel inside packaging at different temperatures. Therefore Ence has come up with a solution due to growing demand from both the market and public concerning greener packaging solutions.

In the recent times, the company has shifted towards specialty pulp, which has higher value, custom made pulp products. In the early months of 2025, the company has already accounted for about 35% of Ence's total pulp sales and this is a sharp rise considering the previous sales. The share is also expected to spike high with 60% by 2028. These statistics reflects both market demand and company's transformation towards sustainability.

The company has developed the cornerstone of the transformation, which is the construction of a new fluff pulp production facility at Ence's Navia bio factory. This is one of the most advanced eco-friendly and efficient facilities they have, this is scheduled to be operational by the end of this year(2025). This facility is dedicated to producing fluff pulp which is a soft, highly absorbent type of cellulose which is crucial in manufacturing absorbent hygiene products such as diapers, sanitary pads and adult incontinence products.

This Fluff pulp is a specialty chemical product engineered for specific performance and thus possess characteristics such as absorbency, softness and strength. This is attained through additives and treatments. The production of such biodegradable, compostable and renewable materials like Ence's aligns with the principles of green chemistry, which is now emerging focus within the chemical industry.

Ence has always been bold and found ways to stand ahead of the curve:

Ence – Energia Y Celulosa, S.A, based in Spain and they focus on sustainable cellulose pulp and renewable energy from biomass. They were committed to circular economy principles and sustainable forestry and they have replaced their products of plastics with plant-based alternatives. They have developed a strong focus on innovation, and they are currently actively expanding in the specialty cellulose products and eco-friendly packaging solutions. They have also gained a leading position in renewable energy generation using agricultural and forestry waste.

Although they began their journey with traditional pulps and they sourced their raw materials mainly from sustainably managed eucalyptus forests in Spain and Portugal. The global demand has shifted the company's focus toward sustainable and diverse materials. They have evolved strategically to meet the market and environmental demands.

Apart from the packaging, the company has a long story of transformation, they are reinventing their business, shifting their focus to high-value specialty pulp, while launching a state-of-the-art fluff pulp-like to aid the growth of Europe's hygiene product industry. Overall from food trays to baby diapers, Ence's cellulose journey is quite a long narrative and it ties sustainability, innovation and the future of packaging so well.

A deep look into the strategy:

The investment shows Ence's clear understanding of consumer preferences and the regulators. The regulators are demanding plastic-free alternatives and there are growing concerns over pollution and climate change. Since the EU banned single-use plastics, they are putting pressure on industries to find sustainable packaging solutions. Likewise, the traditional pulp markets are under price pressure and they are

becoming more saturated as well. Thus the company chooses to move towards molded cellulose packaging thereby tapping into a high-growth and high-margin segment that aligns with the expertise in sustainable materials.
The ultimate goal of the company is to create molded cellulose trays that are biodegradable, recyclable and compostable thereby aligning fully with the circular economy principles. This has given the company a competitive edge in ESG focused markets.

Keeping the production facility locally, helps in reducing emissions tied to the transportation and eliminates the costs. Thereby supporting European food and retail sectors seeking sustainable packaging partners.

How did they begin?

Ence began with their decades of experience in producing "Eucalyptus-based pulp that is responsibly sourced from managed forests. The energy market trends revolved around diversification and in response to that, Ence entered the biomass energy sector and therefore solidified their role in clean tech. They have recognized the decline in profitability of conventional pulp and therefore they shifted towards specialty pulp and advanced biomaterials.

Then they recognized the need to capitalize the alignment with European Green Dal Policies, the schemes related to sustainable packaging, local sourcing and carbon reduction.

After all these endeavours, pilot testing, market analysis, they have jumped into investing 12 million euros, especially in food sector.

Final thoughts:

Ence's 12 million euro investment is not just business, it is a bold step towards reshaping the future of pulp production. The investment aligns the company's operations with sustainability, innovation and local manufacturing. Ence is setting a powerful example of how industry must evolve responsibly. There are very few expansions on specialty pulps and with this upcoming launch of its fluff pulp line, the company has not only reduced environmental impact but also strengthened Europe's self-sufficiency in critical sectors. Overall, they have set the road to ecological responsibility and business growth, and balance them both perfectly. Such forward-thinking companies must come forward to take charge in developing a greener and more circular future.

Less electro-corrosion, more color: New Ultramid® Advanced N for high-voltage connectors in electric cars

- Ultramid® Advanced N3U42G6 with non-halogenated flame retardant increases safety and durability of E&E applications
- Excellent colorability and long-term color stability with pre-colored compound or UL-certified masterbatches
- Automotive supplier KOSTAL Kontakt Systeme uses new BASF polyphthalamide (PPA) in connector for high-current modules
- Meet BASF at Battery Show, Stuttgart, booth 10-E110

BASF is now complementing its polyphthalamide (PPA) portfolio by Ultramid® Advanced N3U42G6, a polyamide 9T with non-halogenated flame-retardant, which minimizes electro-corrosion of metal contacts in electric and electronics (E&E) parts for e-mobility. The PPA increases the safety and durability of high-voltage (HV) connectors in e.g. inverters, DC-DC converters and batteries of electric cars. Due to its high strength and stiffness over a broad temperature range, its outstanding chemical resistance and dimensional stability, the Ultramid® Advanced N grade enhances the robustness and reliability of thin-walled HV connectors meeting growing industry needs for halide-free E&E components used in warm and humid conditions. The new Ultramid® Advanced N3U42G6 is available in uncolored with UL-certified masterbatches but also as pre-colored version with high color stability for easy

processing and excellent color retention after heat ageing.

As one of the first E&E expert companies, the automotive supplier KOSTAL Kontakt Systeme, Lüdenscheid, Germany, now uses the new Ultramid® Advanced N in several components in its high-voltage connector KS22 Class 4 for high-current modules. The HV-connector, the smallest in its performance class, benefits from the BASF PPA in several ways: It enables miniaturization and saves installation space as it shows good flowability at thin wall thickness. Ultramid® Advanced N3U42G6 provides the connector with very high electrical insulation which beats aliphatic polyamides, especially at elevated temperatures. In addition, it has a high elongation at break so that there is no stress whitening when the different components are mounted. In this way, automotive customers can rely on the safe, long-term performance of KOSTAL's HV-connector with the best combination of electrical insulation and mechanical properties.

The flame-retardant Ultramid® Advanced N3U42G6 extends the lifetime of E&E components as it is halide-free according to EN 50642. It thus prevents contact corrosion and subsequent failure of sensitive electrical parts exposed to heat and moisture. The PPA achieves fire protection class UL94 with V-0 at 0.25 mm. It also enables long-lasting color coding which is safety-relevant in areas with high voltages: It meets all the criteria of color stability and heat aging resistance. In in-house tests, the color stability was confirmed after 1,000 hours at up to 150°C. Pre-colored variants like the e-mobility standard orange RAL 2003 are available directly from BASF. For self-coloring, more than 50 inorganic and organic colorants, which are approved for coloring PPAs and show a heat stability up to 350°C, can be used.

"Our new non-halogenated grade combines the excellent properties of our superhero Ultramid® Advanced N with better colorability, long color stability and outstanding anti-corrosion effect", says Volker Zeiher from technical development engineering plastics at BASF. "With this optimized PA9T, our customers can develop innovative, best-in-class E&E components supported by BASF's proven flame-retardant expertise and material know-how for electronics manufacturing. Ultramid® Advanced N3U42G6 is part of BASF's tailored flame-retardant PPA portfolio for the E&E industry that advances the development of challenging parts in consumer electronics, automotive battery systems and electric powertrains."

Due to its low moisture uptake and high heat distortion temperature of 265°C, Ultramid® Advanced N3U42G6 is especially suited for connectors post-processed with surface mount technology (SMT): It guarantees a high dimensional stability and avoids blistering or changes in dimensions of the processed part during the SMT process. The new PPA grade is especially suited for SMT as it can withstand higher temperatures while maintaining its mechanical strength. This increases the quality of the post-processed E&E components and helps to reduce waste and costs.

Source : BASF

OQ Launches 17 New Polymer Solutions to Drive Progress in Packaging, Durables and Infrastructure

OQ, Oman's global energy group, has introduced 17 new application-focused polymer grades over the past year—reinforcing its commitment to delivering transformative material solutions tailored to address global megatrends such as food preservation, water security, and energy saving. These grades will be showcased for the first time in Europe at K 2025, the world's leading plastics and rubber trade fair in Düsseldorf.

Representing one of the most significant expansions of OQ's polymer portfolio to date, the grades span polypropylene and polyethylene families—engineered to address evolving global megatrends and meet the future performance, sustainability, and efficiency demands of converters worldwide.

"This expansion reflects OQ's commitment to delivering application-focused solutions that align with what matters most to our customers—durability, speed-to-market, and operational-efficiency," said Abdulrahman Al Tamtami, Vice President, Global Marketing at OQ. "These aren't just new grades—they're new possibilities for our partners across the value chain."

A Broad Portfolio to Help Solve Real-World Challenges

The 17 new grades include:

- **6 PP Impact Copolymers** for rigid packaging applications including thin walled packaging, housewares

and durables, offering excellent flow and stiffness-impact balance.

Notable: Luban EP2348T for high-speed thin-walled packaging.

- **4 PP Random Copolymers** with enhanced transparency and organoleptic performance, ideal for housewares, closures, and food containers.

1. Notable: Luban RP2251T—improved shelf appeal and faster cycle times with energy savings.

- **2 PP Homopolymers** tailored for spunbond nonwoven applications, offering superior fiber strength and processing stability.

- **5 Polyethylene grades,** including a **rotomoulding grade (Luban LL-8446.21),** developed for water storage and road safety applications delivering excellent impact, durability and UV resistance.

These grades are engineered to meet a wide range of evolving industry needs, including food packaging that helps reduce food waste and energy consumption; durable water storage solutions that support urban growth and water security; and transparent, reusable rigid packaging that not only enhances aesthetics and functionality, but also offers a sustainable alternative to single-use plastics. In addition, the portfolio supports the development of robust consumer goods designed to improve everyday convenience while meeting the rising demand for long-lasting, resource-efficient products.

Customer Success, Fast-Tracked by Technical Expertise

With a full spectrum of polymer offerings, OQ is a comprehensive solution partner for converters. The new grades are backed by strong technical support, regulatory compliance (including REACH), and a commitment to customer collaboration.

"We developed these grades to meet the needs of our customers and the market—from early trials to commercial success," said Cihan Cabuk, Head of Market Development & Innovation at OQ Marketing. "At OQ, we aren't just focused on launching polymer grades. We are focused on continuous innovation through solutions which enable food & water security, energy savings, and convenience."

To match this growing portfolio, OQ has also invested in supply chain agility, including floating warehouse solutions for customers located in the United Kingdom, Europe, and Turkey that reduce delivery times from 30+ days to as little as four.

With a broad product portfolio, faster delivery times, and hands-on technical advisory, OQ is helping converters tackle today's most pressing demands—while staying ready for what's next. As industries push for higher performance and faster time-to-market, OQ stands ready with proven solutions, trusted service, and the agility to grow alongside its partners.

Source : Press Release

CPChem agrees to sell interest in Singapore polyethylene manufacturing joint venture

Chevron Phillips Chemical announced today that the shareholders of Chevron Phillips Singapore Chemicals have agreed to sell 100% of their shares to Aster Chemicals and Energy through its affiliate Chandra Asri. Aster is a joint venture company between Chandra Asri and Glencore.

CPSC owns and operates a high-density polyethylene manufacturing facility on Jurong Island, Singapore, with an annual production capacity of 400 KTA. The approximately 150 employees of CPSC are expected to have the opportunity to join Aster.

"CPSC is an excellent strategic fit for Aster, and we are confident the business will thrive as part of its portfolio," CPChem Executive Vice President of Commercial Justine Smith said. "With this transaction, we are optimizing our asset portfolio to ensure we remain competitive and continue to serve as the supplier of choice to our global customers."

The transaction remains subject to customary closing conditions.

CPChem's Asia headquarters, responsible for the sales and marketing of products throughout the region, will remain in Singapore.

Source : Chevron Phillips Chemical

MUMBAI MARKET PRICE AS ON 11/06/2025

Name of Chemical	Current Price	Location
Acetic Acid-Imported Repack	40	Mumbai
Acetic Acid-Domestic Intact	56	Mumbai
Acetic Acid-Domestic Repack	41	Mumbai
Acetone-Imported Repack	81	Mumbai
Acetone-Domestic Intact	90	Mumbai
Acetone-Domestic Intact	81	Mumbai
Acetonitrile-Imported Intact	135	Mumbai
Acetonitrile-Domestic Intact	148	Mumbai
Acetonitrile-Domestic Repack	130	Mumbai
Acrylonitrile-Imported Intact	145	Mumbai
Acrylonitrile-Imported Repack	170	Mumbai
Aniline-Imported Intact	145	Mumbai
Aniline-Domestic Intact	145	Mumbai
Benzene-Domestic Repack	73	Mumbai
Cyclohexane-Imported Intact	93	Mumbai
Cyclohexane-Domestic Intact	90	Mumbai
Cyclohexane-Domestic Repack	87	Mumbai
Cyclohexanone-Imported Intact	125	Mumbai
Cyclohexanone-Imported Repack	113	Mumbai
Cyclohexanone-Domestic Intact	124	Mumbai
Cyclohexanone-Domestic Repack	137	Mumbai
C9 Solvent (99.99% purity)-Imported Repack	101	Mumbai
C9 Solvent (Arham Petrochem)-Imported Repack	100.75	Mumbai
Dibutyl Phthalate-Domestic Intact	116	Mumbai
Dioctyl Phthalate-Domestic Intact	120	Mumbai
Ethyl Acetate-Domestic Intact	76	Mumbai
Ethyl Acetate-Domestic Repack	73	Mumbai
Formaldehyde(37%)-Domestic Repack	17	Mumbai
Methanol-Imported Repack	32	Mumbai
Methyl Ethyl Ketone-Imported Intact	112	Mumbai
Methyl Ethyl Ketone-Imported Repack	100	Mumbai
Methyl Isobutyl Ketone-Imported Intact	134	Mumbai
Methyl Isobutyl Ketone-Imported Repack	116	Mumbai

Methyl Methacrylate-Imported Intact	134	Mumbai
Mixed Xylene-Imported Repack	75	Mumbai
Mixed Xylene-Domestic Repack	75	Mumbai
Monoethylene Glycol-Imported Repack	58	Mumbai
Monoethylene Glycol-Domestic Intact	62.5	Mumbai
Monoethylene Glycol-Domestic Repack	58.5	Mumbai
Iso propyl Alcohol-Imported Repack	92	Mumbai
Iso propyl Alcohol-Domestic Intact	109	Mumbai
Iso propyl Alcohol-Domestic Repack	92	Mumbai
nButanol-Imported Repack	87	Mumbai
nButanol-Domestic Intact	96	Mumbai
nButanol-Domestic Repack	87	Mumbai
Ortho Xylene-Imported Repack	99	Mumbai
Phenol-Imported Repack	97	Mumbai
Phenol-Domestic Intact	103	Mumbai
Phenol-Domestic Repack	99	Mumbai
Phthalic Anhydride-Imported Intact	96	Mumbai
Phthalic Anhydride-Domestic Intact	95	Mumbai
Styrene Monomer-Imported Repack	91	Mumbai
Toluene-Imported Repack	73	Mumbai
Toluene-Domestic Repack	73	Mumbai
Vinyl Acetate Monomer-Imported Repack	78	Mumbai

Note-Above prices have been collected from experts and experienced outsources of the industry.Kindly verify from your end as well.

INTERNATIONAL MARKET PRICES AS ON 11/06/2025

Product		Regions	Current prices
Feedstock Prices $/unit			
Crude Oil ($/barrel)		WTI CRUDE	65.04
		BRENT CRUDE	66.87
		MARS US	72.21
		OPEC BASKET	66.48
Natural Gas		New York	3.54
Gasoline		RBOB	2.08
Heating Oil	US	2.13	

Ethanol	US	1.66
Naphtha	FOB Singapore	610
	European	550
	CFR Far East Asia	575
Propane	New York	0.75
Aromatics prices $/MT		
Benzene	FOB Korea	720
	CFR Japan	740
Styrene	CFR Japan	900
	CFR South East Asia	900
	CFR China	900
	FOB Korea	890
Toluene	CFR China	680
	CFR South East Asia	680
	FOB Korea	675
	CFR Japan	680
Iso-Mix Xylene	CFR South East Asia	715
	CFR Taiwan	720
	FOB Korea	695
MEG	CFR China	510
	CFR South East Asia	520
Methanol	CFR China	268
	CFR Korea	299
	CFR South East Asia	322
	CFR Taiwan	311
Solvent-MX	CFR South East Asia	740
	FOB Korea	670
	CFR China	705
Ortho Xylene	CFR South East Asia	860
	FOB Korea	850
	CFR China	850
Para Xylene	CFR South East Asia	810
	FOB Korea	790
	CFR Taiwan	810
Propylene	FOB Japan	740

	FOB Korea	705
	CFR China	745
	CFR South East Asia	780
Propylene Glycol	FOB Korea	820
	CFR China	850
Ethylene	CFR North East Asia	775
	CFR South East Asia	845
	FOB Japan	725
	FOB Korea	730
EDC	CFR Far East Asia	150
	CFR South East Asia	155
Butadiene	CFR China	1075
	CFR South East Asia	1000
	FOB Korea	1055
Benzene	FOB Rotterdam	680
Methanol	FOB Rotterdam	275
Ortho Xylene	FOB Rotterdam	1105
Para Xylene	FOB Rotterdam	810
Solvent-MX	FOB Rotterdam	770
Styrene	FOB Rotterdam	1080
Toluene	FOB Rotterdam	795
Benzene C/G	FOB US Gulf	265
Toluene C/G	FOB US Gulf	286
Styrene C/LB	FOB US Gulf	52.12
Para Xylene $/MT	FOB US Gulf	870
Mix Xylene C/G	FOB US Gulf	289
Methanol C/G	FOB US Gulf	80
Intermediates prices $/MT		
Acrylonitrile	CFR Far East Asia	1165
	CFR South East Asia	1165
	CFR South Asia	1125
VCM	CFR Far East Asia	520
	CFR South East Asia	560
MTBE	FOB Singapore	675
	FOB US Gulf	700

Phenol	CFR China	820
	CFR South East Asia	880
	FOB US Gulf	1037
	FOB Rotterdam	685
Acetone	CFR China	645
	CFR South East Asia	715
	CFR Far East Asia	665
	FOB US Gulf	1036
	FOB Rotterdam	605
Caprolactum	CFR Far East Asia	1275
	CFR South East Asia	1280
Caustic Soda	FOB North East Asia	405
	CFR South East Asia	465
Ethyl Acetate	FOB US Gulf	1510
	FOB Rotterdam	948
	FD North West Europe(Euro/mt)	930
Butyl Acetate	FOB US Gulf	1721
	FOB Rotterdam	1199
	FD North West Europe(Euro/mt)	1150
MEK	FOB Rotterdam	1347
	FD North West Europe(Euro/mt)	1280
IPA	FOB US Gulf	1322
	FOB Rotterdam	1085
	FD North West Europe(Euro/mt)	1050
NBA	CFR China	915
	CFR South East Asia	915
	CFR Far East Asia	910
Octanol	CFR China	980
	CFR South East Asia	1045
	CFR Far East Asia	975
DOP	CFR China	1130
	CFR South East Asia	1135
	CFR Far East Asia	1125
Phthalic Anhydride	CFR China	945
	CFR South East Asia	950

	CFR Far East Asia	940
PTA	CFR Far East Asia	615
	CFR South East Asia	635
Acetic Acid	CFR Far East Asia	390
	CFR South East Asia	395
	CFR South Asia	357
	FOB China	305
VAM	CFR China	845
	CFR South East Asia	750
	CFR South Asia	829

Shipping term		Description
FOB	Free on Board	The seller quotes a price including the cost of delivering goods to the nearest port. The buyer bears all the shipping expenses and is responsible to get the products from that port to its final destination. In simple terms, FOB price means the buyer has to bear the shipping costs completely. This is one of the most used shipping terms by international buyers and sellers.
EXW	Ex-Works	The seller has no involvement with the transportation costs and risks. The buyer has to collect the goods from the seller's site and get them to the final destination. All the costs and risks are borne by the buyer. It is advisable that the buyer purchases insurance since the goods can get damaged in transit. EXW is ideal when the buyer and seller are in the same country or region.
CFR	Cost and Freight	The seller pays the loading and freight costs from his premises up to the destination port. Then, the buyer has to arrange for the goods to be transported from the port to his premises. The seller is only responsible for the cost of shipping the products to the destination port. CFR is used for products transported by sea or inland waterways only. The seller does not bear the risk of loss or damage during transit.
CIF	Cost, Insurance, and Freight	If the buyer opts for CIF price, the seller pays for the loading and freight costs right from his premises up to the destination port as well as insurance. In the case of damage or loss, the seller bears the risk completely. The buyer has to arrange for transportation of the goods from the port to his premises. CIF is a safer option than CFR since the goods are insured by the seller up to their arrival at the destination port.
DAP	Delivered at Place	It was previously known as DDU, Delivery Duty Unpaid. In this case, the seller is responsible for getting the goods from his own factory up to the premises of the buyer. He also bears the risk in the case of loss or damage of the goods right until the products are delivered to the buyer. The buyer only has to pay the import duties or custom clearance charges.
DDP	Delivery Duty Paid	The seller is responsible for shipping the goods from his factory to the destination address provided by the buyer, usually his factory or warehouse and is also liable for any damage or loss of goods during transit. The seller also takes care of the customs, VAT, or import duties levied on the products. The buyer only has to receive the products at the destination. In most cases, most sellers only offer DDP for small shipments.

FD North West Europe	**Free Delivered**	**Free Delivered North West Europe**	**Free Delivered North West Europe**	**Free Delivered North West Europe**
Countries Groups	Southeast Asia is composed of eleven countries: Brunei, Burma (Myanmar), Cambodia, Timor-Leste, Indonesia, Laos, Malaysia, the Philippines, Singapore, Thailand and Vietnam.	Far East Asia:The following countries are considered to be located in the Far East: China, Hong Kong, Macau, Japan, North Korea, South Korea, Mongolia, Siberia, Taiwan, Brunei, Cambodia, East Timor, Malaysia, Laos, Indonesia, Myanmar, Singapore, Philippines, Thailand, and Vietnam.	South Asia: The region consists of the countries of Afghanistan, Pakistan, India, Nepal, Bhutan, Bangladesh, the Maldives, and Sri Lanka	Northwestern Europe usually consists of the United Kingdom, the Republic of Ireland, Belgium, the Netherlands, Luxembourg, Northern France, Northern Germany, Denmark, Norway, Sweden, and Iceland.

OPENING PORTS PRICE (RS/KG) OF CHEMICALS AS ON 11/06/2025

USD Exchange Rate: 85.60 INR

Producers	Current Prices (INR/kg)	Prices in USD/mt Equivalent to INR/kg	Location
Acetic Acid	34	397.20	Ex-Kandla
Acetic Acid	35	408.88	Ex-Mumbai
Acetonitrile-imported intact	137	1600.47	Ex-Bhiwandi
Acetone	73	852.80	Ex-Mumbai
Acrylic Acid	88	1028.04	Ex-Mumbai
Acrylonitrile	99	1156.54	Ex-Kandla
Adipic Acid	98.5	1150.70	Ex-Bhiwandi
Aniline Oil	113	1320.09	Ex-Kandla
Benzene	60	700.93	Ex-Vizaz
Butyl Acetate	79	922.90	Ex-Kandla
Butyl Acrylate Monomer	108	1261.68	Ex-Kandla
Butyl Glycol	99	1156.54	Ex-Kandla
C10	88	1028.04	Ex-Kandla
C9	73	852.80	Ex-Kandla
Carbon Black-regular grade	60	700.93	Ex-Mumbai
Caustic Soda Lye	36.5	426.40	Ex-Dahej
Chloroform	14	163.55	Ex-Dahej
Citric Acid-ANHYD	75	876.17	Ex-Bhiwandi
Citric Acid-Mono	66	771.03	Ex-Bhiwandi
Cyclohexane	74	864.49	Ex-Hazira

Cyclohexanone	100	1168.22	Ex-Kandla
DMF Drum	69.5	811.92	Ex-Bhiwandi
DEG	65.5	765.19	Ex-Hazira
EDC	17	198.60	Ex-Kandla
Epoxy Resin	186	2172.90	Ex-Nhava Sheva
Ethyl Acrylate	128.5	1501.17	Ex-Kandla
Formic Acid	65	759.35	Ex-Bhiwandi
Glycerine	104	1214.95	CIF Nhava Sheva
N-Heptane	203	2371.50	Ex-Bhiwandi
Hexane	73	852.80	Ex-Kandla
Hydrogen Peroxide-50%	28.5	332.94	Ex-Bhiwandi
Isobutanol	76	887.85	Ex-Kandla
IPA	84	981.31	Ex-Kandla
IPA	85	992.99	Ex-Mumbai
LAB	129.5	1512.85	Imported
Maleic Anhydride-Drum	89	1039.72	Ex-Mumbai
MDC	36	420.56	Ex-Dahej
MEG	52	607.48	Ex-Mumbai
MEK	90	1051.40	Ex-Kandla
Melamine	74.5	870.33	Imported
Methanol	24.5	286.21	Ex-Kandla
Methanol	25	292.06	Ex-Mumbai
MIBK	102	1191.59	Ex-Hazira
Mix Xylene-Solvent Grade	67	782.71	Ex-Kandla
Mix Xylene-Solvent Grade	69.5	811.92	Ex-Mumbai
MMA	128	1495.33	Ex-Hazira
N-Butanol	78	911.21	Ex-Kandla
N-Propanol	88	1028.04	Ex-Kandla
NPAC	82	957.94	Ex-Kandla
Octanol	99	1156.54	Ex-Kandla
Ortho Xylene	89	1039.72	Ex-Kandla
Phenol	86	1004.67	Ex-Kandla
Phenolic Resin	165	1927.57	Ex-Indore
Phthalic Anhydride	95	1109.81	Ex-Mumbai
Propylene Glycol	84.5	987.15	Ex-Kandla

Sodium Nitrate (50Kg Bag)	61	712.62	Ex-Make-Lasons
Soda Ash Light	35	408.88	Ex-Bhiwandi
Styrene Monomer	84	981.31	Ex-Kandla
Styrene Monomer	87	1016.36	Ex-Mumbai
Sulphuric Acid	14	163.55	Ex-Vapi
Tio2 (Anatase Grade)	220	2570.09	Ex-Bhiwandi
Tio2 (Rutile Grade)	240	2803.74	Ex-Bhiwandi
Toluene	64.5	753.50	Ex-Kandla
Toluene	65.5	765.19	Ex-Mumbai
VAM	72	841.12	Ex-Kandla
VAM	73	852.80	Ex-Hazira

PRODUCER PRICES (RS/KG) OF CHEMICALS AS ON 11/06/2025

Producers	Current Price	Import parity	Location
		(Rs/kg)	Price in USD/MT
Accord-Ethyl Acetate	64.5	749.65	Ex-Maharashtra
Accord-Ethyl Acetate	67	790.93	Ex-Maharashtra
Arham Petrochem-C9	76.75	906.03	Ex-Kandla
Arham Petrochem-C9	77.75	917.84	Ex-Ahmedabad
Arham Petrochem-C10	89.5	1056.55	Ex-Kandla
Arham Petrochem-C10	89	1050.64	Ex-Ahmedabad
Arham Petrochem-C10 (Imported Repack)	95.75	1130.33	Ex-Bhiwandi
Arham Petrochem-MTO/White Spirit (KL)	59.65	704.17	Ex-Kandla
Arham Petrochem-MTO/White Spirit (KL)	60.65	715.97	Ex-Ahmedabad
Arham Petrochem-De-Aromatised D40	130	1534.65	Ex-Kandla
Arham Petrochem-De-Aromatised D40	131	1546.45	Ex-Ahmedabad
Arham Petrochem-De-Aromatised D60	139	1640.89	Ex-Kandla
Arham Petrochem-De-Aromatised D60	140	1652.70	Ex-Ahmedabad
Andhra Petrochemicals-Iso-Butanol	85	1003.42	Ex-Vishakhapatnam
Andhra Petrochemicals-N-Butanol	73.5	867.67	Ex-Vishakhapatnam
Andhra Petrochemicals-Octanol	96	1133.28	Ex-Vishakhapatnam
BASF-Adipic Acid	134	1581.87	Imported
BPCL-2-Ethyl Hexanol (B)	94.5	1115.57	Ex-Kochi
BPCL-2-Ethyl Hexanol (P)	105.83	1249.32	Ex-Kochi

BPCL-2-Ethyl Hexyl Acrylate (B)	116	1369.38	Ex-Kochi
BPCL-2-Ethyl Hexyl Acrylate (P)	126	1487.43	Ex-Kochi
BPCL-Acrylic Acid (B)	87	1027.03	Ex-Kochi
BPCL-Acrylic Acid (P)	96	1133.28	Ex-Kochi
BPCL-Benzene	67.8	800.38	Ex-Mumbai
BPCL-Butyl Acrylate (B)	106	1251.33	Ex-Kochi
BPCL-Butyl Acrylate (B)	114.25	1348.72	Ex-Kandla
BPCL-Butyl Acrylate (P)	116	1369.38	Ex-Kochi
BPCL-Hexane (KL)	74.75	882.42	Ex-Mumbai
BPCL-Hexane (MT)	112.58	1329.00	Ex-Mumbai
BPCL-Iso-Butanol (B)	74.48	879.24	Ex-Kochi
BPCL-Iso-Butanol (P)	85.48	1009.09	Ex-Kochi
BPCL-MTO (KL)	78.15	922.56	Ex-Mumbai
BPCL-N-Butanol (B)	75.48	891.04	Ex-Kochi
BPCL-N-Butanol (B)	77.98	920.55	Ex-Kandla
BPCL-N-Butanol (P)	86.48	1020.89	Ex-Kochi
BPCL-Paraffin Wax	105	1239.52	Ex-Delhi
BPCL-Sulphur (Molten)	30.12	355.57	Ex-Mumbai
BPCL-Toluene	65	767.32	Ex-Mumbai
Deepak Phenolics-Acetone	76.5	903.08	Ex-Dahej Gujarat
Deepak Phenolics-IPA	85.25	1006.37	Ex-Dahej Gujarat
Deepak Phenolics-Phenol	84	991.62	Ex-Dahej Gujarat
GACL-Caustic Soda Lye	37.75	445.64	Ex-Dahej Gujarat
GACL-MDC	29	342.34	Ex-Bharuch Gujarat
GNFC-Acetic Acid	39.5	466.30	Ex-Bharuch Gujarat
GNFC-Aniline Oil	123.5	1457.92	Ex-Bharuch Gujarat
GNFC-Ethyl Acetate	67	790.93	Ex-Bharuch Gujarat
GNFC-TDI Drum	195	2301.97	Ex-Bharuch Gujarat
Grasim-MDC	29	342.34	Ex-Gujarat
GSFC-Cyclohexane	79.5	938.50	Ex-Gujarat
HOCL-Acetone	95.5	1127.38	Ex-Kochi
HOCL-Phenol	103.5	1221.82	Ex-Kochi
IOCL-Banzene	75	885.37	Ex-Vadodara Gujarat
IOCL-DEG	58.9	695.31	Ex-Odisha(Paradip)
IOCL-DEG	58.9	695.31	Ex-Panipat

IOCL-LAB	160	1888.80	Ex-Gujarat
IOCL-MEG	53.1	626.84	Ex-Odisha(Paradip)
IOCL-MEG	54.6	644.55	Ex-Panipat
IOCL-Paraffin Wax	105	1239.52	Ex-Delhi
Jubilant-Ethyl Acetate	68.5	808.64	Ex-Maharashtra
Laxmi-Ethyl Acetate	66	779.13	Ex-Maharashtra
Meghmani-Caustic Soda Lye	39.5	466.30	Ex-Bharuch Gujarat
Meghmani-MDC	29	342.34	Ex-Ankleshwar Gujarat
NIRMA-LAB	150	1770.75	Ex-Vadodra
Reliance-Caustic Soda Lye	37.5	442.69	Ex-Gujarat
Reliance-DEG	NA	Not Available	Ex-Jamnagar
Reliance-LAB	160	1888.80	Ex-Vadodra
Reliance-MEG	NA	Not Available	Ex-Jamnagar
Reliance-Mix Xylene	64.75	764.37	Ex-Jamnagar
Reliance-PTA	67.4	795.66	Ex-Dahej Gujarat
Reliance-Toluene	64	755.52	Ex-Jamnagar
SI GROUP-Phthalic Anhydride	94.5	1115.57	Ex-Navi Mumbai
TATA Chemicals-Soda Ash light	34	401.37	Ex-Bhiwandi

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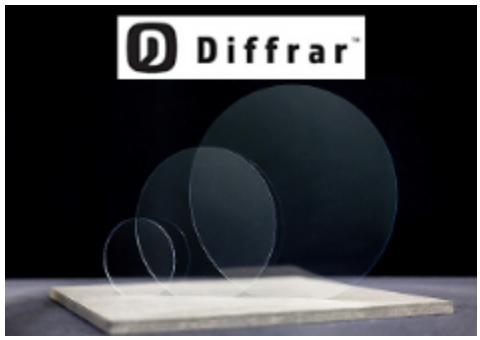
Mitsui Chemicals, Dispelix Collaborate on Polymer Waveguide Technology for AR Glasses

Mitsui Chemicals, Inc. (Tokyo: 4183; President & CEO: HASHIMOTO Osamu) today announced that it has begun to collaborate with Dispelix (Finland; CEO: Antti SUNNARI) to develop waveguides for augmented reality (AR) glasses, using Mitsui Chemicals' Diffrar™ to expand into the augmented and virtual reality markets.



Founded in Finland in 2015, Dispelix is a leading company in AR optical waveguide display technology. The company supports the evolution of AR devices through developing and providing transparent optical waveguide displays.

Leveraging the advanced design technology of waveguide for AR glasses, Dispelix manufactured single-layer, full- color AR waveguides using Diffrar™ X167 (refractive index: 1.67), showing high optical performance and extreme lightness. A single eyepiece without a cover glass weighted just 1.85 grams. Mitsui Chemicals and Dispelix showcased the first waveguide display demo unit at the SPIE2025 AR | VR | MR in January 2025 in San Francisco.

The meaning and feature of Diffrar™
Derived from the word "diffraction" and the abbreviation of "AR," the name Diffrar™ has been coined to express the value provided to customers where the "D" of the logo represents an opening door that to explore new products and providing value to customers.

Equipped with outstanding optical properties, including a high refractive index of 1.67 or higher and extreme flatness, Diffrar™ optical polymer wafers offer users of AR glasses a wide field of view. In addition, the material being polymer allows Diffrar™ to have greater impact resistance, making devices safer and lighter compared to glass.

Mitsui Chemicals will continue to accelerate to the development of polymer wafer and contribute to the expansion of the AR market.

Source : Mitsui Chemicals

From Bath to Biotech How Surfactants Are Quietly Changing the World

Vinodhini Harish

Introduction:

The world is suffering severe climate anxiety and consumer awareness is also increasing- that's a good sign. But do you know the tiniest molecules- surfactants carry the heaviest weight? At the moment surfactants sector is moving towards sustainability and innovations. Yes, the historical trends show how the sector has witnessed steady growth in the past decades. The sector is driven by demand from personal care, household cleaning and industrial sectors. Global urbanization and emerging economies like China and India are supporting and rapidly expanding the market of premium sustainable beauty-related technologies. We have explored how the surfactant sector is shifting towards the growth, major trends, breakthroughs and strategic moves of the sector, in this article. Are you ready to dive in? Let's begin!

How surfactant market is impacted in growing economies?

The demand for surfactants includes consumer awareness of hygiene and urbanization. Surfactants possess a wide range of applications such as home care, textiles, food and beverages. Handwashes, detergents, cleaners and shampoos are increasingly utilized by the urban population. The industrial cleaning includes chemical additives for different contaminants and waste products.

The surfactants are utilized in various products such as personal care products, oilfield chemicals, paints and coatings, household detergents and other factors. However, due to stringent regulations, countries are adopting the substitution of surfactants such as castile soaps that are organically formed from vegetable oils. There are other personal care items and household items that are made from one base they are obtained from natural sources and are certified formulations too.

Home care applications of surfactants are expected to be more lucrative in the future as the demand for different solutions is increasing with respect to different surfaces in households. Laundry detergents, fabric conditioners, dishwashing detergents, hard floor and surface cleaners, glass cleaners, carpet cleaners, air fresheners and others are driving the growth of surfactants.

How the top market players are innovating new surfactants?

The industry is expecting more innovative and sustainable products due to rising demand.

Hindustan Unilever Limited:

In August 2023, Hindustan Unilever Limited announced the launch of a line of eco-friendly surfactant products. This initiative is celebrated as a strategic move as it aligns with their commitment towards sustainability and zero goals, it has put the company in a great place. This line of surfactants are derived from renewable plant-based sources and they are specifically engineered to reduce aquatic toxicity and bioaccumulation.

This launch holds a special place in the journey of the development of the sector as it highlights how major FMCG players are proactively adapting ESG expectations. It also demonstrates how they are evolving with the regulatory frameworks, especially in European and Indian markets. The regulatory bodies are increasingly focusing on the ecotoxicity and lifecycle impact of ingredients and this factor has pushed the companies towards green principles.

HUL's strategy places it ahead of the curve in the FMCG sector where sustainable sourcing and manufacturing are becoming very crucial as there is a need for risk mitigation and brand longevity. The integration of bio-based surfactants into core products like shampoos, body washes and cleaning agents demonstrated the innovation and responsibility of the company.

The millennials and GenZ are emerging as dominant consumer demographics and the demand for transparent, ethical and eco-friendly products is soaring high as well. Therefore HUL's initiative has strengthened its appeal in this segment, thereby enhancing brand loyalty and market differentiation in an increasingly crowded green marketplace.

Overall the new-generation surfactants that are derived from natural oils, sugars and other bio-based precursors are replacing the traditional petrochemical-based variants as they offer high biodegradability, low carbon footprint, minimal aquatic toxicity and improved formulation compatibility.

Therefore the design ensures performance parity with the synthetic surfactants while reducing environmental impact, especially wastewater discharge and marine ecosystems.

Godrej Industries embraces Industry 4.0:

It was September 2023 and Godrej Industries announced a bold strategic move, which is their investment in advanced manufacturing technologies. This leverages industry 4.0 principles that transform production processes, especially in the domain of bio-based surfactants. This investment showed how the company worked towards alignment with its long-term vision of fostering operational efficiency. Operational efficiency is something that only very few companies work upon and this investment worked to the betterment of fast-growing sectors like personal care, agrochemicals and home care.

This move reflected how the company is working towards building a resilient, digitally integrated and environmentally responsible production ecosystem. This enables real-time process control, material efficiency and agile product customization.

This investment also helped revolutionize the way the company produces bio-based surfactants and positioned it as a forerunner in both the personal care and agrochemicals sector.

But how?

Godrej's investment focused on the adoption of smart manufacturing systems such as AI-driven process control and predictive maintenance. This included IoT enabled equipment for real-time monitoring and automated and closed loop production units for consistent quality generation. They have also enabled data analytical tools to optimize the yield and reduce the raw materials usage. Therefore, the company has created a green chemistry integration for clean and low-impact synthesis.

Combining these technologies, now the company promises minimized energy and water consumption, reduced chemical waste and ensured consistent product quality, thereby reducing the production cycles.

Biosurfactants are changing the world – the current trend of the industry:

Sulphate-free shampoos and cleansers, natural dishwashers and laundry detergents, oil spill remediation, soil bioremediation and pharmaceuticals are increasingly utilizing biosurfactants. They are highly efficient as even small amounts of the product are enough to reduce surface tension effectively. Thus, they are considered potent and cost-effective. They break down naturally without polluting water bodies or soil, thus they are extremely crucial for circular economy models.

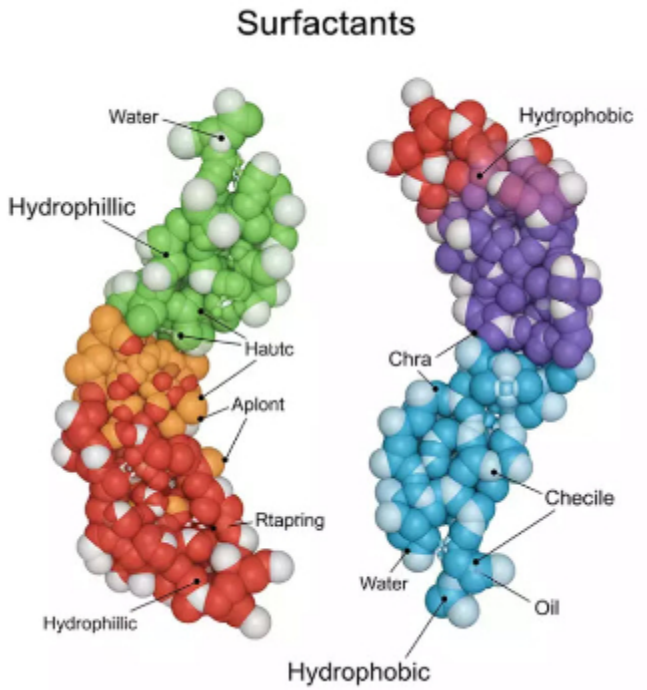
The early 2010s were the period when the mainstream adoption of biosurfactants began and that has set the stage for clean-label, eco-friendly, and scientifically advanced surfactant solutions. They are not simply alternatives they are the industry drivers.

Synthetic surfactants were once ruling the industry, they were everywhere right from dishwashers, laundry, skincare and whatnot. But people nowadays are fully aware of its consequences, their origin is from the depth of fossil fuels. They were strong, effective, and inexpensive and the world admired their strength and reach, but they corrupted our earth, and they caused side effects. Nevertheless, the biosurfactant ones are quieter, greener and more thoughtful heroes, as they are grown by microbes through fermentation processes. These humble surfactants are from sugars, oils, and even agricultural waste. They are gentler, and smarter and disappear when their job is done. They are degrading peacefully leaving no trace.

They are compatible with the new rules that are often changing. They are milder and safer, thus they avoid the need for hazard symbols, GHS warning labels and special handling. Thus they make product registration and distribution easier. Manufacturers don't have to reformulate and companies can use them as they are future-ready, nothing affects them even if the rules keep changing.

Nouryon, Evonik, and Galaxy surfactants are expanding their biosurfactant product lines to stay compliant and striving to keep it ahead of regulatory curves. Likewise the personal care brands are also extensively using biosurfactants to avoid the bans on sulfates and reduce the regulatory risk in the export markets such as Europe and the US.

Take away:



The world is breathing uneasily, it is the right time to control climate anxiety and fortunately, consumers are becoming more alert than ever. The unseen agents in your shampoos, soaps and detergents are transforming right from their molecular structure. All thanks to manufacturers bringing developments in the surfactants sector. Although the sector was once problematic, these bio-based innovations and smart manufacturing are shaping the industry finely. Overall, companies that are embracing sustainability, and good ethics are the leaders of tomorrow, we can label that they are doing smart economics and risk mitigation.

Indian Oil Aligns with National Hydrogen Mission Through Panipat Project

Vinodhini Harish

Introduction:

Indian Oil Corporation (IOC) is all ready to launch the country's largest green hydrogen plant at Panipat refinery in Haryana. The project is expected to be prepared for its operations by December 2027 the pioneering project will produce 10,000 tonnes of green hydrogen every year and this project will substitute fossil fuels-based hydrogen that are nowadays used in refinery procedures. Since India is aiming to reach net-zero emissions within 50 years from now, it also plans short-term goals. In this article, we have discussed all of such short-term goals and the economic potential of the country to reach the goal. Let's begin.

Indian Oil to launch India's hydrogen plant at Panipat by 2027.

Indian Oil is planning to build a green hydrogen plant at its Panipat refinery in Haryana. The factory will deliver 10,000 tonnes of green hydrogen every year, which makes the plant the most oversized project of its kind in India so far. The plant is expected to be prepared by December 2027 as this project will substitute the hydrogen with green hydrogen, it is envisioned to crop down the carbon emissions, making it more eco-friendly. As of now, this is Indian oil's foremost project in the green hydrogen sector.

In India, there is a push for cleaner energy, as a part of this mission, Indian Oil has calculated how much will it cost on average to produce green hydrogen at the new plant, this average cost is called the Levelized cost of hydrogen (LCOH). Determining this cost helps the company to plan better and make better investment decisions. Therefore the entire project is a part of Indian oil's bigger goal to reduce pollution by cutting down carbon emissions and using cleaner and more eco-friendly energy sources.

This project aligns itself with Prime Minister Mister Narendra Modi's national green hydrogen mission and it is the key step in Indian Oil's strategy to reach net zero emissions. This also shows the company's dedication to conducting India's clean energy transition.

The Company chairman Arvinder Singh Sahney confirmed at the 2025 World Economic Forum in Davos that the project is well underway. He mentioned that the good bids have been received, the tenders are under evaluation and the job will be awarded soon as well.

India is planning to reach net zero emissions by 50 years from now.

India has ambitious goals like achieving 500GW of renewable energy capacity and about 50% of renewable energy to meet rising power demand. The nation has also a few other objectives which are advancing towards one billion tonnes of cumulative emissions reduction by 2030 and about a 45% reduction in the GDP's emissions intensity by 2030 as well.

The central government of India has authorized a budget of INR 197.44 billion for reaching these goals and the ultimate goal is to transform India as the world's center for the production, use and export of green hydrogen and byproducts.

India has the prospect of conceiving a hub for the export of green hydrogen derivatives and growing in the sector. There are several developed economies in the world that are thriving to become a global hub which distributes the derivatives of green hydrogen, but they lack the advantage of having vast land sources for the expansion of renewable energy, unlike India. India also has a skilled labour force and other sources that could support the initiative.

Through exporting green hydrogen derivatives, India can draw high value and over time, facilitate the expansion of green hydrogen infrastructure. Along with these strategies, our nation should also implement globally recognized standards that ensure importers receive quality products.

Understanding the importance of green hydrogen plants:

Green hydrogen is rapidly gaining traction due to its potential to decarbonize myriad sectors such as transportation, shipping, and steel. Green hydrogen can substitute traditional fossil fuels in transport and can be employed in sectors that produce ammonia, methanol, and steel. These industries are heavily reliant on fossil fuels that are majorly contributing to greenhouse gas emissions. Green hydrogen has several applications that can be used in fuel cells to power vehicles and provide electricity. They can be used in heating systems and the production of significant chemicals and fertilizers.

Hydrogen fuel cells have high energy density and are highly efficient in traditional combustion engines. This makes it an attractive option for powering vehicles. Green hydrogen can also be utilized in microgrids, which can be used to provide electricity to remote areas and enable energy independence.

India welcomes initiatives taken by companies like Indian Oil:

India greatly welcomes initiatives like launching a large-scale green hydrogen plant, as the plant reduces its emissions but also contributes to India's broader climate goals thereby helping to build a cleaner and greener energy future.

However, the country must develop enabling infrastructure, such as dedicated green hydrogen zones or parks with renewable power integration. Implementation of clear safety standards and regulations for hydrogen production will help.

Indian companies must also encourage large PSUs like Indian Oil, NTPC and ONGC to partner with private companies for hydrogen ventures.

Take away:
Green hydrogen could add billions to India's GDP and create thousands of jobs. It can have great relief on energy dependence and help with climatic goals as well. Overall Indian Oil's green hydrogen plant at Panipat is not just an infrastructure project but it is a strategic leap towards a cleaner and greener future for the country. India has the potential to emerge as a global leader in green hydrogen derivatives production and exports. Since the world is moving towards these initiatives, India can sooner position itself as a serious player in global green hydrogen economy.

The Thermal Shift How Heat Exchangers are Becoming Strategic Assets for Chemical Firms

Vinodhini Harish

ntroduction:

The chemical industry is pushing itself towards energy efficiency, sustainability and low-emission manufacturing, with this demand the spotlight is on critical industrial components like Heat exchangers. The transformation is more impactful and no longer like before due to thermal management, process optimization, performance, and profitability taking centre stage. Since the heat exchanger market is also evolving, it greatly impacts and reshapes the operational and environmental dynamics of the chemical sector. With the growing energy-intensive operations rising costs and stringent ESG regulations, innovative heat exchanger technologies are emerging as key enablers of greener and more cost-effective manufacturing. In this article, we have the innovations and ideas of how companies like Alfa Laval and Kelvion are leading the way with the next-generation solutions. Let's begin. Heat exchangers have become indispensable in the chemical sector, they take on multiple roles like temperature regulation of reactants and products, energy recovery to lower the operational costs, they help in the maintenance of process stability in the reactors and distillation columns. Moreover, with the evolution of the industry, the manufacturers of heat exchangers are looking for ideas to build them with higher corrosion and pressure resistance, especially when they are installed in aggressive environments.

The choice of heat exchanger design, and materials directly affects the yield, efficiency and safety, which makes the technological area and strategic investments more crucial. They must be given more importance while manufacturing.

The rapid evolution of the heat exchangers market:

The demand for heat exchangers is expected to grow in the future, there are numerous reasons behind it, the number of food industries is growing, there is a higher demand for energy and the number of chemical industries is growing as well. Due to the increasing energy consumption from coal, the government of India is deploying systems to reduce dependence on coal and move toward sustainable solutions and usage of nuclear power systems. The generation of heat energy from nuclear power has increased the adoption of heat exchangers.

Aluminium-based heat exchangers are critically used in automotive applications as they offers advantages like light-weight, excellent corrosion resistance and high thermal conductivity. Several leading companies in the sector has brought in innovative products that aims to reduce energy recovery and efficiency in waste-to-energy plants.

For instance, Kelvion officially announced the launch of its Exhaust Gas heat exchanger and EcoMi Modular Economizer on January 29, 2019. The products were introduced as a part of Kelvion's initiative that enhances energy efficiency by recovering the waste industrial heat in the industrial settings itself and converting the thermal energy to a liquid like water or thermal oil. This liquid medium can be integrated into existing waste-to-energy chemical or biogas plant operations.

This system can be pretty useful when deployed in chemical industries, especially the ones that involve heating raw materials like water, solvents, or reactants to specific temperatures before they enter reactors or processing units.

The Kelvion's system helps by capturing the waste heat from engine exhaust and the system can preheat the fluids without the usage of additional fuel or electricity. The Kelvion Exhaust Gas Heat exchanger recovers thermal energy from engine exhausts that make the heat available for industrial use while electricity is generated.

This increases the overall system efficiency by up to 90% and thereby reduces reliance on grid electricity. The system improves the overall thermal efficiency of the plant, which is how well the plant uses its energy input to achieve the desired output. Here a large portion of energy in chemical plants is lost as waste heat. A company's sustainability score includes metrics like energy efficiency, carbon footprint and emission control these factors are typically included in ESG reporting, green audits and regulatory compliances.

Through Kelvion's system, a company can significantly improve ESG rating and compliance with government or international sustainability standards. In addition to all of these benefits, these tools align with cost-saving goals with environmental responsibility which makes them highly attractive to chemical manufacturers who are marching towards operational excellence and sustainability.

Chemical industry welcomes green heat exchanger technologies:

Like any other industry, the chemical

industry gets deeply impressed with the adoption of low-carbon heat exchangers. In December 2023, Alfa Laval and Outokumpu declared their collaboration to build Low-emission circle Green stainless steel. The heat exchangers reduce carbon footprints by nearly 50% and this helps chemical manufacturers to meet stringent ESG and regulatory goals. There is a huge appreciation for heat transfer equipment with lower embodied carbon. Companies like BASF, Clariant, and UPL have shown interest in heat transfer equipment.

Indian glycols, Deepak Nitrite and Tata chemicals are evaluating the new equipment through the lens of life cycle emissions and this factor has made them more receptive to Alfa Laval's low-carbon offerings. Integration into Decarbonization includes electrification of thermal processes, waste heat recovery systems, use of renewable power sources and process optimization with digital twins and IoT. These Alfa Laval's green heat exchangers that are made with circle green stainless steel acquire a top list of CAPEX planning that replaces outdated units in distillation, condensation and reboiling applications.

It is significantly crucial in the chemical industry, as the chemical manufacturers are investing in plate and frame heat exchangers which offer compact design, easy maintenance, and high thermal efficiency. They are all fond of shell and tube heat exchangers as they are preferred for high-pressure and high-temperature applications. They are commonly used in petrochemicals, fertilizers, and large-volume commodity chemical production. The microchannel and compact heat exchangers are also gaining traction as they use less refrigerant yet offer higher efficiency with a smaller footprint. The chemical industry is eagerly waiting for innovation and exploration in the heat exchangers sector and there is no better time than now.

Take away:

The chemical industry is silently advancing towards a space of better energy management and sustainability. One of the most impactful areas of innovation is heat exchanger technology. Traditionally heat exchangers were only used as support equipment, but it has evolved in their role they are viewed as strategic assets that can determine energy efficiency and alter the operational reliability of the entire plant. This strategic shift is not just boosting the performance, but also aligning the entire infrastructure with the future of green manufacturing.

Global Manufacturers Are Choosing India Over China What does the Road Ahead Look Like for India Now

Vinodhini Harish

Introduction:

India is now the most cost-effective manufacturing destination and this pivotal shift is reshaping the country's economic landscape. The labour costs in China, supply chain disruptions and geopolitical tensions in other countries have pushed countries like China to adopt strategies like "China+1" schemes. On the other hand, India is now emerging as the frontrunner in the race. From Apple and Samsung to Tata's groundbreaking semiconductor venture in Assam, the global players are recalibrating their strategies with the country at the centre. We have discussed the story in detail in the article, let's get ready for the read now!

The story is short!

India has been the world's fastest-growing economy for a very long time now; the big news is the country is reaching several other areas. In recent times, the country has gained the top spot with its lowest manufacturing costs. Yes! It has beaten China! According to a U.S News& world report shared by World of Statistics declares that India now ranks at number one across the globe for lowest manufacturing costs. Now China has taken the second place followed by Vietnam, Thailand, Philippines and Bangladesh. Therefore now, international companies aiming to reduce production costs are eyeing India as their preferred destination.

Shifting tides in global manufacturing:

Multinational companies were relying on China for large-scale and affordable manufacturing. But there are some challenges such as rising costs, political issues and the need to expand factories. These factors have made businesses look at other countries. India has become a top choice now to fill this role. Due to cheaper labour, business-friendly policies and better infrastructure, India is now considered the most affordable country in the entire world for manufacturing. China is pushed to second place. In April 2025, the country's manufacturing PMI was at 58.2 and the services PMI was at 58.7

this shows that business activity is growing and companies are becoming confident about the economy.

India's manufacturing capacity is attracting big companies:

Big companies across the globe have understood the might of Indian manufacturing abilities. The Indian manufacturing sector has been bolstered by a series of government initiatives that include Make In India, Atmanirbhar Bharat and Production Linked Incentives (PLIs). These efforts are paying off now. Apple one of the world's largest technology firms, has recently announced their plans to source and manufacture all their iPhones and products in India in the upcoming years. Their decision reflects their confidence in the nation's industrial capacity and efficiency.

Tata Group is also one of India's largest and most reputed business groups. They are planning to build the country's first homegrown semiconductor assembly and testing plant. They have decided to set up the plant in Jagiroad, Assam. This is located in the Northeastern part of India, as this region has been left out for major industrial development. Now, this project involves the production of semiconductors, and currently, most of the chips are made and tested in countries like Taiwan, South Korea and the U.S. By setting up the facility, India is beginning to build its capability in this critical sector, this will be the most critical project for both economic growth and national security.

Tata Group of companies are investing a massive INR 27,000 crore in the project and this shows their commitment towards helping the nation to become self-reliant in advanced technology. This plant is expected to create about 25,000 jobs including direct jobs in the factor and indirect jobs in sectors like transportation, housing and services.

Likewise, Tesla, which has long had a manufacturing presence in China is now exploring opportunities in India. India's new EV policy import duty reductions and local manufacturing incentives are creating a path for Tesla to explore their opportunities in India.

Tesla has been cautious and thinking about reinvesting in China due to unfavourable political conditions, tightening regulations and rising costs. Despite having the biggest names in the industry, Tesla hesitates to deepen their ties with China, this factor highlights how even the biggest market players are reconsidering their long-term manufacturing decisions with China.

Global players are recalibrating their strategies:

India's growth has created ripple effects, since the country is focusing on cost-effective methods, the global companies are rethinking their strategies to cope with the new economic realities. There could be supply chain risks, political tensions and other factors growing as a stumbling block on the road to development. Overall this shift could be part of a larger global realignment where businesses are no longer relying on China, thus they are now seeking to diversify manufacturing and sourcing.

Explore the reasons why market players are shifting from China:

The reasons are crystal clear. The labour costs in China have surged over the past decade, which means the average wage of a manufacturing worker in China is now significantly higher than that of India or Vietnam. The geopolitical tensions, the trade wars like the U.S-China tariff war, sanctions and diplomatic friction have made China less predictable for foreign investors.

Post-COVID, the equation has changed, the situation has revealed how dangerous it can be for the market players when they rely on a single country for essential supplies. This has sparked the China+1 strategy where the countries are looking for additional countries like India, Vietnam or Mexico to spread their manufacturing footprint.

The lockdowns and strict regulations in China have created shipping delays and increased logistic costs across the globe.

What are the lessons learnt?

Diversification is no longer optional! Companies can no longer take risks by relying on a single country like China for manufacturing. The COVID-19 pandemic, geopolitical tensions, trade wars and supply chain bottlenecks have revealed the dangers of over-concentration.

COST is the king, the lower the labour costs, the stronger the draw will be. Factors like government incentives, ease of doing business, workforce availability and skill and stable regulatory environments are showing they all are equally important in deciding the place of manufacturing.

Take away:

This is India's defining moment, it's happening right now. India is now officially the most affordable country for manufacturing and this has opened the opportunity doors wide open. This offers a compelling blend of cost advantage, skilled labour and economic stability to the country. The world's leading companies are reducing dependency and China and that's not it, they are shifting towards India. They are investing as a strong strategic base. There are massive projects, growing foreign investments and a shift in the global trust. These required consistent effort and strategic moves, which the country just did. This transformation marks a critical inflection point for the country's economic growth.

Advancing Sustainability The Role of ELATUR® Plasticizers in Redefining Plastic

Vinodhini Harish

Introduction:

The world is scuffling with plastic deterioration. How frequently do we hear about plastic pollution? Consumers are becoming more attentive towards reducing plastic waste and turning towards sustainable choices. Nevertheless, there are a few technological advancements in the green chemistry principles that help with environmentally friendly additives, which support the flexibility and durability of the plastics. In this article, we have explored a few developments in the sector and this reveals how critical sectors like food packaging, automotive interiors and others are shifting towards safer alternatives. Hence explore the innovations and industrial adoption of green plasticizers and let's begin!

The biobased plasticizers market is performing so well:

Biobased plasticizers are environmentally friendly additives designed to improve plastic materials' flexibility, durability and processability. The market has been using customary plasticizers that are often derived from petroleum and it is associated with health and ecological risks such as endocrine disruption, and persistent toxicity. On the other hand, these bio-based alternatives are synthesized from renewable raw materials such as vegetable oils, starches, citrates and other biomass derivatives. These are also called green plasticizers as they are developed through innovative chemistry that emphasizes low toxicity, biodegradability, and minimal migration. They are more valuable in industries such as packaging, medical devices, children's toys and food contact materials.

They are crucial based on different perspectives, they reduce dependence on fossil fuels, and they align with green chemistry principles while supporting the production of non-toxic and sustainable plastics. Biobased plasticizers are generating massive revenue in countries like India. The Indian biobased plasticizers market generated a revenue of USD 121.9 million in 2023 and is expected to surpass the market value of USD 241.6 million by 2030 and is anticipated to expand with a CAGR of 10.31%.

Especially castor oil-based plasticizers are considered the most lucrative product and are registered as the fastest-growing product in the sector.

Government initiatives in several countries are reducing single-use plastics, which is expected to create a massive impact on the demand for bio-based plasticizers.

Evonik Oxeno- Elatur INA-based plasticizers

Evonik Oxeno is a division of Evonik Industries that has announced a significant expansion of their production facility. These production processes were focused on ELATUR ®CH(DINCH) and ELATUR ®DINCD. Both of these were built on isogonal-based green chemistry. These plasticizers are well received in PVC and rubber formulators as they have established a new industry standard for low-toxicity, non-phthalate plasticization.

The global market is pushing for the development of safer, sustainable, and high-performance alternatives to traditional phthalate-based plasticizers. ELATUR ®CH(DINCH) is a non-phthalate DINCH alternative that has shown exceptionally high compatibility with PVC resins. This makes it ideal for sensitive applications such as medical tubing, children's toys, food contact films wall coverings and flooring.

The EU and FDA regulations are now revised and it is crucial to develop the product with minimal plasticizer migration. The molecular structure of ELATUR ®CH(DINCH) ensures minimal migration and has conveyed consistent mechanical strength, elasticity, and low-temperature flexibility in the end products. Therefore there is no need for reformulation.

In the rubber formulations, the ELATUR ®CH(DINCH) advanced formulation ensured crucial features such as enhanced aging stability, retained elasticity under stress and better compatibility with polar rubbers. The rubber manufacturers have appreciated ELATUR ®CH(DINCH) for the "Plug and Play" solution while replacing phthalates or medium molecular weight alternatives that don't need added stabilizers.

Overall, Evonik has created a massive market impact with ELATUR as it is not about simply replacing phthalates, but about elevating the entire performance, safety and sustainability profile. Therefore they are widely accepted across sectors like medical, automotive, food packaging, and construction.

The sustained uptake is reflected in consistent production scale-ups and wide adoption across several sectors.

- Adoption of medical devices:

ELATUR® CH (DINCH) are intensively used in medical grade PVC that requires plasticizers with exceptional biocompatibility and safety. Since medical applications involve direct and prolonged contact with the human body, the products must not trigger any immune responses, yield cytotoxicity or cell mutation, or even render endocrine disruption or hormonal interference. The additives in the plasticizers are capable of causing these disruptions.

For instance, phthalates like DEHP have caused reproductive toxicity and developmental issues, especially in neonates and pregnant women. Consequently, the regulators and manufacturers sought non-phthalate, bio-inert alternatives.

Whereas, ELATUR is engineered to have negligible toxicity, with no hormonal interference or extensive toxicological evaluation. Therefore they are endorsed for their safety for long-term body contact.

- Adoption in Automotive:

In April 2023, Evonik Industries unveiled a new plasticizer called ELATUR® TM, which is known for its durability, and high-temperature resistance, although the traditional grades have restrictions in processability and cost-efficiency. ELATUR® TM exhibits features such as ultra-low volatility and is tailored for modern car interior formulations.

Therefore they are employed in target materials like soft PVC, thermoplastic elastomers, and polyurethane, which are used in automotive parts like dashboard skins, seating foils, artificial leathers and insulation for high-temperature wiring.

Next-gen epoxidized soybean oil (ESBO):

The global ESBO plasticizers market is maturing rapidly and augmented by about 28% market share. Epoxidized soybean oil is a renewable and bio-plasticizer and stabilizer that is derived from soybean oil. This plasticizer is extensively used in PVC, bioplastics and polyolefins. The plasticizing efficiency, epoxide groups that stabilizer against heat and UV low toxicity and FDA-approved food contact status are some of their unique properties due to which they get much appreciation from critical sectors.

Although in the beginning stages, ESBO is produced through chemical epoxidation, over time the manufacturers realized the process is energy intensive and leaves residual solvents and impurities behind.

ESBO has a long history in the plasticizer sector and it has been esteemed as a renewable and non-toxic plasticizer, especially in PVC applications. However, in 2024, it was a substantial leap in ESBO innovation led by two market players namely, Arkema and Galata Chemicals. The companies have not only enhanced their performance characteristics but have also enhanced their environmental sustainability and set up new benchmarks in bio-based plasticizer development.

In 2024, Arkema, one of the largest global plasticizer market leaders introduced a new version of epoxidized soybean oil. This ESBO is a natural plasticizer made from soybean oil, but the production of the product involves strong and harmful chemicals. Nevertheless, Arkema used enzymes that are natural proteins, which speed up the chemical reactions and make the entire process cleaner and safer. The approach adopted by Arkema is called "Enzymatic Epoxidation". This helped the company to reach extremely high purity levels which is around 99.5%, more importantly, the method reduced carbon emission by a massive 22%!

Furthermore, the method is much safer for the environment as it uses less dangerous chemicals and uses less energy, they are perfect for both human health and environment.

While Arkema was still enhancing the manufacturing process of ESBO, Galata Chemicals, with about 20% of the market share gave their take on the advancement. In 2024, Galata Chemicals launched a multifunctional blend of ESBO, which combines natural oils such as linseed and castor oils with soybean oils. This multifunctional blend also includes special ingredients such as compatibilizers that help the plasticizers work in different ranges of materials.

Galata chemicals' product was designed to handle higher temperatures, eliminate issues like leakage, migrating out of plastics such as PLA and PHA.

Overall both companies delivered great products to the eco-friendly plasticizers industry.

Take away:

Green plasticizers are redefining the standards of the plastic material and the sector, by bringing in safety, sustainability, and high performance. The innovations in the sector are growing as well. Especially the one discussed in the article, EVONIK's ELATUR® CH (DINCH) and ELATUR® TM are marking a paradigm shift from hazardous, phthalate formulations to eco-friendly and regulation-compliant alternatives. They are accepted widely, even in sensitive applications like the medical sector and high-temperature automotive interiors. Their acceptance shows an expanding demand for responsible plasticization. If the sector is supported by governmental regulations and the industries adopt circular practices, then the sector would have an even higher reach.