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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

UNITED CHEMICAL SHOW

UNITED EXPO
INTERNATIONAL EXHIBITION COMPANY

The «United Chemical Show» International Exhibition is the largest chemical industry exhibition in Central Asia, which covers the entire production cycle: from chemical and polymer raw materials, chemical components, auxiliary materials and equipment to the production of finished chemical products. The exhibition brings together manufacturers of chemical products and services, suppliers of advanced technologies and equipment, as well as consumers from various industries in many countries around the world.

January 28-30, 2026

Astana, Kazakhstan
The International Exhibition Center "EXPO"

$136 MILLION

INVESTMENTS IN FIXED ASSETS OF THE CHEMICAL INDUSTRY IN JANUARY - MAY 2024

850

OPERATING ENTERPRISES IN THE CHEMICAL INDUSTRY OF THE REPUBLIC OF KAZAKHSTAN



EXHIBITION TOPICS:


CHEMICAL RAW MATERIALS AND AUXILIARY MATERIALS


EQUIPMENT, MACHINES, LABORATORY DEVICES


ADDITIONAL SERVICES


FINISHED PRODUCTS

Industries of Application for Chemical Raw Materials, Equipment, and Technologies:

Agrochemistry
Mining Industry and Metallurgy
Petrochemicals and Fuel & Energy Complex
Food Industry
Textile and Light Industry
Pulp and Paper Industry
Plastics and Rubber Industry
Pharmaceuticals and Medicine
Professional and Household Chemicals

ADVANTAGES OF PARTICIPATION

5 REASONS TO PARTICIPATE IN THE EXHIBITION:

- Increase sales volumes
- Expand the geography of sales
- Find suppliers
- Establish new/ maintain old business contacts
- Learn about new products on the market and global trends

HOW WILL THE EXHIBITION BE USEFUL FOR YOU?

- Enter Central Asia's top market
- Meet buyers with real purchasing power
- Demonstrate your products live, and close deals faster
- Boost brand visibility and trust
- Track trends and make analysis of competitors

25+
MORE THAN 25 EXPERTS WILL SPEAK AS PART OF THE BUSINESS PROGRAM

10+
COMPANIES FROM CENTRAL ASIA, CHINA, INDIA AND EUROPEAN COUNTRIES ARE REPRESENTED.

6000+
EXHIBITION VISITORS ARE THE TARGET AUDIENCE OF THE EXHIBITION FOR THE DEVELOPMENT OF YOUR BUSINESS

100+
THE EXHIBITION PARTICIPANTS ARE MANUFACTURERS OF CHEMICALS, RAW MATERIALS, EQUIPMENT, ETC.

WE INVITE YOU TO TAKE PART IN THE EXHIBITION!

If you have any questions about participation, please contact us.:

LLC «United Expo» Тел.: + 90 536 810 68 98
E-mail: unitedexpou@gmail.com Web: unitedchemicalshow.com

To participate, scan the QR code

CENTRAL ASIA
COATINGS SHOW

UNITED EXPO
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Central Asia Coatings Show is the largest industry project with a history of more than 5 years, having earned a strong reputation in the Central Asian market. The exhibition brings together leading Kazakhstani and global manufacturers of paints and coatings, raw materials, equipment, and technologies for their production.

The 2025 edition confirmed its status as the key event of the coatings industry in Central Asia, attracting more than 4,000 visitors and over 100 companies from 15 countries.

28-30 January 2026
Astana, Kazakhstan
International Exhibition Center "EXPO"




15,067.2 thousand m² (+15.6% compared to 2022)
Total area of new facilities commissioned in 2024

$11.5 billion (12.8% more than in January-November 2023)
Volume of construction work in January-March 2024

Exhibition topics:


Raw materials and auxiliary materials


Equipment, machines and devices


Finished products


Services for paint and varnish industry enterprises


Containers, packaging and packing


New technologies and developments


Environmental protection and labor protection

Benefits of participation:

In 3 days you will be able to:

- Effectively present your company and its products to a concentrated professional audience
- Gain new ideas and share your expertise
- Take part in the business program
- Influence purchasing decisions
- Hold face-to-face negotiations with potential clients and exchange experience with partners

What does participation in the exhibition give?

- Attract new partners and clients
- Strengthen and expand your market position
- Understand the needs of your target audience
- Gain valuable insights into the competitive environment
- Increase sales volume
- Expand your sales geography

98% Visitors established new business contacts

95% Visitors are satisfied with the quality of business contracts

89% Visitors agreed on a deal

99% Visitors recommend the exhibition to their partners

We invite you to take part in the exhibition!

For participation questions, please contact us:

LLC «united expo» Tel.: +90 536 810 68 98
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Web: centralasiacoatingshow.com

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Kishore Kumar

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In partnership with Zhejiang Sino Trust Chemical Co. Ltd

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2.	Adamantanamine Hydrochloride	CAS RN. 665-66-7
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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1	CPhI North America	June 2-4, 2026	Pennsylvania Convention Center, Philadelphia
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 16-18, 2026	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 10-13,2025	Bangladesh, Dhaka
4	50th Dye+Chem Brazil International Expo	Nov 17-19, 2025	Brazil
Red Carpet Events			
1	Bangladesh Int'l Dyes, Pigments and Chemicals Expo	TBD	Dhaka, Bangladesh
Turkey (Arkim Group)			
1	InterDye Textile Printing Eurasia	Nov 25-27, 2026	Istanbul, Turkey
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	Pragati Maidan, New Delhi, India
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	Apr 15-17, 2026	Shanghai, China
9	Paint Expo Germany	Apr 14-17, 2026	Messe Karlsruhe Germany
10	India Chem	TBD 2026	Mumbai Exibition Centre, India
11	Water Expo	Apr 24-26 2026	Pragati Maidan, New Delhi
12	Inacoating	July 28-30, 2026	JlExpo Kemayoran, Jakarta - Indonesia

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EDITORIAL

CHEMICAL MARKET

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

Shaping the Future of the Global Chemical Industry

As we enter the last quarter of this decade, market dynamics are shifting at a pace that challenges conventional business models yet opens new doors for innovation, collaboration, and sustainable growth. For companies—large or small—this is a defining moment to rethink strategies, embrace digital transformation, and build resilience in an unpredictable global landscape.

Reshaping Supply Chains

Over the last few years, supply chain fragility has remained a pressing concern. The COVID-19 pandemic exposed vulnerabilities, and subsequent geopolitical tensions, trade restrictions, and raw material shortages have kept volatility alive. In 2025, chemical companies are actively redesigning supply networks to be more regional, diversified, and transparent. Nearshoring is no longer just a buzzword—it has become a serious strategic priority.

Technology plays a vital role here. Digital twins, blockchain-based traceability systems, and AI-driven demand forecasting are giving companies the visibility and agility they need.

The Push Toward Sustainability

Sustainability is no longer optional—it is the license to operate. Regulators in Europe, North America, and Asia are tightening environmental norms, pushing companies to cut emissions, minimize waste, and embrace circular economy models. At the same time, customers and investors are demanding more accountability, pushing ESG (Environmental, Social, Governance) reporting into boardroom discussions.

In September 2025, we see an industry where green chemistry, bio-based feedstocks, and renewable energy are becoming mainstream topics rather than niche pursuits. Companies that were early adopters of sustainable practices are now enjoying stronger brand reputations, easier access to capital, and greater resilience to regulatory shocks. The message is clear: sustainability is not just about compliance, it is about competitiveness.

Digital Transformation and Industry 5.0

The chemical sector has often been seen as conservative in adopting digital technologies. But that perception is changing rapidly. Generative AI, advanced robotics, and predictive analytics are no longer futuristic concepts—they are real tools that improve efficiency, safety, and innovation in chemical plants and laboratories.

In 2025, Industry 5.0 is reshaping how chemicals are produced and delivered. Human expertise is being enhanced by intelligent machines that can anticipate risks, reduce downtime, and improve yields. AI-assisted R&D is accelerating the discovery of new materials, while machine learning models help optimize energy use in real time. The future chemical company is not just a manufacturer; it is a data-driven enterprise that thrives on innovation and responsiveness.

Emerging Markets and New Opportunities

While developed economies are setting the pace for regulation and digital adoption, emerging markets are becoming the growth engines of the global chemical industry. India, Southeast Asia, and parts of Africa are witnessing rapid industrialization, urbanization, and demand for specialty chemicals. For global players, these regions represent opportunities to build new partnerships, invest in localized production, and cater to fast-growing sectors such as agriculture, infrastructure, and consumer goods.

At Chemical Market Magazine, we have seen firsthand how businesses from these regions are eager to connect globally. Through our Chemical Market Leads Platform, we are bridging the gap between buyers and suppliers, ensuring that opportunities are genuine, transparent, and value-driven. By eliminating fake leads and fostering authentic business connections, we are empowering companies—especially SMEs—to access international markets with confidence.

Talent and Workforce Transformation

The new chemical enterprise requires a workforce that understands both chemistry and digital technologies. Data scientists, process engineers, and sustainability experts are in high demand, and companies are competing fiercely to attract and retain this talent.

At Chemical Market Magazine, we believe people are at the heart of transformation. This is why our editorial content, newsletters, and industry interactions are designed not only to inform but also to inspire. We want to encourage businesses and individuals alike to view themselves as active contributors to an industry that is sustainable, innovative, and people-centric.

The Road Ahead

As a magazine and as a community platform, we see our role not only as storytellers but also as enablers of collaboration. By connecting businesses, policymakers, researchers, and entrepreneurs, Chemical Market Magazine provides a stage for new ideas to flourish and partnerships to thrive. Our commitment remains the same: to build a trusted ecosystem where the chemical industry can grow together.

-Rajiv Parikh

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BUY INQUIRIES

Product	Quantity	Grade
Cocodimethylamine Details : Need 5 Kg.paid sample Tamilnadu, India	**500 Kg**	**Industrial** **CLICK HERE TO VIEW**
Triphenyl Phosphine Details : We are having spent Triphenyl Phosphine 99% available in stock. Buyers can contact us. Hyderabad, India	**80 Tonnes**	**Any** **CLICK HERE TO VIEW**
Hydrobromic Acid 48% Details : We currently have a large stock of Hydrobromic Acid (HBr) 48% (Water White in colour) available. If you or your organization are in need of this product, we're offering it at highly competitive prices lower than current market rates. High-quality product. Bulk quantities ready for dispatch. Best pricing guaranteed. Hyderabad, India	**400 Tonnes**	**Any** **CLICK HERE TO VIEW**
(4-Methylphenyl) acetonitrile Details : Call Mumbai, Maharashtra, India	**200 Kgs**	**Anatase** **CLICK HERE TO VIEW**
TriIsoPropanolAmine Details : Please connect with me and reply to my inquiry asap Mumbai, Maharashtra, India	**200 Kgs**	**Any** **CLICK HERE TO VIEW**

BUY INQUIRIES

Product	Quantity	Grade
Mix Xylene isomer Details : We require 25 tons of Mix Xylene Isomer grade by 14.07.2025 CLICK HERE TO VIEW Mumbai, Maharashtra, India	**25 Tonnes**	**Technical**
Toluene Details : Need it to export to China on a repeat basis. CLICK HERE TO VIEW Mumbai, Maharashtra, India	**10 Kgs**	**VirginPure**
Styrene Details : We require 20 tons of Styrene at Chiplun by 4.7.2025. CLICK HERE TO VIEW Mumbai, Maharashtra, India	**20000 Kgs**	**Any**
Monoethanolamine Details : we require MonoethanolAmine 12 tons at Chiplun. It is requres in barrels as soon as possible. CLICK HERE TO VIEW Chennai, Tamil Nadu, India	**12000 Kgs**	**Industrial**
N-Ethyl-O-P-Toluene Sulfonamide Details : Used in manufacturing ink for batch coding machines. Quantity: 50 Kgs Urgent Requirement. CLICK HERE TO VIEW Chennai, Tamil Nadu, India	**50 Kgs**	**Any**

BUY INQUIRIES

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**

Global Polymer Summit 2025: Birla Carbon to showcase high-performance carbon black and sustainable solutions

Birla Carbon, a leading global manufacturer and supplier of high-quality carbon-based solutions, will present its full portfolio of innovative, high-performance carbon black products for tire and rubber applications at the Global Polymer Summit 2025, taking place from September 8-11 at the Huntington Convention Center of Cleveland, OH.

Sharing his thoughts on participating in the event, John Davidson, Chief Sales, Marketing, & Sustainability Officer, Birla Carbon said, "At Birla Carbon, innovation and sustainability go hand in hand, and our participation at the Global Polymer Summit 2025 is an opportunity to demonstrate that commitment. Our comprehensive portfolio of high-performance carbon black grades continues to deliver the benefits that tire and rubber manufacturers value most - products that are longer- lasting, more fuel efficient, and easier to process, while consistently meeting the rigorous demands of today's mobility and industrial markets."

"Equally, our focus on sustainability remains central to our strategy. Through our Continua SCM range, we are enabling scalable, consistent circular solutions that help customers increase recycled content and meet their environmental goals without compromising performance or quality. With operations across six continents, Birla Carbon is uniquely positioned to provide supply security of all our products, regulatory compliance, and the technical expertise that empowers our partners to innovate and meet their sustainability goals," added Davidson.

At this year's summit, Birla Carbon will highlight its pioneering carbon black grades that enhance tire performance by making them last longer and improving fuel efficiency. The company will also showcase its complete range of high-performance carbon black grades, including its flagship Raven and Conductex carbon blacks, engineered to meet the demanding requirements of modern mechanical rubber goods (MRG) applications.

With features such as improved processing, fatigue resistance, electrical resistivity and conductivity, and superior Class A surface finish, Birla Carbon continues to set new benchmarks in performance, durability, and quality.

The company will also spotlight its Continua Sustainable Carbonaceous Materials (SCM) - a range of high-quality, consistent, and scalable sustainable solutions with global availability and regulator compliance. Through Continua SCM, Birla Carbon provides customers with supply security, large volume availability, blending possibilities for optimum solutions, increased recycled content, and reduced homologation costs.

Read the full report : https://www.indianchemicalnews.com/general/global-polymer-summit-2025-birla-carbon-to-showcase-high-performance-carbon-black-and-sustainable-solutions-27379

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Creative Tech Textile / Hans Global Brings Nature-Inspired Fiber Innovation to Première Vision Paris 2025

PARIS, Sept. 8, 2025 /PRNewswire/ -- Creative Tech Textile / Hans Global, a leading innovator in sustainable fibers, is proud to present its latest innovations in nature-driven textiles at the Première Vision Paris from 16–18 September 2025, at booth 6S29 as SEAWOOL, located in the Paris-Nord Villepinte Exhibition Centre, France. Headlining

the showcase are Seawool®, the company's signature eco-fiber made from recycled oyster shells and ocean plastics, and Smawarm®, a next-generation thermal insulation material made from Seawool®.

"At Creative Tech Textile / Hans Global, we believe the future of fashion innovation is rooted in nature, where sustainability and performance go hand in hand. Showcasing our innovations at Première Vision Paris allows us to connect with global partners who share our vision for a more responsible and forward-thinking textile industry," said Eddie Wang, Founder and CEO of Creative Tech Textile / Hans Global.

Seawool®: A Revolutionary Innovation in Circular Fashion Inspired by Nature

Seawool® is a groundbreaking textile innovation made from recycled oyster shells and ocean plastics that transform marine waste into high-performance fibers while honoring Taiwan's oyster farming heritage. Just 1% of the world's annual shell waste can yield up to 900 tons of Seawool® fiber, demonstrating the material's vast potential to support a circular economy and reduce environmental impact. In 2023 alone, the company successfully reused 100 tons of oyster shells and 300 tons of post-consumer plastic waste.

Beyond sustainability, Seawool® offers exceptional functionality with its Merino blend:

- Naturally antibacterial and odor-resistant
- Thermally regulating and soft to the touch
- Comfort and feel of wool with added performance benefit
- Machine washability, eliminating the need for toxic dry cleaning

Seawool®'s pioneering impact has earned global recognition, including prestigious accolades such as the Red Dot Award. Its low-carbon, water-saving production process sets a new benchmark for sustainable textile manufacturing. By merging natural inspiration with technological advancement, Seawool® is not only addressing pressing environmental challenges but also reshaping the future of responsible fashion.

Smawarm®: Versatile Warmth, Redefined

Smawarm® is a revolutionary thermal insulation material that reengineers Seawool® fibers into a spiral shape, mimicking the heat-trapping hollow strands of polar bear fur. This biomimetic twist enhances thermal retention, resulting in a high-performance material that offers warmth with sustainability at its core.

At the heart of this innovation are micro air pockets formed by oyster shell fibers. These natural thermal barriers effectively retain body heat without adding bulk, making the fabric lightweight, soft, and comfortable to wear. Years of research and development by Creative Tech Textile / Hans Global have culminated in a solution that redefines warmth with smart insulation and superior thermal regulation.

The fabric offers key performance features that suit a wide range of applications:

- Breathable, moisture wicking, and quick drying
- Anti-bacterial and static-resistant
- Ideal for daily wear, outdoor gear, and high-performance items like gloves, jackets, beddings, and insulated bags

"Seawool® is our foundational fabric that we like to call 'the emerald of the ocean'. To create it, we transform oyster shells and ocean plastics into high-performance fibers that reduce environmental impact without compromising quality. Building on this legacy, Smawarm® delivers lightweight, breathable insulation that offers warmth and comfort with a biomimetic twist," concluded Eddie.

Create Tech Textile / Hans Global is also an active member of the Sustainable Apparel Coalition (SAC) and participates in the Higg Index, reinforcing its alignment with environmental, social, and governance (ESG) best practices across its value chain.

Read the full report : https://hansglobaltextile.net/.

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Colors of Opportunity: India's expanding dye and dyestuff industry

The dye and dyestuff industry in India is a significant segment of the country's chemical sector, both in terms of its historical legacy and current global relevance. India is one of the largest producers and exporters of dyes, dyestuffs, and dye intermediates in the world, accounting for approximately 16–18% of global production. The sector serves key downstream industries such as textiles, leather, paper, plastics, and food, with the textile industry alone consuming around 70% of the dyes produced in India.

As of 2024, the Indian dye and dyestuff market is estimated to be valued at around USD 7 billion, and is projected to grow at a compound annual growth rate (CAGR) of 9–10% over the next five years. This growth is driven by rising domestic textile production, increasing global demand for reactive and disperse dyes, and India's strengthening position as a preferred global manufacturing hub due to the China+1 strategy adopted by international brands.

India exports dyes and intermediates to over 90 countries, with major markets including the U.S., Germany, China, Bangladesh, Turkey, and Brazil. In FY2023–24, the industry's export value stood at approximately USD 3.5 billion, a slight dip from the previous year due to weak demand in Europe and cost inflation in raw materials. However, exports are expected to bounce back in FY2025, supported by easing input costs and improved global demand.

The Indian dyestuff industry is heavily concentrated in Gujarat and Maharashtra, with Gujarat alone accounting for nearly 75% of India's dye and dye intermediate production. The Ankleshwar and Vapi industrial clusters are particularly prominent, hosting a dense network of small, medium, and large-scale manufacturers.

On the product front, reactive dyes account for the largest share of India's dye production, followed by acid, direct, and disperse dyes. India is a global leader in reactive dyes, holding over 40% of the world market in this segment. The country also has a strong position in dye intermediates, especially vinyl sulfone, H-acid, and gamma acid, which are critical precursors in dye manufacturing.

Key developments

In 2024, India's dye and dyestuff industry experienced significant developments across various dimensions, including market growth, technological advancements, policy initiatives, and sustainability efforts.

The market witnessed substantial growth, with the textile dyes segment reaching a valuation of approximately USD 395.50 million. Projections indicate that this figure is expected to escalate to USD 642.54 million by 2033, reflecting a compound annual growth rate (CAGR) of 5.13% from 2025 to 2033. This expansion is primarily driven by heightened textile production, both for export and domestic consumption, and an increasing demand for sustainable and eco-friendly dyes.

Technological innovation played a pivotal role in reshaping the industry. The adoption of digital textile printing technologies gained momentum, offering benefits such as reduced water consumption and minimized chemical waste.Notably, in February 2025, ColorJet India Ltd. introduced the Fab Jet Pro, a high-volume digital textile printer capable of producing up to 13,000 square meters daily. This 3.2-meter-wide machine features advanced sticky belt technology and multiple print heads, delivering exceptional print clarity while promoting sustainable manufacturing practices by lowering energy and water usage.

Policy measures also significantly influenced the industry's trajectory. In February 2025, Union Minister of Textiles, Giriraj Singh, inaugurated several key events, including the Garment Technology Expo and DyeChem World Bharat Tex 2025. These platforms showcased advancements in apparel production technology and sustainable dyes and chemicals, reflecting the government's commitment to fostering innovation and sustainability within the sector.

Sustainability emerged as a central theme, with concerted efforts to balance industry growth with environmental responsibility. The Future Forward Factory project, presented at Bharat Tex, aims to establish near-net-zero textile facilities by integrating innovative low-impact textile processing solutions. This initiative underscores the industry's dedication to reducing its carbon footprint while maintaining economic viability.

Furthermore, the industry sought policy interventions to enhance global competitiveness. Discussions

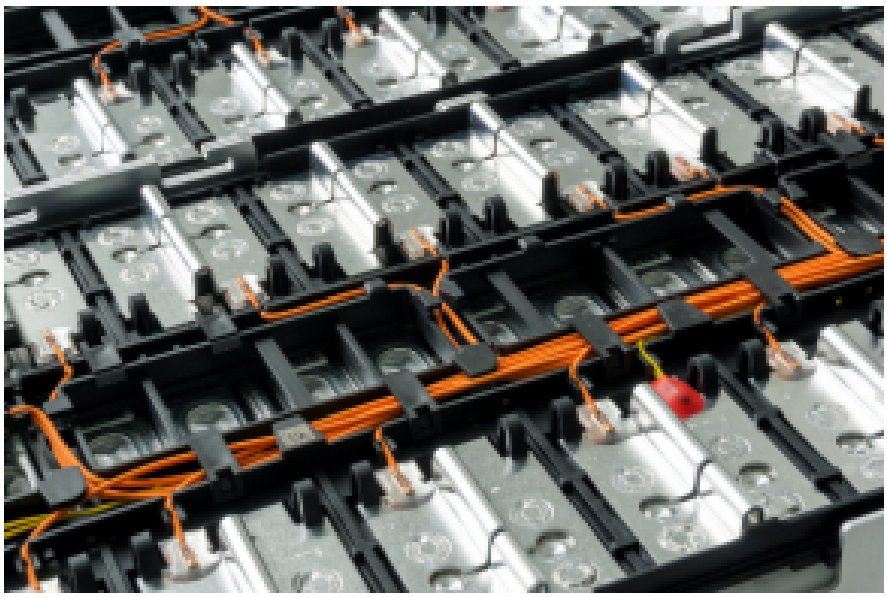
Continued on page 37

POWERING PROGRESS: EVOLVING LANDSCAPE OF EVS, SEMICONDUCTORS & BATTERY CHEMICALS

As the world races toward decarbonization and digital transformation, the electric vehicle (EV) (EV) ecosystem has emerged as a focal point of innovation, investment, and policy reform. The backbone of this transformation lies not just in the vehicles themselves, but in the critical building blocks that power them: advanced semiconductors and battery chemicals. Together, these industries form a complex and interdependent value chain that is rapidly evolving under the pressures of global demand, supply chain shifts, and technological breakthroughs.

EV adoption is scaling rapidly across major global markets, driven by climate goals, rising fuel prices, and government mandates. In 2025, global EV sales are projected to surpass 17 million units , with key growth markets like China, Europe, and increasingly, India and Southeast Asia, expanding their EV infrastructure.

In 2024, India's passenger EV production surged by 22.5 per cent year-over-year, reaching approximately 125,500 units. This growth is primarily attributed to the rising demand for electric two-wheelers, which dominated the market with sales of around one million units in the financial year 2024. In India, ambitious initiatives like the FAME II scheme, PLI programs, and state-level EV policies are pushing both demand and manufacturing capacity. Major OEMs and startups alike are developing two-wheelers, three-wheelers, and passenger EVs, supported by growing investments in charging infrastructure and fleet electrification.



Semiconductors: Critical yet constrained

Semiconductors are the digital brains of EVs, enabling everything from battery management systems to autonomous driving capabilities. However, global chip shortages that began in the post-pandemic recovery continue to affect production cycles and cost structures. EVs require far more chips than ICE vehicles—nearly 2-3 times more—putting additional pressure on an already strained supply chain.

India is currently the world's second-largest consumer of semiconductors, with demand expected to reach USD 110 billion by 2030, up from around USD 24 billion in 2022. This growth is driven by the rapid expansion of smartphones, automotive electronics, EVs, industrial IoT, telecom equipment (especially 5G), consumer appliances, and defense electronics. Despite this surging demand, India has historically had no commercial-grade semiconductor fabs, relying heavily on imports from Taiwan, South Korea, China, and the U.S.—a vulnerability highlighted during the global chip shortages of 2020–2022.

India is actively trying to localize part of this supply chain through the Semicon India initiative, attracting partnerships from global giants to build fabrication and ATMP (Assembly, Testing, Marking, and Packaging) units. The challenge lies in balancing capital-intensive chip manufacturing with long-term demand certainty.

While fabrication is nascent, India is already a global leader in semiconductor design, with over 20 per cent of the world's chip design engineers based in the country. Nearly all major semiconductor companies—including Intel, Qualcomm, MediaTek, AMD, and Texas Instruments—have R&D and design centers in India. In terms of early movers in the segment, Micron Technology is setting up a $2.75 billion ATMP plant in Gujarat, marking the first significant foreign investment

in India's semiconductor ecosystem. Tata Electronics has signed a MoU with Powerchip Semiconductor Manufacturing Corp (Taiwan) to establish a semiconductor fab in Dholera, Gujarat, with an estimated investment of over $11 billion. Vedanta-Foxconn had initially announced plans for a large-scale fab, but the deal was restructured after Foxconn exited the joint venture. Sahasra Semiconductors has already begun chip packaging operations in Rajasthan. ISRO and DRDO are also pushing for indigenous chip development for defense and aerospace applications.

Battery Chemicals: The supply chain hotspot

Battery chemicals—particularly lithium, cobalt, nickel, and manganese—have become geopolitically sensitive and commercially critical. Prices of key materials have seen significant volatility, impacting cell manufacturing economics. At the same time, there's an urgent push toward developing alternative chemistries, such as sodium-ion and solid-state batteries, to overcome sourcing and safety limitations.

The battery chemicals market, valued at approximately $1.2 billion in 2022, is expected to grow at a compound annual growth rate (CAGR) of 13-15 per cent from 2023 to 2030, driven by the increasing adoption of EVs. However, challenges persist, including reliance on imported raw materials and the need for technological advancements in battery production. Addressing these challenges is crucial for India to establish a robust and self-reliant EV and battery ecosystem.

India is investing in domestic refining capacity for battery materials and exploring overseas mining partnerships, particularly with countries in South America and Africa. To meet the escalating demand , India's lithium-ion battery manufacturing capacity is projected to expand from 18 GWh in 2023 to 145 GWh by 2030. This expansion is bolstered by the government's Production-Linked Incentive (PLI) scheme, which aims to establish 50 GWh of battery cell capacity by 2026. Notable corporate initiatives include Reliance Industries securing a bid to produce up to 10 GWh of advanced chemistry cells under the PLI scheme, and Amara Raja Energy and Mobility's licensing agreement with China's Gotion High Tech Co. to produce lithium-ion batteries in India.

Fast paced dynamic deals

Tata Motors, India's leading EV manufacturer, is focusing on locally produced EV batteries to maintain its competitive edge amid intensifying competition. The company's EV market share declined to 62 per cent in 2024 from 73 per cent in 2023 as competitors like JSW MG Motor gained ground. Other automakers, including Mahindra & Mahindra, Hyundai, Maruti Suzuki, and Tesla, are also entering the Indian EV market. Tata Group plans a $1.5 billion investment in a battery gigafactory in India, expected to start production by 2026, to integrate its supply chain further. This move aims to secure the supply of the most costly component of EVs—lithium-ion battery cells—by 2028. Tata Motors is leveraging funding from U.S. private equity firm TPG and India's EV incentive program to support its investments.

In a significant joint venture, India's largest steel producer, JSW, and Chinese carmaker SAIC Motor have established a $1.5 billion partnership to produce and market MG-brand electric vehicles in India, with plans to invest $5 billion by 2030. They aim to reduce costs by sourcing locally, including batteries from a new plant in Odisha. JSW will hold 51 per cent of the joint venture, with SAIC holding 49 per cent. The venture, JSW MG Motor India, plans to release new models every three to six months starting in October. This partnership highlights the shift towards electric vehicles in India, despite challenges such as higher costs compared to combustion-engine cars. Amid regulatory hurdles due to geopolitical tensions, Indian partnerships like this are crucial for Chinese companies. India's EV market, currently led by Tata, is gradually expanding with new entrants like VinFast, Tesla, and Suzuki. The Indian government recently reduced import tariffs on EVs for companies investing in local production, further encouraging market growth.

Amara Raja Energy and Mobility has entered into a licensing agreement with Gotion-InoBat-Batteries, a unit of China-based Gotion High Tech Co., to produce lithium-ion batteries in India. Under this agreement, Amara Raja will access Gotion's lithium iron phosphate technology and receive support to establish gigafactory facilities, integrating into Gotion's global supply chain. Gotion, with German automaker Volkswagen as its largest shareholder, specializes in lithium-ion batteries for new energy vehicles. Indian automakers currently import batteries mainly from China and South Korea but are increasingly investing in domestic lithium-ion battery production. Amara Raja's competitor, Exide Energy Solutions, partnered with SVOLT to build a lithium-ion battery plant expected to start operations this year. Additionally, Hyundai and Kia signed an MOU with Exide to supply batteries for their electric vehicles. Earlier this year, Amara Raja, Reliance Industries, and JSW Neo Energy were among companies that submitted bids to set up battery manufacturing gigafactories in India.

Reliance Industries has secured a bid under India's incentive program to

produce electric vehicle (EV) batteries. The company will manufacture up to 10 gigawatts of advanced chemistry cells (ACCs), essential for EV production, in order to support the country's goal of increasing electric car usage. The production-linked incentive (PLI) scheme, aimed to enhance local battery manufacturing, has allocated $434.4 million.

Hyundai Motor Group has announced a partnership with three premier Indian Institutes of Technology (IITs)—IIT Delhi, IIT Bombay, and IIT Madras—to establish a collaborative research framework focused on batteries and electrification. This initiative aims to revolutionize the development of electric vehicle (EV) technologies tailored for the Indian market. The partnership's centerpiece, the Hyundai Center of Excellence (CoE), will be established at IIT Delhi and will operate with sponsorships from Hyundai Motor Group. The CoE will spearhead advancements in battery technology and electrification while also fostering talent development and academic-industrial cooperation. Hyundai Motor Group plans to invest USD 7 million over five years (2025-2029) to conduct research in battery technology, electrification, and future technologies, including software and hydrogen fuel cells.

Overcoming challenges

A major hurdle is the heavy dependence on imports for critical battery materials such as lithium, cobalt, and nickel. Despite the government's efforts to secure overseas lithium blocks, over 70 per cent of India's lithium-ion cell requirements were met through imports in 2024, primarily from China, South Korea, and Japan. This dependence exposes the industry to global price fluctuations and geopolitical risks.

Another significant challenge is the lack of a well-developed domestic battery manufacturing ecosystem. While India has announced plans to reach 145 GWh of battery manufacturing capacity by 2030, the current operational capacity in 2024 stood at less than 20 GWh. Most of this capacity is in the early stages of setup, and delays in land acquisition, infrastructure, and technology transfer are common.

Cost is also a major barrier, with EVs priced 20 per cent to 40 per cent higher than their internal combustion engine counterparts. Battery costs, which constitute 35 per cent to 45 per cent of an EV's total cost, remain a key contributor to this price differential. The slow pace of technology indigenization further aggravates this cost disparity, making EVs less attractive in the mass market despite subsidies under the FAME II scheme and state-level incentives.

Charging infrastructure remains sparse and unevenly distributed. As of mid-2024, India had around 12,000 public charging stations, with more than 60 per cent concentrated in urban centers. This inadequacy in infrastructure hampers EV adoption in Tier 2 and Tier 3 cities, where growth potential is significant.

On the environmental front, concerns are growing over the future disposal and recycling of used batteries. India lacks a comprehensive battery recycling policy and has limited recycling capacity for lithium-ion batteries, posing a potential ecological risk as volumes grow. Additionally, the energy-intensive nature of battery production raises questions about the overall sustainability of the supply chain, particularly when reliant on coal-powered grids.

Workforce skill gaps and limited R&D capacity also hinder industry innovation. While global automakers and battery makers are entering the Indian market, domestic firms are still catching up on advanced cell chemistries such as solid-state batteries and lithium iron phosphate (LFP) technologies. Without robust investments in research, partnerships with global technology providers, and upskilling of the technical workforce, India risks lagging in the global EV transition.

Building synergy for a sustainable tech future

India's EV industry is poised for significant expansion in 2025 and beyond. In 2025, production of battery-powered passenger vehicles in India is projected to increase by 140.2 per cent year-over-year, reaching approximately 301,400 units, which would constitute about 6 per cent of the estimated 5.16 million passenger vehicles produced that year. This surge is attributed to heightened consumer awareness, favorable government incentives, and advancements in EV technology. Major industry players are making significant investments to strengthen the domestic supply chain. For instance, Tata Group plans to invest $1.5 billion in a battery gigafactory in India, expected to commence production by 2026, aiming to secure the supply of lithium-ion battery cells by 2028.

India is actively seeking technical assistance from countries such as Australia, the United States, and Bolivia to develop domestic lithium processing capabilities and reduce reliance on imports. Additionally, companies like Vedanta are expanding nickel sulfate production to meet the growing demand for battery materials.

With strong government backing, private sector investments, and increasing global interest in a China+1 strategy, India has the opportunity to carve out a significant role—especially in chip packaging (OSAT), legacy node fabrication (28nm+), compound semiconductors, and automotive-grade chips. The real inflection point will come when the first fabs begin

operations and India can demonstrate reliability, scalability, and cost-effectiveness. As the world seeks resilient semiconductor supply chains, India is positioning itself as not just a market, but a maker.

The transformation of transportation is not happening in silos. The EV industry's growth is critically dependent on robust semiconductor supply chains and reliable access to battery-grade materials. Governments and companies are now working more collaboratively across these sectors to ensure long-term competitiveness and sustainability. For India and other emerging markets, the opportunity lies in creating integrated ecosystems where innovation, policy, and manufacturing capabilities converge. Cross-sector synergy will be the defining force that determines who leads the next phase of the global mobility and clean energy transition.

Strategic investments, international collaborations, and supportive policies are expected to drive substantial growth, positioning India as a significant player in the global EV market in the coming years.

Source : Indian Chemical News

NEO BATTERY, NAINTECH TO CO-DEVELOP DRONE & STATIONARY ENERGY STORAGE BATTERIES

NEO Battery Materials, a low-cost, silicon-enhanced battery materials and components developer that enables longer-running, rapid-charging batteries, entered into a Joint Development Agreement (JDA) with NainTech, a South Korean manufacturer specializing in battery & fuel cell technology and semiconductor & display precision equipment.

Both parties will co-develop sodium-ion battery technology for energy storage systems (ESS) and high-performance lithium-ion batteries with MXene additives.

Through the JDA, NEO and NainTech will collaborate closely on both drone and stationary energy storage technologies. Sodium-ion batteries (SIB) will be the first development focus for integration in ESS for artificial intelligence (AI) data centres and power grid storage. SIBs have gained recognition as the de facto alternative to lithium-ion batteries for energy storage, benefiting from greater resource availability and lower costs. NEO will support NainTech in developing and manufacturing SIB electrodes and full battery cells, guiding prototype design through to commercial-level deployment.

For drone applications, NainTech's proprietary additives, Titanium-based MXene, will be incorporated into NEO's silicon anode products and high-performance battery designs to improve electrical conductivity – a critical factor to enable longer flight times, heavier payloads, and high-power maneuvers in drones and unmanned systems (UAS). MXenes are 2-dimensional materials that can outperform the conductivity of commercial graphene by one order of magnitude.

Source : Indian Chemical News

NEOGEN IONICS FORMS JV WITH MORITA CHEMICALS FOR LITHIUM-ION BATTERY COMPONENTS

Neogen Ionics Limited (NIL), a of wholly owned subsidiary Neogen Chemicals Limited has entered into a Joint Venture Agreement (JVA) with Morita Investment Limited (MIL), a subsidiary of Japan-based Morita Chemical Industries Co. Ltd., to jointly participate in the fast-growing lithium-ion battery materials space. This is one of the first JV between Indian and Japanese company in LIB battery material space.

Under the agreement, both parties will invest in Neogen Morita New Materials Limited (NML), currently a wholly owned domestic subsidiary of NIL, which will be engaged in the production, development, and sale of solid LiPF6 salt, a key electrolyte material for lithium-ion batteries.

As per the JVA, NIL will hold a minimum of 80%, while MIL will hold up to 20% of NML's share capital. The amount of investment will be determined after the detailed engineering exercise and will be invested by NIL and MIL in the ratio of their shareholding.

MIL is a wholly owned subsidiary of MCL which is a 100+ year old Japanese chemicals company and is a leading player in lithium salt manufacturing globally for more than 30 years. It has presence across 31 nations globally and works in close cooperation with global battery manufacturers. In addition to its plants in Japan, it has 2 plants for LiPF6 in China and has presence in Europe and USA.

The manufacturing unit for this JV will be set up in Pakhajan, Gujarat, and will support India's growing push for clean energy solutions.

MSN MARKS MAJOR MILESTONE WITH U.S. LAUNCH OF SACUBITRIL AND VALSARTAN TABLETS FOLLOWING HARD-FOUGHT LEGAL VICTORY

PISCATAWAY, N.J., Aug. 19, 2025 / PRNewswire/ -- MSN Pharmaceuticals, the U.S. subsidiary of global pharmaceutical leader MSN Group, is pleased to announce the launch of its generic Sacubitril+Valsartan Tablets in the United States, which is indicated to reduce the risk of cardiovascular death and hospitalization for adult patients with chronic heart failure and reduced ejection fraction. This marks a significant achievement in MSN's journey to expand access to affordable, high-quality cardiovascular medications for patients across the country.

Sacubitril and Valsartan Tablets is an important combination therapy widely used in the management of chronic heart failure with reduced ejection fraction. It helps to reduce the risk of cardiovascular death and hospitalizations, offering hope and an improved quality of life to patients throughout the United States.

MSN's path to launch was shaped by a rigorous legal and regulatory process. The company was at the forefront of a complex patent litigation that spanned multiple years. Despite facing multiple legal obstacles, including attempts to delay the approvals and launch of the product, MSN remained committed to its mission and engaged in a principled defence of its right to be first to introduce its cost effective generic product.

Throughout this process, MSN Pharmaceuticals worked in close coordination with regulatory authorities and adhered to the highest standards of legal compliance and product quality. After multiple court hearings, temporary injunctions, and legal appeals, MSN ultimately secured the necessary approvals to bring its Sacubitril and Valsartan tablets to the U.S. market.

"This launch stands as a symbol of our perseverance, integrity, and unwavering belief that lifesaving medicines must be accessible to all. Aligned with the U.S. government's vision and policy of promoting reduced drug prices through the promotion of robust generic pharmaceutical competition, this milestone reflects our enduring commitment to strengthening global healthcare access through our facilities in the USA as well" MSN Pharmaceuticals said in a statement.

MSN Group is among the fastest-growing, fully integrated pharma companies with 25 state-of-the-art facilities in India and the USA. Its unified R&D drives both APIs and finished dosage research. With 1000+ patents, 200+ ANDAs, and the world's No.1 position in US DMF filings, MSN offers 500+ APIs and 400+ finished dosages across 35+ therapeutic areas, serving 50M+ patients in 100+ countries with speed, reliability, and trust.

SOURCE MSN Pharmaceuticals

BATTELLE AND APRECIA COLLABORATE WITH U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES (HHS) AND U.S. DEFENSE ADVANCED RESEARCH PROJECTS AGENCY (DARPA) TO ADVANCE U.S. DRUG MANUFACTURING CAPABILITY UTILIZING 3D-PRINTED TECHNOLOGY TO PRODUCE ESSENTIAL MEDICINES AT THE

POINT OF NEED

COLUMBUS, Ohio and MASON, Ohio, Aug. 19, 2025 /PRNewswire/ -- Battelle and Aprecia have been awarded a U.S. Defense Advanced Research Projects Agency (DARPA) agreement to advance the research program titled Establishing Qualification Processes for Agile Pharmaceutical Manufacturing (EQUIP-A-Pharma) through funding from the U.S. Department of Health and Human Services (HHS) Administration for Strategic Preparedness and Response (ASPR) Office of Industrial Base Management and Supply Chain (IBMSC). ASPR's mission is to assist in preparing for, responding to, and recovering from public health emergencies and disasters. The EQUIP-A-Pharma research program will investigate how a custom small-scale chemical synthesis platform, built by Battelle, combined with Aprecia's revolutionary 3D printing technology can accelerate U.S. drug production to deliver high quality, sustainable medications, initially focusing on two medications categorized as essential medicines for the US population.

The EQUIP-A-Pharma program will create agile pharmaceutical manufacturing sites producing both active pharmaceutical ingredients and the finished pharmaceutical dosage forms at the same location, significantly shortening the pharmaceutical raw material supply chain while also lessening supply chain risk for commercial product distribution. The synthesis platform being built by Battelle is specifically designed to be able to synthesize multiple active pharmaceutical agents while meeting all regulatory requirements for production of these drugs. Aprecia's Z-Form Flex technology platform is designed for agile manufacturing applications as it produces finished tablets directly in the primary packaging, enabling integrated aspects of manufacturing and packaging operations. This technology platform is also structured to rapidly accommodate drug product formulation modifications to help meet the needs of medications for diverse patient populations.

"We are optimistic that the EQUIP-A-Pharma research program will help identify pathways that will bring agile pharmaceutical manufacturing technology to the masses," said Greg Kimmel, general manager, health unit, at Battelle. "Agile pharmaceutical manufacturing technology is a game-changer, and this program will help us bring to life its benefits including, enabling point-of-need manufacturing for military operations, addressing public health emergencies, like drug shortages, and serving as a foundational tool for personalized medicine."

The EQUIP-A-Pharma program will generate key scientific data needed to demonstrate that agile manufacturing can meet FDA drug product registration requirements and be utilized to produce safe and effective pharmaceutical products. In addition, it will facilitate broader adoption of advanced manufacturing technology, such as the Aprecia 3D printing technology, unlock private capital for commercialization of innovative pharmaceutical technology, and propel the agile pharmaceutical manufacturing technology into the marketplace.

"The EQUIP-A-Pharma program provides a critical opportunity to collaborate with public health stakeholders on agile pharmaceutical manufacturing utilizing our 3D printing technology," said Kyle Smith, president and chief operating officer at Aprecia. "By collaborating with Battelle and DARPA, we will focus on creating a pathway that ensures Aprecia's innovative manufacturing processes address unmet medical needs. This commitment will deliver safe and effective medications more efficiently to those who need them most, including military personnel."

The potential impact of this work is far reaching. Through this innovative program and with directional support from the Industrial Base Management and Supply Chain (IBMSC), Battelle and Aprecia will use agile pharmaceutical manufacturing technology to address critical drug shortages more rapidly, enable point-of-need manufacturing to support military operations and medical countermeasure applications, enhance the overall resilience of the pharmaceutical supply chain and develop the foundation for more personalized medicine success.

Source : Aprecia

BLACKMER LAUNCHES NEW HYDRAULIC ADAPTER KIT FOR LB080 AND LB160 SERIES RECIPROCATING GAS COMPRESSORS

DOWNERS GROVE, Ill., Aug. 20, 2025 /PRNewswire/ -- Blackmer, part of PSG, a Dover (NYSE: DOV) company, and a global leader in rotating pumps and reciprocating compressor technologies, today announced the launch of its new Hydraulic Adapter Kit for the upgrade of Blackmer® LB080 and LB160 Series Reciprocating Gas Compressors.

Designed to meet the evolving needs of mobile liquid petroleum gas (LPG) applications, the Hydraulic Adapter Kit (patent pending) seamlessly transforms existing compressor setups into compact, chassis-mounted, hydraulically-driven systems. This easy-to-install package eliminates the need for flywheels, reducing weight and footprint while improving field performance. In addition to being a retrofit solution, the Hydraulic Adapter Kit is also available as a factory-installed option.

"Operators in mobile LPG applications face constant pressure to reduce weight, save space and increase efficiency," said Ron Crouch, Product Management Director of Blackmer. "The Blackmer Hydraulic Adapter Kit directly addresses those issues by making upgrades easier and more effective, without the cost and complexity of a full system overhaul."

The Hydraulic Adapter Kit helps operators of small LPG applications:

- Save space by eliminating bulky flywheels;
- Reduce weight to improve mobility and fuel economy;
- Increase fuel efficiency to help lower operating costs;
- Simplify installation, with no shaft alignment required; and
- Minimize downtime with streamlined integration.

"Whether you're upgrading an older system or building out new applications, the Hydraulic Adapter Kit is important to a successful mobile LPG operation," said Crouch. "It's a straightforward, cost-effective solution for customers who want to enhance their compressors."

Source : Dover

MOLEAER PARTNERS WITH XYLEM TO GLOBALLY SCALE NANOBUBBLE TECHNOLOGY FOR WATER TREATMENT

HAWTHORNE, Calif., Sept. 4, 2025 /PRNewswire/ -- In a move that affirms the next wave of innovation in water treatment, Moleaer, the pioneer and market leader in nanobubble technology, is partnering with Xylem Inc. (NYSE: XYL) to scale its patented technology for municipal and industrial wastewater treatment plants worldwide. The partnership includes a global distribution agreement and a strategic investment in Moleaer.

This follows successful deployments across wastewater treatment facilities, including a standout project at the Maple Creek Wastewater Treatment Plant in Greer, South Carolina. Moleaer's technology, deployed in partnership with Xylem, significantly decreased the need for settling aid and defoaming chemicals. This resulted in significant savings in chemical costs, improved plant performance, and stronger compliance with discharge permits, all without infrastructure upgrades or major operational changes.

"This partnership shows that nanobubble technology isn't emerging, it's already here," said Nick Dyner, CEO of Moleaer. "Xylem brings global reach and credibility across the water and wastewater treatment market. Together, we're accelerating adoption of one of the most disruptive technologies in decades."

Nanobubbles are 2,500 times smaller than a grain of salt and remain suspended in water longer than conventional aeration bubbles. Their unique properties enable more efficient gas transfer and accelerate physical, chemical and biological processes.

With over 4,000 installations worldwide, spanning wastewater treatment plants, industrial water

treatment systems, greenhouses, aquaculture facilities, lake restoration, surface sanitization, and water disinfection, Moleaer has proven that nanobubble technology increases productivity and lowers operating costs through water, chemical and energy savings, without any infrastructure upgrades.

For both municipal and industrial wastewater treatment plants, integrating nanobubbles offers a rare combination: lower energy and chemical use, increased treatment capacity, and measurable performance gains with minimal operational disruption.

At Meister Cheese, a Wisconsin-based dairy producer, Moleaer's technology is applied to anaerobic digestion to increase biogas generation, transforming industrial wastewater treatment into a net-positive energy system with payback in under 30 days. In Stavnsholt, Denmark, a municipal water treatment facility achieved a 6.8% increase in biogas production, a 5.3% reduction in electricity use, and an 84% reduction in chemical use, while boosting capacity and resource recovery all within its existing footprint. And with Woodard & Curran, which operates nearly 100 wastewater treatment facilities nationwide, Moleaer's technology has been deployed across multiple customer sites, reinforcing a strong and ongoing collaboration to improve performance and efficiency at scale.

"What we saw at Greer, and at other wastewater treatment plants that have adopted Moleaer's nanobubble generators, makes nanobubble technology one of the most compelling innovations in water treatment today," said Scott Holzborn, Vice President and General Manager, Water Infrastructure, Treatment Americas at Xylem. "We see this technology as a significant advance in wastewater treatment, and our partnership with Moleaer will accelerate the value we bring to Xylem customers eager to reduce their chemical usage and more easily achieve discharge compliance."

The partnership reflects Xylem's commitment to bringing breakthrough solutions to market to address the world's most critical water challenges.

For Moleaer, the partnership validates nearly a decade of scientific research and commercial success across water-intensive sectors including agriculture, aquaculture, surface water, wastewater, oil & gas, and more. Nanobubble technology represents a fundamentally new approach to water treatment that enhances performance without chemicals, complexity, or costly infrastructure changes.

With Xylem's global reach and Moleaer's proven nanobubble expertise, the partnership aims to set a new standard in efficient, resilient, and sustainable water and wastewater treatment.

Source : Moleaer, Inc.

COVESTRO EXPANDS TECHNOLOGY FOR NIA-PFAS SUPER-DURABLE FLEXIBLE POWDER COATING RESIN IN APAC

Covestro expands production of its NIA-PFAS super-durable flexible powder coating polyester (Uralac Premium P 8000 and P 9000) to the Asia-Pacific region, addressing global climate challenges and evolving regulatory requirements on PFAS.

The company's Pingtung Site will now supply this trend-setting high-end environmental solution, which outperforms conventional super-durable polyester resins while effectively extending the service life of GSB Premium building materials and heavy equipment for agricultural, construction, and earth-moving applications. Now, through localized supply, the initiative further reduces the carbon footprint from long-distance transportation, supporting Covestro "Sustainable Future" strategy and implementing its commitment to achieve Scope 3 climate neutrality by 2050.

"International regulations continue to drive the transformation of industrial materials," said Tina Jin, Business Director of Powder Coating Resins Asia at Covestro. "Covestro is committed to developing

next-generation coating resins that combine environmental sustainability with high performance, actively addressing industry innovations alongside our customers. This leading solution has been produced and promoted in Europe since 2023, and we are pleased to see the Asia-Pacific region now offering customer-centric services with both reliable local supply and sustainable value."

Covestro's next-generation outdoor powder coating solution - Uralac Premium P 8000 and P 9000, as NIA-PFAS coating polyesters, can replace fluorocarbon systems (PVDF/FEVE) for weather-resistant resins.

NEW PRODUCTS

THERABREATH™, THE BEST-SELLING ALCOHOL-FREE MOUTHWASH BRAND IN THE U.S., IS NOW BRINGING ITS EPIC FRESHNESS TO TOOTHPASTE

EWING, N.J., Aug. 19, 2025 / PRNewswire/ -- The news is out of the tube! In response to increasing demand from the millions of fans of its TikTok viral rinses, TheraBreath™—the revolutionary oral care brand that fights bad breath at its source—announced today the launch of NEW TheraBreath Toothpastes, bringing the epic freshness it is known for to a new format. Dentist-formulated with premium ingredients, including stannous fluoride, the new line of toothpastes sets a new standard in the category and is specially designed to be mixed and matched with the brand's beloved rinses to deliver superior flavor while neutralizing the source of bad breath† and is long-lasting for epic freshness.

TheraBreath Toothpaste can now be purchased online on Amazon.com, Target.com and TheraBreath.com and will soon also be offered on Walmart.com. The new toothpaste line is available in three varieties, sold as twin-packs for $13.99:

- TheraBreath Healthy Gums Toothpaste: Formulated to help remove and prevent plaque that leads to gingivitis** while fighting bad breath for 12 hours with a delightful Clean Mint flavor featuring mild peppermint and aromatic spearmint with a note of green tea.
- TheraBreath Deep Clean Toothpaste: Designed to kill 99.9% of germs that cause bad breath, plaque and gingivitis† while delivering a Fresh Mint flavor experience of peppermint and eucalyptus with a hint of Italian lemon, helping fight bad breath for 12 hours.
- TheraBreath Whitening Toothpaste: Featuring peroxide-free whitening ingredients, the toothpaste helps remove surface stains while making teeth feel smooth and polished. After one week of twice-daily brushing, the toothpaste significantly whitens teeth and leaves breath feeling fresh thanks to its Dazzling Mint flavor, which combines fresh mint, cooling menthol and a note of refreshing coconut water.

"The expansion of TheraBreath offerings in the toothpaste category

reinforces our commitment to providing dentist-developed and science-backed oral care solutions that offer the efficacy consumers need and the premium, sensorial experience they want," said Anthony Cirigliano, Lead Product Development Engineer for TheraBreath. "TheraBreath Toothpastes are clinically tested to ensure effectiveness and are designed to complement our fan-favorite rinses, fitting seamlessly into oral hygiene routines."

TheraBreath Toothpastes may be combined with a favorite TheraBreath Oral Rinse to power up dental routines and give users the ultimate fresh-breath confidence. For more information about TheraBreath and its products, visit www.TheraBreath.com, and follow the brand (@TheraBreath) on TikTok and Instagram for ongoing product news.

Source : TheraBreath

LILYSILK LAUNCHES FIRST-EVER ACTIVEWEAR LINE WITH INNOVATIVE SILKERRY™ FABRIC

NEW YORK, Aug. 18, 2025 /PRNewswire/ -- LILYSILK, the world's leading silk brand dedicated to inspiring people to live spectacular, sustainable lives, has unveiled the SILKERRY™ Collection, its first activewear line crafted from the brand's proprietary silk-enhanced terry fabric. Designed to unite luxury with ease, SILKERRY™ combines the breathable plushness of cotton terry with the naturally cooling, skin-friendly qualities of high-content natural silk. The launch marks LILYSILK's entry into the modern activewear category, offering pieces that transition effortlessly from yoga studios to urban streets.

SILKERRY™ redefines terry fabric by weaving natural silk fibers directly into the cotton terry interior, creating an ultra-smooth surface that glides over skin, reduces friction, and helps maintain freshness through silk's natural antimicrobial properties. Its high thermal conductivity draws heat away for instant cooling, while moisture-wicking capabilities keep the wearer comfortable during movement. The outer layer of natural cotton terry provides structure, breathability, and durability, ensuring each piece retains its shape and softness through repeated wear and washing.

The creation of SILKERRY™ is rooted in LILYSILK's 15 years of consumer research, which identified a shift in modern lifestyles. Activewear has evolved beyond gym use into an everyday wardrobe staple, with consumers seeking garments that combine functional versatility with refined aesthetics. LILYSILK's response is a collection that meets this demand, offering a seamless balance of elegance and versatility.

"Activewear isn't just for the gym anymore. As fitness, work, and life blend seamlessly, people expect apparel that delivers both style and elegance," said David Wang, CEO of LILYSILK. "SILKERRY™ brings the luxury of silk into movement apparel, creating pieces that move effortlessly from yoga mats to city streets."

The debut SILKERRY™ Collection introduces three distinct style lines, each with its own concept and signature piece, and all available in four versatile colorways—Black, Heather, Espresso, and Blush Pink. Seamflow, inspired by the rhythm and structure of city life, blends polished design with easy movement, highlighted by the hip-length, oversized Seamflow Verge Hoodie with practical pockets and a smooth zip closure. Porchlight captures the warmth and ease of everyday living, offering relaxed yet refined silhouettes such as the soft-waistband Porchlight Lounge Shorts, ideal from home to café. Heirloom '89 pays tribute to timeless classics with a touch of vintage sport, anchored by the roomy yet refined Heirloom '89 Zip Jacket, designed for comfort, confidence, and lasting style.

Source : Prnewswire

UNIVAR SOLUTIONS AND BASF EXPAND DISTRIBUTION AGREEMENT TO DELIVER KEY INGREDIENTS FOR HIGH-PERFORMANCE POLYURETHANE, COATINGS, ADHESIVES, AND POLYMER SYSTEMS IN INDUSTRIAL MANUFACTURING

DOWNERS GROVE, Ill., Aug. 14, 2025 /PRNewswire/ -- Univar Solutions USA LLC ("Univar Solutions" or "the Company"), a leading global solutions provider to users of specialty ingredients and chemicals, today announced that Univar Solutions and its Canadian affiliate, Univar Solutions Canada Ltd., (the Ingredients + Specialties division from Univar Solutions) have been appointed the exclusive distributors in the United States and Canada for select BASF specialty ingredients used in industrial applications. The expanded partnership between the two companies aims to provide customers with a significant advantage through access to an extensive portfolio of these essential ingredients: Capromer™, 1,6-Hexanediol (HDO®) molten and flakes, and epsilon-caprolactone. These ingredients are used across a variety of industrial and manufacturing applications, including polymers, plastics, coatings, and adhesives

"We're excited to deepen our already solid partnership with BASF in North America. Working together, we're continuing to pave the way for shared growth and innovation, leveraging our combined strengths to explore new possibilities, solve complex challenges, and deliver exceptional value to our customers," said Matthew Oliver, global vice president of Performance Materials for Univar Solutions. "The diverse range of products and services that our expanded collaboration brings to the table enhances our security of supply and ability to meet the nuanced needs of our mutual customers. These specialty ingredients may be the building blocks of our customers' product improvements and innovative, tailored market solutions."

Capromer, HDO, and epsilon-caprolactone compounds are frequently selected by formulators as starting materials and building blocks in the development of high performing coatings, plastics, textile fibers, and other industrial products. They are recognized as versatile chemistries that impart durability, flexibility, weather resistance. HDO is used to manufacture industrial coatings including lower volatile organic compound (VOC) formulations, polyurethanes, and adhesives. HDO is also present in the formulation of epoxy systems, which are used for the production of rotor blades for wind turbines and construction components for automotive lightweight applications.

"We are thrilled to expand our specialty ingredients distribution partnership with Univar Solutions," said Timothy Cavanaugh, business director, Diols, Acids, and Polyalcohols for BASF Corporation. "This collaboration enhances our ability to provide high-quality specialty ingredients

for industries like polymers, plastics, coatings, and adhesives. Together, we are helping customers innovate, meet regulations, and maintain product performance."

This distribution partnership focuses on providing customers with the tools and insights to try to tackle complex technical challenges head-on. Learn more about the chemistries and innovative technical solutions that we're delivering to meet the demands of today's customers..

Source : Univar Solutions LLC

VIONEO SELECTS LUMMUS AS ITS POLYPROPYLENE PARTNER FOR WORLD'S FIRST INDUSTRIAL SCALE FOSSIL-FREE PLASTICS FROM GREEN-METHANOL FACILITY

HOUSTON and ZUG, Switzerland, Aug. 19, 2025 /PRNewswire/ -- Lummus Technology, a global provider of process technologies and value-driven energy solutions, announced Vioneo has selected its Novolen® polypropylene (PP) technology for a new grassroots plant in Antwerp, Belgium. The plant will be part of Vioneo's complex that, once complete, will be the world's first industrial scale fossil-free plastics production complex. The complex, based on green methanol as feedstock, will also be highly electrified using renewable electricity and use renewable hydrogen as key components to its operations.

"Vioneo's goal of delivering the world's first fossil-free polypropylene plastics facility is bold, ambitious and one we are honored to support," said Leon de Bruyn, President and Chief Executive Officer, Lummus Technology. "Our proven polypropylene polymerization technology will allow Vioneo to produce high-performance, drop-in polypropylene grades through a low-emissions process without compromising quality or flexibility."

The first-of-its-kind plant will have a capacity of 200KTA and will use 100 percent segregated green propylene and ethylene as feedstock to produce a wide range of polypropylene grades. With high-purity feedstock and proven technology, polypropylene will serve as a direct drop-in replacement for fossil-based alternatives. The plastics produced will be fully traceable and CO2 negative, allowing customers to reduce their Scope 3 emissions.

"Vioneo is driving the plastics industry's transition by proving that large-scale, cleaner production with green methanol-derived feedstocks is economically viable," said Alex Hogan, Chief Executive Officer, Vioneo. "Our collaboration with Lummus Technology to license their premier Novolen® polypropylene technology for our Antwerp facility is fundamental to this vision. This world-first plant will use fully certified green propylene and ethylene from industrially proven Methanol-To-Olefins technology, to produce a broad range of high-quality, drop-in bio-polypropylene grades, significantly advancing a sustainable plastics economy."

Lummus' scope includes the technology license, process design package, support during the front-end engineering design phase and catalyst supply during ongoing operations.

Lummus' Novolen PP technology is part of the Verdene™ technology suite, which is made up of proven technologies for sustainable polymer producers using bio-feedstock to produce fully bio-based polymers such as polyethylene, polypropylene and super absorbent polymers. The suite offers reduced to net-negative carbon dioxide emissions because of the sequestration of CO2-based carbon in the polymer itself. The polymer functions the same as polymers produced from traditional hydrocarbon sources.

Vioneo is owned by A.P. Moller Holding. Launched by A.P. Moller in 2024, Vioneo is dedicated to transforming plastics production by manufacturing fossil-free plastic resins and significantly reducing the carbon footprint associated with plastics production.

Source : Lummus Technology, LLC

ISHIHARA SANGYO LAUNCHES "LUSHADE® BLACK," AN ULTRA-LOW REFLECTANCE STRUCTURAL BLACK PIGMENT THAT ABSORBS OVER 99.0% OF VISIBLE LIGHT

TOKYO, Aug. 20, 2025 / PRNewswire/ -- ISHIHARA SANGYO KAISHA, LTD. has established full-scale production of LUSHADE® BLACK—an ultra-low reflectance black pigment that absorbs over 99.0% of visible light—and is now ready to expand its sales into global market.

LUSHADE® BLACK is an ultra-low reflectance structural black pigment that absorbs more than 99.0% of visible light. This exceptional optical property helps suppress stray light and enhances the appearance of optical devices.

Additionally, its infrared reflectivity enables the formulation of black coatings that reflect infrared light. When used in coatings, it also helps suppress surface temperature rise.

LUSHADE® BLACK is a bismuth sulfide black pigment featuring a surface structure resembling sea urchin spines.

This structure enables the pigment to absorb more than 99.0% of visible light, resulting in an ultra-black pigment with extremely low reflectance. Moreover, it reflects infrared light, making it suitable for infrared-reflective black coatings.

It also effectively suppresses surface temperature rise, helping to reduce heating of the coated surface. With these properties, LUSHADE® BLACK is expected to find applications in the following areas.

Black Coating for Optical Lens Edges

Utilizes its low reflectance to prevent stray light for improved optical performance.

Low-Reflectance Coating Inside Camera Modules

Reduces internal reflections, contributing to clear and sharp image

quality.

Infrared-Reflective Black Coatings

Suitable for use in infrared-reflective black coatings for infrared-based devices, such as LiDAR, and for reducing surface temperature rise.

LUSHADE® BLACK is expected to become a key material that supports next-generation optical technologies across a wide range of industries.

Source : Ishihara Sangyo Kaisha, Ltd.

MOOG AT K 2025 TO DEMONSTRATE THE WORLD'S BEST MOTION CONTROL SOLUTIONS FOR PLASTICS MACHINERY

September 1, 2025 - East Aurora, NY, USA — Moog Inc. (NYSE: MOG.A and MOG.B), a worldwide designer, manufacturer, and systems integrator of high-performance precision motion and fluid controls and control systems, announced today that it will showcase its latest innovations for the plastics machinery industry at K 2025, taking place October 8–15 in Düsseldorf, Germany.

At Booth I-39 in Hall 11, Moog will feature a new generation of hydraulic, electrohydraulic, and electrohydrostatic products and systems designed to help machine builders achieve greater performance, reliability, and sustainability. A highlight of the exhibition will be a groundbreaking pump concept, incorporating unique patented design features that challenge traditional hydraulic approaches in injection molding. This innovation promises to deliver surprising advancements in performance, efficiency, and adaptability—inviting attendees to discover how Moog is redefining the possibilities in motion control technology.

"Moog continues to lead through engineering excellence—developing motion control technologies that not only meet today's

performance standards but help shape the future of plastics manufacturing. Our latest innovations reflect what's possible when deep expertise meets real-world customer challenges," said Harald Branz, Sales Manager at Moog Industrial.

The presentation at K 2025 will immerse visitors in Moog's commitment to innovation and collaboration. Attendees will explore the new pump technology firsthand at the centerpiece technology island, supported by additional displays showcasing Moog's advanced Electrohydrostatic Pump Systems alongside Servo and Servo-proportional Valves. This environment highlights Moog's approach of collaborating closely with customers to develop mission-critical solutions that enhance operational efficiency, boost productivity, and minimize environmental impact.

Moog's presence at K 2025 exemplifies its dedication not only to technical innovation but also to fostering strong partnerships with plastics machinery OEMs. This collaboration ensures that Moog delivers tailored, high-performance systems that address both current and future manufacturing needs.

"Customer collaboration drives our ability to innovate and engineer solutions that truly matter. At Moog, our passion is engineering excellence combined with forward-looking innovation—focused on long-term reliability and sustainable growth for our customers and their industries," concluded Branz.

Source : Press Release

SYENSQO AND TEIJIN CARBON ACHIEVE AEROSPACE QUALIFICATION FOR ADVANCED RESIN SYSTEM

Alpharetta, GA, September 5, 2025 - Syensqo has achieved FAA-sponsored NCAMP qualification for its PRISM® EP2400 epoxy resin system in combination with Teijin Carbon's Tenax™ IMS65 E23 24K Non-Crimp Fabrics (NCF) and woven unidirectional (UD woven) reinforcements.

The qualification, recognized by both FAA and EASA and formalized under material specification NMS 241 and process specification NPS 82401, is supported by a publicly available NCAMP Material Property Data Report, providing aerospace manufacturers with certified, design-ready material data to accelerate implementation where resin infusion offers clear performance and cost advantages.

"This qualification fills a critical gap in publicly available aerospace material data," said Rob Blackburn, Head of Customer Engineering at Syensqo. "It's the first resin infusion system in the NCAMP database, giving manufacturers a validated, scalable alternative to autoclave processing for applications where resin infusion makes sense such as integrated structures."

Closing the resin infusion data gap in NCAMP

PRISM® EP2400 is the first resin infusion material to be added to the NCAMP database. Until now, public NCAMP allowables have focused almost exclusively on prepreg systems, leaving a gap for OEMs seeking validated out-of-autoclave (OoA) resin infusion solutions.

This qualification directly addresses that gap, offering industry-approved, publicly available mechanical property data for a high-performance infusion process.

Technical benefits of PRISM® EP2400:

- Low viscosity system enabling robust and repeatable resin transfer processing
- Toughened and damage tolerant resin for high performance application
- Long and stable pot life for large or complex structure infusions
- One-part, low reactive system, developed for global shipping by sea, land, or air

Advantages of the NCAMP qualification:

- Faster adoption: mechanical testing and analysis are already complete
- Lower cost: qualification expenses significantly reduced
- Reduced program risk: OEMs can move directly to the next stage of certification for their aircraft or components

Ideal for both primary and secondary structures on commercial or defense aircraft, PRISM® EP2400 is suited for a wide variety of components, where its toughened resin system delivers higher performance than typical resin infusion systems, further enhancing the benefits of liquid resin processing.

Source : Press Release

Continued from page 22

emphasized the need for streamlined regulations, development of innovation portals, and creation of business clusters to facilitate smoother transportation and knowledge exchange. These measures are aimed at accelerating innovation and improving the industry's position in the global market.

Strong export orientation

As one of the world's largest producers and exporters of dyes and dye intermediates, India commands approximately 16–18% of global market share, particularly excelling in reactive dyes, which are the most consumed category worldwide. This dominance is rooted in the country's rich industrial legacy, a mature manufacturing base, and its strategic integration with the textile sector, which consumes nearly 70% of all dyes produced domestically.

The industry benefits immensely from its geographical clustering, especially in Gujarat and Maharashtra. Gujarat alone accounts for over 75% of the country's dye and dye intermediate production. This clustering has enabled economies of scale, shared infrastructure, common effluent treatment plants (CETPs), and an industrial ecosystem that supports seamless logistics, availability of raw materials, and skilled labor. The presence of such industrial clusters significantly reduces costs and enhances competitiveness, particularly for exporters catering to cost-sensitive markets in Asia, Africa, and Latin America.

India's strong export orientation further enhances its industry profile. Indian dyestuff manufacturers have established a footprint in over 90 countries, with growing demand from Southeast Asia, the Middle East, and Africa. Competitive pricing, a wide product range, and the ability to meet large-volume orders position Indian players favorably in global markets. Moreover, many Indian exporters are increasingly aligning with international environmental and quality certifications such as GOTS, REACH, and Bluesign, enabling them to tap into premium markets in Europe and North America.

Another strength lies in the country's large pool of technically trained chemists and engineers, which supports continuous improvement and innovation in manufacturing. While the industry still has room to improve its R&D intensity, leading firms are investing in green chemistry, digital color matching, and high-performance specialty dyes. This growing focus on innovation is helping Indian companies gradually move up the value chain, offering eco-friendly and application-specific colorants for technical textiles, packaging, food, and personal care industries.

Government policy support is also bolstering the sector. Initiatives like the PM-MITRA parks, incentives for setting up CETPs, and support under Make in India have created a conducive environment for large-scale, sustainable manufacturing. These policies aim to provide integrated infrastructure and encourage environmentally responsible production—both critical for a sector facing increasing scrutiny from global buyers.

India's dye and dyestuff industry, therefore, stands at an inflection point where its traditional strengths—scale, cost efficiency, export orientation, and skilled workforce—are being augmented by policy-driven infrastructure development and a shift toward sustainability and innovation. This unique combination of legacy and future-readiness positions India as not just a volume supplier, but an increasingly value-driven partner in the global colorant supply chain. As environmental and performance standards become more stringent globally, India's ability to evolve through clean technology, regulatory compliance, and product innovation will define its sustained leadership in this space.

Challenges

The industry faces a set of persistent and emerging challenges that could impact its long-term sustainability and global standing. One of the most pressing challenges is environmental compliance. The dye manufacturing process is water-intensive and often generates hazardous effluents. Strict regulations by the Central and State Pollution Control Boards, particularly in Gujarat—the industry's hub—have led to periodic shutdowns of non-compliant units. Many small and mid-sized enterprises struggle to invest in zero liquid discharge (ZLD) systems or common effluent treatment plants (CETPs), affecting their operational continuity.

Another key issue is raw material volatility. Many dye intermediates are derived from petrochemicals, and prices of critical inputs like benzene, toluene, and naphthalene are subject to international crude oil fluctuations. India also imports several key intermediates from China, and any disruption—such as trade restrictions or plant closures—creates immediate supply chain stress and price instability.

The lack of backward integration is a structural gap. A significant portion of

raw materials is sourced externally, making the industry vulnerable to global market dynamics. While some integrated players are emerging, a majority of Indian dyestuff manufacturers are dependent on external suppliers, which affects both cost control and delivery timelines.

Technological obsolescence is another limiting factor. Many units, especially SMEs, continue to operate with outdated manufacturing technologies, which hampers product quality, productivity, and environmental performance. This restricts their ability to compete in high-value global markets where customers demand eco-friendly and high-performance dyes.

Global competition is intensifying, particularly from countries like China, South Korea, and Turkey. Chinese manufacturers, despite regulatory hurdles at home, continue to dominate the supply of basic dyes and intermediates at aggressive price points. To remain competitive, Indian firms must move up the value chain, innovate in green chemistry, and strengthen their export logistics and customer service.

The sector suffers from limited R&D investment and innovation. While India has strong technical talent, institutional support for advanced dye chemistry research, new formulations, and sustainable alternatives is still nascent. This limits the industry's ability to develop proprietary products and capture premium markets.

In essence, while India's dye and dyestuff sector has scale, experience, and global linkages, addressing these challenges is critical for the industry to sustain its leadership, embrace sustainability, and move toward high-margin, future-ready segments.

Aiming for bigger global pie

The year 2025 presents a pivotal opportunity for India's dye and dyestuff industry to transition from being a volume-based global supplier to a value-driven, innovation-led, and environmentally sustainable sector. Building on the momentum of recent market growth, technological upgrades, and policy interventions, the industry must now chart a future that aligns with global trends and regulatory expectations.

First and foremost, adopting sustainable manufacturing practices must move from being an option to a necessity. With increasing scrutiny on the environmental footprint of textile and chemical processes, the industry should prioritize zero liquid discharge (ZLD) systems, waterless dyeing technologies, and bio-based dye formulations. Investments in clean production technologies will not only reduce regulatory risk but also help capture demand from eco-conscious global brands.

Second, accelerating innovation and R&D is essential to remain competitive. The sector needs to develop high-performance, low-impact dyes, especially for digital textile printing, technical textiles, and non-textile applications such as food, cosmetics, and pharmaceuticals. Collaborative innovation models involving academia, research institutes, and private players will be critical in driving product differentiation and export diversification.

Third, strengthening backward integration and securing raw material supply chains must become a strategic priority. Reducing dependence on imported intermediates—especially from China—by developing domestic capabilities will enhance resilience against price volatility and geopolitical disruptions. Setting up dedicated dye intermediates parks and incentivizing local production can support this shift.

Fourth, supporting MSMEs through policy and financial support is crucial. A significant portion of the dyestuff industry is comprised of small and mid-sized enterprises that lack the capital to modernize or expand. Targeted government schemes, low-cost financing, cluster-based infrastructure, and shared R&D facilities can empower MSMEs to scale sustainably and upgrade technologically.

Fifth, deepening global market access and branding India as a quality supplier of sustainable dyes will be vital for export-led growth. The industry must focus on gaining international certifications (like Bluesign, GOTS, and ZDHC compliance), enhancing traceability, and participating in global expos to strengthen its position in value-driven markets such as Europe, the U.S., and Japan.

Finally, the way forward will require stronger regulatory clarity and institutional coordination. Streamlining environmental and industrial clearances, digitizing compliance processes, and setting up centralized regulatory portals will ease business operations and attract new investments.

Source : Indian Chemical News

Shaping Tomorrow Petrochemicals as the Backbone of Indias Growth Story

Team Chemical Market

Introduction:

India's petrochemical industry plays a key role in the country's growth, supporting sectors like agriculture, automobiles, construction, packaging, and manufacturing. As demand for chemicals is set to nearly triple by 2040, the industry could reach a USD 1 trillion market size. Indian companies are working to boost their competitiveness and cut down on imports, making this sector central to the nation's $5 trillion economy goal. This article looks at opportunities in specialty chemicals, the need for more R&D investment, and other important market gaps.

How is the petrochemical industry in India driving growth with investment and innovation

India's petrochemical industry is set to receive over USD 87 billion in investments over the next decade, making up more than 10% of global petrochemical growth. Even with many manufacturers and new factories, the demand for plastics and other polymers is rising faster than local production can keep up, so India still depends on imports. The main challenge is to compete globally, adopt greener practices, reduce waste, and connect all parts of the production chain to ensure efficient operations from raw materials to finished products.

India faces increasing demand due to population growth, industrialization, and evolving lifestyles, all contributing to higher requirements for petrochemical products such as plastics, fibers, and packaging materials. If local production does not meet this demand, imports will continue to rise, leading to increased costs and greater dependence on other countries.

India is aiming to reach a USD 5 trillion economy by 2026, and the petrochemicals sector is expected to play a huge role as it supports many industries such as agriculture, cars, packaging, construction, manufacturing, and more. The demand for chemicals in India is going to grow almost triple, and the petrochemicals sector could grow to USD 1 trillion by 2040.

To support this growth, the country is expected to attract over USD 87 billion in petrochemical investments in the next 10 years. The government is also encouraging growth through implementing policies such as 100% FDI, petroleum, chemicals, and petrochemicals Investment Regions (PCPIRs), and plastic parks.

Challenges amidst successful growth:

India has relied on imports, especially for polymers, due to limited infrastructure and logistics challenges. The country also faces problems from volatile crude oil prices. At times, these issues have not been managed well, which has had a significant impact on the petrochemical industry.

For instance, consider two instances:

Crude oil price volatility:

India remained heavily dependent on naphtha, and thus, petrochemical costs rose when crude spiked. There were also delays in projects such as new PCPIRs and expansion of SPRs that faced delays, which limited the country's resilience to crude shocks.

Reductions in fuel subsidies and continued support for LPG and kerosene still expose government finances to crude price fluctuations. While biofuels and renewable energy are being promoted, the transition has not been rapid enough to significantly reduce the country's dependence on crude imports.

The country has encouraged refineries such as Reliance Jamnagar, IOCL Paradip to add to the petrochemical units, thereby making the crude usage more flexible. This has helped balance the losses in fuels with the gains in petrochemicals when the crude oil prices jump higher.

Overall, India has managed the crude price volatility fairly well through diversified sourcing, strategic reserves, and refinery-petrochemical integration. Nevertheless, the failure to diversify into gas-based feedstocks, delays in infrastructure, and partial subsidy dependence continue to make the nation vulnerable during crude spikes.

Infrastructure and logistics bottlenecks:

India has begun to cluster the parks as it has helped to reduce transport costs and created economies of scale. The investment in coastal refineries and petrochemical hubs near the ports improved logistics. This has not worked for the mid-size players as they still operate in silos instead of integrated hubs, which has led to inefficiencies. There were also some policy execution gaps, as some announced plastic parks and PCPIR projects remained under-utilized or only partly developed due to land, funding, and clearances.

Market gaps in the Indian petrochemical

industry: what are some missing pieces of growth?

The Indian petrochemical industry is often celebrated as one of the fastest-growing in the world. There are some projections of billions of dollars in investments and expanding demand across the packaging, textiles, construction, and automotive sectors. The discussion revolves around capacity expansion, new refinery-petrochemical complexes, and government initiatives such as PCPIRs and sustainability measures.

Lack of focus on specialty chemicals and limited investment in the core R&D and innovation are some topics that remain underexplored. However, these blind spots could hold the country back from realizing its full potential in the global petrochemical value chain.

Traditionally, India's petrochemical industry has focused on bulk polymers like polyethylene, polypropylene, and PVC, which are essential for packaging, pipes, and construction. However, the market is now shifting toward specialty and performance chemicals, including high-value products like engineered plastics, composites, adhesives, coatings, and advanced polymers used in electronics, renewable energy, aerospace, and healthcare.

Specialty chemicals contribute disproportionately to profitability because they cater to niche and technology-intensive applications. Countries like China, South Korea, and Germany have already developed strong positions in the segment, thereby investing heavily in the downstream innovations and advanced manufacturing.

Petrochemical companies are developing models to embrace transformative strategies:

Customers are showing interest in value-added petrochemical products across all sectors. Therefore, the petrochemical producers are focusing on integrating their value chains and expanding their product portfolios to include acrylates, specialty polymers, and others.

In the competitive landscape of the petrochemical industry, both horizontal and vertical value chain integration can have a significant impact. Steam integration across refining and petrochemical units, integration of refining byproducts- naphtha, off-gas as feed to cracker unit, combining aromatics byproducts with refinery gasoline pool.

Digitalization can optimize plant operations and thus improve the petrochemical supply chain in the country. The industry has enjoyed the benefits of cost management and thus has enhanced reliability and real-time optimization. One leading petrochemical player in Thailand improved its plant uptime by adopting a Digital reliability platform.

They have used big data, artificial intelligence, and machine learning to analyze equipment condition and get predictive analysis results as well as actionable recommendations.

One of the top global leaders in process technologies has teamed up with the world's largest producer of bio-based polymers to explore a breakthrough in Brazil: the use of an electric cracking heater to decarbonize operations. The cutting-edge header is built on the proven short-residence time (SRT) technology. This is reimagined for electric power and designed to be scalable for future needs. The innovations like this mark a turning point for the petrochemical industry and thereby offering the potential to shrink carbon footprints, boost efficiency, and pave the way for truly sustainable growth.

What could be some possible risks?

India is continuously relying on bulk polymer production, and this is creating risks of being locked into low-margin and high-volume segments where the competition is intense and cost advantages are favoring Middle Eastern or US producers with cheaper feedstocks. The expansion of speciality chemicals is therefore not just an opportunity, but is a necessity for the country to climb up the petrochemical value chain, reduce import dependence, and improve trade competitiveness.

Another gap lies in the R&D. There are some advancements with the digitalization, but the true innovation is in areas like:

New materials development, such as biodegradable plastics, high-performance composites, catalysts designed to improve yields and reduce energy usage, green chemistry for sustainable manufacturing, and advanced recycling technologies to address the plastic waste challenges.

India is falling behind in these areas, with R&D spending in the chemical and petrochemical sector often below 1% of revenues, compared to 3-5% for global leaders like BASF and DOW. This underinvestment limits Indian companies' ability to develop their own technologies or breakthrough products, so many firms rely on licensed technologies from abroad.

India needs targeted policies to attract investments, support midstream and downstream SMEs, and create incentives for high-value product manufacturing. On the R&D front, both government and industry must commit to higher spending and encourage academia-industry collaboration, and build research hubs that focus on petrochemical innovation.

Where is the country's petrochemical industry standing now?

The Indian petrochemical industry stands at an inflection point where investment, innovation, and sustainability are no longer separate aspects; they are interconnected drivers of growth. The domestic demand is continuously outpacing the supply, and the industry is not merely relying on capacity expansion. Instead, they are embracing new technologies, partnerships, and forward-looking strategies that align with both global competition and national sustainability goals.

The international companies are exploring electric cracking heaters, and this is a kind of transformative innovation that the country should prioritize, too. By adapting these technologies, the Indian sector can address its heavy dependence on imports while positioning itself as a future-ready, low-carbon manufacturing hub.

Takeaway:

The petrochemical industry in India is not just about meeting the growing demand for polymers and plastics. The nation is on its journey to become more self-reliant, competitive, and sustainable. With over USD 87 billion in investments expected, strong governmental support, and increasing demand from diverse industries, the sector is positioned for remarkable growth. However, India must look beyond bulk polymer production to capture opportunities in specialty chemicals, invest significantly in R&D, and embrace innovation across the value chain. Therefore, the path ahead is all about balancing capacity expansion with high-value innovation and ensuring the industry drives both economic growth and sustainable development for decades to come.

Indias Dollar 7 Billion Dye Industry Opportunities Challenges and the Road Ahead

Vinodhini Harish

Introduction:

India's dye and dyestuff industry is a key part of its chemical sector. It has a long history and continues to play a significant role in the global market. The country is expanding exports and now accounts for about 16-18% of total global dye production. Dyes are used not only for coloring fabrics but also in industries such as textiles, leather, paper, plastics, and food. Because of this wide usage, global demand for dyes keeps growing, and India is well positioned to meet it. In this article, we explore the industry's advancements and how growth in end-use industries is impacting the Indian dye sector. Let's dive in.

How is the Indian dye industry performing?

The global standing of the country in the dye industry is due to the better governmental policies and infrastructure, which includes cleaner production methods, better ports, and energy support. It can still strengthen the position even more with the given support. Since many industries are dependent on dyes, the sector is catering to demands for exports, jobs, and foreign exchange earnings. The textile industry is one of the strongest export sectors, and this relies on the dyes. A strong dye industry means a stronger

textile sector as well. As the global demand rises, the countries will look for reliable suppliers, and India can certainly fill the gap and even become the world leader in dye manufacturing.

In 2024, the Indian dye and dyestuff market was worth about USD 7 billion, and it is growing quickly at around 9-10% every year. This pace is expected to continue in the next 5 years. The main reasons for the growth are:

More textile production in India, as this sector uses a lot of dyes than any other sector.

Higher global demand for specific dyes, such as reactive and disperse dyes.

China +1 strategy – many global brands don't want to be heavily dependent on China for their imports and thus they are turning towards India as an alternative suppliers.

India has already exported dyes to over 90 countries, and the biggest buyers are the U.S, Germany, China, Bangladesh, Turkey, and Brazil. India exported about USD 3.5 billion worth of dyes in the FY2023-2024, and that is because Europe had weaker demand, and the raw materials prices were also at a peak.

Things are expected to change – starting in 2025, exports are expected to rise again as input costs ease and global demand improves.

This growth matters – why:

The USD 7 billion market is growing steadily at 10% a year, showing strong future potential. This growth creates more opportunities for businesses, workers, and the economy.

The growth gives India massive export power, which is selling to 90+ countries that making the country a trusted and diverse supplier. Even if the demand falls in one region, such as Europe, other markets can keep the industry going and keep it stable.

The China +! Strategy is a huge advantage, and the companies reduce their dependency on China. The large production capacity of India, combined with lower costs and a skilled workforce, makes India the next best option for other countries. The export dip in 2023-2024 revealed that the sector is sensitive to global conditions. The rebound is expected in 2025, and this highlights the resilience and strong demand outlook.

Indian regions where the dye production is higher:

Most of the country's dye production happens in just two states: Gujarat and Maharashtra. Gujarat alone makes about 75% of all dyes and dye intermediates in India. Especially, Ankleshwar and Vapi are two big industrial hubs in Gujarat that contain many small, medium, and large factories making dyes. The reactive dyes are the most widely produced product, but there are other dyes as well, such as acid dyes, direct dyes, and disperse dyes. India is strong in the production of reactive dyes, as it makes about 40% of the world's supply. India also excels in producing dye intermediates like vinyl sulfone, H-acid, and gamma acid. These are the essential raw materials used in the production of dyes.

The concentration in Gujarat and Maharashtra shows the industry's dependence on these states, and this also shows the risks if these regions face problems like pollution control, water scarcity, and supply chain disruptions. Since India supplies nearly half the world's reactive dyes, it has a strong influence in the market, and this is crucial because reactive dyes are in high demand across the globe, especially in textiles.

By producing critical intermediates like Vinyl sulfones and H-acid, India is making finished dyes while controlling important steps in the value chain. As a result, international buyers have become increasingly reliant on Indian suppliers.

How Textile Industry Advancements Are Shaping India's Dye Sector:

The textiles dye segment was valued at USD 395.5 million in 2024, and this is expected to reach USD 624.54 million by 2033 with a growth rate of 5.13%.

Apart from the rising demand, the textile industry is also advancing, and the trend of digital textile printing is causing a huge stir in the industry because it uses less water and fewer chemicals. In February 2025, Color Jet India Ltd. launched Fab Jet Pro. This digital printer showcases the ultra-wide direct-to-fabric design and industrial-grade build. The ultra-wide feature enables the print to print on fabrics up to 3.2 meters wide with mighty output of up to 13,000 sq meters per day, and thus making it ideal for large-volume textile use like home décor and furnishings.

The advanced print technology is equipped with either 32 Kyocera or 48 Konica Minolta print heads, and that is paired with a sticky belt system that ensures accurate fabric handling and high-resolution clarity. The printer is engineered with eco-consciousness to have lower water and energy consumption, thereby helping the manufacturers transition to more sustainable textile production.

With these tools, even the smaller units in India can step up to high-end production and compete globally.

With industry advancements in mind, it's also crucial to explore the role of government support. What does the Indian government have to offer?

In 2025, the Indian government offered supreme support to the growth of the dye and textile industry. The Union Minister of Textiles, Giriraj Singh, launched big events like Garment Technology Expo and DyeChem World Bharat Tex 2025, and these platforms displayed new technologies to the world that exist in the clothing production and sustainable dyes.

The Future Forward Factory project aims to create textile factories that are near net-zero. The initiative is created by global fashion and textile players to transform the textile production to near net-zero. The goal is to cut down energy usage, reduce water consumption, and minimize pollution across dyeing and finishing processes. The project covers advanced dying techniques such as digital printing, waterless dyeing to save water. It also features better effluent treatment plants and chemical recycling and even incorporates AI-driven monitoring for efficiency.

Apart from the benefits, there were some challenges in the project as well.

The processes include setting up sustainable factories, as it requires a big investment in machinery, water treatment systems, and renewable energy. The Indian dyeing units are mostly small and mid-sized, and adopting advanced digital or waterless dyeing was difficult.

The international buyers are after eco-friendly supply chains, and the local suppliers struggled to meet the standards at first.

Nevertheless, the Indian brands, manufacturers, and sustainability organizations worked together to share the technology and investments to overcome these challenges. There were also Indian policies, such as Production Linked Incentive (PLI) schemes and textile parks, that provided funding and infrastructure.

Overall, India is in a better position now due to the better policy support, such as easier regulations, innovation portals, industrial clusters for better transport, and knowledge sharing. On the other hand, the country has a strong export orientation as it produces 16-18% of the world's dyes, that especially dominated by reactive dyes; about 70% of the dyes go to the textile industry. The exports are benefiting due to competitive pricing, large volumes, and international certifications like GOTS, REACH, and Bluesign that are helping tap the premium global markets.
Likewise, the geographical strength also plays favouring to the country's growth. Gujarat and Maharashtra are the biggest hubs, and Gujarat alone is producing 75% of India's dyes. These clusters are giving cost advantages with the shared infrastructure, effluent treatment plants, and raw material access.

There is always room for improvement:

Most of the Indian dye markets are relying on exports for raw materials. There are only a few companies that are integrated with the making of raw materials and final dyes. This makes the dye industry vulnerable to global price changes and supply disruptions.

Likewise, there are still small and medium enterprises that use old methods. This reduces the quality, productivity, and eco-friendliness. This also stops them from entering the arena for premium global markets. The customers' demand is towards advanced and sustainable products.

In order to have better control over the costs, while ensuring reliable delivery, which the global buyers expect, India should adopt backward integration, and they have to upgrade their processes.

Final thoughts:

India's dye and dyestuff industry is now worth USD 7 billion and growing at 10% yearly. With Gujarat and Maharashtra as strong production bases and a global share in reactive dyes, India is positioned for leadership, but must address raw material dependence, SME technology gaps, and environmental compliance. By advancing backward integration, innovation, and sustainability, Indian manufacturers can secure the industry's future role in global supply chains.

Air Products Successfully Completes First Liquid Hydrogen Fill of the World's Largest Hydrogen Sphere at NASA's Kennedy Space Center

LEHIGH VALLEY, Pa., Aug. 21, 2025 /PRNewswire/ -- Air Products (NYSE: APD), the world's leading supplier of hydrogen, today announced it has successfully completed the first fill of the world's largest hydrogen sphere at the National Aeronautics and Space Administration's (NASA) Kennedy Space Center located on Merritt Island, Florida. NASA uses liquid hydrogen combined with liquid oxygen as fuel in cryogenic rocket engines.

To complete the fill, Air Products delivered over 50 trailer loads of liquid hydrogen – over 730,000 gallons in all - to NASA's new sphere. The NASA hydrogen sphere is the world's largest liquid hydrogen tank, measuring 90 feet tall and 83 feet in diameter. The hydrogen will be used to fuel NASA's Artemis missions, which aim to return humans to the Moon for the first time since the Apollo era and establish the first long-term presence on the Moon.

"Air Products has a long history dating back into the 1950s of working with NASA, and stretching from well before the successful Apollo 11 moon landing to more recent missions to study Mars," said Francesco Maione, Air Products' President, Americas. "This hydrogen fill, which is Air Products' largest ever for NASA, successfully demonstrates our ability to supply world-scale levels of industrial gases safely and reliably through our robust supply chain, so NASA can confidently continue its important work for future missions to the Moon and beyond."

Air Products' working relationship with NASA began in 1957. It has included supplying NASA with liquid hydrogen and other industrial gases to advance the U.S. Space Program including Orion, the Space Shuttle, and Apollo, and reaching all the way back to the earliest Mercury program missions. In addition to supplying product for space launches, Air Products also has had a long-term relationship with NASA's engine testing program at Stennis Space Center in Mississippi, Johnson Space Center in Texas, as well as Marshall Space Flight Center in Alabama.

Astronautic applications are a key business for Air Products, and the Company is also heavily involved in supporting the increasing number of privatized space launches and missions of several independent companies.

Source : Air Products

Chung-Ang University Researchers Demonstrate Paper Electrode-Based Crawling Soft Robots

SEOUL, South Korea, Aug. 21, 2025 / PRNewswire/ -- Biological systems have inspired the development of next-generation soft robotic systems with diverse motions and functions. Such versatility in soft robots—in terms of rapid and efficient crawling—can be achieved via asymmetric bending through bilayer-type actuators that combine responsive liquid crystal elastomers (LCEs) with flexible substrates. This, in turn, requires temperature-responsive LCEs with accurate temperature regulation via elaborate Joule heating configurations.

However, it is a complicated task owing to the difficulty in generating asymmetric motions using isotropic thermal distributions, necessitating simple temperature gradient patterning and bilayer fabrication technologies.

Addressing these challenges, a team of researchers from the Department of Chemical Engineering at Chung-Ang University, led by Professor Suk Tai Chang and Assistant Professor Changyeon Lee, have proposed a facile electroless plating method for patterning asymmetric temperature gradients on paper substrates, ultimately resulting in the development of innovative caterpillar-inspired soft

robots. Their findings were made available online and published in the journal Advanced Functional Materials on 30 July 2025.

Prof. Chang sheds light on the motivation behind their research. "Our motivation for this work comes from the fascinating world of nature, specifically the crawling motion of caterpillars. We were intrigued by how such a simple organism could achieve highly efficient locomotion through sequential bending and stretching. I wanted to replicate this elegant mechanism in a soft robotic system, but without the complexity of traditional methods that often require intricate heating configurations."

With this vision in mind, the researchers chose cellulose-based paper—a common and eco-friendly material—as the substrate for the soft robots. Furthermore, instead of complex circuit designs, they turned to printing-based electrode patterning technology to dramatically simplify the fabrication process.

"Cellulose-based paper substrates provide distinct advantages due to their porous structure, which enables facile electrode deposition via solution-based processes and offers high mechanical deformability," remarks Prof. Lee.
In this study, the team deposited Cu electrodes asymmetrically on paper substrates by changing electrode widths. This variation caused electrical resistance gradients, producing significant temperature gradients across the substrate. This process finally resulted in energy-efficient soft robots capable of directional crawling at a low actuation voltage value via paper substrate integration with LCEs in a bilayer architecture.

"In this way, we successfully achieved asymmetric bending motion, which is a difficult feat for conventional soft robots. By precisely controlling the temperature gradient on the paper-based electrode, we were able to induce differential bending, which mimics the natural crawling motion of a caterpillar. This novel mechanism enables directional and controlled movement for soft robots," points out Prof. Chang.

The lightweight and thin crawling robot presented in this work could be used for environmental monitoring or performing special tasks in environments that are difficult for humans to reach, whether due to physical constraints or safety concerns.

Overall, the simplicity and cost-effectiveness of the electrode patterning process, in combination with the abundance and eco-friendly nature of paper-based actuators, is a promising approach for the scalable and sustainable fabrication of real-life soft robots, paving the way for the widespread integration of soft robots into our daily lives.

Source : Chung-Ang University

LG Electronics LG Unveils AI-Driven, Energy-Efficient Laundry Solutions at IFA 2025

SEOUL, Aug. 21, 2025 — LG Electronics (LG) is set to showcase a comprehensive suite of advanced AI-powered laundry solutions with maximized energy efficiency at IFA 2025. The new lineup meets a growing demand for sustainable appliances in the European market, with energy-efficient laundry products that accommodate a variety of lifestyles and living spaces.

At the center of the lineup is the LG HeatPump WasherDryer – also known as LG WashCombo – which integrates the essential benefits of LG's washer and dryer in an all-in-one unit. First introduced in Europe as part of LG's premium SIGNATURE lineup, the original model earned the highest efficiency rating of Energy Class A for its full washing-to-drying cycle. The new HeatPump WasherDryer upholds this benchmark, once again delivering Energy Class A performance across the entire cycle. Equipped with cutting-edge DUAL Inverter HeatPump™ technology and low-GWP refrigerants such as R290, the WasherDryer delivers exceptional energy efficiency while meeting Europe's strict standards. Its built-under design with large load capacity optimizes space utilization for European households, while advanced AI algorithms provide tailored fabric care. With this highly efficient lineup, LG aims to reinforce its leadership in Europe's energy-conscious washer-dryer all-in-one market.

Grounded in its sustainability efforts, LG's new washers feature the Microplastic Care Cycle, which reduces up to 60 percent* of microplastics released from synthetic fibers during washing. In addition, advanced AI motion control enhances energy efficiency to the industry's highest level.

Leveraging AI Core-Tech driven by LG's innovative AI DD™ technology, the washers' AI Wash™ function detects weight to select the optimal wash pattern – minimizing damage to delicate fabrics while consuming less energy.

LG's new dryer models also achieve industry-leading Energy Class A efficiency. Powered by the AI Dual Inverter™ technology, the AI Dry™ feature intelligently detects the weight, fabric type and humidity of the load, to adjust the drying speed, particularly for soft fabrics and reduce energy consumption.

Recognizing that many European customers prefer installing appliances themselves, LG provides self-installation checkup features through the LG ThinQ service. Moreover, the newly introduced Comfort Kit for the new 24-inch European laundry lineup enhances usability and accessibility for all households.

With this expanded portfolio of heat pump laundry solutions, LG continues to grow its presence in Europe by addressing local needs and preferences. Intuitive displays, streamlined controls and automatic cycle optimization simplify everyday laundry tasks, while stylish designs – including the 24-inch WashTower European model available in multiple colors – seamlessly integrate into modern interiors.

"Drawing on extensive customer insights and advanced AI, LG has gained a deep understanding of Europeans' unique lifestyles and laundry habits," said Lyu Jae-cheol, president of the LG Home Appliance Solution Company. "This enables us to deliver solutions tailored to local needs, further strengthening our leadership in Europe across the global home appliance market."

Source : LG

Indias Growing Reliance on U S Ethane A Boon or a Vulnerability

Team Chemical Market

Introduction:

Ethane is rapidly emerging as a crucial feedstock for the global petrochemical industry and is becoming the backbone of plastics, packaging, textiles, and countless other products. In India, soaring demand for petrochemicals has made ethane a preferred feedstock due to its efficiency and cost advantages over traditional naphtha. However, India's lack of ethane-rich natural gas reserves means it must rely on imports—primarily from the U.S.—supporting its chemical sector but creating new strategic vulnerabilities. This article explores how India's growing reliance on U.S. ethane delivers major benefits for industry while increasingly exposing the country to supply-related and geopolitical risks, underscoring the need for careful long-term planning.

Ethane's role as a preferred petrochemical feedstock exposes the vulnerability of India:

Ethane has become a preferred feedstock due to its high ethylene yield, cost efficiency, and lower carbon footprint compared to naphtha. Yet, India's heavy and increasing dependence on imported ethane, mainly from the U.S., introduces a strategic vulnerability that could affect its industrial security.

The petrochemical industry is the backbone of the modern economy as it provides essential raw materials for plastics, textiles, fertilizers, and countless consumer goods. Traditionally, naphtha has been dominating as a feedstock for producing ethylene, which is considered the building block in the petrochemical sector. However, in the past two decades, ethane has replaced naphtha and is considered an attractive alternative. Ethane is capable of yielding higher ethylene, combined with cost advantages, and a relatively lower carbon footprint.

India's petrochemical sector is expanding rapidly and has embraced the shift to ethane. Yet, the country remains reliant on imported ethane, especially from the U.S., which creates a new vulnerability. While the move from naphtha to ethane improves efficiency and competitiveness, it simultaneously heightens strategic risks related to supply concentration, infrastructure, and sustainability—thus sharpening the dilemma facing India's industry.

Why has ethane become the preferred feedstock?

There are three major reasons why ethane is a preferred feedstock in recent times.

High ethylene yield: Ethane is primarily composed of two carbon atoms and six hydrogen atoms; thus, when cracked, it produces a high proportion of ethylene compared to naphtha. Whereas naphtha produces a mix of ethylene, propylene, butadiene, and aromatics. The petrochemical companies are driving towards maximizing ethylene production for polyethylene, PVC, and other derivatives. Since ethane provides them a more targeted and efficient pathway, many petrochemical companies are after ethane for feedstock, and they have replaced naphtha with ethane.

Cost efficiency: The shale gas revolution in the U.S unlocked vast reserves of natural gas liquids that include ethane. The abundance of ethane has made it cheaper than naphtha in the global markets. Indian companies used to import large amounts of naphtha or crude oil for feedstocks; now they have shifted to ethane, and this has improved the profit margins for countries like India.

Lower carbon footprint; Ethane cracking is more energy-efficient than naphtha cracking. Additionally, the ethane cracking process results in lower greenhouse gas emissions per unit of ethylene produced. Since we live in the era where sustainability pressures are mounting, the transition from naphtha to ethane has helped these companies to align their company goals while maintaining competitiveness.

Exploring the strategic vulnerabilities:

India is moving towards ethane-based feedstocks, which is rational and forward-looking, but the dependence on one country source, especially the US, has created multiple vulnerabilities.

- Supply concentration risk: India currently lacks domestic ethane recovery infrastructure at scale. India lacks natural gas that contains a good amount of ethane gas and thus the country can't produce ethane on its own. While other countries like the U.S and the Middle East have plenty of ethane-rich gas. Therefore, India is fully dependent on the U.S shale gas boom to get its ethane. Thus, we can see the risk right there. If something goes wrong in the U.S, like the government putting limits on the exports or if some political problems arise affecting shipping routes, or even natural disasters, that could affect production and ports, then ethane supply to India could be affected badly, and the petrochemical industry.

- There is price volatility in ethane imports: one of the biggest challenges is that India has a growing dependence on U.S ethane, and it suffers from price volatility. The price of ethane is not stable on its own as it is tied to the economics of U.S shale gas production and the wider global energy market. In the United States, ethane is separated from the Natural Gas Liquids(NGLs), and the price depends on the domestic supply-demand balance. The ethane supply becomes abundant when the shale gas production grows and thereby keeping the prices low. However, if the U.S shale drilling slows down due to government policies, environmental restrictions, or when the crude oil prices fall, it makes the shale gas less profitable, and the ethane supply could shrink and drive the prices high.

Likewise, the American petrochemical industry is also using ethane more and making it less available for exports. Therefore, the export prices for Indian buyers can increase with the U.S consumption.

The shipping costs of the ethane gas, transporting it in the special cryogenic tankers, require heavy investments. If the global liquified natural gas (LNG) shipping rates rise due to fuel costs, port congestion, or a shortage of tankers, then the delivered price of ethane to India can climb sharply. Ethane is indirectly linked to crude oil benchmarks; therefore, when crude oil

prices increase, naphtha becomes more expensive, and this can push global ethane demand higher and raise its price. Conversely, when the crude prices fall, the relative advantage of ethane can narrow.

- India should also deal with infrastructure constraints. Ethane is a cryogenic liquid, and it requires specialized shipping, handling, and storage facilities at -89°C. Although India invested in such infrastructure, it is limited to a few hubs such as Jamnagar, Dahej. Further investment in the infrastructure seems less flexible compared to naphtha, which is easier to transport and store.

Reliance eyes US ethane expansion as the Global trade Landscape transforms:

Reliance Industries (RIL) is looking to bring in more ethane from the United States as the trade is flowing and the price policies are shifting. Reliance aims to lock in cheaper feedstock and become more cost-competitive by importing more U.S ethane. The analytical reports state that typical ethylene yields approximately 80-84% of ethane, while 29-34% of naphtha. Ethylene is the core monomer of polyethylene, PVC, etc.

Reliance has built a full "US-to-India Ethane" chain that includes pipeline, ships, terminal, and cracker integration. The aim is to feed multiple sites like Dahej, Hazira, and Nagothane.

Reliance was the first Indian company to secure a dedicated supply chain for ethane. The company already co-owns and operates a fleet of six Very Large Ethane Carriers (VLECs). These massive ships were built to carry ethane from the United States to Reliance's Dahej Terminal in Gujarat. This system allows Reliance to import Ethane reliably in large volumes. Reliance is also expecting to expand its inland infrastructure and plans to build a 100 km pipeline from Dahej to Hazira in Gujarat. This helps in moving ethane efficiently to another of its petrochemical complexes. According to filings with India's downstream regulator, this pipeline will specifically carry ethane.

On the other hand, state-owned enterprises are also stepping into the ethane space. ONGC has chartered two large ethane carriers that reflect their plan to import ethane in their own way. GAIL is investing in downstream capacity, and thus, they have announced a 1.5 million metric tonnes per annum ethane cracker in Sehore, Madhya Pradesh. This is estimated to cost around $6 billion. Ethane is no longer an experiment; it is becoming a mainstream feedstock that could redefine how India produces its plastics and petrochemicals in the coming decades.

Takeaway:

Ethane is seen as more beneficial because of its attributes, like cleaner, cheaper, and more efficient. In addition to these benefits, it produces more ethylene when cracked in petrochemical plants. Therefore, the overall process is less costly and more environmentally friendly. Therefore, Indian companies are building a specialized supply chain to import ethane from the U.S. This factor also creates vulnerability, and policy changes, natural disasters, shipping route problems, and geopolitical tensions can directly affect the Indian petrochemical sector. This will only raise costs and slow down production and thereby impact industries that are dependent on petrochemicals, from packaging to automobiles. To manage the risk, India should diversify its sources and explore ways to increase domestic natural gas production or utilize other feedstocks, or even consider investing in renewable and bio-based options for the long term.

Rochester Midland Corporation Acquires Decon Water Technologies

Rochester, N.Y., Aug. 22, 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 Decon Water Technologies, LLC ("Decon"), a Water Treatment Service Provider Based in Phoenix, AZ. With over 30 Years of Expertise, Decon Offers Customized Water Treatment Programs Integrating Proprietary Chemistry with System Mechanics, Ensuring Full Regulatory Compliance While Reducing Costs and Environmental Impacts for Its Customers.

Jim White, CEO of Rochester Midland, Commented, "We Are Excited to Welcome Decon to the Rochester Midland Family as This Acquisition Further Expands Our Presence in Wastewater Treatment Applications. Decon Brings a Highly Skilled Team, Industry Leading Chemistry and Advanced Automation to Rochester Midland."

Marten Hebert, Founder of Decon, Commented, "We Are Thrilled to

Partner with Rochester Midland in This Exciting Next Chapter. Their Excellent Reputation, Values and Commitment to a Smooth Transition Made Them a Logical Choice as We Were Contemplating Our Options."

Jim White, CEO of Rochester Midland, Added, "We Continue to Seek Additional Partnership Opportunities with like-Minded Businesses to Further Our Mission of Becoming a World-Class Water Treatment Platform with Differentiated and Value-Added Capabilities for Our Customers."

Source:Rochester Midland Corporation

The Domino Effect Soda Ash Market Dynamics and Their Industrial Impact

Vinodhini Harish

Introduction:

The global soda ash industry has experienced consecutive disruptions that have altered its demand, supply, and trade dynamics. The initial shock was the COVID-19 pandemic, which sharply reduced industrial activity and weakened demand in sectors such as glassmaking, detergents, and others. The Russia-Ukraine war in 2022 introduced further uncertainty, primarily through soaring energy costs and shipping challenges. Given that soda ash is vital in industries like glass, packaging, soaps, and chemicals, the ripple effects of these global events can leave lasting impacts on trade flows, competitiveness, and market tightness. In this article, we analyze how these crises have shaped the growth of the soda ash market and examine the ways end-use product demand fluctuations have influenced overall market development.

The first shockwave: COVID-19 impact on the global soda ash market:

The pandemic caused significant disruptions in industries linked to soda ash, such as glass and detergents, creating a ripple effect that continues to shape today's market conditions. In these sectors, demand experienced considerable fluctuations directly tied to the pandemic and broader market dynamics. As many countries began emerging from COVID-19 restrictions and economies started recovering, the Russia-Ukraine war in 2022 introduced another global disruption. This conflict brought new uncertainties, especially through increased energy prices and sanctions, further stressing the soda ash industry.

In February 2022, as Russia's invasion started, the sanctions disrupted trade flows and increased energy prices. Since Soda ash production is energy-intensive, the higher fuel costs and restricted supply chains have a great impact. Both COVID-19 and the war created turbulence in demand, supply, and costs. Overall, there were multiple crises that compounded each other, and this magnified the challenges faced by the soda ash market.

Soda ash is the primary raw material utilized in the manufacturing of basic

goods such as architectural and automotive glass, glass packaging, sodium silicates, soaps, and detergents. There are several other smaller applications as well. The number of applications shows why disruptions in consumer demand, such as housing, autos, and packaging, directly affect soda ash consumption.

Since COVID has slowed down the industrial processes and production, and that has led to less construction, fewer cars were made, and less glass packaging was done, the demand for soda ash and its usage dropped. Not all industries declined equally during COVID, but the global demand decreased. The statistical evidence showed that there was about a 5.5% decline due to COVID.

Soon after the recovery in 2021, the restrictions were eased, and the demand began to bounce back sharply. The demand not only recovered but also surpassed the levels that were in 2019. This indicates the structural growth potential in soda ash consumption. But the concern was about supply-side shrinkage, which is less production capacity and more demand that leads to market tightness.

The supply-demand imbalance was expected, and the war shortage was beyond expectations. This was mainly due to the energy disruptions, and this has also reduced the trade flows.

Role of Russia and Ukraine in the soda ash market – the second blow:

Russia is not a significant player in the world soda ash market, and thus, the direct supply impact of these countries was significantly small. Russia and Ukraine's consumption shares are only 4.3% and 0.4%. In addition to that, Russia's soda ash trade is mostly regional, which shows why global soda ash markets are not heavily dependent on Russian exports.

In 2024, about 84% of the Russian exports were delivered within CIS, and 68% in 2020; these trade statistics confirm the regional concentration and prove their limitation to global exposure.

On the other hand, the global Soda ash market is tight, and diminishing exports from Russia are placing huge pressure on the global market, especially in regions like India, Africa, and so on. These are spot buyers with less stable supply, and thus, they are facing greater difficulty due to the market tightness.

The trade disruption is secondary, but the energy shock is primary. The soda ash production is energy-intensive, and the high prices are squeezing producers across the globe. The market is globally interconnected, and one-fourth of the cross-border trade shows exposure to shipping and geopolitics.

Likewise, the key exporting countries dominating the global supply and the concentration mean disruptions in either country significantly impact the markets. The U.S is by far the world's biggest exporter that accounting for about 40% of the world trade, and Turkey is positioned at 2nd place with about 27%. Nevertheless, China remains unpredictable in its exports, and the variability creates uncertainty in the global supply. Overall, China remains unstable in the global soda ash trade.

Tightness in the global soda ash market persists as the US exports fell and Turkey remained stagnant. China has also shifted its trading routes; likewise, South America is facing a shortage, which has attracted Chinese supply. Data confirms a dramatic increase in Chinese exports to South America, and this reflects the supply-demand imbalances redirecting the trade flows.

Analysing the trade dynamics, interdependence, and vulnerabilities:

Trade remains central to Soda ash, and with about 25% of the global production shipped across the globe. The United States leads as the largest exporter which accounting for about 40% of the global trade, and in the second place, Turkey with 27%. The Russia-Ukraine war exposed the vulnerabilities in the logistics. Since the Black Sea was the key route for Bulgarian and Turkish Soda ash shipments, which became a risk zone, it complicated the supply flows to central and eastern parts of Europe. The global exports were modestly up and driven by China.

The companies are expected to expand their supply chains via Mediterranean ports or overland routes rather than being fully reliant on the black sea. If the domestic demand softens, then China could aggressively expand its exports and pressure the global prices. Conversely, if the local industries surge, the exports may drop sharply. Since the soda ash production is energy-intensive, the fluctuating natural gas and coal prices will directly affect the costs, competitiveness, and trade volumes.

The demand for low-carbon glass is falling, especially in solar panels and green construction. Therefore, the soda ash consumption will likely expand and keep the trade flows strong despite geopolitical risks.

We can expect slight tightness but manageable supply in the short term, with South America emerging as a surprising new destination for Chinese exports. However, the trade patterns can rebalance, with Turkey and the U.S trying to retain dominance while China plays a wildcard role. The innovations in sustainable soda ash production, recycling, and alternative raw materials may reshape the industry and potentially reduce the volatility tied to geopolitics.

Soda ash market impact on end-use industries:

Soda-ash is one of the most versatile industrial chemicals, and its applications stretch across glassmaking, detergents, silicates, and several specialty chemicals. Therefore, the fluctuation in the soda ash market due to any of the reasons, such as supply shortages, energy price volatility, global trade disruptions, or such, has a direct and immediate impact on these end-use industries.

For instance, consider the glass industry that accounts for more than half of the global soda ash demand and thus is the most sensitive sector to market disruptions. Due to the COVID pandemic, disruptions in the industries, the demand for soda ash reduced, and this has led to a significant reduction in soda ash consumption, and the global demand dropped by over 5% in 2020.

In the detergents sector, soda ash acts as a water softener and a cleaning agent. The demand for the industrial detergent fell as the factories, offices, and commercial establishments were operated at reduced capacity during the pandemic. Meanwhile, the demand for detergents used for household purposes increased sharply as it was driven by hygiene awareness. This uneven demand created fluctuations in soda ash usage patterns.

It was observed that the price of soda ash had increased due to rising energy costs, and this directly increased raw material expenses for detergent manufacturers. Since this sector is highly price-sensitive, the companies were forced either to absorb these costs or pass them on to the customers.

Overall, the soda ash market has created turbulence, which demonstrates how closely the market is tied to its end-use industries. Thus, when the supply becomes tight, the energy prices are high, or when the trade flows are disrupted, the end-use industries such as glass making, detergents immediately feel the strain. These structural growth drivers, construction, green energy, packaging, and hygiene, ensure that soda ash will remain indispensable.

Take away:

The soda ash market has endured a period of compounded crises- first through the demand crash of COVID-19 and later through the supply and energy shock of the Russian-Ukraine war. The dominance of the U.S, Turkey, and China continues to shape the global flows, but the shifting trade routes and volatile energy prices mean the market remains fragile. Despite challenges to the structural demand growth, particularly in construction, packaging, and green technologies, promises long-term stability and the innovations in the sustainable production processes, recycling, and diversified supply chains could help in cushioning up the industry against future shocks while keeping the trade flows resilient in an uncertain geopolitical landscape.

Why Koreas Petrochemical Crisis Reflects a Larger Industry Shift

Vinodhini Harish

Introduction:

The petrochemical industry faces a significant moment, shaped by shifting global demand and growing environmental regulations. As demand rises in Southeast Asia, India, and Africa, oil price volatility drives uncertainty for producers. Meanwhile, stricter EU regulations are forcing companies to reconsider supply chains and strategies. This article examines the global context behind Korea's petrochemical crisis and its impact on international markets. Let's begin.

Crisis in South Korea's petrochemical industry:

South Korea's petrochemical sector was once considered one of the cornerstones of the nation's export-driven economy. The sector is now facing one of its most severe crises in decades. Especially, the industry is grappling with structural weakness, intensified global competition, and mounting financial pressures; these aspects have left several companies vulnerable. The crisis is the combination of oversupply in the market and aggressive expansion by China, these have been rapidly scaling its petrochemical production capacities. This has led to an oversupply of basic chemicals in the global market, which has pushed prices lower and made it harder for the Korean companies to earn profits.

South Korea's petrochemical industry has been facing problems for years, and the companies have been making very little profit, losing their strength in exports, and running their plants at lower levels. Furthermore, the pandemic has hit the industry badly, which is when the supply chains broke down and the demand dropped drastically. Other industries have recovered, except the petrochemical industry, as it was left with too much supply and too few customers.

Since South Korea imports a lot of naphtha, that has been the key raw

material for petrochemicals, the companies are easily hurt when the prices of the fuel and raw materials go up. These rising costs left the companies with almost no profit at all.

Boston Consulting Group warned about the downturn of the petrochemical companies. Considering the current cash holdings and recent operating losses of the domestic petrochemical firms, only about 50% will remain viable if the downturn lasts for over three years.

Another BCG alert showed that nearly half of the firms could collapse within three years without reforms. These warnings pushed the government to act quickly, and the officials held urgent meetings with the industry leaders and ordered them to restructure. This action is not simply about saving businesses but also about protecting industries like cars, textiles, electronics, and construction, which are heavily dependent on petrochemicals.

The government referred to the shipbuilding industry, which had a similar crisis earlier but came back stronger after restructuring and reforms. The petrochemical industry can also cut down excess production, merge when needed, and move into producing higher-value specialty chemicals. Even though the crisis is tough, there could be a turning point that helps South Korea rebuild its petrochemical industry for the future.

The massive change by South Korea's Petrochemical giants to 25% capacity cuts:

The biggest petrochemical companies in South Korea have decided to reduce their production capacity by about a quarter, and this drastic step is essential to reduce production. Even if this could lead to less revenue in the short term, it is necessary to balance the supply and demand and prevent further financial losses.

The capacity cuts are part of a bigger restructuring plan, and this plan is supported by the government. The key problem is oversupply in the market, and this concern was made worse by the Chinese competitors. Since the oversupply drives the prices down and makes it harder for the Korean firms to stay profitable in the industry. The government intervention shows the urgency of saving a critical industry.

Many companies could go bankrupt, while hurting the industry and also the downstream sectors like autos and electronics. Therefore, the companies listened to the government's warning. Ten of the biggest producers are shutting down nearly one-fourth of their naphtha-cracking plants, factories that make basic chemicals from naphtha. Although Naphtha cracking is the backbone of petrochemical production, cutting such a large share shows the depth of the crisis and the need to reduce the oversupply.

Clearly, the industry was losing out the profits due to too much supply and China was selling cheaper products. The problem is structural, thus the quick fixes won't work in such cases. The agreement to cut down the capacities was made official during a government-led meeting with company executives. The decision was taken to cut down 2.7 – 3.7 million tons out of the 14.7 million tons capacity. These are significant numbers, which are about 20-25% showing just how serious the oversupply issue has become. The companies must hand in their restructuring blueprints by year-end, but the finance minister wants them faster.

Oversupply is the root problem, and thus cutting the output will help the prices low, and Korean companies cannot compete with the Chinese producers. Firms and investors must present concrete, legally enforceable plans soon, and vague promises won't save the industry; binding commitments force the companies to act.

Restructuring plans – in detail:

The plans are to restructure major complexes in Yeosu, Daesan, and Ulsan with comprehensive support packages to cushion the local economies. The regional economies rely on these hubs, and therefore, cushioning the impact is vital. The authorities and companies are taking drastic steps to ensure survival and protect the communities that are dependent on this sector. One of the major pressing measures is the designation of Seosan, a major petrochemical hub, as an "industrial crisis zone". If the status is granted, it will unlock access to government subsidies and loans for businesses and workers in the area.

The move is critical because Seosan is home to thousands of employees whose livelihoods depend on petrochemical production. Without the financial aid, many plants might shut down, leading to mass layoffs and social unrest. By channeling subsidies, the government can help struggling companies cover costs and provide a buffer until the industry stabilizes. The move is not only about saving businesses but also about protecting communities and preventing a chain reaction of economic hardship in the region.

Large-scale mergers and tie-ups now appear inevitable, and the market is plagued by oversupply, and too many companies competing against each other are driving down the margins further. By merging, companies can share their resources, cut overlapping costs, and streamline their operations. This also helps in reducing overcapacity and makes the industry leaner and more efficient to handle the global competition.

Media reports are saying that Lotte Chemical Corp. and Hyundai Co. are in discussions about merging their Daesan

naphtha-cracking centres. Likewise, SK innovation Co. and Korea petrochemical Ind. Co. is considering integrating its facilities in Ulsan. These plans highlight how seriously they are considering the crisis. Rather than competing and duplicating efforts in the same geography, they are exploring cooperation to optimize operations. The benefits of such mergers are clear, which include reduced competition within Korea, improved utilization rates, and the ability to cut the fixed costs in a low-demand environment.

The trend doesn't stop here. In Yeosu, a region with seven naphtha crackers but only one refinery, the industry watchers expect companies like GS Caltex, LG Chem, and Lotte Chemical to pursue joint ventures. To avoid the wasteful duplication of efforts and to create a strong collective defence against external market pressures, the companies are trying approaches like building partnerships, joint ventures that offer a rational solution, and allowing the firms to share feedstock, infrastructure, and even research costs.

The combination of these measures, in addition to the government intervention through financial support, industry-driven consolidation, and strategic partnerships, is shaping the roadmap for South Korea's petrochemical sector.

The combination of public policy and private collaboration seeks to stabilize the operations, preserve jobs, and ensure long-term competitiveness in the global market. Therefore, the road ahead remains challenging, and these steps reflect a proactive effort to adapt to new realities and build resilience in one of South Korea's most critical industries.

Global petrochemical market outlook – shifts and what is shaping the market opportunities and risks:

The global petrochemical industry is undergoing major shifts, and it is directly shaping market opportunities and risks. In the developed regions such as Europe and North America, the demand growth has slowed due to market saturation, energy transition policies, and a push toward recycling and bio-based alternatives. The emerging economies in Southeast Asia, India, and Africa are seeing rising consumption, fuelled by rapid urbanization, a growing middle class, and expanding manufacturing sectors. This demand shift is creating new centres of growth outside the traditional markets.

At the same time, the oil price volatility remains a key challenge for the petrochemical players. Since naphtha is a primary feedstock for petrochemicals, is directly linked to crude oil prices, the fluctuation in the global energy markets can heavily influence the production costs and profitability. For the companies that are operating with thin margins, sudden spikes in oil prices can make these exports less competitive, and the price drops can potentially disrupt investment decisions.

The energy transition policies are reshaping the industry, which is adding further complexity. The EU's carbon border adjustment mechanism (CBAM) and stricter sustainability regulations are pushing petrochemical producers to adopt cleaner technologies. Therefore, the global trends are highlighting why Korea's petrochemical crisis must be seen as a part of a larger structural transformation.

Takeaway:

The Korean petrochemical crisis exposes the vulnerabilities and urgent need for adaptation in a rapidly changing industry landscape. Facing slower demand growth in traditional markets, surging consumption in emerging economies, volatile oil prices, and unprecedented regulatory demands, companies stand at a crossroads. Moving forward, those that act decisively—embracing efficiency, diversifying markets, and advancing low-carbon strategies—will set the pace for the industry's next era. Ultimately, adaptability and strategic vision, not mere survival, will determine which players lead South Korea and the global petrochemical sector into a resilient and competitive future.

EVENTS AND CONFERENCES

ASIA PACIFIC COATING SHOW

Date : Oct, 28-30, 2025

City : Messe Frankfurt

Country : Germany

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

Description : Join our global network of pharma professionals year-round through our online platform and take it to the next level at CPHI Frankfurt. Connect with thousands of industry leaders and expand your network with endless opportunities to learn, innovate, and collaborate online and in-person. CPHI facilitates opportunities for you to grow your business and develop meaningful connections at the heart of pharma.

PAINT EXPO EUROSIA

Date : Oct, 1-3, 2025

City : Istanbul Expo Center

Country : Turkey

Website : https://paintexpo.com.tr/en/

Description : PaintExpo will host industry professionals from October 1-3, 2025, at the Istanbul Expo Center. Renowned as the leading meeting point for the industrial coating sector, PaintExpo stands out as an event where technological innovations are showcased, trends are set, and global collaborations are forged. Exhibitors will discover the latest solutions in coating technologies, while visitors will have the opportunity to explore ideas and applications shaping the future of the industry.

INACOATING 2025

Date : Nov, 5-7, 2025

City : Foire Internationale de Casablanca Expo Center, Casablanca – Morocco

Country : Morocco

Website : https://dyechem-morocco.com/

Description : 1. The 49th Dye+Chem Morocco 2025 International Expo is a Comprehensive International Exhibition featuring Worldwide Dyestuff and Fine & Specialty Chemical Manufacturers, focusing on the entire Textile, Apparel & Leather Industries of Morocco and Africa – the new & future market. 2. The manufacturing sector in Morocco has been expanding, with the country becoming a hub for producing various types of Textiles, Apparel, and Leather. The industry has attracted both domestic and foreign investments. The country is now Europe's eighth-largest textile and clothing supplier. 3. Morocco's strategic location, close to European markets, provides it with a competitive advantage in terms of logistics and transportation. This proximity allows for shorter lead times and cost-effective delivery to European customers. it has served as a very important Business hub between Europe, Africa, and the Middle East. 4. The Moroccan government has been actively supporting the manufacturing industry through policies and incentives. This support includes measures to attract investments, improve infrastructure, and enhance the competitiveness of the sector. 5. Morocco's status as a trade hub is bolstered by its trade

agreements with the Persian Gulf, Mediterranean, and African nations, the United States of America, and the European Union. 6. Morocco currently has duty-free access to a market of 55 countries representing more than one billion consumers and 60 percent of world GDP. 7. Participate in the 49th Dye+Chem Morocco 2025 International Expo. Meet, network, explore new business partnerships and opportunities with potential buyers through the Expo from Morocco and Africa.

SAUDI ARABIA COATING SHOW

Date : Nov 17-19, 2025

City : 50th Dye+Chem Brazil International Expo

Country : Brazil

Website : https://br.cems-dyechem.com/

Description : 1) Milestone Edition: The 50th DyeChem Brazil International Expo: The 2025 edition marks the 50th milestone of DyeChem Series of Exhibitions, highlighting its legacy as a premier platform for showcasing dyestuff, fine, and specialty chemicals. This prestigious event underscores its continued relevance in driving innovation and collaboration in the Dyestuff and Chemical industry. 2) A Strategic Gateway to Brazil and Latin America: Brazil is the largest economy in Latin America and a textile industry hub, providing access to one of the fastest-growing markets in the world. Participating in DyeChem Brazil offers a direct route to establish and strengthen connections across the entire Latin American textile and apparel industry value chain. 3) Comprehensive Focus on the Textile Industry: As a key segment of DyeChem Series under the renowned Textile Series of Exhibitions held across three continents in Bangladesh, Brazil, Morocco, Sri Lanka and Thailand; the DyeChem Brazil Expo provides a dedicated platform for manufacturers to meet textile professionals, from raw material suppliers to apparel manufacturers, seeking cutting-edge dyes, chemicals, and solutions. 4) Showcasing Sustainable Solutions for the Textile Industry: With the global textile sector shifting towards sustainability, DyeChem Brazil 2025 offers manufacturers the perfect platform to present eco-friendly and innovative dyeing, printing, and specialty chemical technologies to decision-makers who prioritize green solutions. 5) Meet a Diverse and Engaged Audience: The expo attracts buyers, suppliers, distributors, importers, technologists, and industry leaders from across the globe. Manufacturers can engage directly with a well-curated audience actively seeking solutions to enhance their processes and product quality. 6) Unmatched Networking Opportunities: Participate in one-on-one meetings, with visitors to build strong partnerships with local and international players. Forge new alliances and expand your market presence in Latin America by meeting key stakeholders in person. 7) Enhanced Brand Visibility in a Renowned Event: Being part of the 50th DyeChem Brazil 2025 Expo elevates your brand's profile in one of the most recognized platforms for the textile chemicals industry. Leverage the event's extensive marketing and media outreach to maximize your visibility in Brazil, Latin America, and beyond.

CHINA COAT CHINA

Date : Nov 25-27, 2025

City : Shanghai New International Expo Centre (SNIEC)

Country : China

Website : https://www.chinacoat.net/?lang=2&route=homepage

Description : Bangladesh - This year's exhibition spans 8.5 halls (E2–E7, W1–W3), covering a gross exhibition area of nearly 100,000 square meters. It brings together over 1,240 exhibitors from 30 countries / regions, showcasing innovative products and technologies in 5 exhibit zones to meet the evolving needs of downstream industries. A series of concurrent Technical Programmes will be held during the exhibition, including Technical Seminars & Webinars and Country Presentation, offering valuable opportunities to share expertise, gain insights and stay at the forefront of industry trends. Register to visit now!

Illuminated Extractors Unveils Breakthrough Hydrocarbon Extraction Technology with Expanding Industrial Applications

FORT COLLINS, Colo., Aug. 29, 2025 /PRNewswire/ -- Illuminated Extractors, Ltd. is proud to announce the issuance of U.S. Patent US12135149 for its revolutionary heating and refrigeration system, a game-changing advancement in hydrocarbon extraction and industrial thermal management. This innovative technology, developed by inventor Zachary Richard Lantz, is set to redefine efficiency, safety, and versatility in extraction processes and beyond.

Next-Generation Hydrocarbon Extraction

The newly patented system introduces a novel apparatus and method for heating and cooling refrigerants, specifically optimized for hydrocarbon extraction processes such as cannabinoid extraction. By utilizing hydrocarbon refrigerants like propane, butane, and isobutane, the system enables precise thermal control of extraction solvents, ensuring maximum yield and purity in cannabinoid extraction and other chemical extraction applications. The technology's unique dual-chamber, jacketed container design allows for efficient heat transfer and rapid temperature changes, while the integrated compressor cycle generates superheated vapor, which is then condensed and recirculated for continuous, energy-efficient operation .

Expanding Applications Across Industries

While the system is a breakthrough for hydrocarbon extraction, its impact extends far beyond the cannabis sector. The patented technology is engineered for versatility, offering precise temperature management and cryogenic capability for a wide range of industries, including:

- **Pharmaceutical Manufacturing:** Enables strict thermal control for sensitive drug synthesis, formulation, and cold storage, supporting regulatory compliance and product integrity .
- **Food Processing:** Delivers rapid cooling and freezing for food safety, quality preservation, and extended shelf life.
- **Industrial Chemical Manufacturing:** Provides efficient process cooling and heating for temperature-sensitive reactions, distillation, and crystallization .
- **Cryogenics and Advanced Refrigeration:** Achieves ultra-low temperatures for applications in quantum computing, medical imaging (MRI), cryopreservation, and energy storage .

Breakthrough Features and Environmental Benefits

Key features of the Illuminated Extractors system include:

- **Integrated Heating and Cooling:** Reduces the need for multiple compressors and evaporators, streamlining operations and minimizing equipment footprint.
- **Energy Efficiency:** Maintains high efficiency and low power consumption, even at extreme or cryogenic temperatures, resulting in up to 40% energy savings compared to conventional systems.

- **Hydrocarbon Refrigerant Compatibility:** Utilizes low-GWP refrigerants, supporting sustainability and regulatory compliance.

- **Enhanced Safety:** Offers precise control under both positive and negative pressure conditions, reducing risks associated with volatile solvents.

- **Scalability and Versatility:** Adaptable for both small-scale laboratory and large-scale industrial operations.

According to industry data, advanced refrigeration systems like this can reduce energy consumption by 20–50%, lower greenhouse gas emissions, and support the transition to environmentally friendly refrigerants .

Industry Leadership and Vision

"Our patented system represents a significant leap forward in extraction and industrial refrigeration technology," said Zachary Richard Lantz, inventor and CTO of Illuminated Extractors. "By combining efficient heat transfer, energy savings, and broad industrial applicability, we are setting a new standard for hydrocarbon extraction and thermal management across multiple sectors."

About Illuminated Extractors

Illuminated Extractors, Ltd. is a leading innovator in extraction and thermal management technology, serving the cannabis, pharmaceutical, food processing, and chemical manufacturing industries. With a commitment to efficiency, safety, and sustainability, Illuminated Extractors delivers advanced solutions that empower businesses to achieve superior results while reducing their environmental footprint.

Source : Illuminated Extractors

New Technology Offers Solution To Plastic Waste Threat:Plastic 2 Green Achieves Breakthrough in Nitrogen-Doped Graphene Production and Receives First Purchase Order

LOVELAND, Colo., Aug. 28, 2025 / PRNewswire/ -- A promising breakthrough in converting waste plastic—one of humankind's largest environmental threats—into high-value carbon products and carbon-free fuels was announced by pioneering clean technology startup Plastic 2 Green Inc.

Plastic 2 Green successfully produced nitrogen-doped graphene from waste plastic in a laboratory in a milestone tested and confirmed through advanced Transmission Electron Microscopy at Colorado State University, with upcoming independent evaluation of its Raman Spectroscopy data from the Technical University of Munich.

"We're proving that waste plastic, one of the world's worst pollutants can become one of its most valuable materials," says Ed VanDyne, CEO of Plastic 2 Green, an advanced materials and clean energy company. Plastic 2 Green develops plasma-based technologies to convert all types of waste plastic into high-value products such as green ammonia, carbon black, and nitrogen-doped graphene (NDG). Among its many uses in sensors, batteries and catalysts, NDG is expected to be widely used in supercapacitors due to its increased charge storage capacity and cycling stability.

Plastic 2 Green's first customer has now issued a P.O. to purchase sample quantities, and has funded a research team at the University of Notre Dame to do further analysis to confirm its performance in next-generation supercapacitors. The startup has raised $500,000 of its $1million pre-seed SAFE Note round, supporting continued development in its proof-of-process laboratory.

The remaining $500,000 is now open to investors looking to participate in a high-impact, high-value clean technology solution addressing both global plastic waste and advanced material shortages arising from political tensions.

Plastic 2 Green's patent-pending plasma-based process transforms unsorted, contaminated plastic into clean hydrogen, green ammonia, carbon black, and now nitrogen-doped graphene, using renewable energy. For more information, visit www.plastic2green.com.

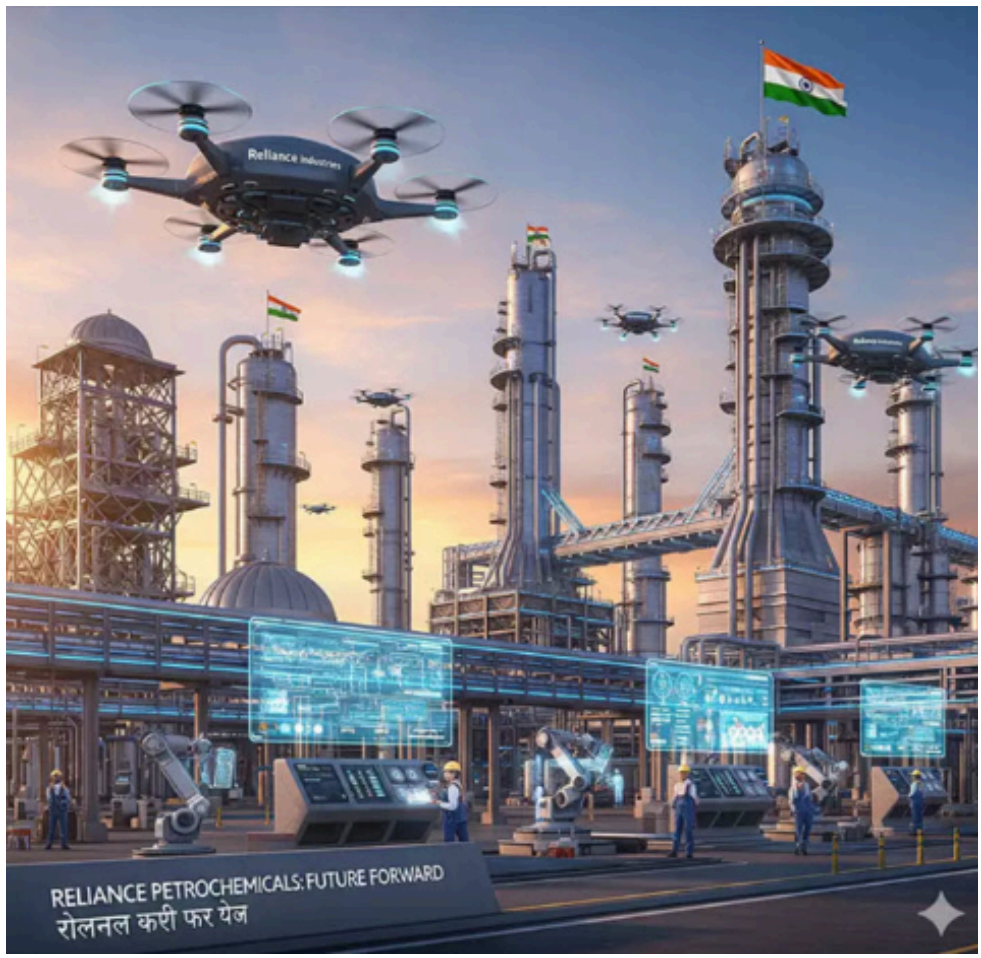
Source : Plastic 2 Green Inc.

BPCLs Strategic Refinery Expansion How Indian firms Can learn to scale for the future

Vinodhini Harish

Introduction:

India faces escalating energy demand and the need for forward-thinking investment. Bharat Petroleum Corporation Ltd. has announced a significant greenfield refinery and petrochemical complex near Ramayapatnam Port, Andhra Pradesh, with an estimated investment of INR 95,000 crore. This large-scale project aims to increase refining capacity and fortify national energy security. Industry stakeholders have welcomed this strategy, which reduces imports and stimulates domestic industries. In addition to traditional fuels like petrol, diesel, aviation turbine fuel, and LPG, the facility will produce high-value petrochemicals and integrate renewable power, green hydrogen, and biofuels. This refinery will bridge current energy needs with a sustainable future. We examined the news in detail, so let's begin.



BPCL Planning Greenfield Refinery:

Bharat Petroleum Corporation Ltd. has announced its plans to build a brand-new oil refinery. India has been buying refined fuels from other countries; thus, building this refinery will help the country to take the imported crude oil and convert it into usable fuels like petrol, diesel, aviation turbine fuel (ATF), and liquefied petroleum gas (LPG). Along with the fuels, BPCL has planned to produce petrochemicals such as raw materials for plastics, paints, textiles, packaging, and fertilizers. This will cut down the imports of high-value petrochemicals and boost local industries.

BPCL selected the location near Ramayapatnam Port for direct access to crude oil imports and refined product exports. This optimizes the supply chain, making it faster, more cost-effective, and globally competitive. BPCL will also establish facilities for green hydrogen, biofuels, and renewable power generation, alongside traditional refining. This multi-faceted setup will help India prepare for the energy transition, balancing today's oil demand with future clean fuels.

How will this advance the country's economic and industrial growth?

Currently, India is importing about 85% of its crude oil. With the high refining capacity, the country can potentially process more of its imports domestically and even export the surplus fuels to Asia and Africa. Therefore, the country doesn't have to suffer when there is a global supply disruption. An INR 95,000 crore project means thousands of jobs, during construction and permanent employment in operations.

With the project becoming effective, Andhra Pradesh will see growth in supporting industries such as transport, housing, retail, and services. The petrochemicals produced in the refinery will support Indian industries like Automotive, electronics, textiles, and packaging. The nation can cut down its imports of raw materials and produce more locally and making the industries more competitive across the globe.

BPCL has announced plans for solar and wind energy projects, and these renewable units can power their own refinery operations while reducing emissions, feed extra clean power into India's electricity grid. This will also reduce India's dependence on coal-fired power plants, which are the biggest source of emissions. Currently, the country's energy demand is exploding, the cars, planes, industries, and residential purposes require more energy, and oil will remain essential for at least the next 2-3 decades.

India must invest in oil; otherwise, it risks falling behind as the world moves to cleaner technologies. BPCL's dual approach, the oil, renewables, and hydrogen, ensures short-term security, which is fuel that is available to meet the current demand, and long-term competitiveness, where the country is part of the global clean energy race.

India has pledged to reach net-zero emissions by 2070, and if companies like BPCL keep investing in renewables and hydrogen, India can gradually cut down carbon emissions while keeping its economy growing. This also keeps inviting foreign investments as global investors prefer working towards sustainability.

BPCL is aiming to meet the growing energy demand:

The chairman of Bharat Petroleum Corporation Ltd, Mr. Sanjay Khanna, pointed out that the country is the world's fastest-growing oil market. The country is expected to account for almost one-third of the increase in global oil demand by 2030. Thus, the new refining facilities are urgently required. This project strengthens the country's traditional energy supply. BPCL also plans to expand into petrochemicals, renewable energy, green hydrogen, and so on. Thus, this approach ensures that the company is also preparing for a cleaner and more sustainable future.

India already has a National Green Hydrogen Mission that is aiming to make the country a global hub for hydrogen production and exports. BPCL's role here ties directly into that mission. BPCL has announced plans for solar and wind energy projects. These renewable units can power their refinery operations while reducing emissions. These renewable units can feed extra clean power into India's electricity grids.

India has the fourth-largest refining capacity in the world, with over 251 million tonnes per annum. Some of the major refineries are operated by public sector companies like Indian Oil Corporation Ltd., Bharat Petroleum, Hindustan Petroleum, and private players such as Reliance Industries and Nayara Energy.

India imports about 85% of its crude oil, and this makes the country highly dependent on external suppliers. On the other hand, India is a significant exporter of refined fuels like diesel, petrol, and aviation fuel, especially to Africa, Southeast Asia, and Europe. The domestic demand continues to grow at the fastest rate across the globe, and the country must expand the refining capacity for the following reasons:

- Ensure energy security
- Cater to booming domestic consumption
- Maintain its position as a reliable global supplier.

What are similar government and industry initiatives:

The Indian government has set ambitious plans to expand the country's refining capacity to reach about 450MTPA by 2030. BPCL has announced its greenfield project in Andhra Pradesh that is worth INR 95,000 crore. Ratnagiri refinery in Maharashtra is proposed as a Mega Joint venture with Saudi Aramco and ADNOC, though it has faced delays.

IOCL, HPCL, and BPCL are carrying out expansions across Kochi, Panipat, and Vizag refineries. India's geographical location provides the country with a natural advantage. India is well placed to serve both the Middle East, a major crude supplier, and the Asia-Pacific, which is a major consumer market. The advanced refining complexes already supply fuels to the regions that are facing shortages, especially Europe, which reduces its reliance on Russian oil.

The opportunities are massive, but there are some challenges as well. Especially, the increase in the refining capacity reflects on higher carbon emissions unless they are paired with clean energy. The EV adoption is also increasing across the globe, and this is reflecting on demand for petrol and diesel. India is continuing to build world-class refining hubs to ensure energy security and economic growth, and simultaneously diversifying into green hydrogen, biofuels, and renewables to future-proof its position.

Greenfield vs. Brownfield refineries: the difference and why it matters:

In the oil and gas industry, two terms often surface when talking about new projects: greenfield and brownfield refineries. Although they both increase the fuel production, the approaches, investment, risks, and benefits are quite different. Therefore, understanding the distinctions is important for grasping the country's refining strategy and understanding why companies like BPCL are now focusing on greenfield projects.

A greenfield refinery is built entirely on a new site, where there is no previous refinery existed. The upcoming BPCL

MUMBAI MARKET PRICE AS ON 09/09/2025

Name of Chemical	Current Price	Location
Acetic Acid-Imported Repack	38	Mumbai
Acetic Acid-Domestic Intact	49	Mumbai
Acetic Acid-Domestic Repack	38	Mumbai
Acetone-Imported Repack	69	Mumbai
Acetone-Domestic Intact	88	Mumbai
Acetone-Domestic Intact	69	Mumbai
Acetonitrile-Imported Intact	143	Mumbai
Acetonitrile-Domestic Intact	155	Mumbai
Acetonitrile-Domestic Repack	137	Mumbai
Acrylonitrile-Imported Intact	147	Mumbai
Acrylonitrile-Imported Repack	170	Mumbai
Aniline-Imported Intact	130	Mumbai
Aniline-Domestic Intact	135	Mumbai
Benzene-Domestic Repack	81	Mumbai
Cyclohexane-Imported Intact	99	Mumbai
Cyclohexane-Domestic Intact	93	Mumbai
Cyclohexane-Domestic Repack	87	Mumbai
Cyclohexanone-Imported Intact	118	Mumbai
Cyclohexanone-Imported Repack	112	Mumbai
Cyclohexanone-Domestic Intact	118	Mumbai
Cyclohexanone-Domestic Repack	137	Mumbai
C9 Solvent (99.99% purity)-Imported Repack	96	Mumbai
C9 Solvent (Arham Petrochem)-Imported Repack	96.75	Mumbai
Dibutyl Phthalate-Domestic Intact	113	Mumbai
Dioctyl Phthalate-Domestic Intact	118	Mumbai
Ethyl Acetate-Domestic Intact	76	Mumbai
Ethyl Acetate-Domestic Repack	73	Mumbai
Formaldehyde(37%)-Domestic Repack	20.25	Mumbai
Methanol-Imported Repack	37.5	Mumbai
Methyl Ethyl Ketone-Imported Intact	122	Mumbai
Methyl Ethyl Ketone-Imported Repack	105	Mumbai
Methyl Isobutyl Ketone-Imported Intact	120	Mumbai

Methyl Isobutyl Ketone-Imported Repack	108	Mumbai
Methyl Methacrylate-Imported Intact	140	Mumbai
Mixed Xylene-Imported Repack	81	Mumbai
Mixed Xylene-Domestic Repack	81	Mumbai
Monoethylene Glycol-Imported Repack	57.5	Mumbai
Monoethylene Glycol-Domestic Intact	61	Mumbai
Monoethylene Glycol-Domestic Repack	57.5	Mumbai
Iso propyl Alcohol-Imported Repack	89	Mumbai
Iso propyl Alcohol-Domestic Intact	103	Mumbai
Iso propyl Alcohol-Domestic Repack	89	Mumbai
nButanol-Imported Repack	89	Mumbai
nButanol-Domestic Intact	103	Mumbai
nButanol-Domestic Repack	89	Mumbai
Ortho Xylene-Imported Repack	91	Mumbai
Phenol-Imported Repack	97	Mumbai
Phenol-Domestic Intact	103	Mumbai
Phenol-Domestic Repack	99	Mumbai
Phthalic Anhydride-Imported Intact	93	Mumbai
Phthalic Anhydride-Domestic Intact	93	Mumbai
Styrene Monomer-Imported Repack	94	Mumbai
Toluene-Imported Repack	76	Mumbai
Toluene-Domestic Repack	76	Mumbai
Vinyl Acetate Monomer-Imported Repack	81	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 09/09/2025

Product	Regions	Current prices
Feedstock Prices $/unit		
Crude Oil ($/barrel)	WTI CRUDE	62.64
	BRENT CRUDE	66.41
	MARS US	71.28
	OPEC BASKET	71.32
Natural Gas	New York	3.09
Gasoline	RBOB	1.96

Heating Oil	US	2.32
Ethanol	US	1.96
Naphtha	FOB US Gulf	492.3
	European	545
	CFR Far East Asia	596
Propane	New York	0.7
Aromatics prices $/MT		
Benzene	FOB Korea	710
	CFR Japan	730
Styrene	CFR Japan	875
	CFR South East Asia	910
	CFR China	875
	FOB Korea	865
Toluene	CFR China	670
	CFR South East Asia	715
	FOB Korea	660
	CFR Japan	670
Iso-Mix Xylene	CFR South East Asia	705
	CFR Taiwan	700
	FOB Korea	680
MEG	CFR China	520
	CFR South East Asia	530
Methanol	CFR China	262
	CFR Korea	323
	CFR South East Asia	323
	CFR Taiwan	316
Solvent-MX	CFR South East Asia	730
	FOB Korea	660
	CFR China	710
Ortho Xylene	CFR South East Asia	810
	FOB Korea	795
	CFR China	795
Para Xylene	CFR South East Asia	825
	FOB Korea	810
	CFR Taiwan	830

Propylene	FOB Japan	745
	FOB Korea	755
	CFR China	785
	CFR South East Asia	740
Propylene Glycol	FOB Korea	785
	CFR China	785
Ethylene	CFR North East Asia	835
	CFR South East Asia	835
	FOB Japan	790
	FOB Korea	795
EDC	CFR Far East Asia	185
	CFR South East Asia	195
Butadiene	CFR China	1090
	CFR South East Asia	995
	FOB Korea	1070
Benzene	FOB Rotterdam	650
Methanol	FOB Rotterdam	296
Ortho Xylene	FOB Rotterdam	1095
Para Xylene	FOB Rotterdam	850
Solvent-MX	FOB Rotterdam	800
Styrene	FOB Rotterdam	935
Toluene	FOB Rotterdam	820
Benzene C/G	FOB US Gulf	255
Toluene C/G	FOB US Gulf	286
Styrene C/LB	FOB US Gulf	40.8
Para Xylene $/MT	FOB US Gulf	885
Mix Xylene C/G	FOB US Gulf	286
Methanol C/G	FOB US Gulf	95
Intermediates prices $/MT		
Acrylonitrile	CFR Far East Asia	1110
	CFR South East Asia	1105
	CFR South Asia	1070
VCM	CFR Far East Asia	500
	CFR South East Asia	535
MTBE	FOB Singapore	665

	FOB US Gulf C/G	235.8
Phenol	CFR China	775
	CFR South East Asia	835
	FOB US Gulf	1028
	FOB Rotterdam	721
Acetone	CFR China	555
	CFR South East Asia	610
	CFR Far East Asia	550
	FOB US Gulf	992
	FOB Rotterdam	560
Caprolactum	CFR Far East Asia	1235
	CFR South East Asia	1240
Caustic Soda	FOB North East Asia	395
	CFR South East Asia	425
Ethyl Acetate	FOB US Gulf	1299
	FOB Rotterdam	898
	FD North West Europe(Euro/mt)	870
Butyl Acetate	FOB US Gulf	1544
	FOB Rotterdam	1119
	FD North West Europe(Euro/mt)	1060
MEK	FOB Rotterdam	1248
	FD North West Europe(Euro/mt)	1170
IPA	FOB US Gulf	1088
	FOB Rotterdam	1073
	FD North West Europe(Euro/mt)	1020
NBA	CFR China	840
	CFR South East Asia	855
	CFR Far East Asia	835
Octanol	CFR China	950
	CFR South East Asia	955
	CFR Far East Asia	945
DOP	CFR China	1095
	CFR South East Asia	1100
	CFR Far East Asia	1090
Phthalic Anhydride	CFR China	883

	CFR South East Asia	905
	CFR Far East Asia	880
PTA	CFR Far East Asia	615
	CFR South East Asia	635
Acetic Acid	CFR Far East Asia	405
	CFR South East Asia	385
	CFR South Asia	338
	FOB China	286
VAM	CFR China	845
	CFR South East Asia	735
	CFR South Asia	768

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.

	Free Delivered	Free Delivered North West Europe	Free Delivered North West Europe	Free Delivered North West Europe
FD 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.

Note : Last changed price means when it changed last whether its yesterday or 2 days ago or 5 days ago or depends on last changing.

OPENING PORTS PRICE (RS/KG) OF CHEMICALS AS ON 09/09/2025

USD Exchange Rate: 88.08 INR

Producers	Current Prices (INR/kg)	Prices in USD/mt Equivalent to INR/kg	Location
Acetic Acid	32	363.31	Ex-Kandla
Acetic Acid	32.25	366.14	Ex-Mumbai
Acetonitrile-imported intact	150	1703.00	Ex-Bhiwandi
Acetone	63	715.26	Ex-Mumbai
Acrylic Acid	100	1135.33	Ex-Mumbai
Acrylonitrile	99	1123.98	Ex-Kandla
Adipic Acid	115	1305.63	Ex-Bhiwandi
Aniline Oil	107	1214.80	Ex-Kandla
Benzene	65	737.97	Ex-Vizaz
Butyl Acetate	78	885.56	Ex-Kandla
Butyl Acrylate Monomer	104.5	1186.42	Ex-Kandla
Butyl Glycol	93	1055.86	Ex-Kandla
C10	84	953.68	Ex-Kandla
C9	70	794.73	Ex-Kandla
Caustic Soda Lye	36	408.72	Ex-Dahej
Chloroform	9.25	105.02	Ex-Dahej

Citric Acid-ANHYD	72	817.44	Ex-Bhiwandi
Citric Acid-Mono	65	737.97	Ex-Bhiwandi
Cyclohexane	80	908.27	Ex-Hazira
Cyclohexanone	99	1123.98	Ex-Kandla
DMF	57	647.14	Ex-Bhiwandi
DEG	62	703.91	Ex-Hazira
EDC	19.5	221.39	Ex-Kandla
Epoxy Resin	186.5	2117.39	Ex-Nhava Sheva
Ethyl Acrylate	130	1475.93	Ex-Kandla
Formic Acid	65	737.97	Ex-Bhiwandi
Glycerine	105.5	1197.77	CIF Nhava Sheva
N-Heptane	208	2361.49	Ex-Bhiwandi
Hexane	72	817.44	Ex-Kandla
Hydrogen Peroxide-50%	30	340.60	Ex-Bhiwandi
Isobutanol	77	874.21	Ex-Kandla
IPA	80.5	913.94	Ex-Kandla
IPA	80.5	913.94	Ex-Mumbai
LAB	152.5	1731.38	Imported
Maleic Anhydride-Drum	89	1010.45	Ex-Mumbai
MDC	31	351.95	Ex-Dahej
MEG	52	590.37	Ex-Mumbai
MEK	95.5	1084.24	Ex-Kandla
Melamine	80	908.27	Imported
Methanol	29.75	337.76	Ex-Kandla
Methanol	29.75	337.76	Ex-Mumbai
MIBK	94	1067.21	Ex-Hazira
Mix Xylene-Solvent Grade	70	794.73	Ex-Kandla
Mix Xylene-Solvent Grade	72.5	823.12	Ex-Mumbai
MMA	113	1282.92	Ex-Hazira
N-Butanol	84	953.68	Ex-Kandla
N-Propanol	84.5	959.36	Ex-Kandla
NPAC	83.5	948.00	Ex-Kandla
Octanol	100	1135.33	Ex-Kandla
Ortho Xylene	81	919.62	Ex-Kandla
Phenol	85.5	970.71	Ex-Kandla

Phenolic Resin	170	1930.06	Ex-Indore
Phthalic Anhydride	94	1067.21	Ex-Mumbai
Propylene Glycol	85	965.03	Ex-Kandla
Sodium Nitrate (50Kg Bag)	61	692.55	Ex-Make-Lasons
Styrene Monomer	85.5	970.71	Ex-Kandla
Styrene Monomer	87.5	993.42	Ex-Mumbai
Sulphuric Acid	12	136.24	Ex-Vapi
Tio2 (Anatase Grade)	215	2440.96	Ex-Bhiwandi
Tio2 (Rutile Grade)	240	2724.80	Ex-Bhiwandi
Toluene	67.5	766.35	Ex-Kandla
Toluene	68	772.03	Ex-Mumbai
VAM	71	806.09	Ex-Kandla
VAM	72	817.44	Ex-Hazira

PRODUCER PRICES (RS/KG) OF CHEMICALS AS ON 09/09/2025

Producers	Current Price (INR/Kg)	Import parity Price in USD/MT	Location
Accord-Ethyl Acetate	63.75	728.24	Ex-Maharashtra
Accord-Ethyl Acetate	63.5	720.94	Ex-Maharashtra
Arham Petrochem-C9	69.75	791.89	Ex-Kandla
Arham Petrochem-C9	70.75	803.25	Ex-Ahmedabad
Arham Petrochem-C10	82.5	936.65	Ex-Kandla
Arham Petrochem-C10	82	930.97	Ex-Ahmedabad
Arham Petrochem-C10 (Imported Repack)	88.75	1007.61	Ex-Bhiwandi
Arham Petrochem-MTO/White Spirit (KL)	59.65	677.23	Ex-Kandla
Arham Petrochem-MTO/White Spirit (KL)	60.65	688.58	Ex-Ahmedabad
Arham Petrochem-De-Aromatised D40	130	1475.93	Ex-Kandla
Arham Petrochem-De-Aromatised D40	131	1487.28	Ex-Ahmedabad
Arham Petrochem-De-Aromatised D60	139	1578.11	Ex-Kandla
Arham Petrochem-De-Aromatised D60	140	1589.46	Ex-Ahmedabad
Andhra Petrochemicals-Iso-Butanol	75	851.50	Ex-Vishakhapatnam
Andhra Petrochemicals-N-Butanol	83	942.33	Ex-Vishakhapatnam
Andhra Petrochemicals-Octanol	92.5	1050.18	Ex-Vishakhapatnam
BASF-Adipic Acid	132	1498.64	Imported
BPCL-2-Ethyl Hexanol (B)	93.6	1062.67	Ex-Kochi

BPCL-2-Ethyl Hexanol (P)	104.1	1181.88	Ex-Kochi
BPCL-2-Ethyl Hexyl Acrylate (B)	119	1351.04	Ex-Kochi
BPCL-2-Ethyl Hexyl Acrylate (P)	129	1464.58	Ex-Kochi
BPCL-Acrylic Acid (B)	87.9	997.96	Ex-Kochi
BPCL-Acrylic Acid (P)	96.9	1100.14	Ex-Kochi
BPCL-Benzene	67.5	766.35	Ex-Mumbai
BPCL-Butyl Acrylate (B)	105.8	1201.18	Ex-Kochi
BPCL-Butyl Acrylate (B)	105.8	1201.18	Ex-Kandla
BPCL-Butyl Acrylate (P)	115.8	1314.71	Ex-Kochi
BPCL-Hexane (KL)	76	862.85	Ex-Mumbai
BPCL-Hexane (MT)	114.46	1299.50	Ex-Mumbai
BPCL-Iso-Butanol (B)	77	874.21	Ex-Kochi
BPCL-Iso-Butanol (P)	88	999.09	Ex-Kochi
BPCL-MTO (KL)	83.45	947.43	Ex-Mumbai
BPCL-N-Butanol (B)	83.1	943.46	Ex-Kochi
BPCL-N-Butanol (B)	86.6	983.20	Ex-Kandla
BPCL-N-Butanol (P)	94.1	1068.35	Ex-Kochi
BPCL-Paraffin Wax	105	1192.10	Ex-Delhi
BPCL-Sulphur (Molten)	27.09	307.56	Ex-Mumbai
BPCL-Toluene	67.5	766.35	Ex-Mumbai
Deepak Phenolics-Acetone	60.25	684.04	Ex-Dahej Gujarat
Deepak Phenolics-IPA	78.25	888.40	Ex-Dahej Gujarat
Deepak Phenolics-Phenol	84	953.68	Ex-Dahej Gujarat
GACL-Caustic Soda Lye	36.75	417.23	Ex-Dahej Gujarat
GACL-MDC	31.25	354.79	Ex-Bharuch Gujarat
GNFC-Acetic Acid	33	374.66	Ex-Bharuch Gujarat
GNFC-Aniline Oil	110	1248.86	Ex-Bharuch Gujarat
GNFC-Ethyl Acetate	64.5	732.29	Ex-Bharuch Gujarat
GNFC-TDI Drum	185	2100.36	Ex-Bharuch Gujarat
Grasim-MDC	31	351.95	Ex-Gujarat
GSFC-Cyclohexane	77.5	879.88	Ex-Gujarat
HOCL-Acetone	86	976.39	Ex-Kochi
HOCL-Phenol	103	1169.39	Ex-Kochi
HPCL-Hexane	113.7	1290.87	Ex-Mumbai
HPCL-MTO	108.74	1234.56	Ex-Mumbai

IOCL-Banzene	64	726.61	Ex-Vadodara Gujarat
IOCL-DEG	58.4	663.03	Ex-Odisha(Paradip)
IOCL-DEG	59.3	673.25	Ex-Panipat
IOCL-LAB	157	1782.47	Ex-Gujarat
IOCL-MEG	54.3	616.49	Ex-Odisha(Paradip)
IOCL-MEG	55.8	633.51	Ex-Panipat
IOCL-Paraffin Wax	105	1192.10	Ex-Delhi
Jubilant-Ethyl Acetate	64.25	729.45	Ex-Maharashtra
Laxmi-Ethyl Acetate	64	726.61	Ex-Maharashtra
Meghmani-Caustic Soda Lye	36.75	417.23	Ex-Bharuch Gujarat
Meghmani-MDC	31	351.95	Ex-Ankleshwar Gujarat
NIRMA-LAB	157	1782.47	Ex-Vadodra
Reliance-Caustic Soda Lye	37	420.07	Ex-Gujarat
Reliance-DEG	59.2	672.12	Ex-Jamnagar
Reliance-LAB	160	1816.53	Ex-Vadodra
Reliance-MEG	56.4	640.33	Ex-Jamnagar
Reliance-Mix Xylene	72	817.44	Ex-Jamnagar
Reliance-PTA	74.7	848.09	Ex-Dahej Gujarat
Reliance-Toluene	65	737.97	Ex-Jamnagar
SI GROUP-Phthalic Anhydride	91.5	1038.83	Ex-Navi Mumbai
TATA Chemicals-Soda Ash light	34	386.01	Ex-Bhiwandi

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refinery near Ramayapatnam port in Andhra Pradesh and the proposed Ratnagiri Refinery in Maharashtra are prime examples.

The prime advantages of Greenfield projects are the following:

These greenfield projects are designed with the latest technology, the most modern and efficient refining technology. These are integrated with units like petrochemicals, renewable energy, and hydrogen units, which can be built from the start. They are large-scale, and they are often mega projects that significantly boost national refining capacity. Thus, they demand massive investments, which are approximately 95,000 crore. They require long timelines, like 5-7 years to complete. They acquire land and environmental approvals, which can be challenging.

Brownfield refineries: they are expansions of what already exists:

A Brownfield refinery is named as they are expansion of an existing refinery or one that is upgraded. For instance, IOCL's Panipat expansion or BPCL's Kochi refinery expansion are brownfield projects.

The key advantages are lower costs, as they are simply upgrading the existing infrastructure; therefore, they are usually cheaper. They can be completed in 2-3 years since basic facilities already exist. They are easier to finance and manage since the operations are ongoing.

Existing sites may not have enough land for large-scale additions. The old layouts may restrict the adoption of new processes. They add capacity, but not on the scale of greenfield projects.

India has been relying on brownfield expansion historically to keep up with the demand growth. The domestic consumption is rising rapidly, while greenfield projects are becoming essential as well to add large-scale capacity. For instance, Reliance's Jamnagar greenfield refinery was a game changer; this made the country a net exporter of fuels. Thus, BPCL's upcoming Andhra Pradesh refinery is aiming to do the same by adding a fresh hub on the eastern coast.

India is refining the future with the help of both greenfield and brownfield refineries due to the growing demand.

What BPCL is doing right:

BPCL knows the demand for oil in India, and they also know that the demand will grow strongly for decades. With the expansion of the refining capacity, they know that they can strengthen their core business. BPCL entered petrochemicals, renewables, and green hydrogen instead of sticking to only fossil fuels. This dual approach ensures that they can shift easily when the world shifts to clean energy. This prevents them from becoming obsolete. Observing the strategies, other companies should learn how to secure current revenue streams while investing in future-ready technologies. For example, an auto company shouldn't sell petrol or diesel cars, but they must also invest in EVs and hydrogen vehicles. India is not just a domestic market, but is a hub for Asia and Africa. Companies must aim for global competitiveness and not just local survival.

Diversification is one prime strategy that works well for the development, but the companies should learnt that it must also complement the core. Therefore, just like BPCL linking oil refining with petrochemicals and renewables, other firms should find synergies in expansion. BPCL understood that fossil fuel projects would face criticism; therefore, they have paired the refinery expansion with green hydrogen and renewables and which improves their reputation, attracts global investors, and ensures long-term relevance.

Final thoughts:

BPCL's greenfield refinery project represents more than another industrial expansion. This is a strategic move to secure the country's energy future. It combines conventional refining with investments in petrochemicals, green hydrogen, biofuels, and renewable energy. BPCL is adopting a dual approach that balances current oil demand with the global shift towards clean energy. This project will generate thousands of jobs, stimulate Andhra Pradesh's regional economy, and reduce the country's dependency on importing fuels and petrochemicals. Therefore, the company positions India as a reliable energy supplier to the global markets. Overall, the approach adopted by BPCL is truly amazing as the model combines both the ways to support both national development and global competitiveness.

U S and China Slash Tariffs in 90-Day Truce What It Means for Global Trade

Team Chemical Market

Introduction:

The U.S. and China have agreed to a 90-day truce in their prolonged trade war. This truce was announced on May 12, 2025, in Geneva and took effect on May 14, 2025. Both nations reduced tariffs on U.S. goods, providing relief to businesses and financial markets. This policy shift brought opportunities and challenges for countries like India and industries such as chemicals, especially those dependent on global trade. We explore different perspectives related to this event—let's take a closer look.

WTO Welcomes U.S.-China Tariff Truce: A Step Toward Stability

The U.S. and China have taken substantial steps to de-escalate their trade dispute, agreeing to significantly reduce the additional tariffs imposed on each other's goods. The U.S. will lower tariffs on Chinese imports from 145% to 30%, while China will reduce duties on U.S. goods from 125% to 10%. The announcement, made on May 12, 2025, during high-level talks in Geneva, set the agreement to last for 90 days, effective May 14, 2025.

Now, the U.S.-China tariff conflict began in 2018, and the U.S accused China of unfair trade practices, intellectual property theft, and dumping low-cost goods in the global market. Thus U.S imposed steep tariffs on Chinese imports; meanwhile, China retaliated with equal force on American goods. This has triggered a full-blown trade war, and that has strained global supply chains, which pushed the costs higher across industries. Over the years, multiple negotiations were carried out to calm the tensions; nevertheless, the distrust remained strong.

The COVID pandemic intensified the situation. Political and security issues, such as tensions over Taiwan, technology restrictions, and semiconductor controls, further strained cooperation. By 2024, tariffs peaked, with the U.S. imposing duties of up to 145% on Chinese goods and China charging 125% on U.S. products. This surge caused significant hardship for businesses, consumers, and governments.

Therefore, the global trade bodies like the WTO jumped in, and both parties decided to have a 90-day truce in Geneva. This repair period was expected to cool down the strained ties while avoiding a complete decoupling of the world's two largest economies.

Current situation- how Indian players are reacting to it?

During the 90-day truce in their conflict, the U.S reduced its tariffs on Chinese imports from 145% to 30% and China has lowered its tariffs on U.S goods from 125% to 10%. This is a dramatic cut, and this has immediately eased pressure on the businesses that were struggling with high costs. The markets have responded positively, and the stock indices across the globe have risen as well. The WTO welcomed the move as it insisted that it was a "major step forward" to avoid fragmentation of the global economy.

The U.S. Treasury Secretary said that the decoupling, which is completely breaking off economic ties with China, is not a good option; instead, the goal is to balance trade and have fairer business between the two nations without extreme trade barriers.

India exports a lot of specialty chemicals like dyes, pharma ingredients, and agrochemicals to both the U.S and China. If the U.S and China fight again after August 2025, then their trade will slow down, and they will start looking for alternative suppliers. India has a greater chance to benefit from this situation.

On the other hand, India is also importing raw materials such as intermediates from China. If China faces tariffs and slows down, then those raw materials could get expensive, and that will hit back on bad for Indian producers. Other countries like Vietnam, Indonesia, and Mexico are also waiting to grab this opportunity; thus, India should act swiftly with policy support such as tax incentives, easier trade rules, and an infrastructure boost.

Indian chemical exporters are quickly seeking alternatives to the U.S markets since the U.S has raised import tariffs on Indian chemicals to 50%. The Indian exporters are seeking countries like Europe, Asia, and Africa, and some are even sending goods through other countries to avoid extra costs. For example, Pheromone Chemicals has already started exporting more to Europe, Russia, and Africa. To support the exporters, especially to find new markets and keep their businesses running, the Indian commerce ministry has planned to launch programs. Likewise, companies in Gujarat and Bengal are struggling more as their shipments are stuck, the warehouses are full, and the exporters are facing financial issues as well.

The Indian economy has slowed as well because of these trade problems. To reduce the damage, the government is working on tax cuts, export benefits, and easier loans for the industries that

are mostly affected.

How has this impacted the global chemical industry?

The chemical industry is highly sensitive to trade policies as it is dependent on global supply chains for raw materials such as petrochemicals, specialty chemicals, and intermediates. American chemical manufacturers are more interested in having benefits from the tariff relief and regaining market access in China. Meanwhile, in China, the producers are welcoming the tariff relief as it allows them to export more competitively to the U.S. The situation is not as good as it could have been for China. As they are still under pressure due to overcapacity and slower domestic demand. The U.S firms are shifting their focus towards high-value specialty chemicals rather than bulk production.

Europe has its own challenges. They are including high-energy costs after the Russia-Ukraine conflict and coal import bans. The truce helps in easing global supply bottlenecks, but the European companies are still struggling with competitiveness compared to U.S and Asian peers.

Emerging markets in Southeast Asia and Africa are gaining ground as well, and global firms are diversifying their supply chains. Countries like Vietnam, Indonesia are attracting investments in specialty chemicals. Overall, the truce gives the global chemical industry a short-term breathing space but a long-term restructuring.

Strategies brought by Europe and other emerging markets:

Europe has been facing very high energy costs, especially after the Russia-Ukraine conflict, which has disrupted the gas and coal supplies. Since chemical production needs a lot of energy, this has become a huge problem for the European producers. To cope with this, Europe is focusing on Efficiency and innovation. Companies are trying to modernize the plants; as such, they use very little energy for operation. They are also shifting towards greener sources such as hydrogen, renewable power, and focusing on improving the recycling of chemicals and plastics. U.S and Asian countries can also produce chemicals at a lower cost. Therefore, Europe is focusing on manufacturing "Specialty chemicals" as these high-value, advanced producers, such as coatings, adhesives, and biotech chemicals valued more than low-cost ones. This strategy helps them to survive despite higher expenses.

The emerging markets like Southeast Asia and Africa are turning this global shift into an opportunity. Some big companies are diversifying their supply chains, meaning they don't want to depend on Europe or China for chemicals. Therefore, countries like Vietnam, Indonesia, and African nations are becoming more attractive investment destinations.

These destinations have cheaper labor, and the government is encouraging industries to set up new facilities. They have local demand. Nevertheless, instead of competing only on bulk chemicals, they are working on hubs that produce specialty chemicals. Since these products are essential for pharma, electronics, and agriculture, the focus will help them to climb up the value chain and build long-term growth.

To sum up…

We can see the 90-day U.S.-China tariff truce as a major step in cooling down the trade tensions, but it is temporary. For now, the markets, especially the chemical markets, have gained some relief. India is finding itself at a crossroads; on one hand, it can benefit by becoming a reliable supplier of specialty chemicals, but on the other hand, the rising raw material costs from China and the new tariffs on Indian chemical companies are expected to bring fresh challenges. Meanwhile, in other countries, the chemical companies are adapting strategies to stay competitive and truce avoids deeper economic damage in the short run, but the long-term path will depend on whether Washington and Beijing can reach a lasting agreement.

The Main Business Event of the Coatings Industry in Central Asia - Central Asia Coatings Show - Returns to Astana

Press Release

From 28–30 January 2026, the International Exhibition of Paints, Coatings, Raw Materials, Equipment, and Production Technologies – Central Asia Coatings Show – will take place at the EXPO International Exhibition Centre in Astana.

The 2025 edition reaffirmed its status as the leading event for the coatings industry in Central Asia, bringing together more than 4,000 visitors and 100+ companies from 15 countries, including Singapore, India, China, Turkey, Germany, Poland, Korea, Russia, and across Central Asia. During the event, over 700 partnership agreements were signed, confirming Central Asia Coatings Show as a key platform for business networking and entering new markets.

In 2026, the Central Asia Coatings Show will once again become a hub for innovation and professional exchange.

👉Fill in the formon the official website to learn all the details.

Take part in Central Asia Coatings Show 2026 and you will gain:

- Access to buyers and technical specialists from the construction, chemical, oil & gas, woodworking, furniture, and engineering industries.
- The opportunity to showcase your products, equipment, and technologies to a wide professional audience.
- A chance to establish new partnerships and expand your supply geography.
- Participation in the business program and master classes, where you can demonstrate your solutions in action.
- Meetings with industry peers from across Kazakhstan to discuss current challenges and opportunities.

A comprehensive business conference will traditionally be held as part of the exhibition, where leading experts, analysts, industry companies, and professional associations will discuss key trends, technologies, and strategic directions for the coatings industry.

The exhibition attracts strong interest from end-users of coatings, including representatives of construction, chemical and oil & gas industries, woodworking and furniture production, automotive, aerospace, and shipbuilding sectors. The event provides a unique opportunity to directly connect with target customers.

Exhibition sectors include:

- Paints and coatings for all types of surfaces
- Raw materials, fillers, additives
- Production and dosing equipment
- Application, drying, and processing lines
- Recycling, cleaning, and sustainable production technologies

The Central Asia Coatings Show is the ideal platform to enter the markets of Kazakhstan and Central Asia, increase brand awareness in the B2B segment, build business connections, and secure profitable agreements.

👉Follow the link to book your stand.

For more details about the exhibition, please contact us via WhatsApp: +905368106898 or email admincoatingshow@centralasiacoatingshow.com.

Central Asia Coatings Show – your exhibition, not to be missed!

The Main Event of the Chemical Industry in Central Asia United Chemical Show

Press Release

From January 28 to 30, 2026, the International Exhibition Center "EXPO" in Astana will host the United Chemical Show — an international exhibition for the chemical industry, technologies, equipment, and materials for chemical processing.

This exhibition will bring together manufacturers, suppliers, and experts of the chemical industry. It is a platform for building business connections, showcasing innovations, sharing knowledge, finding partners, and entering the fast-growing Central Asian market.

Showcase your products to a global audience! Fill out the form on the official website to confirm your participation.

The exhibition will be held simultaneously with the Central Asia Coatings Show — the largest event in the coatings industry. In 2025, the Central Asia Coatings Show welcomed more than 4,000 visitors and 100+ companies from 15 countries. Over 700 partnership agreements were concluded, confirming the show's status as the leading coatings industry event in Central Asia.

5 Reasons to Participate in United Chemical Show:

- Boost your sales by presenting your products to a targeted professional audience.
- Expand your market reach by entering Kazakhstan and other Central Asian countries.
- Find new suppliers and contractors by comparing offers from companies worldwide.
- Build new and strengthen existing business connections all in one place.
- Stay up to date with global trends and innovations by joining the exhibition's business program.

Who Will Visit?

The exhibition attracts a highly relevant target audience: company executives, formulators, procurement specialists, laboratory and research center representatives, processors, producers of construction chemicals, representatives of the automotive and furniture industries, oil & gas, agrochemicals, machinery, pharmaceuticals, cosmetics, and dozens of other sectors. The show provides a unique opportunity to directly engage with your target customers.

Exhibition Sections Include:

- Chemical Raw Materials and Components: additives and fillers, chemical fibers, reagents, catalysts
- Petrochemicals and Polymers: raw materials for petrochemicals, polymeric materials, industrial gases, oil & gas processing equipment
- Pharmaceutical Chemistry: organic and inorganic acids, solvents, synthetic reagents, polymers for pharmaceutical production
- Plastics, Rubber & Packaging: raw materials and equipment for the production and processing of polymers and rubbers, packaging solutions, recycling technologies
- Laboratory Equipment & Engineering: analytical instruments, laboratory glassware, pumps, compressors, industrial equipment, automation
- Agrochemistry & Professional Chemistry: fertilizers, plant protection products, cleaning and detergents, car care chemicals, disinfectants, insecticides

United Chemical Show 2026 is your chance to showcase products, strengthen your brand within the professional community, build strategic partnerships, and expand into new markets. Join the exhibition and be at the center of the region's chemical industry!

Book your stand here.

For more detailed information about the exhibition, please contact us via
WhatsApp: +905368106898
unitedexpou@gmail.com

India's ₹4500 Crore Push for Global Mineral Acquisitions- Securing the Future of Energy and Technology

Team Chemical Market

Introduction:

The world is undergoing a significant shift to clean energy and advanced technologies, making critical minerals the new oil. Minerals like lithium, cobalt, uranium, and rare earths are essential for batteries, renewable energy, and nuclear power. Recognizing this demand, India is intensifying efforts to secure reliable access to these minerals. The government has committed INR 4500 crore and is investing in global partnerships. This article examines these developments and the opportunities ahead. Let's begin.

India is accelerating its global critical minerals strategy

As the global pursuit of clean energy and technology intensifies, India is accelerating efforts to secure key minerals. Critical resources like lithium, uranium, and cobalt power batteries, nuclear energy, and electronics. Reliable access will support India's economic growth and energy security. The government is investing in uranium deals, acquiring lithium mines, and exploring copper-cobalt deposits in Africa. With about INR 4500 crore allocated for foreign projects and building strategic reserves, India is taking a global approach. This robust financial commitment strengthens India's position against major competitors like China, which dominates mineral supply chains.

India is carrying out significant strategies, such as strengthening their global supply chain for critical minerals by establishing strategic partnerships. Khanji Bidesh India Ltd. is a joint venture of Indian public sector companies that has entered into collaborations with the UAE's International Resources Holding (IRH) and Russia's Uranium One. The aim of these alliances is to secure uranium and other rare earth elements. Both Uranium and rare earth elements are critical in nuclear energy, defence technologies, electronics, and renewable energy applications. By partnering with established international players, India reduces supply chain risks, gains technical expertise, and ensures access to resources that are otherwise tightly controlled in the global market.

China is currently dominating the rare earth elements sector, and Uranium is concentrated in a few supplier nations. These partnerships, therefore, enhance the country's bargaining power, diversify its sourcing options, and build resilience in the face of future shortages, thereby making it a proactive participant in the global critical minerals race.

Consortium-based approach is working well for India:

Instead of acting alone and suffering with the challenges, it is observed that when a group of companies comes together to act on the project, it works really well. It is termed a consortium-based approach, where the companies pool their money, skills, and resources to achieve their goal. India is adopting this consortium-based approach to strengthen its presence in the global critical minerals race. Khanji Bidesh India Ltd. (KABIL) is a state-run joint venture, is now joining forces with leading domestic public sector undertakings such as ONGC Videsh Ltd., Oil India Ltd. (OIL), and NLC India Ltd. (NICIL). This collaborative model pools together financial resources, technical expertise, and operational experience, giving India a greater strength when competing for overseas mining assets.

This way, it is not required to rely on a single company to secure mineral rights, and the joint effort ensures a stronger bid, reduces risks, and enables the country to challenge established international players who dominate the sector. Such partnerships are especially important in the acquisition of resources like lithium, copper, and cobalt, which are critical for electric vehicles, renewable energy, and advanced technologies. By uniting domestic PSUs, India is positioning itself as a resilient global player.

Better legal and financial framework:

India is now bigger and stronger with this better legal and financial framework, as it supports the country in overseas mineral acquisition plans. Recent amendments to the Mines and Minerals (Development and Regulation) Act have updated and now it allows the country to use the funds from the National Mineral Exploration Trust(NMET) to purchase mining assets abroad. Earlier, the funds from NMET were used only for finding minerals inside India.

Now, after this update, the government also wants to make the NMET fund bigger, which is about INR 8700 crore; therefore, India now has more money to

invest. Out of the investment, about INR 4000 crore will be used to support mining projects and build transport systems to move the minerals. Transport is as important as mining itself. Therefore, with the legal approval and financial backup, the country will be able to quickly grab the opportunities to secure minerals like lithium, copper, and cobalt worldwide.

India has begun their search for the critical minerals, and Africa has become an important focus. Zambia has been on its radar for years now, as it offered the country nearly 9000 square kilometres of land for geological mapping and surveys.

Zambia is rich in copper and cobalt, and these two minerals are essential for manufacturing electric vehicle batteries, renewable energy systems, and electronics manufacturing. The Geological Survey of India and the Mineral Exploration Corporation Ltd. have already completed their initial surveys in June 2025, thus giving India a significant advantage in identifying promising mining sites.

India is making sure that it is not dependent on a single country or source for these minerals, and thus, they are expanding their presence in Africa. The strategy reduces risks and balances China's influence in the region.

The Indian government is creating a National Critical Minerals Stockpile Programme with a budget of 500 crores. The idea is simple yet powerful, just like the country built petroleum reserves for the oil crisis, it is now planning to build mineral reserves such as lithium, cobalt, nickel, and rare earths.

Since global supply chains for such resources are often uncertain, when the country stockpiles these resources, it can save the domestic industries from disruptions, even if the global markets become unstable. Even though the guidelines of how these reserves will work are not established as of now, this move is offering the country a safety cushion, while making its green growth and industrial expansion less vulnerable to external shocks.

Opportunities lie ahead for India:

Although the reserves can efficiently store these minerals, there is always room for improvement. These minerals that are used extensively in modern batteries can't be used in their raw form. These must be chemically processed into compounds such as lithium hydroxide, lithium carbonate, and cobalt sulfate for them to be used in cathode materials for lithium-ion batteries. India's chemical industry will play a central role in this transformation, as refining and processing require advanced chemical technologies and large-scale industrial infrastructure.

The global push for electric vehicles and energy storage is demanding these battery-grade chemicals to be well-refined. Thus, if India can build refining capacity domestically, it can secure raw minerals but also capture higher value through chemical conversion and advanced material production. This will sufficiently reduce dependency on imports of refined chemicals, strengthening the EV ecosystem of the country. This will also create opportunities for both chemical manufacturers and downstream industries in the green energy transition.

1. **India should focus on developing the specialty chemical industry:**

Mining rare earths is the first step; it is followed by complex chemical separation and refining processes that often involve solvent extraction and ion exchange.

Currently, China is dominating more than 80% of the global rare earth refining capacity. If India could focus on developing the specialty chemicals industry, it could bridge the gap by investing in rare earth processing technologies, developing its domestic refining capacity, could allowing the country to add value, build local expertise, and reduce the overdependence on China. Moreover, the processing industries would feed into India's fast-growing sectors such as electronics, renewable energy, and defence manufacturing. If India could link critical mineral acquisition with chemical processing, then it could advance up the value chain and establish itself as a serious global player in the rare earth supply chains.

2. **Copper and cobalt for catalysts:**

Copper and cobalt are not only essential for renewable energy and EV batteries, but they also play a significant role in the chemical and petrochemical industries. Both metals are widely used in catalysts, which are chemical agents that speed up the reactions without being consumed. For example, cobalt catalysts are used in the Fisher-Tropsch process to produce synthetic fuels, while copper catalysts are key in the production of methanol and other petrochemicals.

These catalysts are key components in the manufacturing of plastics, fertilizers, and specialty chemicals. Since the demand for chemicals, plastics is rising in the domestic and export market, the access to copper and cobalt is becoming strategically important. By securing overseas mines and building reliable supply chains, India ensures stability for its chemical manufacturers.

This supports the industrial growth, but also helps the country remain competitive in the global markets, where the catalysts are critical in the large-scale production processes.

3. **Impact on fertilizer and agrochemical markets:**

Phosphate and potash are critical minerals like lithium and cobalt, and they are directly fed into the fertilizer and agrochemical sectors. India is one of the largest consumers of fertilizers. Therefore, a stable supply of these minerals helps maintain food security. The processing of these minerals involves chemical reactions, and the fertilizers such as DAP and MOP (Diammonium Phosphate and Muriate of Potash) are produced. Therefore, the country needs an assured supply of these minerals without the risk of price volatility. This directly impacts farmers and agricultural productivity.

To sum up…

India's critical minerals strategy doesn't stop with mining; it is about creating a resilient ecosystem for the country's future. By securing overseas resources, forming international alliances, India can build a domestic chemical processing industry and lay the foundation for long-term energy security and industrial strength. Already, the government's legal and financial reforms have given the Indian companies confidence to compete with the global players. In addition to this, the national stockpiles are acting as a safety net against the supply chain shocks. In this situation, if the country connects raw materials to downstream industries, such as batteries, catalysts, fertilizers, and specialty chemicals, it can ensure the value is captured within the country. The global demand for clean energy and advanced technologies is growing; this proactive approach of India can effectively position it as a competitor in the global minerals market.

Brazils Anti-Dumping Measures What They Mean for Indian Steel and Petrochemical Companies

Vinodhini Harish

Introduction:

What should Indian steelmakers and petrochemical exporters observe in Brazil's investigations? Brazil's anti-dumping measures are intensifying, and this is changing global trade dynamics. Recently, they have imposed temporary duties on polyethylene resin imports from the United States, Canada, and, alongside permanent measures, on carbon steel sheets from China. Although India is not targeted, the move has significant implications for the Indian companies that are operating in the steel and petrochemical sectors. In this article, we have covered essential information related to the news, as we have explored

the background, latest actions of Brazil, and potential impact on Indian companies and global trade. It's going to be an interesting read.

Brazil's anti-dumping actions and their impact on Indian companies:

Brazil has become more active in defending its industries, especially what it sees as unfair foreign competition. Brazil's trade panel, the Executive Management Committee of the Foreign Trade Chamber, has imposed measures against the imports of certain petrochemicals and steel products. Their latest strategy targets polyethylene resin imports from the United States and Canada, and carbon steel sheets from China. Brazil has also turned its attention towards India and has been launching investigations into several categories of Indian steel exports.

Brazil's antidumping measures were specifically aimed at Polyethylene resins from the U.S and Canada (temporary for 6 months) and Carbon Steel sheets from China (permanent). The investigations in Brazil showed that the exports from these countries were sold below fair market value, and it is harming the Brazilian producers.

India was not part of the investigations as India doesn't export huge amounts of polyethylene or steel sheets to Brazil compared to the U.S, Canada, or China. In addition to this, there are no Brazilian authorities who have found evidence that the Indian products were being dumped in their market. Even though India is not directly restricted, there is a major global market balance shift when one country blocks or taxes imports from another.

These restrictions might open opportunities for Indian producers like Reliance, GAIL, or Opal, as the U.S or Canadian resins are facing temporary restrictions. The Chinese steel makers are facing permanent duties as well. Therefore, the Brazilian importers may turn towards Indian steel makers such as TATA Steel, JSW, or SAIL to fill the gap.

There is also a level of risk attached to the situation, considering the restrictions that the Chinese steel makers aren't selling their steel to Brazil; Chinese steel makers are not going to stop; instead, they might divert the excess supply to other markets such as Southeast Asia, the Middle East, or even India. This could potentially flood the global markets with cheap Chinese steel with pushed down prices, and Indian steel makers could face tougher competition both at home and abroad.

India itself has used these anti-dumping measures against Chinese steel and some petrochemical imports in the past. Therefore, if the diversion from the Chinese companies may pressure the government to impose fresh duties to protect the local industries.

Brazil's investigations:

1. Hot-rolled steel products:

In early 2025, Brazil opened an anti-dumping investigation into hot-rolled steel imports from China, India, and Indonesia. The complaint came from the Brazilian producers who argued that these imports are harming the local output and forcing them to cut prices unsustainably. The Hot-rolled steel is a critical raw material utilized for the automotive industry, construction, shipbuilding, and machinery manufacturing. These end-use industries have significant demand across the globe. Now India is one of the leading exporters of hot-rolled steel across the globe, and companies like JSW Steel and TATA Steel have expanded aggressively into the overseas markets, including Latin America. Brazil's probe, therefore, directly touches the Indian exporters.

2. Stainless steel flat products:

Brazil has also made investigations into the hot-rolled stainless steel flat products from China, India, and Indonesia. These stainless steel flat products are utilized in kitchen equipment, industrial machinery, architecture and construction, and consumer goods. India has leading companies like Jindal Stainless and thereby strong stainless steel industry; if the investigation leads to duties, then the Indian stainless steel exporters could face reduced access to Brazil's market.

3. Color-coated steel:

In 2024, Brazil initiated another anti-dumping probe that involves color-coated steel from China and India. This type of steel is used for roofing, wall cladding, and appliances. Again, Indian producers, especially those with integrated downstream operations possess risk losing the competitive advantage. Thus, if Brazil decides to impose duties.

India is not seen as a threat: deep analysis of Brazil's trade volumes:

India's total exports to Brazil are worth about 7.25 billion, whereas the steel-related exports are about 155 million, which is about only 2% of the total exports. The petrochemical exports like polyethylene resins are worth about 2.8 million, and that is almost negligible compared to the total. Therefore, on considering the total full trade basket, India's export in the categories Brazil is investigating, steel sheets and polyethylene resins are like tiny slices of the trade pie.

Brazil is currently prioritizing action against the countries where the import volumes are high and potentially damaging the local industries.