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MUMBAI | PAGES 80

DYES & CHEMICAL MARKET

Connecting the Chemical Industry Together !

A MONTHLY MAGAZINE DEVOTED TO

DYES CHEMICALS PHARMACEUTICALS API TEXTILE AUXILIARIES PAINTS SOLVENTS COSMETICS

Garment Industry Shaping the Global Textile Dye Market Reactive Dyes MMCFs and much more -Pg41

₹13,000 Crore Deal Akzo Nobel to Sell Dulux Paints India -Pg73

The Invisible Backbone of Modern Industries Why ECH Matters More Than You Think -Pg51

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
INTERNATIONAL EXHIBITION COMPANY

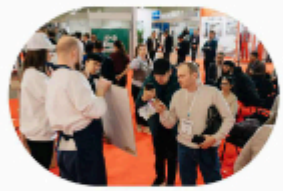
Central Asia Coatings Show is the largest industry project with a history of more than 5 years, having earned a strong reputation in the Central Asian market. The exhibition brings together leading Kazakhstani and global manufacturers of paints and coatings, raw materials, equipment, and technologies 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 (12.6% 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:

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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
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13.	Methacrylic Acid	CAS RN. 79-49-4
14.	Diethyl Oxalate	CAS RN. 95-92-1

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No	**Exibitions**	**Date**	**Place**
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 25 - 27, 2026	COEX, Seoul, Korea
7	CPhI India	Nov 25-27, 2025	Noida, India
MECS (Coating Show)			
1	Asia Pacific Coatings Show	Aug 26-28, 2026	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	2026	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	June 17-19, 2026	Istanbul
3	Paint Expo Eurosia	Apr 14-17, 2025	Karlsruhe, Germany
Other Exhibitions			
1	Paint India	Feb 19-21, 2026	Bombay Exhibition Centre, Mumbai
2	India Paint and Coating Expo	Apr, 6-8, 2026	Bangalore Exhibition Centre, 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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CHEMICAL MARKET

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

Building Trust, Collaboration, and Growth in a Changing Chemical Landscape

As we step into the final quarter of 2025, the global chemical industry continues to navigate an environment of rapid transformation — shaped by technological innovation, sustainability mandates, and evolving trade dynamics. What stands out more than ever is that trust and collaboration are becoming the real catalysts of growth.

This month, as we engage with businesses across continents, one message echoes clearly: **authentic connections drive progress**. The market has grown cautious of inflated data, misleading leads, and superficial partnerships. Genuine opportunities, rooted in transparency and mutual respect, are what every forward-thinking chemical business seeks today. At Chemical Market Magazine, we've built our philosophy around this — empowering companies to connect, collaborate, and grow with confidence.

The world's chemical ecosystem is diversifying faster than ever. Startups are challenging legacy models with agile innovations, while established manufacturers are embracing digital transformation to streamline supply chains. Artificial intelligence, automation, and analytics are no longer "futuristic" — they're tools of survival and strategy. Whether it's predictive demand modeling or optimizing logistics, the companies that adapt digitally are the ones securing their competitive edge.

However, with digital acceleration comes a growing need for credibility. As many have experienced, flashy websites and inflated claims don't translate into business value. The chemical industry, by nature, thrives on long-term relationships — where trust is earned through consistency and results. This is why platforms like **chemicalmarket.net** are seeing a renewed surge of interest: businesses want verified leads, authentic buyers, and partners who value professionalism over pretense.

Another trend reshaping the industry is the **sustainability revolution**. ESG (Environmental, Social, and Governance) reporting is now more than a compliance requirement — it's a brand differentiator. From greener feedstocks and energy-efficient manufacturing to circular economy models, the shift toward responsible chemistry is creating both challenges and opportunities. Indian companies, in particular, are rising to this call, positioning themselves as reliable global suppliers who care not only about profits but also about the planet.

In this issue, we explore how these transformations are influencing market behavior. We also shed light on how digital B2B networking is replacing outdated marketing practices. The goal is simple: to help our readers see the future not as a threat, but as an invitation to innovate.

At Chemical Market Magazine, our mission extends beyond news and analysis. We are building a **community of businesses that grow together**. Every article, every feature, and every new connection made through our platform is a step toward that vision — a marketplace that values integrity, collaboration, and progress.

As we close another vibrant year of engagement, we thank our subscribers and partners for believing in this mission. Your continued support encourages us to keep raising the bar — to create a publication and platform that truly serve the needs of the chemical fraternity.

Looking ahead, our focus remains on **real opportunities for real businesses** — ensuring that when companies connect through us, they find not just visibility, but value. Whether you're a manufacturer, trader, or distributor, we invite you to be part of this growing network that is redefining how the chemical industry communicates and collaborates.

Let's continue to build a marketplace rooted in trust, transparency, and shared growth — because that's where the real chemistry happens.

— Rajiv Parikh

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Citric Acid (Mono)	25Kgs	67.00
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D D Turpentine	200Litrs	145.00
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Polyethelene Glycol 600	230Kgs	150.00
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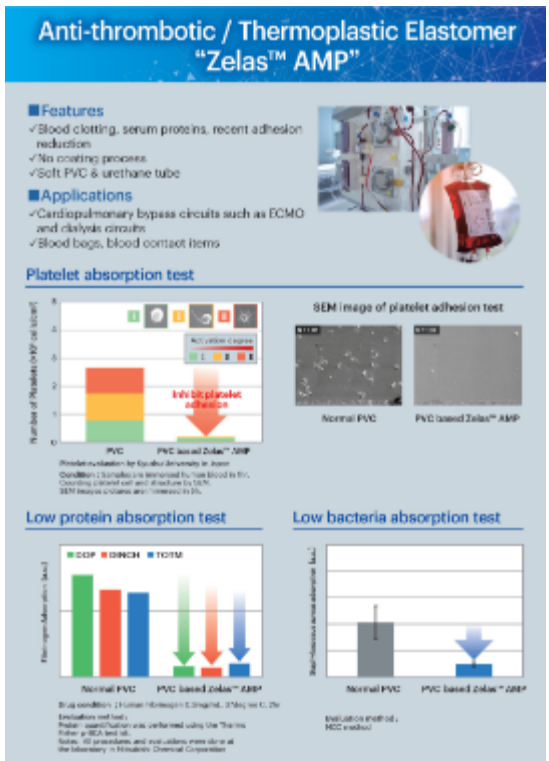
Zinc Sulphate Details : Di ethylene Glycol CLICK HERE TO VIEW Bhiwandi, Maharashtra, India	**3000 Kgs**	**Industrial**
METHYL TRICHLOROSILANE Details : We Request You To Send The Quotation, Specification And Delivery Period As Early As Possible CLICK HERE TO VIEW Mumbai, Maharashtra, India	**200 Litres**	**VirginPure**

Joint Research on Application of Antithrombogenic Thermoplastic Elastomer 'ZELAS™ AMP' to Medical Devices

Mitsubishi Chemical Corporation (Head Office: Chiyoda-ku, Tokyo; President: Manabu Chikumoto; hereafter 'MCC') has initiated a collaborative research project (hereinafter referred to as "the Joint Research") in partnership with Professor Masaru Tanaka of the Institute for Materials Chemistry and Engineering, Kyushu Univ. (Fukuoka City, Fukuoka Prefecture) and Professor Shigeru Miyagawa of Osaka University Graduate school of medicine, Cardiovascular surgery (Suita City, Osaka Prefecture), focusing on application of our antithrombogenic thermoplastic elastomer 'ZELAS™ AMP' to medical devices. Through this Joint Research, MCC aims for market launch of ZELAS™ AMP in 2027 and its global expansion.

In medical devices such as cardiac catheters and cardiopulmonary bypass circuits, anticoagulants have conventionally been coated onto the base resin to prevent blood coagulation and thrombus-related occlusion. However, since the cost of coating processes can only be justified for certain advanced medical devices, there is demand for materials that can provide antithrombogenic properties at a lower cost.

MCC has accumulated advanced formulation and compounding technologies for the medical-grade compound resin 'ZELAS™ AMP' over many years and has expanded its global supply system for medical materials※. The key polymer in ZELAS™ AMP is an amphiphilic polymer that combines blood compatibility, derived from its hydrophilic structure, with substrate affinity, derived from its hydrophobic structure. By adding this key polymer of ZELAS™ AMP to resins used as base materials for medical devices (such as polyvinyl chloride, polyurethane, and engineering plastics), antithrombogenic properties, low protein adsorption, and low bacterial adhesion can be imparted to the base material.



The Institute for Materials Chemistry and Engineering, Kyushu Univ. specializes in elucidating material structure and function from the atomic, molecular, and nanoscale to the macroscale, and has particular expertise in the surface design of medical devices. Osaka University Graduate school of medicine, Cardiovascular surgery is a world leader in research and development of advanced medical fields such as heart transplantation, assisted circulation, and regenerative medicine.

In this Joint Research, MCC will pursue the optimal addition and formulation design of ZELAS™ AMP key polymer for various resins used as base materials for medical devices. By developing ZELAS™ AMP in response to the needs of medical professionals, MCC aims to reduce the use of anticoagulants through antithrombogenic properties and eliminate the need for coating processes, thereby lowering risk and manufacturing cost for medical devices that come into direct contact with blood, such as cardiac catheters, cardiopulmonary bypass circuits, and dialysis and transfusion components.

MCC, under its management vision 'KAITEKI Vision 35', has designated technology and equipment for new therapeutics as one of its key business domains and aims to support new therapies with high-performance, medical-grade materials. Through the research and development of antithrombogenic thermoplastic elastomer 'ZELAS™ AMP' in collaboration with healthcare professionals, MCC will contribute to

improving the functionality and safety of blood-contacting medical devices.

【About the Institute for Materials Chemistry and Engineering, Kyushu Univ.】
The Institute for Materials Chemistry and Engineering, Kyushu Univ. engages in a wide range of research, including synthesis of new functional molecules, the chemistry of novel molecular assemblies, the organic-inorganic hybrid materials, and the chemistry related to the application of advanced materials to devices.
Professor Masaru Tanaka is a leading expert in biomedical materials and medical device surface design. In this Joint Research, he will be responsible for evaluating the antithrombogenic properties of various medical materials, including ZELAS™ AMP, and will provide technical advice on nanoscale surface analysis and material design. By leveraging his profound expertise in the creation and application of molecular assemblies and hybrid materials, he will support optimal material design.

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

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Eurofragance introduces proprietary perfumery ingredient Olivante

Eurofragance will unveil its fourth proprietary perfumery ingredient in Dubai at the Beautyworld Middle East trade show on October 27, 2025. The Spanish fragrance house's latest exclusive raw material brings opulence to fragrance compositions.

Olivante is not only destined to a Middle Eastern target; but also can act as a highlighter of typical western world perfumery ingredients. Eurofragance Perfumers, who have been formulating with this innovative captive ingredient, state that with the inclusion of Olivante, fruity notes become richer, gourmand notes more delightful and delectable, and certain white floral notes more intense.

Belén Garcia, Master Perfumer at Eurofragance who is composing with the raw material says: "In recent years we have seen how consumers in the West have opened up to Middle Eastern perfumery. Powerful notes of leather and oud have gained consumer acceptance well beyond the Gulf Region. Olivante® is multi-faceted and offers some of these olfactive aspects that are now appreciated across geographies."

In developing its fourth proprietary raw material, Eurofragance followed its sustainability philosophy. It collaborated with a partner in the olive oil industry who upcycles olive residues into various byproducts, following the extraction of oil from the olives.

Felipe San Juan, R&D Manager Ingredients and Fragrance Performance and Magdalena Rey, Technical Perfumer, both at Eurofragance, spent months scouring the Spanish countryside searching for the variety of olive with the right concentration of the desired volatiles and precursors.
San Juan states: "Olivante® cannot be made from any random olive pulp. Terroir and climate from a very specific region of Spain are key to this project. Then we applied our scientific expertise to characterize and separate the essential odorant molecules needed to develop a desirable captive ingredient."

Read the full report : https://www.indianchemicalnews.com/general/eurofragance-introduces-proprietary-perfumery-ingredient-olivante-27811

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India's USD 85 Billion Chemical Export Goal NITI Aayog's Plan Explained

Team Chemical Market

Introduction:

The Indian government's policy think tank, NITI Aayog, doesn't implement schemes directly, but it creates strategies, frameworks, and recommendations to guide the country's growth economically and is responsible for social development. NITI Aayog decided to strengthen the infrastructure, incentivizing domestic production and shifting towards specialty chemicals. The ultimate aim is to position the country as a leading hub that is competitive, self-reliant, and globally integrated. Therefore, it is good to analyse their recommendations very often to understand the areas to improve. We have discussed their recent recommendations in the article; let's begin!

Key factors involved in the strategy include:

NITI Aayog have developed a strategy to transform the Indian chemical industry into a global growth engine. The plan is to increase(double) chemical exports of the country to USD85 billion by 2030 and to expand the domestic market to USD 1 trillion by 2040. This will probably increase the country's global value chain share from 3.5% to 5-6%. At present, the country faces a USD 31 billion trade deficit, especially due to heavy reliance on imports of critical intermediates. Thus the strategies include the following:

- **Infrastructure push:**

The major focus is to upgrade the ports, storage, and logistics. At present, the country's ports are facing bottlenecks like inadequate chemical storage, inefficient cargo handling, and slow customs clearance. These gaps have increased the costs and thereby reduced the export competitiveness. NITI Aayog recommends focusing on developing modern port facilities that include specialized chemical terminals, faster clearance systems, and safer logistics networks. It also emphasizes the need for faster customs clearance and smoother regulatory processes that will also reduce delays and costs.

Improved infrastructure will help in cutting down turnaround times, attract foreign investments, and enable smoother exports. By addressing these physical constraints, the country can cut supply chain delays and ensure that its chemical exports reach international markets more efficiently, strengthening its position in the global chemical trade. Also, by strengthening logistics, India can reduce the transportation costs and increase reliability, and make the exports more competitive in the global market. Well-equipped ports will attract more private investments and ensure seamless supply chain integration.

- **Cluster development:**

NITI Aayog highlights the importance of petroleum, chemicals, and petrochemicals investment regions as hubs for scaling production, existing regions such as Dahej(Gujarat), Paradeep(Odisha), and Vizag(Andhra Pradesh). The progress has been uneven, with Pradeep and Vizag still incomplete. NITI Aayog stresses that revitalizing these clusters is essential to achieve scale and reduce costs, and attract global investors.

Clusters allow companies to share infrastructure, utilities, logistics, and other resources. This makes the operations more cost-effective. If the country could strategically place these clusters close to the ports, then this could be a strategic advantage to the nation. This reduces the transportation costs for both raw material imports and finished goods exports.

The idea is to support the development of new chemical clusters in high-potential regions, which can further expand India's manufacturing base. If the nation executes this well, then the cluster-based growth can create economies of scale, encourage innovation, and make the Indian products more competitive across the globe.

Ultimately, by completing and expanding PCPIR projects, India can become a global hub for chemicals and reduce its dependence on imports, thereby meeting both the domestic and international demand more effectively.

- **Sales-linked Incentive(SLI) scheme:**

Continued on page 37

MORE SUSTAINABLE TIRES: TOTALENERGIES' CRAY VALLEY AFFILIATE SUPPLIES RESINS (CLEARTACK® AND RICON®) DERIVED FROM USED COOKING OIL FOR SYNTHETIC RUBBER PRODUCTION

Brussels, Belgium, September 9, 2025 – TotalEnergies's Cray Valley Affiliate has signed a new agreement to supply tire manufacturer Continental with ISCC Plus-certified Cleartack® and Ricon® resins. Using a mass balance approach, the Cleartack® and Ricon® resins will enable the increase of renewable materials in the value chain of Continental tires while maintaining the highest level of safety and performance through specific tire tread formulation.

Cleartack®, a pure monomer low molecular weight tackifying resin, and Ricon®, a Liquid Polybutadiene resin that enhances the performance of tires, are produced at TotalEnergies' Carling, France site. The ISCC Plus-certified bio-feedstock originally comes from vegetable oil or used cooking oil processed at TotalEnergies' biorefinery in La Mède, France. Cray Valley will supply Cleartack® and Ricon® resins to different Continental tire plants in Europe.

The agreement highlights Cray Valley's ambition to develop low carbon solutions for high-value applications such as automotive applications, enabling their clients to reduce the carbon footprint of their products through the use of renewable feedstock in their value chain.

"The collaboration with Continental is the ideal example of a long-term and trustworthy partnership with a common target: achieving performance while accelerating the transition to more sustainable materials through innovative and reliable solutions. We are very proud to support our long-standing partner to reach its sustainability ambitions. Simultaneously, this agreement is part of our 2030 ambition to supply more than 30% of our total volume as sustainable resins," said Thierry Lebriat, Global Head of Sales at Cray Valley.

Source : Press Release

RECYCLED ACRYLIC RESIN JOINTLY DEVELOPED WITH HONDA IS USED FOR THE DOOR VISORS OF THE N-ONE E:

Mitsubishi Chemical Corporation (Head Office: Chiyoda-ku, Tokyo; President & CEO: Manabu Chikumoto) and Honda Motor Co., Ltd. (hereinafter "Honda") have jointly developed PMMA (polymethyl methacrylate; hereinafter "acrylic resin") recycled material for the door visors of the new N-ONE e: mini-electric vehicle, which will be released on September 12, 2025. This marks the first time in the automotive industry that recycled acrylic resin has been used for door visors*.

Acrylic resin can be converted back into its raw material, MMA (methyl methacrylate), through thermal decomposition, and it is thus suitable for chemical recycling. Since 2021, Mitsubishi Chemical had been conducting joint research with Microwave Chemical Co., Ltd. on microwave-based thermal decomposition recycling technology toward its present establishment. However, acrylic resin recovered from end-of-life vehicles has been difficult to recycle into products due to its unstable quality and unsuitability for reuse. To solve the problem, Mitsubishi Chemical started to conduct demonstration experiments aimed at practical recycling of acrylic resin together with Honda and Hokkaido Auto Dismantler corporation. Together with these companies, Mitsubishi Chemical successfully established a recycling technique that prevents foreign matter from being included in recovered acrylic resin, and that secures quality equivalent to virgin acrylic resin. For the door visors employed for the N-

ONE e: vehicle, recycled acrylic resin is recovered and recycled using this technique, enabling reduction of CO_2 emissions generated in its manufacturing and disposal, as well as resource recycling.

Mitsubishi Chemical is continuing to promote technological development of acrylic resin, aiming to become a "green specialty company" that inspires customers with the power of materials, and to realize a sustainable society.

Source : Mitsubishi Chemical

BASF DELIVERS FIRST CATHODE ACTIVE MATERIALS FOR SEMI-SOLID-STATE BATTERIES TO WELION NEW ENERGY

- Significant progress through close collaboration in the Solid-State battery sector
- New CAM technology enhances energy density and safety
- From concept to mass production in just one year

BASF Battery Materials, through its joint venture BASF Shanshan Battery Materials Co., Ltd. (BSBM), has achieved a major milestone in next-generation battery technology. In collaboration with Beijing WELION New Energy Technology Co., Ltd., BASF has successfully delivered its first batches of mass-produced Cathode Active Materials (CAM) for Semi-Solid-State batteries – marking a significant step towards industrializing Solid-State batteries.

With the rapid development of the new energy industry, the market demands higher energy density and further enhanced safety from batteries. Solid-State batteries, including Semi-Solid-State batteries, are seen as the next generation of battery technology and have garnered widespread attention.

WELION New Energy is recognized as a pioneer with over 40 years of experience in exploring Solid-State battery technologies that are primarily used in electric vehicles, energy storage, and other applications such as drones and power tools. BSBM brings more than two decades of expertise in cathode active materials development and production, and, with that, the ability to handle critical challenges of Solid-State batteries.

Since the project initiation in August 2024, both parties have moved swiftly from concept to mass production in just one year through seamless teamwork and a shared commitment to technological advancement. The BSBM R&D team developed an ultra-high Nickel NCM (Nickel Cobalt Manganese) cathode active material with a unique composite coating layer to address interface issues between CAM and solid electrolytes. This not only enhances the energy density by higher capacity and lower resistance but also improves the cycling performance and calendar life through suppressing side reactions in interfaces between CAM and electrolyte. Therefore, this successful collaboration represents a true milestone toward the next generation of advanced batteries.

"The commercial implementation of this project is a result of our high technological competency as well as the close interaction between our technical teams," commented Dr. Xin Xia, CTO of BSBM. "We are proud to jointly contribute to the future of the battery industry," added Dr. Wenjun Li, Director of WELION New Energy Engineering Institute.

"We are impressed by BASF's robust technology and fast response. As a leading manufacturer in the Solid-State battery industry, WELION will use BASF's cathode materials in our new generation of Semi-Solid-State batteries and look forward to more joint projects both at home and globally," said Dr. Jin Xiang, General Manager of WELION New Energy.

"We sincerely thank WELION New Energy for their trust. This collaboration marks a milestone for our battery materials business and is a significant step forward in the field of Solid-State batteries. We look forward to further deepening our cooperation with WELION New Energy and achieving further breakthroughs in Solid-State battery technology together," added Desmond Long, Senior Vice President of BASF Battery Materials and CEO of BSBM.

This milestone reflects the shared commitment of WELION New Energy and BASF to accelerate the development, commercialization, and large-scale industrialization of next-generation battery technologies. By combining WELION's pioneering expertise in Solid-State Batteries with BASF's advanced materials innovation,

both companies are driving meaningful progress toward safer, more energy-dense solutions. The successful delivery of Cathode Active Materials for Semi-Solid-State batteries marks a strategic advancement in their global collaboration and sets the stage for future breakthroughs in the battery industry.

Source : BASF

BASF LAUNCHES GLYSANTIN ELECTRIFIED LOW ELECTRICAL CONDUCTIVITY COOLANTS FOR EV

BASF has launched its new Glysantin Electrified low electrical conductivity coolants (LECCs) to enhance the safety and stability of battery systems in electric vehicles. Complying with the new GB 29743.2-2025 standard, which comes into effect on October 1 in China, these coolants are engineered to mitigate risks associated with battery failures, thereby improving overall vehicle safety and longevity.

BASF's LECCs maintain low and stable currents when exposed to high-voltage components, minimizing fluid decomposition and hydrogen generation. These features help prevent overheating, fire and explosion, enhancing both the safety and long-term stability of batteries. Additionally, the newly developed coolants offer excellent corrosion protection and compatibility with various materials, having received certification from external testing institutes such as SGS and RATTC, a subsidiary of the Ministry of Transport of China.

"We are excited to offer these innovative coolants, fully compliant with the upgraded national standard, to our customers," said Matthias Lang, Vice President, Business Management of Fuel and Lubricant Solutions Asia Pacific. "This advancement reflects the collaborative efforts of the Ministry of Transport of China, leading research institutions, OEMs and industry players, including BASF, to establish the new GB standard, all aimed at enhancing the safety of electric vehicles."

BASF has commenced production of the new LECCs at its Pudong site in China, the largest market for new energy vehicles. This move accelerates BASF's strategy tailored to regional and local markets and highlights the synergy between its global R&D capabilities and local operations.

"The initial launch of LECCs is focused on China, where we see primary customer interest," added Lang. "When this interest grows outside of China, we will continue to leverage our global presence and technical expertise to serve our customers seamlessly."

Source : Indian Chemical News

PLASMATREAT GMBH: PLASMA TECHNOLOGY SUPPORTS THE AUTOMOTIVE INDUSTRY IN TERMS OF QUALITY AND SUSTAINABILITY

STEINHAGEN, Germany, Sept. 29, 2025 /PRNewswire/ -- The industry is facing major challenges, such as new materials, lightweight construction concepts, and growing sustainability requirements, which call for innovative manufacturing processes. Plasma technology plays a key role in meeting these challenges.

Plasmatreat GmbH develops customized applications for this purpose. The Openair-Plasma® process gently and environmentally friendly pretreats surfaces. This allows materials such as plastic, metal, and glass to be precisely cleaned and prepared for further processing. This significantly improves the adhesion of adhesives, paints, coatings and sealants without using environmentally harmful chemicals.

Additionally, these processes are dry, fully automatable, and can be integrated directly into existing production lines. This increases efficiency, reduces waste, and lowers costs. At the same time, durable bonds contribute to higher product quality and longer component life.

What exactly is plasma?

Often referred to as the "fourth state of matter," plasma joins solid, liquid, and gaseous states. It is a high-energy gas that modifies surfaces specifically. At Plasmatreat, this modification is done in a controlled and precise manner

using special nozzles. The treatment takes only seconds and immediately prepares surfaces for further processing.

Practical examples:

Plasma technology has already established itself in numerous areas of automotive production.

- Headlights: Treating plastic parts ensures permanent adhesion and protects against moisture.
- Interior: Pretreated surfaces allow for precise, solvent-free processing of dashboards and door modules.
- Batteries: In electromobility, plasma improves thermal conductivity in bonded cells, resulting in shorter charging times.

Potential for Other Industries

In addition to the automotive industry, other industries benefit from plasma applications, including electronics manufacturing, medical technology, and the packaging industry. Plasma opens up new possibilities wherever reliable adhesion, clean surfaces, and environmentally friendly processes are required.

Technology for Tomorrow's Mobility

Plasma applications are important for quality, efficiency, and sustainability in vehicle production. They support the use of modern materials and are therefore a building block for the mobility of the future.

Source : Plasmatreat

PURE LITHIUM TAPS VOLTAIQ'S PLATFORM TO COMMERCIALIZE NEXT-GEN LITHIUM METAL BATTERY

Pure Lithium, a vertically integrated and disruptive lithium metal battery technology company, has selected Voltaiq's Enterprise Battery Intelligence platform to support the commercialization of its next-generation lithium metal batteries. This strategic partnership marks a critical milestone as Pure Lithium transitions from research and development to full-scale commercial operations.

Voltaiq, a recognized leader in battery analytics and quality control software, will provide Pure Lithium with advanced battery data intelligence tools designed to optimize manufacturing performance and accelerate product delivery.

As Pure Lithium relocates its operations to Chicago and launches its first pilot production line, the partnership with Voltaiq ensures robust quality control and streamlined production workflows, essential for meeting growing customer demand.

Previously, Pure Lithium relied on internal analytics systems to support its R&D efforts. However, with the company's focus now shifting toward commercialization, the need for a scalable, secure, and commercially focused platform became paramount. Voltaiq's solution enables real-time battery quality monitoring and analytics, significantly reducing time-to-market and manufacturing risks. In some applications, Voltaiq has demonstrated the ability to detect battery defects weeks in advance, enabling up to 50 per cent faster factory ramp-up.

The collaboration will play a central role in enhancing operational efficiency, ensuring seamless data management during the company's cross-country relocation, and delivering substantial cost savings compared to maintaining in-house software systems.

"As we bring a new anode production method online—something that has never been done before—we need a battery analytics platform that is both robust and commercially oriented," said Emilie Bodoin, Founder and CEO of Pure Lithium. "Just because you can build it, doesn't mean you should. In today's competitive environment, speed to market is invaluable. With Voltaiq as our software partner, we're accelerating commercialization while allowing our team to focus on what they do best."

Tal Sholklapper, Co-Founder and CEO of Voltaiq, added, "We're proud to support Emilie and the Pure Lithium team in bringing this groundbreaking technology to market. Lithium metal batteries, especially those made from lithium refined domestically, hold transformational potential for the battery industry and broader clean energy economy."

Source : Indian Chemical News

ALAMAR BIOSCIENCES LAUNCHES NULISAQPCR™ BD-PTAU217 ASSAY: A BREAKTHROUGH IN NON-INVASIVE, BRAIN-SPECIFIC BIOMARKER DETECTION FOR ALZHEIMER'S DISEASE RESEARCH

FREMONT, Calif., Oct. 9, 2025 / PRNewswire/ -- Alamar Biosciences, a company powering precision proteomics to enable the earliest detection of disease, today announced the launch of the NULISAqpcr™ BD-pTau217 Assay— a transformative leap in blood-based quantification of brain-derived phosphorylated tau 217 (pTau217)—a pivotal biomarker in Alzheimer's disease research and other tauopathies. This first-of-its-kind assay is the only brain-derived single-plex solution available, setting a new benchmark for precision and CNS specificity in neurodegenerative disease research.

Built on Alamar's proprietary NULISA™ platform, the NULISAqpcr BD-pTau217 Assay delivers unprecedented sensitivity and specificity from non-invasive sample types such as plasma, serum and dried blood spots. The research assay's direct measurement of CNS-derived pTau217 without the need for cerebrospinal fluid (CSF) collection or PET imaging removes existing barriers to widespread adoption in population-based studies or longitudinal clinical trials.

"The NULISAqpcr BD-pTau217 Assay redefines what's possible in CNS biomarker quantitation," stated Dr. Yuling Luo, Founder, Chairman and CEO of Alamar Biosciences. "By removing the noise from the peripheral sources of tau, researchers can now detect meaningful changes in the brain earlier and with higher precision."

"The performance of Alamar's brain-specific plasma pTau217 assays is excellent," said Jonathan Schott, MD, PhD, Professor of Neurology, University College London. "For the detection of Alzheimer's pathology with cognitive symptoms, our early results suggest that the single-plex format performs at least as well as established plasma ptau217 tests, but has a higher fold-change, and results in fewer samples being classified in the indeterminate range. In a research setting, brain-specific pTaus measured using the multiplex assay show great promise in detecting asymptomatic individuals with high levels of Alzheimer's pathology who may be candidates for clinical trials of disease modifying therapies."

Available as a single-plex NULISAqpcr assay or within the multiplex NULISAseq™ CNS Disease Panel 120, the BD-pTau217 assay will support both discovery and translational research. The assay's automated workflow enables processing of over 220 samples per day with the ARGO™ HT System, making it ideal for high-throughput analysis in disease cohorts or population-based studies.

Alamar Biosciences continues to collaborate with the neuroscience community to unlock biomarker insights that accelerate progress in Alzheimer's and beyond. Visit alamarbio.com to learn more.

The NULISA BD-pTau217 Assays are for research use only and not for use in diagnostic procedures.

Source : Alamar Biosciences, Inc.

NEXT GENERATION REFRACTIVE SURGERY TO LASIK AND SMILE NOW AVAILABLE FOR CLINICAL REVIEW

SINGAPORE, Aug. 18, 2025 / PRNewswire/ -- Dr. Natasha Lim, an internationally renowned surgeon in Ophthalmology, has introduced an alternative to established refractive surgery techniques for medical practitioners in Singapore to explore. Smooth Incision Lenticule Keratomileusis (SILK), a recent advancement in laser vision correction, offers a potentially improved approach to correcting myopia and astigmatism. SILK is a flapless refractive surgery that uses a more recent iteration of the femtosecond laser to create and extract a lens-shaped piece of corneal tissue, called a lenticule, to reshape the eye. A pioneer surgeon in Singapore for the SILK procedure, Dr. Natasha Lim is opening her eye centre for professional discussion and clinical review of the technology and technique behind it.

Comparing SILK to Existing Procedures: LASIK, SMILE

LASIK, a widely established refractive surgery for myopia and astigmatism, involves the creation of a corneal flap. Clinically, LASIK has demonstrated efficacy in correcting myopia up to -12.00DS[1] and astigmatism up to -6.00DC[1]. SILK, a flapless procedure, has since been shown to replicate LASIK's treatable range for myopia up to -12.00DS[2] and astigmatism up to -6.00DC[2].

SILK is not indicated for the correction of hyperopia. However, its minimally invasive nature sets it apart from LASIK—the former does not create a corneal flap, but instead forms a thin lenticule within the cornea.

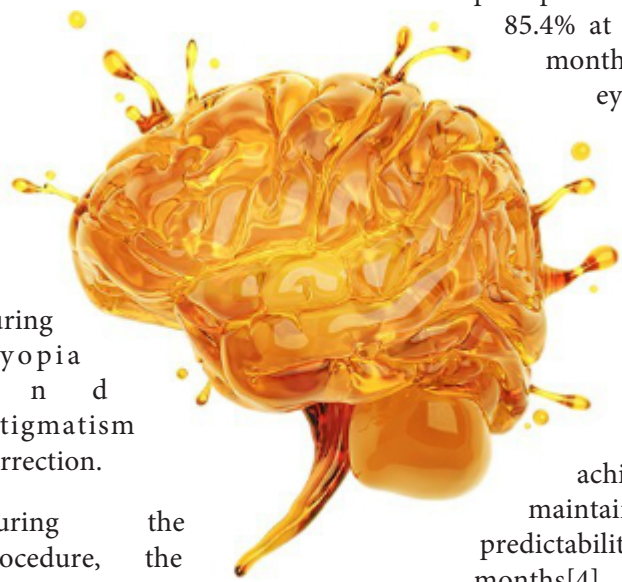
This suggests that flapless refractive surgeries, such as SILK, can potentially reduce the onset of risks associated with flap complications—such as wrinkles, displacement, and conditions such as corneal ectasia and dry eye syndrome[2]—which can affect visual outcomes and necessitate further correction.

Preceding SILK surgery is Small Incision Lenticule Extraction (SMILE), introduced in 2009. SILK incorporates further technological advancements to the SMILE procedure, including a submicron precision laser system, which delivers lower energy per pulse (at 40 to 90 nanojoules) compared to other laser systems, and is meant for easier and faster tissue dissection time with less post-operative inflammation[3] and faster vision recovery time. Furthermore, SILK employs a proprietary biconvex lenticule shape designed for faster, more optimal healing and better quality of vision, as compared to the asymmetrical shape used by SMILE.

The targeted result is a smoother corneal surface and potentially reduced surgical time, hence enabling faster post-operative visual recovery.

SILK Surgery Operating Procedures

Preoperatively, patient-specific data, including corneal pachymetry and refractive error measurements, are entered into the SILK laser system. The system machine will process this data to inform the automated calculation of lenticule parameters, including the thickness and diameter of corneal tissue (lenticule), for precise tissue extraction during myopia and astigmatism correction.



During the procedure, the patient is positioned under the surgical microscope and cold diode laser delivery system. A fixation light is presented to the patient to ensure stable ocular alignment. The cold diode laser then executes a pre-programmed cutting pattern, creating a lenticule within the corneal stroma and an approximately two-millimetre peripheral incision, allowing the lenticule to gently be removed from within the cornea.

Following laser application, the ophthalmologist proceeds with controlled lenticule dissection and extraction.

Post-Procedure Results

Smooth Incision Lenticular Keratomileusis takes around two minutes to perform, with 85.3%[4] of eyes requiring no or only mild dissection. Patients report an average of one (1) day of downtime for the cornea to reshape by itself.

Clinical studies of the Smooth Incision Lenticule Keratomileusis (SILK) procedure, utilising a femtosecond laser system, demonstrate favourable outcomes: In a 2023 study of SILK surgery, 65.9% achieved a monocular uncorrected distance visual acuity (UDVA) of 20/20 or better at postoperative day one, increasing to 85.4% at one week and 96% at six months. At six months, 100% of eyes achieved a monocular UDVA of 20/40 or better, and no eyes lost any lines of corrected distance visual acuity (CDVA)2.

Refractive stability, as measured by mean refractive spherical equivalent (MRSE), was achieved by three months and maintained at an MSRE predictability of 91.1% through six months[4].

"As an updated version of SMILE, SILK has the potential to be a more effective option for refractive surgery with possibly reduced downtime. Ophthalmologists may soon advise SILK surgery for patients to have a more comfortable and quicker path to clear vision," said Dr Natasha Lim, one of the pioneer surgeons in Singapore for the SILK surgery and the director of Dr Natasha Lim Eye Centre.

As an internationally renowned pioneer LASIK surgeon in Singapore, Dr Natasha Lim has been recognised for her extensive contributions to refractive surgery. She is the only ophthalmologist from Singapore elected to publish her LASIK results on the worldwide AMO iDesign Registry, providing clinical guidance to other LASIK surgeons globally.

Source : Dr Natasha Lim Eye Centre

POLYPLASTICS' DURAST (R) FINE POWDER TECHNOLOGY UNLEASHES NEW MANUFACTURING POSSIBILITIES FOR ENGINEERING PLASTICS

TOKYO, Sept. 24, 2025 / PRNewswire/ -- Polyplastics Group, a global leader in engineering thermoplastics, has announced the introduction of DURAST (R) Powder technology which transforms high-performance resins into fine powders, enabling the use of diverse manufacturing processes from prototyping to 3D printing and mass production.

The DURAST (R) Powder technology successfully micronizes high-strength, high-molecular-weight resins -- which were previously difficult to powder -- into various shapes such as spherical or fibrous forms based on application requirements. In particular, high-performance resins like liquid crystal polymer (LCP) and polyphenylene sulfide (PPS) faced challenges with conventional grinding methods, such as particle agglomeration and reduced flowability. Using Polyplastics' proprietary technology, DURAST (R) Powder achieves uniform powderization with an average particle size of approximately 1-100 micrometers for LCP. This powder exhibits excellent powder flowability and mixing dispersibility, contributing to process stability and improved quality.

Resins such as polybutylene terephthalate (PBT) and polyacetal (POM) pose significant challenges in terms of micronization due to their low glass transition when processed via conventional grinding methods. In the case of PBT and POM, the glass transition temperature (the temperature above which resin softens) is low, causing the material to easily agglomerate due to friction heat during grinding. The new technique has successfully enabled the powderization of these high-molecular-weight resins. When considering the thermal and mechanical properties of these resins and selecting powderization methods suited for each, the technology produces powders with particle sizes ranging from 20 micrometers to 100 micrometers with a narrow particle size distribution.

DURAST (R) Powder is suitable for additive manufacturing using 3D printers and powder sintering, enabling the production of complex shapes and high-precision parts. Additionally, it is expected to be utilized as a matrix resin for carbon fiber-reinforced thermoplastics and as an organic filler or reinforcing material.

Source : Polyplastics Co., Ltd.

ANGEL LAUNCHES A NEW ERA OF WHOLE-HOUSE PURIFICATION & DRINKING WATER WITH THE SUCCESSFUL DEBUT OF ITS MINERALIZED WATER DISPENSER

SHENZHEN, China, Sept. 24, 2025 / PRNewswire/ -- ANGEL, a global leader in water purification technology, successfully hosted its "ANGEL Space Master Bestseller & The World's First Mineralized Water Dispenser Launch" event in Shenzhen under the theme "Global Leader in Water Purification Technology". The event, marked a milestone with the debut of ANGEL's Golden-Ratio Mineralization Water Dispenser and the upgraded Space Master Series Whole-House Purification System, alongside the launch of its new global store identity branding system. Distinguished guests, including Gu Zhongyi of the Beijing Nutritionist Association, Tang Limei, China's first female deep-sea scientist aboard Jiaolong, Qian Kun of China University of Geosciences, and Bian Qi from COFCO's Nutrition & Flavor Institute, joined ANGEL executives to discuss future trends in healthy drinking.

Innovation-Driven Growth

Chairwoman and President Ms. Kong Na highlighted ANGEL's 38-year journey of technological breakthroughs that continue to reshape industry standards and consumer lifestyles. She emphasized that innovation is the foundation of ANGEL's resilience and success, with the Golden Ratio Mineralized Water Dispenser representing a benchmark for healthy hydration.

Pioneering Products for a Healthier Future

As safe drinking water in China is largely secured, consumer demand has shifted toward healthy hydration. In

response, ANGEL, together with the Key Laboratory of Groundwater & Health, identified the natural calcium–magnesium balance found in long-life regions and applied it to the industry's first Golden Ratio Mineralized Water Dispenser. The system uses patented sensing technology and a dual-waterway design to deliver both purified and mineral water, ensuring real-time monitoring, scientific balance, and a smarter drinking experience. ANGEL launched the Space Master Series M7 Home 1200 water purifier with V12 Ultra-Silent Diaphragm Pump 2.0, boosting flow by 50% while cutting noise by 30%.

Expert Recognition

ANGEL's "purify then mineralize" route was hailed as a scientific, responsible upgrade, with its Golden Ratio Mineralized Water Dispenser bringing natural benefits to every home. Experts highlighted its smooth, refreshing taste—enhancing tea's clarity and aroma and coffee's crema and flavor.

The event concluded with a strategic signing ceremony, cementing ANGEL's leadership in setting new standards for whole-house purification in China. Looking ahead, ANGEL will continue to drive the industry from "safe drinking" to "healthy drinking," providing scientific, intelligent, and sustainable purification and drinking water solutions for families.

Source : Angel Drinking Water Industrial Group

SUMITOMO CHEMICAL AND JFE ENGINEERING TO START DEMONSTRATION TEST FOR CO_2 RECOVERY USING MEMBRANE SEPARATION TECHNOLOGY THE FIRST ATTEMPT IN JAPAN TO RECOVER CO_2 FROM A WASTE TO ENERGY PLANT BY MEMBRANE SEPARATION

Sumitomo Chemical Co., Ltd. ("Sumitomo Chemical") and JFE Engineering Corporation ("JFE Engineering") have decided to jointly conduct a demonstration test for CO_2 separation and recovery utilizing proprietary membrane technology. This is part of the Green Innovation Fund Project "Technology Development for CO_2 Separation and Recovery" ("the Project") commissioned by the New Energy and Industrial Technology Development Organization ("NEDO"). The demonstration test will begin in March 2026 at the Ukishima Municipal Solid Waste Disposal Center, a waste to energy plant managed and operated by the Environmental Protection Bureau, Kawasaki City. This will be the first attempt in Japan* to recover CO_2 from exhaust gases of a waste to energy plant by using membrane separation technology.

As efforts to achieve a carbon neutral society advance, demand for technologies to separate and recover CO_2 from exhaust gases at power generation and industrial facilities is growing. Meanwhile, to introduce such technologies to medium-scale emission sources, including waste to energy plants and small factories, it is necessary to develop a compact, lower cost system, which remains a vital issue. Since May 2022, under the Project commissioned by NEDO, Sumitomo Chemical has been working with OOYOO Co., Ltd. ("OOYOO") to develop cost-effective technology for separating and recovering low-pressure, low-concentration CO_2 using separation membranes. To date, the companies have succeeded in manufacturing full-scale separation membrane elements and assembling modules that combine multiple elements. JFE Engineering, a comprehensive engineering company with extensive experience in the engineering, procurement, construction, and operation of waste to energy plants, as well as in energy plants and infrastructures such as bridges and steel structures, joined the Project in April 2025.

In this joint demonstration test, Sumitomo Chemical will undertake the assembly and processing of membrane modules using the CO_2 separation membranes it has developed with OOYOO, as well as the basic design of the separation process, and provide a system that enables energy-efficient separation and recovery of CO_2 from exhaust gas with low CO_2 concentrations (below 10%), such as that from a waste incineration process. JFE Engineering will handle the detailed design of the CO_2 separation and recovery process, and will also design, install, and operate a

demonstration test facility capable of incorporating the CO_2 separation and recovery system. The facility will be installed at the Ukishima Municipal Solid Waste Disposal Center, which is aiming for carbon neutrality in waste management, and is scheduled to begin operation in March 2026.

Comment by Junpei Tsuji, Managing Executive Officer, Sumitomo Chemical
As the world strives to achieve a carbon neutral society by 2050, there is a growing demand for the implementation of CO_2 separation and recovery technologies across various sectors, including industry, power generation, and waste incineration. Against this backdrop, Sumitomo Chemical has been developing a CO_2 separation membrane technology by leveraging the support provided under the Green Innovation Fund Project initiative. We are pleased to begin a demonstration test of the technology in collaboration with JFE Engineering and Kawasaki City. We believe this test will be a significant step forward to become a global leader in the effort to achieve cost-effective separation and recovery of low-pressure, low-concentration CO_2.

Comment by Kazuyoshi Honobe, Managing Director, JFE Engineering
As a top runner in the engineering, procurement, construction, and operation of waste to energy plants, JFE Engineering has built over 200 such facilities both in and outside of Japan. By integrating our proprietary technologies in high-efficiency power generation, energy saving, and digital transformation with the CCU-Ready Plant functionality, we will further enhance the value of waste to energy plants in local communities.

Source : Sumitomo Chemical

NEW PRODUCTS

BASF LAUNCHES THE WORLD'S FIRST THERMOPLASTIC POLYAMIDE WITH HIGH WATER PERMEABILITY

- Innovative Ultramid H combines the strength of polyamide with a high water permeability
- Smoked sausages can be produced in an artificial casing made of pure polyamide for the first time
- Product launch at the plastics trade fair in Düsseldorf in October

With the launch of Ultramid® H33 L, BASF is introducing the world's first thermoplastic polyamide with a high water permeability to the market. The unique combination of strength and water permeability makes Ultramid H an innovative material for artificial casings in which sausages can be smoked and then dried.

Such casings have so far been made of collagen or cellulose, for instance. As the new polyamide can be used to produce artificial casings with significantly thinner walls due to its strength, it is an attractive alternative to these materials. Thanks to the hydrophilic properties of Ultramid H, the desired smoke aromas pass through the artificial casing made of pure polyamide into the sausage products during the smoking process. The high water permeability allows subsequent drying directly in the casing.

"Ultramid H opens up new fields of application for thermoplastic polyamides that were previously beyond technical capabilities and is unique among thermoplastics. It can be processed like any other polyamide, enabling our customers to incorporate Ultramid H into their production processes

without making any adjustments," explained Dr. Rolf Minkwitz, who is responsible for polyamide product development at BASF.

With the development of this innovative material, BASF is setting new standards for both polyamide research and its applications and will present Ultramid H for the first time at the world's largest plastics trade fair "K", which will take place in Düsseldorf from October 8 to 15. Experts will be available at the BASF stand in hall 5, C21/D21 to answer questions about the product's properties and will discuss initial application experiences with the customer PODANFOL S. A. on October 9 at 3 pm.

Source : BASF

MS PRINTING SOLUTIONS AND JK GROUP LAUNCH FIVE INNOVATIVE PRINTERS FOR THE DIGITAL TEXTILE MARKET

DOWNERS GROVE, Ill., Sept. 11, 2025 /PRNewswire/ -- MS Printing Solutions and JK Group, part of Dover (NYSE: DOV), today announced the launch of five multi-pass (MP) printers designed to heighten performance standards in digital textile printing.

Developed on an all-new platform, the MP Series introduces significant advancements in body design, construction architecture, user interface, electronics, print heads, safety and ease of use. The printers provide increased durability with fewer parts, reducing the need for spares and simplifying maintenance.

The new MP Series includes:

- MP3000: Entry-level printer for sublimation paper with a four-head CMYK configuration, delivering speeds up to 315 square meters per hour.
- MP3100: Optimized for high-quality sportswear with an eight-head configuration supporting extended color gamut or double CMYK, reaching speeds up to 315 square meters per hour.
- MP4000: Designed for the fashion market, equipped with eight heads in two rows configured in four-color printing, reaching speeds up to 630 square meters per hour.
- MP4100: Combines the speed of the MP4000 with 16-head versatility, offering extended color options for the sportswear industry.
- MP5000: Direct-to-fabric printer with up to 16 heads, compatible with multiple ink types (reactive, disperse, acid, pigment) and optional feeding, drying and water recirculation systems.

All MP Series printers are compatible with the Qwizard touchscreen control system and exclusive Color Pack software for automatic color calibration and management, ensuring consistent, high-quality output.

"With sustainability at its core, the MP Series represents a leap forward in speed, durability and versatility," said Sergio Giannone, Senior Director of Product Engineering and Operations at MS Printing Solutions & JK Group. "By combining cutting-edge hardware with advanced ink innovations, we are empowering textile producers to achieve new levels of productivity and quality."

Source : Dover

LOTTE CHEMICAL LAUNCHES NEW PREMIUM ARTIFICIAL MARBLE LINE, ARIA COLLECTION, FOR HIGH-END INTERIOR DECORATING

- Introducing nine new premium artificial marble products featuring elegant marble patterns inspired by gentle waves.
- Targeting the domestic and global premium interior decoration markets, with plans to expand collaboration with major Korean construction companies and global partners.

Lotte Chemical has unveiled the "Aria Collection," a new addition to its premium artificial marble brand Staron.

Following the release of the Premiere, Tempest Stella, and Stucco Collections in 2024, the Aria Collection marks the company's 2025 lineup, featuring a total of nine sophisticated colors.

Designed to enhance the atmosphere and aesthetics in interior spaces, the new collection is organized into three color groups — Cream, Deep, and Concrete — each with unique textures and marble patterns that enable refined interior design.

The soft colors and natural patterns also minimize visible seams when joined, allowing for a luxurious finish.

To expand its presence in the domestic artificial marble market, Lotte Chemical has been hosting launching events since late July for key distributors and major kitchen manufacturers, with additional briefings scheduled in August for interior firms and local dealers nationwide.

A Lotte Chemical representative commented, "The Aria Collection is a product that satisfies both design and functionality, developed in response to the needs of customers in Korea and abroad." "In particular, we are considering developing a signature model with added antibacterial functionality in collaboration with a leading Korean kitchen brand."

The Aria Collection is also set to be installed in model homes of major domestic construction companies, attracting attention in the premium building materials market. Overseas, the collection has already secured initial orders for September and is receiving positive feedback, with plans under review to include it in the 2026 lineup for the U.S. and European markets.

Looking ahead, Lotte Chemical will continue to develop premium artificial marble products that replicate the look of natural stone to meet growing consumer demand.

Source : Lotte Chemical

MERGERS AND ACQUISITIONS

PURE LITHIUM TAPS VOLTAIQ'S PLATFORM TO COMMERCIALIZE NEXT-GEN LITHIUM METAL BATTERY

Pure Lithium, a vertically integrated and disruptive lithium metal battery technology company, has selected Voltaiq's Enterprise Battery Intelligence platform to support the commercialization of its next-generation lithium metal batteries. This strategic partnership marks a critical milestone as Pure Lithium transitions from research and development to full-scale commercial operations.

Voltaiq, a recognized leader in battery analytics and quality control software, will provide Pure Lithium with advanced battery data intelligence tools designed to optimize manufacturing performance and accelerate product delivery.

As Pure Lithium relocates its operations to Chicago and launches its first pilot production line, the partnership with Voltaiq ensures robust quality control and streamlined production workflows, essential for meeting growing customer demand.

Previously, Pure Lithium relied on internal analytics systems to support its R&D efforts. However, with the company's focus now shifting toward commercialization, the need for a scalable, secure, and commercially focused platform became paramount. Voltaiq's solution enables real-time battery quality monitoring and analytics, significantly reducing time-to-market and manufacturing risks. In some applications, Voltaiq has demonstrated the ability to detect battery defects weeks in advance, enabling up to 50 per cent faster factory ramp-up.

The collaboration will play a central role in enhancing operational efficiency, ensuring seamless data management during the company's cross-country relocation, and delivering substantial cost savings compared to maintaining in-house software systems.

"As we bring a new anode production method online—something that has never been done before—we need a battery analytics platform that is both robust and commercially oriented," said Emilie Bodoin, Founder and CEO of Pure Lithium. "Just because you can build it, doesn't mean you should. In today's competitive environment, speed to market is invaluable. With Voltaiq as our software partner, we're accelerating commercialization while allowing our team to focus on what they do best."

Tal Sholklapper, Co-Founder and CEO of Voltaiq, added, "We're proud to support Emilie and the Pure Lithium team in bringing this groundbreaking technology to market. Lithium metal batteries, especially those made from lithium refined domestically, hold transformational potential for the battery industry and broader clean

energy economy."

Source : Indian Chemical News

EVONIK, SCHNEIDER ELECTRIC TO ADVANCE AUTOMATION IN THERMOPLASTIC PROCESSING AND RECYCLING

Schneider Electric and Evonik have partnered to automate a thermoplastic processing plant at Evonik's Essen Goldschmidt site in Germany.

This initiative was officially launched during the world's number one trade fair for the plastics and rubber industry, K in Düsseldorf, from October 8-15, 2025.

The collaboration aims to enhance the efficiency of mechanical plastic recycling processes and improve the quality of recyclates, underscoring both companies' commitment to circular economy principles.

"Digitalization is essential for advancing circularity. Our collaboration with Evonik demonstrates how automation can enhance recycling efficiency and quality, showcasing the power of teamwork in building a sustainable future," said Jessica Bethune, VP Industrial Automation DACH at Schneider Electric.

"Our partnership with Schneider Electric highlights how digitalization and chemistry enable circular rity in plastics. Combining Schneider Electric's process automation with our innovative additives takes thermoplastic processing to the next level, aligning it with the principles of a circular economy," said Patrick Glöckner, Head of the recently announced Next Markets Program at Evonik

The first step of the new partnership is the digitization of an existing pilot plant at Evonik's Goldschmidt site. This facility will be equipped with an open automation approach, enabling the collection and contextualization of data from various machines into a central access point. This data-driven strategy aims to analyze performance, reduce or eliminate manual work, and streamline separate calculation steps.

Source : Indian Chemical News

CHEMPOINT AND EASTMAN ANNOUNCE PARTNERSHIP FOR TAMISOLVE™ NXG SOLVENTS

DOWNERS GROVE, Ill., Oct. 13, 2025 /PRNewswire/ -- ChemPoint LLC ("ChemPoint"), a subsidiary of Univar Solutions LLC ("Univar Solutions" or "the Company"), a leading global solutions provider to users of specialty ingredients and chemicals, and Eastman, a global specialty materials company that produces a broad range of products, are pleased to announce an expansion of their long-standing relationship for the sales, marketing, and distribution of TamiSolve™ NxG solvents in the United States and Canada.

"We are delighted to further strengthen our relationship with Eastman, a partnership that has flourished for over a decade through our mutual dedication to excellence in specialty chemical insights, sales, marketing, and innovation," said Austin Nichols, president of ChemPoint. "Our strategic focus on specialty products, digital solutions, and partnerships with producer brands has been key to expanding Eastman's coatings and inks business. Adding Eastman's TamiSolve™ NxG solvents to our portfolio highlights our continued success and commitment to industry leadership."

Eastman's TamiSolve™ NxG solvents are used in various industrial applications, including coatings, inks, cleaners, electronics, agrochemical formulations, and chemical synthesis. They are not classified as developmental reprotoxic, so they can often replace n-methyl-2-pyrrolidone (NMP) and n-ethyl-2-pyrrolidone (NEP), as well as other solvents like dimethyl sulfoxide (DMSO) and dipropylene glycol dimethyl ether (DMM).

"Partnering with ChemPoint to bring TamiSolve™ NxG to customers across North America is an important step in expanding access to safer, high-performance solvent solutions," said Phil Begley, sales director of coatings and inks for Eastman. "TamiSolve™ NxG delivers the robust solvency and formulation flexibility customers expect, while supporting product performance, worker safety, and more sustainable outcomes."

Source : Univar Solutions LLC

PALSGAARD SHOWCASES INNOVATIVE AND HIGH-PERFORMING SOLUTIONS THAT GIVE CUSTOMERS PEACE OF MIND AT K 2025

JUELSMINDE, Denmark, 9 September 2025 –– Palsgaard A/S, the world leader in plant-based emulsifiers and polymer additives, will present its latest innovations in safe and responsible chemistry at K 2025. Visitors will discover how Palsgaard's food-grade, plant-based additives offer resin producers and converters both high performance and the reassurance of worldwide regulatory compliance.

At the heart of this year's showcase is Einar® 987, a new anti-fouling additive developed from renewable vegetable oils. Designed as a drop-in replacement for ethoxylated amines, Einar® 987 is food-contact approved, effective at low dosage levels (100–300 ppm), and delivers the same reactor efficiency and product quality while eliminating toxic legacies. It offers resin makers an alternative solution that aligns with anticipated changes in chemical safety requirements.

Alongside Einar® 987, Palsgaard will highlight its portfolio of safe polymer additives, including:

- Anti-static solutions such as Einar® 601 and Einar® 608 PL – proven to reduce dust attraction, control static build-up, and improve processing efficiency across PE, PP, EVA, PLA, PA, and PVC applications.
- Anti-fog solutions such as Einar® 618 and Einar® 422 – designed to keep food packaging clear under hot and cold storage conditions, helping extend shelf life and reduce food waste.

Together, these additives demonstrate how Palsgaard supports converters, resin producers, and brand owners in meeting performance, safety, and sustainability goals without compromise.

"Einar® 987 was designed to balance performance with safety," said Laura Juhl, Application Manager of Palsgaard's Bio-speciality Additives. "It not only helps resin producers maintain stable reactor performance and consistent product quality, but also provides a safer, food-contact compliant alternative to conventional chemistries. That combination gives customers real confidence in the future of their production."

"For more than 100 years, responsibility has been part of our DNA," added Ulrik Aunskjær, Director at Palsgaard. "Our goal is to be a trusted partner that gives customers peace of mind. And this is not just through innovative, plant-based additives like Einar® 987, but also through the long-term commitments we make to safety, compliance, and sustainability across the value chain."

Palsgaard's commitment to innovation builds on more than a century of heritage. Since inventing the world's first plant-based emulsifier in 1917, the

company has been guided by the values of responsibility, loyalty, and commitment. Today, with 850 employees across 20 countries and expanding production facilities in Denmark, the Netherlands, and Malaysia, Palsgaard remains a trusted partner in developing safer, more sustainable polymer solutions for global markets.

Meet Palsgaard at K 2025 in Hall 7, Level 1, Booth C15, and learn more about how plant-based chemistry can deliver performance, compliance, and peace of mind.

Source : Press Release

KISUMA ENABLES RUBBER MANUFACTURERS TO ENHANCE DURABILITY AND

SUSTAINABILITY WITH DHT™-4 ADDITIVES

Veendam, Netherlands, September 08, 2025 – Kisuma Chemicals, a global leader in magnesium-based additives, has presented new test data showing that its hydrotalcite-like DHT™-4 additive can significantly enhance the heat, fluid and ageing resistance of chloroprene (CR) and epichlorohydrin (ECO) rubbers. In addition to acting as an efficient acid scavenger and improving both the mechanical and the chemical resistance of rubber compounds, this offers manufacturers a compelling alternative to partially replace fluorine rubbers (FKM) in light of upcoming regulations expected to ban the use of per- and polyfluoroalkyl substances (PFAS).

"With DHT-4™, we are helping compounders and OEMs move towards high-performance, PFAS-free elastomer solutions without compromising quality," adds Claudia Aguilar Carvalho, Technical Sales Manager Europe for Kisuma. "The dual role of DHT™-4 as a protective and enhancing additive enables different rubber matrices to bridge the performance gap to FKM, providing an efficient future-ready solution for low-PFAS elastomer systems at low dosage levels."

DHT™-4 is especially targeted at European and North American rubber compounders, OEMs, tier suppliers, gasket, sealing and hose manufacturers in market sectors such as automotive, industry, fluid handling, who are impacted by REACH and other regulatory initiatives addressing particularly the production and use of PFAS. As a tested and proven PFAS-free additive, it enables formulators and sustainability-driven material specifiers to reduce or eliminate the use of fluorinated elastomers like FKM, thus reducing the reliance on materials flagged as hazardous to human health and the environment.

With DHT™-4, Kisuma is positioning itself as a forerunner in supporting PFAS-free rubber formulations that also contribute to the United Nation's Sustainability Development Goals 12 (Responsible Consumption) and 13 (Climate Action) by improving production safety, regulatory compliance and long-term material sustainability.

Kisuma's market specialists will be available during K 2025 in Düsseldorf to discuss the strategic benefits of DHT™ 4 with visitors at the company's booth H31 in Hall 8B.

Source : Press Release

ASAHI KASEI, MITSUI CHEMICALS, AND MITSUBISHI CHEMICAL FORM ETHYLENE MANUFACTURING FACILITIES IN JAPAN

Asahi Kasei, Mitsui Chemicals, and Mitsubishi Chemical have established a limited liability partnership (LLP) to achieve carbon neutrality and production capacity optimization targeting 2030 with respect to the two ethylene manufacturing facilities in total owned by the three companies in western Japan, and will accelerate relevant studies.

As described in the two related announcements last year, the three companies have advanced discussions on specific measures to promote the carbon neutrality of ethylene manufacturing facilities, such as the shift to biomass-based feedstocks and low-carbon fuels in place of petroleum resources, as well as the establishment of an optimized production framework, including potential future capacity reductions. The discussions encompassed implementation timelines, the roles of each participating company, and the most appropriate form of joint operating entity.

As a result, the three companies determined that they should establish an LLP and further accelerate studies in order to deepen their collaboration and proceed to the phase of execution. Through the LLP, the three companies aim to implement measures for carbon neutrality and achieve a highly competitive ethylene production framework targeting 2030.

Source : Indian Chemical News

Continued from page 22

One of the most innovative proposals is the Sales-Linked Incentive (SLI) scheme that is designed as an operational expenditure (OPEX) subsidy. This subsidy is not like capital subsidies, which only support the initial setup of a plant. The OPEX subsidies are supported throughout based on actual sales.

This ensures the companies are rewarded for expanding production and exports, rather than just for building facilities.

The SLI scheme is expected to target critical product categories where the country is heavily dependent on imports. These include agrochemical intermediates, pharmaceutical intermediates, battery and electronic chemicals, dyes and pigments, and petrochemicals.

The cost support could encourage the domestic firms to scale up production in several areas while reducing reliance on countries like China.

The approach mirrors the success of the PLI scheme in electronics and manufacturing. SLI is tailored for chemicals where the operational costs, such as raw materials, utilities, and compliance, are significant. By lowering these costs, the government can make the Indian products more competitive

- **Focused on specialty chemicals:**

The global chemical industry is shifting towards specialty chemicals, which are the products manufactured in smaller quantities but have higher value and are tailored for specific uses. Unlike bulk chemicals, which are standardized and face intense price competition, specialty chemicals offer better margins and stronger demand in high-growth industries such as electronics, electric vehicles, renewable energy, automotive, and pharmaceuticals.

The country's current exports are heavily tilted towards bulk chemicals, which limits profitability and global competitiveness. Developing specialty chemicals requires investment in R&D, skilled manpower, and advanced infrastructure. Investing in Specialty chemicals also helps the country to align with future trends such as green technology, energy storage, and sustainable materials that are crucial for long-term competitiveness.

- **Building stronger global value chain presence:**

India currently holds only a 3.5% share in the global value chains. Whereas China is currently dominating with 23%. The country is set to achieve long-term competitiveness, and it should strengthen its role in these networks by increasing exports, upgrading product quality, and integrating deeply with global chains.

The gap between China's position and India highlights India's reliance on imports of critical raw materials and intermediates. Many chemicals that feed into industries like pharmaceuticals, electronics, and renewable energy are still imported from China and other countries. This shows the country has supply chain disruptions, price volatility, geopolitical risks, and so on.

There is also another weakness, which is the country's limited integration into global value chains. While the country exports chemicals, a significant portion is in low-value bulk chemicals, rather than high-margin specialty chemicals that are in demand worldwide. This keeps the country at the lower end of the value chain, unable to capture the kind of value addition that boosts competitiveness.

Observe the competition:

- **India Vs. China:**

China is the undisputed leader in the global chemical industry, holding about 23% share in the global chemical value chain, compared to India's 3.5%. China's dominance is driven by large-scale infrastructure, integrated clusters, and heavy state-backed investments. China's chemical exports are surpassing USD 400 billion, whereas the country's chemical exports were around USD 44 billion by 2023.

India has lower labor costs than China and a large pool of chemistry graduates, but China still outpaces India due to superior logistics, faster approvals, and better port infrastructure.

India must learn to replicate China's strategies, such as cluster-based mega chemical parks, faster regulatory clearances, and supply chain integration.

- **India Vs. USA**

The US chemical industry is not driven by bulk manufacturing, but it has already transformed to high-value specialty chemicals, advanced materials, and bio-tech driven products. The US chemical companies spend heavily on R&D, leading to global leadership in high-end products such as performance polymers, advanced composites, bio-based chemicals, and so on.

If India is trying to move beyond bulk chemicals, then it should concentrate on R&D incentives, skilled workforce training, and public and private research partnerships.

- **India vs. European Union**

The EU chemical industry is highly advanced, especially in the specialty and green chemicals. The strict environmental regulations under REACH have pushed the EU companies toward cleaner and more sustainable products.

EU chemical exports are above USD 550 billion and are driven largely by specialty, fine, and green chemicals. India has tremendous cost advantages, but it still lags behind sustainability compliances, circular economy practices, and green certifications. Therefore, they are increasingly demanded in global markets.

To attract global buyers, India should align itself with safety and sustainability standards and invest in eco-friendly processes.

Key takeaways from the context:

India has a lot of potential, but currently it is vulnerable. The future growth depends on strategic investments in infrastructure, policy reforms, and a sharper focus on specialty and value-added products. Apart from other recommendations, India must focus on transitioning from bulk chemicals to specialty chemicals and high-value chemicals, as they have a higher demand globally and could bring higher profitability to the country. India must also integrate more deeply into global supply chains through exports to raise their GVC share to 6% by 2030. Therefore, several opportunities lie ahead, with the rising global demand and geopolitical shifts, and the global companies are seeking supply chain diversification beyond China. The country has a strategic chance to become a stronger player if it acts now.

₹13,000 Crore Deal Akzo Nobel to Sell Dulux Paints India

Vinodhini Harish

Introduction:

Selling an Indian unit is significant. Akzo Nobel, a Dutch company, has decided to sell its Indian unit, valued at INR 13,000 crores. The deal is attracting Indian companies that are competing to acquire it. This comes at the right time for the Indian paint industry, now worth USD 9 billion and growing faster than most global markets. Players believe that acquiring the company is better than starting from scratch—it's seen as a shortcut to scale, credibility, and premium positioning in a highly competitive sector. Let's begin.

Akzo Nobel wants to exit India- why?

There is no better way than adopting a global strategy – rather than fighting the tough competition, it is better to focus on the existing business. Akzo Nobel is a very large Dutch Paint and coatings company that has decided to sell their Indian business, because India's paint market is growing tremendously and the competition is very tough; they don't want to spend all their assets and money here in India. Therefore, the Dutch company has decided to sell its Indian unit, and Indian paint companies like Pidilite, JSW Paints, Berger, and Indigo Paints have shown their interest in buying the company. The deal was around INR13,000 crore. Since running the Indian unit requires massive

investment in factories, marketing, and distribution to compete with giants like Asian Paints, they have decided to simplify their portfolio by selling smaller or non-core businesses.

The Indian paint market is growing at a rapid pace and has growing opportunities. The Indian paints and coatings industry is currently valued at around USD 9 billion and is growing much faster than other global markets. The growth emerges from factors like rapid urbanization, new housing construction, and rising disposable income, which is leading towards demand for premium paints. There are other factors, such as a shift from unorganized or local paints to branded decorative paints. The government has also shifted its focus to infrastructure and smart cities. These factors are pushing the Indian paint market further and further. Therefore, every company in the market wants a bigger slice of the pie. For several years now, the market has been led by Asian Paints, which is followed by Berger Paints and Kansai Nerolac.

Akzo Nobel brand, despite owning the famous "Dulux", has managed to hold only 7% share in the market. The game has changed in 2023, when the Aditya Birla group entered the industry with its Birla Opus brand. Their emergence has shaken the Indian market, as the Aditya Birla group has deeper pockets to spend on marketing, distribution, capacity, and so on. Other companies now feel the need to consolidate/ combine their businesses or buy out competitors to stay strong.

Akzo Nobel NV, the Dutch parent company, has been restructuring across the globe, and its strategy is to focus on factors like:

Strengthening core markets: Akzo Nobel wants to focus more on the regions where it already has a dominant presence, such as Europe and North America.

Simplifying their portfolio: instead of competing with fragmented markets, Akzo is selling its smaller and less profitable businesses. In India, it needs massive investment to fight against the giants like Asian Paints and Aditya Birla. Freeing up capital: By selling Akzo Nobel India, the company can raise INR 13,000+ crore, and this money can be used(will be effective when used):

- Investing in R&D for eco-friendly, sustainable paints
- Expanding into the regions where profits are higher
- Reducing debt and rewarding shareholders

Avoiding heavy future costs- to increase market share in India, Akzo would need to spend aggressively on new plants, distribution, and advertisements. Instead of selling, it allows them to exit at a high valuation without the risk.

The announcement of Akzo Nobel NV has excited Indian players.

Immediately after the announcement made by Akzo Nobel NV that they wanted to exit Indian operations and wanted to set off a race among India's top paint makers, companies like Pidillite industries, JSW paints, Berger paints, and Indigo paints have submitted their initial bids that they are going to acquire Akzo.

- They are competing for the following reasons:

There is no better way than this to gain market share very quickly. Akzo Nobel India currently has around 7% of the market, although this is not as large as one would desire, the paint industry is a place where every percentage counts. It is still a big deal, and building this kind of market presence requires years of investment, marketing, expansion, and so much more. By acquiring Akzo Nobel India, the buyer instantly gains the following:

- A ready customer base across India
- Access to premium segments where Dulux has established its expertise
- A strong foothold to compete with giants like Asian Paints and Berger Paints.

Since Indigo paints and JSW paints are smaller but ambitious companies, this share of 7% can be a game changer, and for bigger companies like Berger and Pidilite, it adds to their scale and further strengthens their defense against new entrants such as Aditya Birla.

In simple terms, the deal is like buying a shortcut to size and relevance in an extremely competitive industry.

- Strong brand equity: Dulux paints:

The Dulux paint brand has covered the household sector, and they have produced premium decorative paints for the segment. Over the decades, they have built consumer trust and a reputation for quality. Customers associate Dulux with the following:

- Superior finish and long-lasting quality
- Stylish and aspirational colors
- International brand prestige

Therefore, Indian companies understand that brands like Dulux are huge, and building the brand from scratch would cost thousands of crores in advertising and years of hard work. Therefore, the buyers are not after the factories and distribution networks alone; they are after a ready-made, respected brand name that can be

marketed more aggressively.

Pidillite is strong in adhesives and construction chemicals, and could use the brand Dulux to cross-sell to its existing customer network. JSW Paints is a relatively new player that could instantly elevate its image by owning Dulux. Indigo Paints is known for its smaller towns and value categories that could use Dulux to break into the premium urban market.

Akzo Nobel India has a strong manufacturing base, with an annual production capacity of around 250 million liters. This is a massive advantage for any company that is striving to expand. The setting up of factories in India is not only expensive but time-consuming as well. The company has to begin with acquiring land to set up factories, getting environmental and governmental clearances, building plants and supply chain infrastructure, and recruiting and training workforce. The process can take about 5-7 years before a new factory is running at full efficiency.

JSW Paints has ambitious growth plans, but they have limited capacity right now.

Indigo Paints would otherwise have to invest heavily in the new plants to catch up with Asian Paints and Berger Paints. Even Berger Paints and Pidilite are those that can use their extra capacity to grow faster without overburdening their existing facilities.

This is a game-changer for the challengers:

The biggest reason for the Indian bidders lining up is that acquiring Akzo Nobel could be a game-changer. JSW paints: JSW paints has ambitions of becoming a serious premium brand, and buying Akzo Nobel would give them credibility as a premium brand and significant market presence overnight. The company wants to replicate its success in steel and cement by becoming a household name in paints. So far, they have introduced products Any Color, one price; this tag has challenged traditional pricing models in the paint industry. But despite such innovations, JSW still lacks a premium identity, and the urban consumers can't associate with it.

The company will largely benefit from the massive dealer network the brand has created. For instance, Akzo Nobel's wide dealer network across India will save years of groundwork for JSW, if they could buy it. In short, Dulux could transform JSW paints from a challenger to a top-tier competitor within a short period of time.

Indigo paints: Indigo paints have been one of the fastest-growing paint brands in the country, and they stood out because of their quirky advertising and unique products like floor paints, ceiling paints, and dirt-proof emulsions. These innovations have helped them to capture the rural and semi-rural markets where the customers are quite price-sensitive, yet they are very open to experimenting. Indigo struggles in big cities and premium paint categories where Asian paints and Berger dominate.

If Indigo could acquire Dulux, it could fill the gap. Dulux is strong in metros and regions where the premium customers reside; these are the regions where Indigo is weak. For example, if a rural customer may choose Indigo for affordability, while an urban apartment buyer may prefer Dulux for its luxury appeal, then owning both would give Indigo a balanced portfolio across all segments.

Pidilite Industries is the maker of Fevicol and has long been the leader in adhesives and construction chemicals. But over the years, they have expanded into categories like waterproofing and tile adhesives. But one missing element in Pidilite Industries is decorative paints. Their launch of products like Pidilite paints in the smaller markets has never competed head-on with Asian Paints or Berger.

Acquiring Dulux would change that overnight, and they already have brand recognition and distribution. By combining Dulux paints with Fevicol adhesives, Pidilite can offer complete home-building and renovation solutions. This will mirror the strategy of companies like Asian Paints, which moved beyond paints into modular kitchens, bath fittings, and home decor. For example, imagine if a contractor is looking for products to renovate a house, he doesn't have to purchase paints, adhesives, and waterproofing solutions from different companies. He can simply purchase them all from Pidilite Industries if they have purchased Dulux.

Overall, Dulux could be the catalyst for its rise in paints, and thereby making Pidilite a 360-degree home solutions giant.

Take away:

India's paint industry faces intense competition from local giants with aggressive expansion plans. Dulux, with its strong brand and 7% market share, presents a rare opportunity. Akzo Nobel's exit is about global strategy, not weakness. For Indian companies like JSW, Indigo, Pidilite, and Berger, this is a unique chance to gain scale, enter premium segments, and reinforce market positions. Akzo Nobel's departure could reshape the competitive landscape for years to come.

Garment Industry Shaping the Global Textile Dye Market Reactive Dyes MMCFs and much more

Team Chemical Market

Introduction:

The global textile dye industry is evolving rapidly, driven by rising urban populations, disposable incomes, and growing demand for affordable fast fashion. Bright, durable, and trend-adaptable dyes are increasingly necessary to keep pace with the changing market. This article explores key factors and transformational shifts impacting the industry today.

The role of the garment industry, which is impacting the demand:

The garment industry uses about 65% of all textile dyes. As cities grow and incomes rise, demand for cheap, trendy fast fashion increases. Rapidly changing trends and frequent new collections pressure dye manufacturers to quickly supply a wide variety of colors, shades, and finishes.

Every brand in the Garments industry, especially from street wear to luxury wear, is expecting dyes that are bright, long-lasting, and flexible enough to follow the changing trends. Thus, the connection is simple and obvious. The demand for the dye rises with the demand for the fashion; likewise, when the demand for the fashion slows down, it affects the dye makers directly.

Manufacturing plays a key role in the dye industry and its economic growth. China used to dominate the industry as it was the world's low-cost manufacturing hub. It used to produce huge volumes of textiles and dyes. But in recent times, the country is moving towards high-tech industries and other countries that are taking over the role of low-cost producers.

Therefore, other countries like India, Vietnam, Bangladesh, and Indonesia are becoming new textile powerhouses. They have lower labor costs, huge industrial setups, and strong connections to the global clothing supply chains. Therefore, the global production shifts include them investing in the new dye factories to keep up with the rising garment demand.

Another problem in the sector is overproduction. There are too many dye producers on the planet, and therefore, the supply is always higher than the demand. This will reduce the profit margins as well. In Asia, most of the dye production is moving, and the companies must balance the low-cost production with the quality and innovation to stay competitive.

The reactive dyes segment is leading the dyes market:

Reactive dyes are considered the most popular type of dye in the textile dyes sector. The reactive dyes were holding about 57% of the market, and the dominance is due to their chemical bonding process. Unlike many other dyes, they sit on the surface of the fabric and they form a covalent bond with the fibres of the material, which could be cotton, rayon, or other cellulosic materials. This covalent bond makes the dye part of the fabric itself, rather than a coating. Therefore, the colors last longer even after repeated washing, and they also show better resistance to fading from light, sweat, and detergents. Moreover, they allow a wide range of bright and vibrant shades to be produced, and the dyeing process with the reactive dyes can also be more efficient and eco-friendly; therefore, they require less water compared to other dyes in the market.

Owing to the dominance of reactive dye in the market, the leading manufacturers and countries are investing in the production and development of reactive dyes. For instance, China is one of the biggest producers and consumers among other countries. They are leading both in the production and consumption of reactive dyes, and they have integrated the dye manufacturing hubs with the large cotton fabric outputs and strong export markets. Thus, their share in the reactive dye production volume has surpassed 46%.

India is also among the leading reactive dye exporters. The country benefits from the low labour costs and a well-established textile and cotton industry. The growing local demand, policies that are encouraging the textiles and chemicals investment, are encouraging the demand for reactive dyes. India has many companies that are expanding their reactive dye capacities, and they are building more eco-friendly intermediate reactive dye supply.

Vietnam is also focusing on expanding its garment exports. To keep up with the fashion trends and export standards, the firms are using more reactive dyes. Some production is local, while the majority of the usage comes through imports. They are also increasing the investments in infrastructure and sustainability, such as wastewater and chemical regulation, to support the shift.

Turkey has a strong textile sector as well. These facilities in Turkey are used both for domestic consumption and exports. They are importing a lot of reactive dyes and also improving dyeing technologies and standards to meet stricter environmental and customer expectations.NEW-AGE materials movement is supporting dyes:

The cellulose-based materials are made from natural cellulose, but they are processed through advanced technologies to create fibers that combine the comfort of natural fibers with the performance of synthetics. Many MNCFs are now produced from certified forests, with closed-loop processes such as recycling water and solvents used in the production.

The companies are also working towards alternatives to cotton, as cotton production facilities are facing issues such as land use, water, intensity, and pesticide concerns. MMCFs are being promoted as an eco-friendly substitute.

These MMCFs offer softness, breathability, and drape similar to cotton and silk but at lower costs, therefore making them popular in both fast fashion and premium apparel. Since MMCFs are cellulose-based like cotton, they are compatible with reactive dyes. They bond chemically with the reactive dyes. With these materials, reactive dyes provide excellent wash fastness, brightness, and shade variety.

Many dye producers are now offering low-salt, low water-reactive dyes that are tailored for MMCFs, which aligns with the sustainability demands.

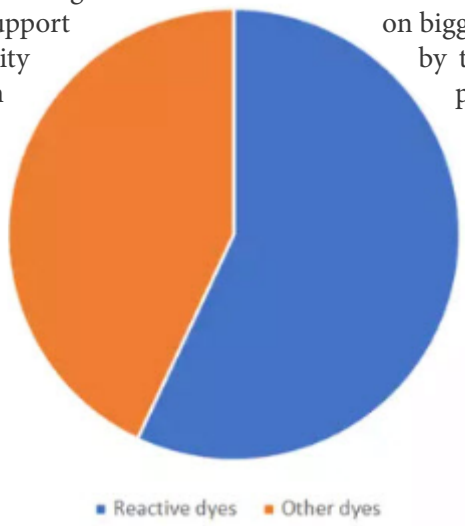
Industry partnerships and innovations:

In the textile dyes sector, partnerships, product launches, and strategic expansions are no longer just growth strategies; they are also critical tools for the companies to stay competitive in this rapidly evolving market. The consumers are expecting faster turnaround times, vibrant new colors, and on the other side, the governments and regulators are pressing with stricter compliance and sustainability standards. Therefore, the environment for the sector presents a situation where innovation cannot happen in isolation. The companies are increasingly relying on collaborations, research-driven product launches, and geographic expansions to ensure that they remain relevant and profitable.

One example of innovation in action is Atul Ltd.'s Launch of Novatic Classic Dark Green and Dark Navy Vat Dyes in January 2022. These products were specifically designed for institutional wear, leisure wear, and furnishings. There are three categories that require long-lasting colorfastness and consistency.

Institutional wear, like uniforms, undergoes frequent washing and exposure to varying conditions, making durability a key requirement. Leisure wear and furnishings demand both aesthetic appeal and resistance to fading. Therefore, Atul's new dyes not only address these technical demands but also expand the company's product portfolio, thereby allowing it to serve niche markets with high standards. This type of innovation ensures that dye manufacturers can meet the specialized needs of different textile segments, a growing necessity in today's diversified fashion and apparel market.

In October 2020, Huntsman Textile Effects partnered with Phong Phu International to support sustainable and high-quality textile production in Vietnam. In the collaboration, Phong Phu benefited from Huntsman's knowledge about the sector, and Huntsman benefited from Phong Phu's strong manufacturing base that it has built and its ties with the global brands. The partnership has helped meet the growing demand for eco-friendly products and boosted Vietnam's role as a reliable player in the global textile market.



Market share by dye types 2022

In January 2021, Kiri Industries began making specialty intermediates at its Vadodara plant. The intermediates are important materials that are used in dye production. By producing them itself, Kiri reduced their dependence on outside suppliers, which has ensured a steady raw material supply, and expanded its product range. This step highlighted the rising country's position in the global textile dyes market, with the local companies taking on bigger roles once led by the international players.

Key Learnings:

Reactive dyes are leading the market with 57% in 2022, and thus, reactive dyes are the most favoured among others. Therefore, companies should focus on building facilities and investing in the reactive dyes segment.

The production is moving from China to India, Vietnam, and Bangladesh. Therefore, the companies should carefully choose their location for better production and effective transportation.

MMCFs like Viscose and Lyocell are boosting demand for reactive dyes. Therefore, they are the future of the dyes segment. The customer brands and governments are enforcing stricter eco-friendly practices.

Strategic collaborations, product launches such as Atul, Huntsman, and Kiri, show how the companies are staying competitive in the industry.

Final thoughts:

The textile dye market is at a turning point, where growth is no longer tied to volume but is closely linked to the ability to respond to the fast-changing fashion trends and sustainability pressures. The reactive dyes are leading the change, new-age fibers are growing, and global supply chains are shifting as well. Meanwhile, the garment industry's demand patterns are setting the rhythm of the textile dye sector. The fashion cycles shorten, and sustainability becomes central. The dyes are no longer just about the colors, but they are also about their performance, safety, and responsibility. Overall, the future of the dye industry lies in innovation, eco-friendliness, and global collaboration. The companies that align with these trends will not only survive but also shape the future of fashion and color.

How Tariff Uncertainty is Stalling Chemical Industry M&A-and Why 2026 Could Change Everything

Vinodhini Harish

Introduction:

At a pivotal intersection of global trade, innovation, and regulation, the chemical sector faces major challenges as tariff uncertainty disrupts mergers and acquisitions. Companies now struggle to finalize deals, as sudden tariff changes can alter valuations, disrupt supply chains, and create unexpected costs. As a result, consolidation and investment have slowed, leaving many firms hesitant. Amid cautious optimism, this article explores how tariff uncertainty is reshaping M&A in the chemical industry, why 2026 brings hope, and lessons the sector must embrace for continued safety and growth. Let's begin.

How can tariffs change the value of a chemical company overnight?

The chemical industry is highly sensitive to macroeconomic shifts, and ongoing tariff uncertainties from geopolitical

tensions, trade disputes, and shifting policies have pressured corporate decision-making. Among major disruptions, mergers and acquisitions have been the most visible, functioning as a vital tool for sector growth and competitiveness. Reports suggest companies are exercising extreme caution in finalizing deals, as fluctuating tariffs can alter valuations overnight.

Chemical companies are more cautious about mergers and acquisitions because shifting tariffs cause company values to change overnight, making it difficult to agree on a fair price during deals—especially for companies dependent on importing raw materials, whose costs and profits can swing with new tariffs.

Another issue is cross-border synergies, which means the benefits companies expect to gain when they combine operations in different countries. If the tariffs appear suddenly between the countries, it affects the planned cost savings and market advantages. Apart from all of these, tariffs might add hidden costs like customs delays, compliance expenses, or sudden chain changes. These are difficult to predict, whereas careful financial and legal checks are done before finalizing a deal.

For instance, the U.S and China trade war in 2018-2020 made several companies put their merger plans on hold because the tariffs on chemicals like methanol, polyethylene, and other intermediates jumped to 25% overnight. One U.S.-based company considering buying a Chinese supplier took back its promise as the expected profits made no sense under the new tariff costs. This shows how uncertainty can freeze deal-making.

Even though M&A slowed down, the chemical industry has shown resilience, and large companies with their own facilities manufacturing dangerous chemicals like phosgene have maintained excellent safety records, and they follow strict safety systems that allow risks to be managed responsibly.

Some smaller companies might assume that triphosgene can be used as an alternative, but in reality, it can release phosgene during use and is still very hazardous. Underestimating the risk can lead to accidents if precautions are not taken.

Experts believe that 2026 is going to bring in some relief, trade disputes may calm down, tariffs could become more predictable, and the companies might feel confident to restart the deal-making. Therefore, we can expect fresh investments and growth opportunities for the chemical industry across the globe.

What do the experts say? Signs of stabilizing trade policies:

The trade policies are expected to get more stable, thereby giving the chemical companies great confidence to plan mergers and acquisitions by 2026. In recent years, the industry has been facing constant uncertainties due to tariff wars, retaliatory duties, and shifting trade alliances. For instance, the U.S and China conflict has created unpredictable tariffs on a wide range of chemical products, while Brexit unsettled European cross-border trade. These sudden policy swings have discouraged the companies from making long-term commitments.

Analysts believe the coming years could see a gradual move toward negotiation and compromise. The U.S, China, and the EU all have strong economic incentives to reduce the tension because prolonged disputes raise costs for their domestic industries. Even if the full free trade is not achieved, partial agreements and cleaner tariff frameworks would make planning easier.

Due to the pandemic, everybody has learnt to adjust the supply chains. The pandemic has forced companies to rethink their sourcing strategies. This has diversified the sourcing and reduced single-country dependency. By 2026, many of these shifts will be completed. It is also expected that in the upcoming years, there will be better regional supply chains and the shock of sudden tariffs will be less severe, thereby making the cross-border operations more predictable.

Likewise, large free trade agreements such as the Regional Comprehensive

Economic Partnership in the Asia-Pacific are maturing. These agreements reduce the tariff barriers across multiple countries and thereby provide a more secure environment for investments. The chemical producers who are relying heavily on the exports and imports of intermediates will experience fewer surprises, and thus they can have more confidence in long-term growth strategies.

Investor sentiment recovery:

Investor confidence plays a huge role in the pace of M&A deals. It has been shaken in recent years by tariff unpredictability, high inflation, and volatile interest rates. Since the economic conditions are uncertain, the private equity firms and strategic investors have been hesitating to commit large sums of money to acquisitions. Even if they see the opportunities, they worry that the tariffs or the policy change might quickly destroy the profitability or the deal.
However, by 2026, these challenges are expected to ease. Inflation rates are projected to stabilize, and the central banks may adopt more predictable monetary policies.

Investors often worry about the difficulty in predicting whether the company's exports will face tariffs or disruptions; therefore, they expect normalization of trade flows. As the trade policies are settling down, the valuations of chemical firms will become clearer, making it easier to agree on fair prices. This will reduce the "risk premium" investors demand and speed up deal-making.

Strategic investors such as large chemical multinationals are expected to expand their portfolios and capture growth through acquisitions once the conditions are stabilized. Overall, by 2026, we can expect the investors' confidence to bounce back strongly. With clearer valuations, predictable financing costs, and reduced tariff risks, we can expect these strategic players to revive their deal pipelines, fueling their new wave of M&A activity in the chemical sector.

Phosgene safety and triphosgene hazards:

Phosgene is a highly toxic chemical that is involved in the manufacturing of crucial industrial products and thus, safety handling requires strict engineering controls, robust procedures, and constant vigilance. Large chemical companies agreed that handling of phosgene requires closed systems, multiple layers of containment, continuous gas detection, and automatic shut-off valves.

Although Triphosgene is considered safer and a solid alternative for small-scale applications, it is not benign. When heated or subjected to certain chemical reactions, triphosgene can decompose and release phosgene gas. This will create an invisible and lethal hazard if controls are lacking.

Overall, the chemical industry's good safety record with phosgene can be extended to triphosgene users, but only if companies acknowledge the shared hazards and commit to equally rigorous safeguards. Practical steps and shared best practices will reduce accidents and build trust with regulators, communities, and customers alike, and save lives.

Renewed focus on green growth is expected by 2026:

During the past years, the companies were finding it difficult to acquire a recycling technology provider in another country. The sudden tariffs on the equipment or feedstock imports could disrupt the process or economics of the deal. Therefore, the green investments were delayed. The chemical companies that are looking to invest in renewable chemicals, recycling technologies, and bio-based solutions were struggling due to these uncertainties. M&A was one of the fastest ways for the firms to achieve this transformation, as it allowed them to acquire new technologies and scale up quickly.

Nevertheless, by 2026, a more predictable tariff environment will give the companies the confidence to make these moves. Stable trade conditions will allow them to plan for a long-term supply chain of renewable feedstocks like bio-based oils, captured carbon, or recycled plastics.

Could 2026 mark a turning point for chemical deal-making? Will the upcoming years stabilize trade policies, investor confidence, and sustainability goals? We can certainly expect a new wave of M&A.

Final thoughts:

We can see that the chemical industry is navigating a period of disruption, where tariff uncertainty has slowed down the deal-making, complicated global growth strategies, and much more. Nevertheless, the sector has proven its resilience, especially in maintaining strong safety standards in high-risk areas. There are more sustainability-related priorities that are pushing the firms to pursue acquisitions in green technologies. Therefore, the possibility of mega deals is looming large. But the key questions remain unanswered: will the global leaders reduce the trade tensions that are enough to unlock this growth? Will the smaller firms improve their safety culture to gain investor trust? Will the Upcoming M&A focus on profits but also on building a safer and more sustainable chemical industry?

Solvay's Expansion and the Future of Ultra-Pure Chemicals in Chipmaking

Team Chemical Market

Introduction:

Semiconductor manufacturing has become one of the most critical industries in our time, powering everything from smartphones, laptops, to electric vehicles and data centres. Behind these complex processes, there is an equally demanding requirement for ultra-pure chemicals that can meet the industry's microscopic standards. Recent global developments are highlighting how both established companies and emerging markets are pushing the boundaries to secure their place in the semiconductor value chain. In this article, we have discussed the ways India can learn from other countries and other growth opportunities that lie ahead for our country. Let's begin.

Solvay's Zhenjiang Growth: Doubling Capacity for Semiconductor Purity

Solvay, a huge Belgian chemical company, has recently opened a major expansion at its factory in Zhenjiang, China. This is where they manufacture electronic-grade hydrogen peroxide H_2O_2. The expansion has doubled the site's annual production capacity and thereby made it a bigger player in the semiconductor industry. The Electronic-grade H_2O_2 is a special kind of hydrogen peroxide that is very important in making computer chips. It is mainly used to clean and prepare wafers, which are the thin slices on which chips are built. This job has to be done with extreme care because the circuits on today's chips are so tiny that even the smallest speck of impurity can damage them. That is why this chemical must be made at an incredibly high purity level, with impurities so small they are measured in parts per trillion. Very few companies in the world are able to achieve this level of quality, because it needs advanced technology, special equipment, and strict processes. Solvay is one of the select companies that can reliably make this super pure chemical for chipmakers.

Interox Pico grades, Solvay's brand name for their highest-purity Hydrogen peroxide made specifically for the electronics industry. These grades are not like regular hydrogen peroxide used in medical or household applications. Instead, they are designed for semiconductor manufacturing, where purity and consistency are critical.
In chip production, wafers must be meticulously cleaned and etched, as even minuscule impurities cause defects in circuits. Therefore, Interox Pico grades are made with great precision to achieve near-elimination of unwanted particles or substances, reaching purity levels measured in parts per trillion.

One of the unique aspects of Interox Pico grades is that Solvay uses the same manufacturing process in all its plants across the globe. This ensures that no matter where a semiconductor company operates, whether in Asia, Europe, or the U.S., they get the exact same quality and consistency of hydrogen peroxide. Such reliability is very important for global chipmakers who demand uniformity across their supply chains.

Why Electronic-Grade H_2O_2 Is Gaining Market Potential

The modern semiconductor manufacturing demands extreme purity and precision, and this impacts the demand for Electronic Grade H_2O_2. The Chips are moving to 3nm and even 2nm technologies. These require higher-purity chemicals. Along with this, technologies like 3D NAND and stacked logic chips require precise etching and cleaning for multiple layers, and that requires further boosting chemical usage. The specialized chips will demand ultra-pure processing environments, which is expanding the niche for high-grade chemicals.

Companies are developing H_2O_2 formulations that significantly reduce waste and environmental impact while maintaining the necessary purity. By using eco-friendly hydrogen peroxide, manufacturers can minimize environmental harm and lower waste management costs, addressing two main industry concerns: sustainability and operational efficiency.

These innovative formulations reduce the consumption of additional chemicals, yet improve the cleaning and etching, and enable better recycling of process water. The suppliers are investing in green production methods such as renewable feedstocks or energy-efficient processes to make the upstream manufacturing of H_2O_2 more sustainable.

These eco-friendly H_2O_2 chemistries offer two-fold benefits, such as improved environmental compliance and reduced operational costs associated with waste management. With the stricter regulations around the chemical discharge and carbon emissions, fabs are increasingly pressured to demonstrate their commitment to environmental stewardship. Over time, these sustainable chemistries are expected to evolve with standard practice, and the fabs look for ways to balance rising chip demand with sustainability commitments. This shift is expected to lower the environmental footprint but also provide suppliers that are pioneering the eco-friendly formulations with a significant competitive advantage. The eco-friendly H_2O_2 solutions represent a critical bridge between technological innovation and environmental responsibility.

Automation and AI monitoring:

The industry is not tolerant towards impurities and is embracing automation and AI-driven monitoring systems for electronic-grade hydrogen peroxide usage. These automation systems provide real-time insights into chemical purity, wafer cleanliness, and process performance, thereby reducing contamination risks and improving the yields.

AI-enabled sensors and analytical tools are now capable of detecting impurities at parts per trillion levels! This level of sensitivity far surpasses the manual quality checks. With the help of these AI tools, the companies can ensure that every batch of H_2O_2 meets stringent specifications before use.

Key Innovations and Technologies Driving the Semiconductor Industry in India:

Design-led manufacturing:

India has worked hard and gained a reputation as a global hub for chip design, with companies like Intel, Qualcomm, and Texas Instruments running R&D centers in Bangalore and Hyderabad. However, the challenge lies in translating these designs into locally manufactured chips. The design-led manufacturing bridges this gap, where the Indian innovation doesn't stop at circuit blueprints but extends to real production. By encouraging partnerships between design houses and fabrication facilities, India can reduce its dependency on imports. This approach not only strengthens self-reliance but also helps build expertise across the semiconductor value chain, from the concept to commercialization.

Compound semiconductors and new materials:

The traditional silicon is reaching its physical limits, especially as devices demand higher speed, efficiency, and power handling. Compound semiconductors like gallium nitride and silicon carbide are emerging as crucial materials for electric vehicles, 5G telecom equipment, solar inverters, and defense technologies. Overall, the country is now focusing on renewable energy and EV adoption, which makes GaN and SiC especially relevant. Therefore, India is expected to focus on investing in R&D and pilot lines for these materials and thereby position itself as a leader in the next-generation chips rather than chasing established silicon fabs.

Government support:

The country has realized the strategic importance of semiconductors; because of that, the Indian government has rolled out initiatives like the Semicon India Program and PLI schemes to attract investments in fabs, packaging, and design. These programs provide support, tax incentives, and subsidies to the global and domestic companies that are willing to set up operations in the country. India is developing semiconductor clusters in states like Gujarat; therefore, this governmental push has become critical in these states for the development.

What lessons can India learn from other countries?

Japan: Japan is not currently into

chipmaking, but it remains irreplaceable in materials, chemicals, and precision equipment required for semiconductors. Companies like Shin-Etsu and Tokyo Electron are the leaders in wafers, photoresists, and etching tools. Japan is focusing on upstream parts of the supply chain, such as electronic-grade chemicals, specialty gases, and advanced manufacturing equipment. These are the areas that have fewer entry barriers than building full-scale fabs and can be developed alongside the country's chemical and engineering strengths.

China: The country's biggest achievement is creating a complete ecosystem, which covers the raw materials, fabrication, packaging, design, and training. They bring everyone together to form a cluster that includes suppliers, manufacturers, R&D centers, and hubs like Shanghai and Shenzhen.

China has a self-sufficient semiconductor supply chain, and India must learn from China how to develop semiconductor clusters where universities, startups, fabs, and suppliers work together. This will reduce the logistical costs, attract investment, build collaborative innovation, and so on. A well-connected ecosystem is the best solution for faster problem-solving and talent development.

Takeaway:

The semiconductor industry is rapidly evolving at an unprecedented pace and thus is demanding technological breakthroughs and sustainable practices. The global leaders are developing advanced chemistries for nations like India and working towards ecosystem building. Therefore, every innovation is set to shape the future of electronics. We can conclude that success will not depend on producing cutting-edge chips, but also on ensuring purity, reliability, and environmental responsibility across the supply chain. The next wave of progress will be driven by the players who can seamlessly combine innovation with sustainability and maintain global consistency. Thereby setting the stage for a more resilient and competitive industry.

Why Toluene Remains a Critical Building Block for Multiple Sectors

Vinodhini Harish

Introduction:

The industrial landscape is rapidly changing, and certain chemicals are playing a crucial role beyond our realization. They are quietly fuelling systems, enabling advanced materials, and driving growth across construction, automotive, healthcare, and whatnot. Understanding the market dynamics is as essential as understanding their influences, which stretches across multiple value chains and directly impacts the end-user industries. Behind every product, like paints, plastics, and fuels, lies a chemical that keeps the modern industries running. In this article, we have explored the story of rising demand, changing regulations, and market opportunities that highlight how industries balance growth with safety and sustainability. Let's begin.

Toluene market dynamics:

The toluene market is expected to reach USD 33.23 billion by 2030 with a CAGR of 5.2% 2030.

Toluene is regarded as one of the most adaptable chemicals in modern industry. Its primary draw is its ability to transform into vital compounds such as benzene, p-xylene, and toluene diisocyanate. These derivatives are essential in making products used daily.

For instance, P-xylene is used in the production of PET resins, which are widely used in plastic bottles and packaging. TDI is a crucial ingredient in making polyurethane foams, which are widely used in furniture, bedding, and automotive seats. Benzene is used in making detergents, plastics, and synthetic fibres.

Toluene's chemical structure is that of a methyl-substituted benzene—a benzene ring with an attached methyl group. This structure lends stability and lower volatility compared to pure benzene. As a result, it evaporates less readily, making it safer as a solvent in paints, adhesives, and coatings. Additionally, its structure enables it to be an effective octane enhancer for fuels. Adding toluene to gasoline helps prevent engine knocking and boosts overall performance, making it valuable to the automotive industry.

What are the demand drivers?

Toluene demand is closely tied to multiple end-use industries. A primary driver is construction. The current construction boom in our country is spurring demand for toluene-based paints, coatings, and adhesives. There is a growing need for high-octane gasoline, lubricants, and polyurethane foams. In addition, intermediates derived from toluene are seeing increased use as the petrochemical sector grows.

The automotive industry is another huge

industry that utilizes toluene to improve the octane rating of gasoline. The higher octane level ensures smoother engine performance and reduces the knocking in vehicles. Apart from the fuel, toluene is indirectly used in the polyurethane foams. These foams are made from TDI, and they play a crucial role in the manufacturing of car seats, cushioning, and interior parts, thereby making them indispensable in the automobile manufacturing.

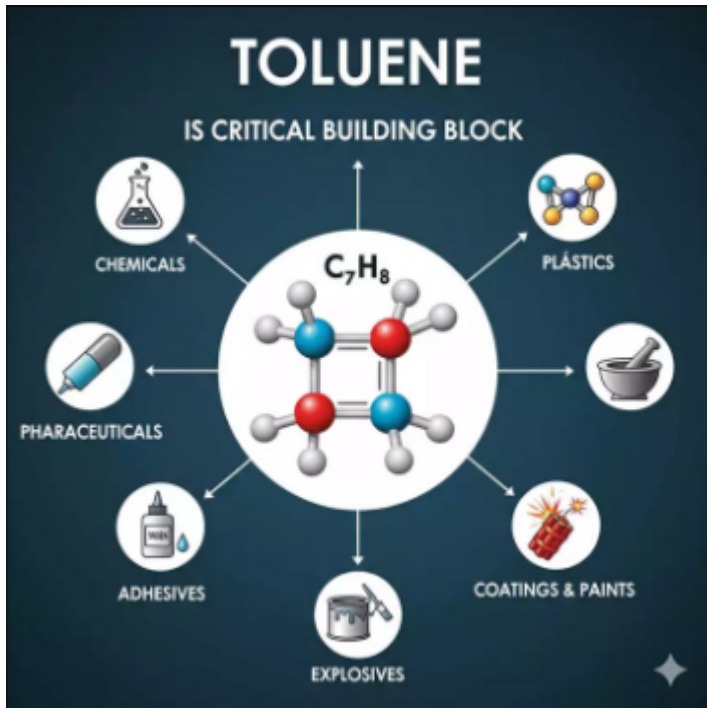
Overall, toluene caters to every industry that is booming, which includes construction, automotive, and petrochemical industries. Urbanization, rising car ownership in the country, and the global appetite for plastics and resins are directly fuelling its growth. The key aspects in modern life, such as housing, transportation, packaging, and manufacturing, demand the manufacturing and steady supply of toluene.

Toluene production- what are all the impacts?

Toluene is mainly produced during the crude oil refining process. Naphtha is produced as one of the key outputs during crude oil processing. Then the naphtha is converted using catalytic reforming into higher value products, and one of these products is toluene. This means that the growth of the oil and gas industry is directly connected to the availability of toluene.

The demand for energy pushes the crude oil refining processes, and this meets the need for gasoline, diesel, and other fuels. Therefore, this leads to the natural production of toluene as a by-product. Therefore, the reasons that cause the refining processes ensure a steady supply of toluene to the global market. This is the reason why the countries with strong refining capacities, such as the Middle East and Asia, are playing a major role in the global toluene trade.

This steady supply of toluene keeps the industries running smoothly, whether it is the automobile industry that needs the high-octane fuel blends or the chemical industry that requires raw materials for resins and plastics. The growth of the oil and gas sector is fuelling industry and balancing the raw material demand gap, which ensures that the industries do not face shortages.



Likewise, we can strongly conclude that the price and availability of toluene are tied to the global crude oil trends; therefore, if the oil prices rise or the supply is disrupted, then the toluene market feels the impact. The energy and refining industry is like a lifeline for the toluene market, and as oil refining expands, the availability of toluene increases, thereby supporting all the industries across the globe. But when the oil market faces trouble, all of these industries that rely on toluene face challenges.

Toluene is a toxic chemical- how is India dealing with it?

Toluene is widely used in many industries; this is one of the biggest drawbacks, and it has a lot of impact on health and the environment. When workers or people are exposed to it for a long time or in large amounts, especially the workers of industries like paints, adhesives, and refineries, they often face this risk.

Exposure to toluene vapors can cause symptoms like dizziness, headaches, tiredness, and even confusion. Long-term exposure can lead to damage in the nervous system, and it will show up with symptoms like memory loss, poor coordination, and more serious neurological problems. In extreme cases, the vapors could damage internal organs such as the liver and kidneys.

It also has an environmental impact, such as air and water pollution. It is a volatile organic compound and thus it evaporates easily into the air and contributes to smog formation, which reduces air quality. When toluene leaks into soil or water, it contaminates groundwater and becomes highly dangerous for both aquatic life and humans who rely on that water. Therefore, handling the compound comes with pressure on the industries to adopt safer practices. The Indian chemical industry has set limitations and stricter regulations on handling the compound. For instance, they limit how much toluene can be present in paints, glues, and other consumer products. This prevents misuse and protects everyday users.

The companies that work with the compound should comply with limitations and workplace safety. The companies must provide the workers

with protective equipment, such as masks and gloves, proper ventilation, safe handling training, and so on. This helps them in reducing the health risks caused by breathing in vapors or coming in contact with the chemical.

On the other hand, India is moving towards alternatives rather than investing in preventive measures. Several paint companies in India are developing water-based paints for industrial applications.

They produce water-based primers, paints, and clear coats for automotive and industrial uses. So instead of solvent-based coatings, the companies are using water plus additives that reduce VOC emissions. Birla Opus introduces water-based enamel solutions; traditionally, the companies have been using more solvent or oil-based solvents. However, the invention of water-based enamels is considered an eco-friendly version. Khamir Industries has introduced low-VOC, water-based industrial coatings and coatings for concrete, etc. These factors are affecting the overall demand for the toluene industry.

How is India dealing with regulatory pressures?

Health and environmental risks associated with toluene handling and production are higher; therefore, they are subjected to strict regulations in many countries. Government and international organizations have set limitations on how much toluene can be used in certain products. The regulatory pressure is creating both challenges and opportunities for the companies, as they must invest in research and development to find alternative solvents or reformulate their products. Meanwhile, the expenditure is rising due to compliance measures like safe storage, waste treatment, worker safety systems, and so on.

The production of toluene is directly connected to the crude oil industry. This is raising questions about sustainability. As the world is moving towards renewable energy and alternative fuels, the availability of petroleum-based byproducts like toluene may decrease.

The alternatives to toluene – how is it impacting the toluene market?

Paints and adhesives companies are shifting towards water-based solvents and plant-derived solvents. This is due to stricter compliance and consumer preference. Nevertheless, the performance of these alternatives doesn't match the products that contain toluene, and the alternatives are sold at a higher price. Therefore, this helps in the growth of the toluene market.

Another critical risk is the overcapacity in the market. Since toluene is produced during oil refining processes, the production is directly linked to refining activity and it is taking place across the world. This is increasing the production significantly, and the amount of toluene produced generally exceeds the market demand.

The oversupply can push down the prices and thus create pressure on the producers and refiners. Although the lower price is helping the end-user industries such as paints and plastics manufacturers, this is hurting the benefit of refiners and chemical producers. Therefore, the companies are forced to cut down on production, reduce investments, and shut down the less-efficient plants.

Future outlook:

Although the market is getting filled up with alternatives, the toluene market is expanding rapidly due to its role as a solvent. It has efficiency and the capacity to dissolve a wide range of materials. They are crucial in paints and coatings, for smooth finishes and durability, adhesives to ensure strong bonding in construction and packaging, and chemicals, as they serve as a reaction medium in multiple processes. Therefore, its versatility and effectiveness are making it the most sought-after solvent in the country's growing industrial base.

Toluene is playing a huge role in the pharmaceutical sector as it is deployed in producing APIs and other compounds. India is becoming a global hub for generic drugs, and thus, the demand for pure toluene is rising.

Above all, the compound is intensely used as a fuel additive that boosts octane levels in gasoline and as a feedstock for benzene, xylene, and TDI production. The stricter norms across the world and their role in making cleaner, high-performance fuels are becoming more valuable.

Conclusion:

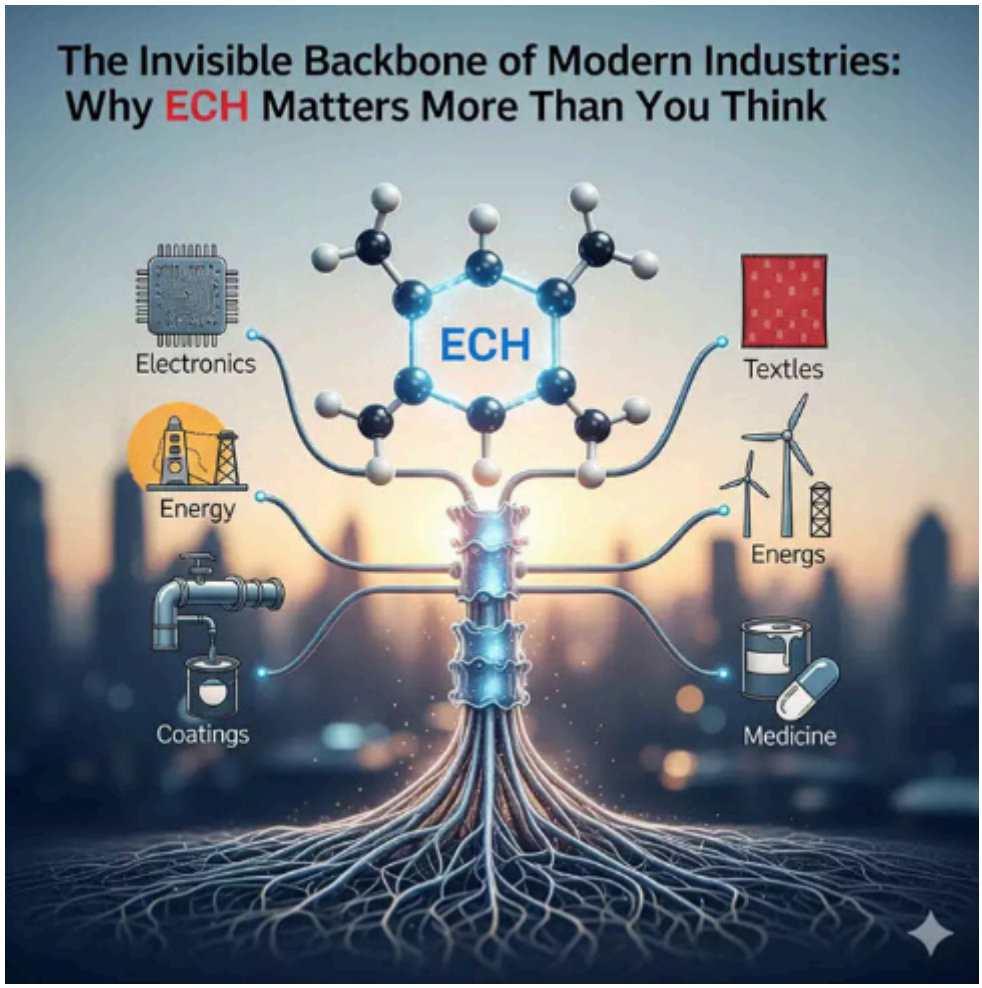
Toluene remains one of the most versatile and important chemicals across the globe. From the paints and coatings to pharmaceuticals, fuels, construction, and a vast number of other applications. The growth story in India has never been stronger than now. The rising industrial activity, booming construction, growing pharma exports, and government support are pushing the demand higher and higher. Likewise, India is also trying to reduce its import dependence by expanding its domestic capacity, and globally, the demand is expected to grow, but the challenges around health, safety, and sustainability will shape the way industries use toluene in the future. cleaner fuels, eco-friendly coatings, greener solvents, and innovation. Overall, Toluene is here to stay as a building block for the modern industrial base, and for the future, it's all about balancing economic growth with environmental responsibility.

The Invisible Backbone of Modern Industries Why ECH Matters More Than You Think

Team Chemical Market

Introduction:

The Epoxy resins are a growing and strategic segment in the chemical industry. The growth of the epoxy market is driven by renewable energy, electronics, semiconductors, high-performance coatings, and adhesives. To combat the vulnerabilities in the market, the products are manufactured while achieving sustainability and supply chain control of feedstocks. These processes are emerging in the market with full swing. The Indian chemical industry is striving to achieve heights in the epoxy market. Therefore, they should shift their focus towards selective vertical integration that moves up the value chain into specialty epoxies. These specialty epoxies focus on green formulation and scale reliable local ECH or BPA supply to capture export and domestic demand. We have discussed the key challenges in the market and a massive shift that is happening! Let's begin!



Epoxy resins are indispensable for the majority of applications:

Epoxy resins in construction:

Epoxy resins are the most versatile and high-performance materials in the world. They are known for adhesion, strength, chemical resistance, electrical insulation, durability, and so on. Their applications span several industries that are central to modern economies.

Epoxies form tough protective coatings that are used in industrial flooring, marine applications, pipelines, refineries, and infrastructure. In India, construction and infrastructure projects are booming in recent times, and epoxy coatings are gaining momentum because a large sect of consumers prefer aesthetics and value in their construction materials.

They are widely used in the coatings and paints sector, as they are durable and offer versatile protective finishes. They form a hard, chemically resistant layer that shields surfaces from corrosion, abrasion, moisture, and chemical attack. Thus, they are found in industrial flooring, marine structures, pipelines, refineries, bridges, and public infrastructure. They extend the lifespan of expensive assets and add color, serving more than just decorative purposes.

Since India is focusing on infrastructure development and is one of the government's biggest priorities, the role of epoxy coatings is rapidly growing. From the smart cities mission to Bharatmala and Sagarmala projects, roads, ports, and airports are being built at a massive scale. The epoxy-based flooring and coatings provide resistance to heavy traffic, oil spills, and harsh climates; therefore, they are the best choice for highways, industrial parks, and warehouses.

Epoxy coatings are extremely constructive in housing, commercial spaces, and metro networks as they are used to protect concrete from wear and tear. The refineries and petrochemical

complexes are central to the country's energy sector, and they rely on the epoxy linings for tanks, pipelines, and offshore rigs. Without epoxy, the corrosion-related damage would lead to costly maintenance and frequent replacements. These protective coatings are growing in their worth, surpassing billions of dollars. Thus, India's chemical industry should focus on developing specialty coating formulations that are tailored for infrastructure, marine, or defense applications instead of supplying bulk resins. This not only boosts margins but also strengthens the country's position as a supplier of advanced materials to the world.

Epoxies in adhesives:

Epoxies are integral in adhesives. They are critical in electronics, construction, automotive, and aerospace. They bond materials that ordinary glues cannot handle. They offer exceptional strength, heat resistance, and chemical stability. Therefore, they are indispensable in sectors like Electronics, construction, automotive, aerospace, and defence.

Since the automotive and aerospace sectors expect safety and reliability as their highest priority, epoxy adhesives replace traditional mechanical fasteners. These materials allow for lighter, more fuel-efficient vehicles by reducing the need for heavy bolts and welds.

The country is now moving towards producing specialty epoxy adhesive formulations, and this can give Indian companies a strong export advantage, especially in the global markets towards lightweight, energy-efficient materials.

Why is securing feedstocks like Epichlorohydrin and Bisphenol-A important?

ECHs' high reactivity, excellent chemical versatility, and ability to form epoxide rings make them indispensable in the manufacturing sectors, from coatings and adhesives to paper, textiles, water treatment, and more. Although ECH is utilized in several ways, it is classified as a probable human carcinogen that demands careful handling and strict exposure controls.

In the world of specialty chemicals, there is a handful of intermediates that form the backbone of multibillion-dollar industries. Epichlorohydrin is one such building block. It is one of the fastest-growing segments of advanced materials like epoxy resins. Nearly 87% of ECH output across the globe is consumed in the production of Bisphenol A diglycidyl ether (BADGE), and this has increased to 88% in 2024. The number shows how Epichlorohydrin is linked to the epoxy industry. The epoxy resins are special materials that are used everywhere, especially in paints, adhesives, electronics, cars, airplanes, ships, and even wind turbine blades. Industries like construction, infrastructure, and electronics keep growing, and the need for epoxy resins is also growing. This is automatically pushing the demand for ECH.

India should work towards securing feedstocks like Epichlorohydrin. This chemical reacts easily with other substances because of its special structure. It has both chlorine and epoxy groups. This makes it useful as a building block for many products. ECH is made from propylene using a process through allyl chloride. Therefore, the ECH production is directly connected to oil prices and supply. To deal with this vulnerability, India can adopt other processes in the market. For instance, there is another new process that involves producing ECH from glycerol, which comes from biodiesel production. This method is called bio-ECH, and it is cleaner and less dependent on the oil.

The main use of ECH is to react with Bisphenol A to make BADGE, which is the primary material to manufacture epoxy resins. In simple terms, without ECH, production of epoxy is not possible. Therefore, the demand for epoxy is directly connected to the demand for ECH. This is the reason why 9 out of 10 tonnes of ECH end up in epoxy production.

The changing landscape of the Global ECH market: the backbone of epoxy resins production:

Currently, China is the largest consumer and producer of ECH. This was not the case a decade ago. The production of ECH was more concentrated in the U.S, Europe, and Japan. These countries together accounted for about 80% of the global capacity, but today China has built significant production capacity that is driven mainly by the demand from its rapidly growing epoxy resin industry. Currently, China's ECH production capacity is estimated at 1 million tonnes per year, with roughly 30% of this capacity from bio-based routes. These bio-based methods use renewable feedstocks like glycerol instead of petrochemicals, thereby making the production process more sustainable and environmentally friendly. This rapid expansion has created an oversupply situation, and thus, China produces more ECH than the market immediately needs. This has influenced global pricing and created a competitive market environment. Despite the oversupply, the demand for ECH continues to grow across the globe, largely because of epoxy resins.

Massive shift in the global ECH production and integrations: since the demand for epoxy resins is increasing by about 2% every year, the traditional market is witnessing slow growth, yet remains important. In the last ten years, China has added a significant amount of ECH capacity to the global production. The majority of the production was used to build new epoxy resin plants that ensure a local supply of this essential raw material. This has critically changed the global supply dynamics.

About 50% of the world's ECH supply is now controlled by epoxy resin producers; therefore, large companies like DOW and Solvay produce ECH in-house using both conventional and bio-based technologies. Other companies are relying on licensed technology from companies like Conser, SPA, Solvay, and Spolchemie.

A significant shift is occurring in the world, marked by the move toward bio-based ECH. This is one of the most significant shifts happening. Bio-ECH uses renewable feedstocks such as glycerol, which is a byproduct of biodiesel production. This method reduces reliance on petroleum-based raw materials and lowers the environmental footprint of production.

Currently, about 30% of China's ECH production uses bio-based methods, and nearly all new global capacity does the same. The scale of this shift is huge.

But the real question is, will this global shift affect ECH production and thereby affect epoxy resins production, its market dynamics, and growth?

Let's explore that further!

How has the global shift of bio-based ECH affected Epoxy resin production?

Epoxy resins are the primary downstream product of ECH, consuming around 65% of all ECH produced across the globe. The Changes in ECH supply are directly influencing the resin production. For instance, it has increased the supply and thereby lowered the costs of the raw materials. China's expansion of ECH capacity, especially the bio-based methods, has led to oversupply, and that has led to a fall in raw materials costs of epoxy resin producers. Therefore, the production process is made more profitable, which allows for price-competitive exports.

This shift has also affected the production capacity, responding to the growing demand in construction, electronics, automotive, and aerospace sectors.

This has also led to the expansion of emerging markets, such as rising infrastructure, renewable energy, and electronics sectors in India, Southeast Asia, and Africa, which are driving the local demand.

Takeaway:

Epoxy resins are truly indispensable. They are the backbone of modern infrastructure, electronics, aerospace, and a lot more. The global shift towards bio-based ECH production, led by China, has tremendously affected so many aspects. The path is clear; it is to begin with securing domestic feedstocks. The landscape of modern industrial materials is changing in ways that only a few could have predicted. We still don't know which regions and companies will emerge as leaders. How will these leading countries carry out innovation, sustainability, strategic foresight, and determine who will capture the growth opportunities? The strategic planning, investment in advanced formulations, and attention to sustainable practices are likely to define who leads in the future. But the question is, are we ready for the transformation, or will the next wave of progress leave some behind?

Solvents are more than just background players in pharma- how

Vinodhini Harish

Introduction:

From simple carriers in early medicine to critical enablers of advanced drug discovery, solvents and petrochemical intermediates have played a quiet yet powerful role in shaping the pharmaceutical landscape. Their influence extends from everyday bulk drugs to highly specialized formulations. As the industry is adapting to regulatory changes, safety concerns, and other sustainability pressures, the chemical tools are no longer just invisible background players, they are becoming central to innovation. In this article, we have discussed the evolution of solvents and various perspectives on their impact on the pharmaceutical industry, including growth opportunities and related considerations. Let's begin.

Role of solvents in the pharmaceutical industry- beyond our imagination:

Solvents are indispensable liquids in both industrial and pharmaceutical processes. They dissolve, extract, or suspend other substances without chemically altering them. Thus, they are critical in applications like cleaning, degreasing, paint production, and adhesives manufacturing. In the pharmaceutical industry, the solvents serve as a reaction medium that helps synthesize active pharmaceutical ingredients, which ensures consistency in drug formulations. For example, solvents like ethanol, acetone, and isopropanol are essential in drug production, sterilization, and laboratory processes. The selection of a solvent for a specific application is based on its polarity, volatility, and compatibility with the intended chemical reaction.

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.

CPHI MIDDLE EAST & AFRICA

Date : Dec, 8-10, 2025

City : Riyadh Exhibition and Convention Centre in Malham

Country : Saudi Arabia

Website :https://www.cphi.com/middle-east/en/home.html

Description : CPhI Middle East is the largest pharmaceutical event that connects local, regional, and international pharmaceutical professionals worldwide, who are the key supply chain from ingredients to finished product distribution. It's an event held in the Middle East and Africa Riyadh Exhibition and Convention Centre to uplift the regional pharmaceutical market on a cost-effective platform. Other than that, CPhI Middle East 2025 Malham is a platform that brings pharmaceutical buyers, manufacturers, and suppliers together. Whether you are seeking to source new business or get the latest market understanding, CPhI could be your one-stop pharmaceutical platform held in the Middle East & Africa to again it all at once!

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!

In recent times, the regulatory frameworks and growing environmental concerns are reshaping how solvents are selected, handled, and replaced in the industry. The article explores the importance of solvents in pharmaceuticals, their classification, key applications, challenges, and their shift towards greener alternatives.

The solvent industry has gotten several growth opportunities in the pharmaceutical sector, as there are room for improvement. For instance, in the pharmaceutical industry, there are a few sensitive applications such as parenteral injections, infusions, or formulations that meet strict sterility or bio burden requirements. The solvent industry players must understand the real-life problems in pharmaceutical developers with the APIs.

Several APIs, especially the new or complex ones, have poor water solubility. This reduces the dissolving capacity of the drug, thereby affecting absorption by the body or the capability of it delivered in a formulation.

Some APIs are chemically or physically sensitive; the impurities or microbial contamination in excipients can degrade APIs or impose safety risks.

Let's dive into the evolution story:

In the early pharmaceutical era, solvents were used for basic extraction and dissolution. They were carrying out simple roles such as extracting medicinal compounds from plants, herbs, and fermentation broths. There were no purity standards, they were no systematic regulation, there was high variability, and they were used as primitive carriers rather than engineered process enablers. Then came the "industrial adaptation era". The growth of petrochemicals began, which brought widespread availability of organic solvents into the market such as methanol, acetone, chloroform, and dichloromethane. The solvents began to be used not just for extraction but also for multi-step organic synthesis of bulk drugs like antibiotics and analgesics. This was the time when the solvents became the backbone of synthetic organic chemistry that enabled mass production of APIs such as aspirin, ibuprofen, and penicillin derivatives. The solvents required minimal oversight, and safety and environmental impacts were all secondary.

During 1980s and 1990s the pharmaceutical industry has expanded even further, the solvents were needed for scale up, crystallization, purification and formulation. The regulatory bodies, such as the FDA, EMA, and ICH, began issuing residual solvent guidelines. The solvent classes were defined in this period, and the regulations limited the usage of solvents like benzene or carbon tetrachloride. Therefore the solvents shifted from medium to controlled critical parameters which affected drug safety and regulatory approval.

During the 2000-2010 decade, the solvent waste was one of the major challenges in the industry where about 80% of the process waste. There was also a push for the green solvents such as supercritical CO2, ionic liquids, and bio-based solvents. Processes like solvent recycling and recovery techniques gained traction in India and across the globe. The role changed again, and the solvents became a sustainability target in drug manufacturing.

In the present era, 2015-current, the pharma companies were increasingly adopting cautious manufacturing and flow chemistry, where the solvent use must be precise and optimized. The solvents were evaluated not just for soluability, but for reaction selectivity, atom economy, recyclability and environmental footprint. The regulatory pressure, ESG goals are driving the adoption of green solvents, solvent-less reactions, solvent-minimized processes, and so on. The solvents are now strategic enablers that are not impacting chemistry, and not just that, it is also affected by compliance, sustainability, and cost-efficiency.

The solvents might evolve from petrochemical-based dominance to bio-derived, recyclable, and tunable systems. Especially, Deep Eutectic solvents, biobased ethanol, and engineered ionic liquids will see more adoption. AI and digital chemistry will help in identifying the best solvent for every specific reaction, therefore reducing trial and error methods. The solvents are expected to become smarter, more sustainable, and more precision-driven. Therefore, it enables high-value drugs with lower environmental costs.

Today's challenges in using solvents in pharmaceuticals:

Although the solvents are becoming more indispensable, there are many solvents that are inflammable, toxic, or carcinogenic. This poses occupational hazards to the workers. The VOC emissions are contributing to air pollution, climate change, and so on. The compliances must meet strict residual solvent limits, requiring advanced monitoring and purification. The industry is slowly moving towards cleaner processes and products; therefore, the greener solvents are gaining more momentum, and they require new processes, equipment, and R&D investments. The disposal of spent solvents generates large volumes of hazardous waste.

Today's companies are exploring green solvents and alternatives that are derived from renewable resources or designed for low toxicity. Sustainability has become a central theme in the pharmaceutical industry, like every other industry. There are quite a lot of green solvents in the industry, to name some of them:

Supercritical CO2: This is used for decaffeination and the extraction of bioactive compounds.
Ionic liquids: these are non-volatile solvents with customizable properties.
Bio-based solvents

Deep Eutectic Solvents

Traditional solvents often fail to ensure proper solubility, or stability of such compounds, this limits their therapeutic potential.

Changes in pharmaceutical manufacturing affect the solvents industry:

Pharmaceutical companies are shifting from batch processes to continuous manufacturing to improve their efficiency and reduce waste. Therefore, solvents have become more important to enable these new systems by providing a consistent reaction medium. The process intensification helps as well in exploring solvent-free or solvent-minimized systems.

Since several companies are adopting process-intensification systems, they are able to cut down the costs and reduce environmental impact. On the other hand, companies are adopting techniques like microwave-assisted synthesis and flow chemistry, which help in reducing the reliance on hazardous solvents while maintaining high yields.

These factors are affecting the demand for solvents and the overall growth of the solvents industry.

Future outlook:

Despite all these challenges, the future of solvents in the pharmaceuticals will be defined by efficiency, safety, and sustainability. The companies are investing in solvent recycling systems to minimize waste and cut down on costs. The green chemistry initiatives are expected to accelerate the adoption of

bio-based solvents and solvent-free processes.
On the other hand, the regulatory bodies are expected to tighten the controls, pushing the industries towards safer alternatives and so on.

Recently, Clariant's Vitipure LEX and polyglycol range provided co-solvents with optimized purity and functionality to address these issues. Their use allows the formulation of APIs that otherwise struggle with poor absorption or degradation in physiological conditions. These innovations proved to the industry that solvents are not mere "inert carriers" but are active enablers of drug discovery pipelines.

Overall, in the long run, the pharmaceutical sector is expected to balance its dependence on pharmaceutical-derived solvents with eco-friendly innovations. The transition will not only ensure patient safety but also align with the global commitments to reduce carbon emissions and protect ecosystems.

Takeaway:

The pharmaceutical industry is making shifts towards greener, safer and more efficient practices, therefore solvents and intermediates are standing at a turning point as well. From benzene-based derivatives to bio-based alternatives, they are redefining how APIs are synthesized and delivered. But how far can the innovation go in replacing traditional petrochemical pathways? Will green solvents become the new standard in every formulation hereafter? Will petrochemical-based systems continue to dominate due to cost and performance advantages? The answers couldn't decide just the future of the solvents but the very way medicines reach the patients across the globe.

Bio-Based Solutions and IPM The Key to Securing India's Export Markets

Team Chemical Market

Introduction:

The global trade in agricultural products is entering a new phase in this era. The new safety standards, growing environmental concerns, and consumer preferences are shaping the way countries are competing. Farmers and exporters are now facing tremendous pressure as there is no transition period, and also, for farmers to shift from chemical to organic practices. The international markets are increasingly demanding cleaner, more sustainable, and more carefully regulated produce. Overall, we have to take a deep dive into the subject and ways to tackle the challenges. Let's begin.

Tea, Trade, and Tighter Rules: The Residue Problem Facing Indian Exports

The European Union EU has recently imposed stricter residue limits on agrochemicals such as Thiamethoxam, Clothianidin, and Thiacloprid, which are commonly used for pest control in Indian plantations (The Times of India). These neonicotinoid-based insecticides, while effective against tea pests, are increasingly linked to pollinator decline and environmental harm, prompting tougher restrictions in Europe.

If the residues of these chemicals exceed permissible limits, the shipments could be rejected, damaging the country's trade reputation and causing economic losses. The exporters and researchers in India are urging a transition period, arguing that abrupt restrictions could destabilize growers who lack immediate alternatives. They are also called for investment in safer pest management solutions, ranging from bio-based pesticides to integrated pest management IPM practices.

The problem is not limited to India; it is all across the globe. The rules on pesticide use are becoming stricter. For example, in France, the top court recently cancelled part of a law that tried to bring back Acetamiprid, a pesticide already banned in the European Union. The court said allowing it again would go against the country's duty to protect the environment. This shows that more and more countries are putting nature and long-term safety ahead of short-term farming needs.

What are the new insecticides and crop-protection approvals?

The Indian farm sector got a boost when the Indian government added six new insecticides under the Insecticides Act. This means the farmers now have more tools to fight the pests that are damaging crops like rice, wheat, cotton, and vegetables. The Central Insecticides Board and Registration Committee cleared about 27 new crop protection products that include insecticides, fungicides, and herbicides. These products are crucial because the pests are changing, and the labor for weeding is becoming more difficult, as the global market demand for high-quality crops increases. Some of the new products also promise to be safer and more effective, which gives farmers better options.

For companies, this is a chance to expand their business and introduce products that are already popular in other countries. For farmers, it means access to stronger and modern solutions, but they will need proper training to avoid misuse or overuse. Overall, the approvals are showing the country wants to modernize farming and support food security, while keeping an eye on safety and sustainability.

India's big problem- fake fertilizers and agricultural inputs:

India is facing a major challenge in terms of dealing with fake or poor-quality fertilizers. The reports suggest that about 40% of the fertilizers sold by value are fake or mixed with cheap fillers. This not only reduces the crop yields, but also

damages the soil and pushes the farmers into financial loss.

To fight this, the government is preparing a tough new law with stronger punishments for those selling fake fertilizers. This could include big fines, jail terms, and cancellation of licenses. The same problem is happening with the bio stimulants and agricultural chemicals, where many fake or wrongly labelled products are sold.

The farmers are often trapped because they don't realize the difference between the legit and fake ones. Just that they are attracted to the cheaper ones. Overall, the lack of strict checks in supply chains makes the issue worse.

The solution needs a mix of laws, awareness, and technology. Fixing this problem is crucial because it could affect the country's food security soon and its global reputation as well. Strong action can rebuild trust and protect the farmers from big losses.

Chemical residue and export risk: A growing concern for Indian agriculture:

India is one of the major exporters of agricultural products in the world, and with commodities such as tea, spices, rice, fruits, and vegetables reaching markets across Europe, the United States, and Asia. With the rising global concern towards food safety, environmental protection, and human health, the importing countries are tightening their rules on the chemical residues in food. The Indian exporters are feeling the pressure now. Especially, the European Union, which is a key market for Indian tea, has recently lowered its permissible residue limits for widely used pesticides. The stricter limits could put Indian tea exports at risk if farmers do not adapt quickly.

The situation highlights a broader trend, which is that agriculture is no longer just about productivity; it is also about meeting international safety and sustainability standards.

The EU has among the world's strictest food safety regulations, especially concerning the Maximum Residue Limits for pesticides. They have tightened their restrictions on chemicals such as Thiamethoxam, Clothianidin, and Thiacloprid. These chemicals are linked to the decline of bees and other pollinators. However, the tea growers in Assam use these chemicals to control pests like tea mosquito bugs, thrips, and Aphids. These insects or tiny pests can cause severe damage to the tea bushes. Likewise, if the residues of these pesticides are found in tea above the EU's stricter limits, the regulators could reject the entire shipments. Such rejections only lead to financial losses for the exporters but also damage the country's image as a reliable supplier.

Both the tea exporters and industry experts are urging the government and regulators to support the transition. The focus should be on the gradual replacement of the banned or restricted chemicals with safer alternatives. The process should be carried out along with training farmers in integrated pest management (IPM) practices.

Although tea is at the center of the current debate, the chemical residue risks extend to many other Indian exports. Basmati rice, spices, mangoes, and vegetables that are exported from Indian also face similar scrutiny in the international markets over the residue issues. The EU, the US, and Japan are constantly rejecting the shipments that fail to meet their strict food safety norms.

Every rejection not only leads to financial loss for the exporters but also affects the country's reputation in global trade. Every time the product is labelled unsafe or non-compliant, rebuilding trust in the market becomes very difficult.

Solutions to the challenges:

India must take the route of bio-based pest control. The bio-based pest control products are made from plant extracts, beneficial microbes, or pheromones. They break down faster in the environment and leave very little harmful residue. While the bio-based pesticides currently occupy a very small role in the country's crop-protection market, the global demand is growing tremendously. With the right investment and policy support, the country could not only solve its residual problem but also emerge as a supplier of sustainable pest control solutions in the world.

Ultimately, addressing the chemical residue issues is about long-term competitiveness. The countries are failing to adapt, risking being locked out of lucrative markets. Therefore, the companies that move quickly towards safer practices will enjoy easier market access and stronger brand value.

Final thoughts:

The tightening of the residue limits in the EU is a wake-up call for Indian agriculture. For Assam's tea growers, the challenge is immediate, but the lessons apply across the farming sector. The global markets are shifting towards stricter food safety and environmental standards, and the country needs to keep up the pace. The path forward lies in transitioning to safe pesticides, investing in IPM and supporting bio-based alternatives, and improving farmer training. The short-term transition may be quite difficult, but the long-term benefits are clear: they are stronger export markets, higher incomes, and more sustainable farming systems. Since the consumers and regulators are increasingly linking food to environmental and health concerns, India's agricultural future depends not just on how much the country is producing, but also how safely and sustainably it is doing so.

MUMBAI MARKET PRICE AS ON 10/10/2025

Name of Chemical	Current Price	Location
Acetic Acid-Imported Repack	38	Mumbai
Acetic Acid-Imported Repack	36	Mumbai
Acetic Acid-Domestic Intact	47	Mumbai
Acetic Acid-Domestic Repack	36.5	Mumbai
Acetone-Imported Repack	68	Mumbai
Acetone-Domestic Intact	79	Mumbai
Acetone-Domestic Intact	67	Mumbai
Acetonitrile-Imported Intact	150	Mumbai
Acetonitrile-Domestic Intact	155	Mumbai
Acetonitrile-Domestic Repack	140	Mumbai
Acrylonitrile-Imported Intact	150	Mumbai
Acrylonitrile-Imported Repack	170	Mumbai
Aniline-Imported Intact	125	Mumbai
Aniline-Domestic Intact	129	Mumbai
Benzene-Domestic Repack	72.5	Mumbai
Cyclohexane-Imported Intact	92	Mumbai
Cyclohexane-Domestic Intact	91	Mumbai
Cyclohexane-Domestic Repack	86	Mumbai
Cyclohexanone-Imported Intact	113	Mumbai
Cyclohexanone-Imported Repack	107	Mumbai
Cyclohexanone-Domestic Intact	120	Mumbai
Cyclohexanone-Domestic Repack	137	Mumbai
C9 Solvent (99.99% purity)-Imported Repack	94	Mumbai
C9 Solvent (Arham Petrochem)-Imported Repack	93.75	Mumbai
Dibutyl Phthalate-Domestic Intact	108	Mumbai
Dioctyl Phthalate-Domestic Intact	116	Mumbai
Ethyl Acetate-Domestic Intact	75	Mumbai
Ethyl Acetate-Domestic Repack	72	Mumbai
Formaldehyde(37%)-Domestic Repack	20.5	Mumbai
Methanol-Imported Repack	36.5	Mumbai
Methyl Ethyl Ketone-Imported Intact	113	Mumbai
Methyl Ethyl Ketone-Imported Repack	102	Mumbai

Methyl Isobutyl Ketone-Imported Intact	114	Mumbai
Methyl Isobutyl Ketone-Imported Repack	100	Mumbai
Methyl Methacrylate-Imported Intact	117	Mumbai
Mixed Xylene-Imported Repack	83	Mumbai
Mixed Xylene-Domestic Repack	83	Mumbai
Monoethylene Glycol-Imported Repack	56	Mumbai
Monoethylene Glycol-Domestic Intact	58	Mumbai
Monoethylene Glycol-Domestic Repack	56	Mumbai
Iso propyl Alcohol-Imported Repack	87	Mumbai
Iso propyl Alcohol-Domestic Intact	97.5	Mumbai
Iso propyl Alcohol-Domestic Repack	87	Mumbai
nButanol-Imported Repack	90	Mumbai
nButanol-Domestic Intact	98	Mumbai
nButanol-Domestic Repack	90	Mumbai
Ortho Xylene-Imported Repack	90	Mumbai
Phenol-Imported Repack	96	Mumbai
Phenol-Domestic Intact	100	Mumbai
Phenol-Domestic Repack	98	Mumbai
Phthalic Anhydride-Imported Intact	88	Mumbai
Phthalic Anhydride-Domestic Intact	88	Mumbai
Styrene Monomer-Imported Repack	91	Mumbai
Toluene-Imported Repack	85	Mumbai
Toluene-Domestic Repack	85	Mumbai
Vinyl Acetate Monomer-Imported Repack	75	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 10/10/2025

Product	Regions	Current prices
Feedstock Prices $/unit		
Crude Oil ($/barrel)	WTI CRUDE	61.39
	BRENT CRUDE	65.04
	MARS US	71.01
	OPEC BASKET	66.51
Natural Gas	New York	3.23

Gasoline	RBOB	1.87
Heating Oil	US	2.27
Ethanol	US	1.74
Naphtha	FOB US Gulf	510.3
	European	540
	CFR Far East Asia	586
Propane	New York	0.68
Aromatics prices $/MT		
Benzene	FOB Korea	695
	CFR Japan	705
Styrene	CFR Japan	840
	CFR South East Asia	870
	CFR China	840
	FOB Korea	830
Toluene	CFR China	660
	CFR South East Asia	710
	FOB Korea	645
	CFR Japan	660
Iso-Mix Xylene	CFR South East Asia	705
	CFR Taiwan	705
	FOB Korea	680
MEG	CFR China	495
	CFR South East Asia	505
Methanol	CFR China	258
	CFR Korea	325
	CFR South East Asia	326
	CFR Taiwan	318
Solvent-MX	CFR South East Asia	720
	FOB Korea	650
	CFR China	700
Ortho Xylene	CFR South East Asia	805
	FOB Korea	790
	CFR China	790
Para Xylene	CFR South East Asia	790
	FOB Korea	785

	CFR Taiwan	805
Propylene	FOB Japan	740
	FOB Korea	745
	CFR China	780
	CFR South East Asia	780
Propylene Glycol	FOB Korea	785
	CFR China	785
Ethylene	CFR North East Asia	800
	CFR South East Asia	795
	FOB Japan	760
	FOB Korea	765
EDC	CFR Far East Asia	185
	CFR South East Asia	195
Butadiene	CFR China	1045
	CFR South East Asia	945
	FOB Korea	1025
Benzene	FOB Rotterdam	680
Methanol	FOB Rotterdam	271
Ortho Xylene	FOB Rotterdam	1055
Para Xylene	FOB Rotterdam	825
Solvent-MX	FOB Rotterdam	760
Styrene	FOB Rotterdam	800
Toluene	FOB Rotterdam	770
Benzene C/G	FOB US Gulf	257
Toluene C/G	FOB US Gulf	311
Styrene C/LB	FOB US Gulf	37.3
Para Xylene $/MT	FOB US Gulf	845
Mix Xylene C/G	FOB US Gulf	295
Methanol C/G	FOB US Gulf	97
Intermediates prices $/MT		
Acrylonitrile	CFR Far East Asia	1085
	CFR South East Asia	1080
	CFR South Asia	1065
VCM	CFR Far East Asia	510
	CFR South East Asia	540

MTBE	FOB Singapore	680
	FOB US Gulf C/G	234.2
Phenol	CFR China	785
	CFR South East Asia	845
	FOB US Gulf	1014
	FOB Rotterdam	716
Acetone	CFR China	560
	CFR South East Asia	610
	CFR Far East Asia	545
	FOB US Gulf	948
	FOB Rotterdam	539
Caprolactum	CFR Far East Asia	1210
	CFR South East Asia	1215
Caustic Soda	FOB North East Asia	390
	CFR South East Asia	450
Ethyl Acetate	FOB US Gulf	1310
	FOB Rotterdam	938
	FD North West Europe(Euro/mt)	900
Butyl Acetate	FOB US Gulf	1534
	FOB Rotterdam	1079
	FD North West Europe(Euro/mt)	1020
MEK	FOB Rotterdam	1255
	FD North West Europe(Euro/mt)	1170
IPA	FOB US Gulf	1044
	FOB Rotterdam	1079
	FD North West Europe(Euro/mt)	1020
NBA	CFR China	820
	CFR South East Asia	835
	CFR Far East Asia	815
Octanol	CFR China	935
	CFR South East Asia	980
	CFR Far East Asia	930
DOP	CFR China	1015
	CFR South East Asia	1010
	CFR Far East Asia	1010

Phthalic Anhydride	**CFR China**	**835**
	CFR South East Asia	**865**
	CFR Far East Asia	**830**
PTA	**CFR Far East Asia**	**600**
	CFR South East Asia	**620**
Acetic Acid	**CFR Far East Asia**	**410**
	CFR South East Asia	**389**
	CFR South Asia	**324**
	FOB China	**300**
VAM	**CFR China**	**845**
	CFR South East Asia	**710**
	CFR South Asia	**755**

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	TThe seller is responsible for shipping the goods from his factory to the destination address provided by the buyer, usually his factory or warehouse and is also liable for any damage or loss of goods during transit. The seller also takes care of the customs, VAT, or import duties levied on the products. The buyer only has to receive the

products at the destination. In most cases, most sellers only offer DDP for small shipments.

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

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 10/10/2025

USD Exchange Rate: 88.70 INR

Producers	Current Prices (INR/kg)	Prices in USD/mt Equivalent to INR/kg	Location
Acetic Acid	29	326.94	Ex-Kandla
Acetic Acid	28.5	321.31	Ex-Mumbai
Acetonitrile-imported intact	150	1691.09	Ex-Bhiwandi
Acetone	59	665.16	Ex-Mumbai
Acrylic Acid	99.25	1118.94	Ex-Mumbai
Acrylonitrile	99	1116.12	Ex-Kandla
Adipic Acid	110	1240.14	Ex-Bhiwandi
Aniline Oil	107	1206.31	Ex-Kandla
Benzene	59	665.16	Ex-Vizaz
Butyl Acetate	76	856.82	Ex-Kandla
Butyl Acrylate Monomer	95	1071.03	Ex-Kandla
Butyl Glycol	91	1025.93	Ex-Kandla
C9	69	777.90	Ex-Kandla
C10	85	958.29	Ex-Kandla
Caustic Soda Lye	37	417.14	Ex-Dahej
Chloroform	8.5	95.83	Ex-Dahej

Citric Acid-ANHYD	70	789.18	Ex-Bhiwandi
Citric Acid-Mono	64	721.53	Ex-Bhiwandi
Cyclohexane	77	868.09	Ex-Hazira
Cyclohexanone	96	1082.30	Ex-Kandla
DMF	55	620.07	Ex-Bhiwandi
DEG	57	642.62	Ex-Hazira
EDC	21	236.75	Ex-Kandla
Epoxy Resin	181.25	2043.40	Ex-Nhava Sheva
Ethyl Acrylate	130	1465.61	Ex-Kandla
Formic Acid	65	732.81	Ex-Bhiwandi
Glycerine	105	1183.77	CIF Nhava Sheva
N-Heptane	204.5	2305.52	Ex-Bhiwandi
Hexane	72.5	817.36	Ex-Kandla
Hydrogen Peroxide-50%	73.75	831.45	Ex-Bhiwandi
Isobutanol	75	845.55	Ex-Kandla
IPA	77	868.09	Ex-Kandla
IPA	78.5	885.01	Ex-Mumbai
LAB	150.5	1696.73	Imported
Maleic Anhydride-Drum	84	947.01	Ex-Mumbai
MDC	30	338.22	Ex-Dahej
MEG	50	563.70	Ex-Mumbai
MEK	93	1048.48	Ex-Kandla
Melamine	75.5	851.18	Imported
Methanol	29.5	332.58	Ex-Kandla
Methanol	29.5	332.58	Ex-Mumbai
MIBK	89	1003.38	Ex-Hazira
Mix Xylene-Solvent Grade	71.5	806.09	Ex-Kandla
Mix Xylene-Solvent Grade	74	834.27	Ex-Mumbai
MMA	111	1251.41	Ex-Hazira
N-Butanol	80.5	907.55	Ex-Kandla
N-Propanol	82.5	930.10	Ex-Kandla
NPAC	82	924.46	Ex-Kandla
Octanol	95	1071.03	Ex-Kandla
Ortho Xylene	78	879.37	Ex-Kandla
Phenol	84.5	952.65	Ex-Kandla

Phenolic Resin	170	1916.57	Ex-Indore
Phthalic Anhydride	88	992.11	Ex-Mumbai
Propylene Glycol	84	947.01	Ex-Kandla
Sodium Nitrate (50Kg Bag)	61	687.71	Ex-Make-Lasons
Styrene Monomer	84	947.01	Ex-Kandla
Styrene Monomer	86	969.56	Ex-Mumbai
Sulphuric Acid	15.5	174.75	Ex-Vapi
Tio2 (Anatase Grade)	225	2536.64	Ex-Bhiwandi
Tio2 (Rutile Grade)	250	2818.49	Ex-Bhiwandi
Toluene	77	868.09	Ex-Kandla
Toluene	78	879.37	Ex-Mumbai
VAM	67	755.36	Ex-Kandla
VAM	67.5	760.99	Ex-Hazira

PRODUCER PRICES (RS/KG) OF CHEMICALS AS ON 10/10/2025

Producers	Current Price (INR/Kg)	Import parity Price in USD/MT	Location
Accord-Ethyl Acetate	63	710.26	Ex-Maharashtra
Arham Petrochem-C9	68.75	775.08	Ex-Kandla
Arham Petrochem-C9	69.75	786.36	Ex-Ahmedabad
Arham Petrochem-C10	80.5	907.55	Ex-Kandla
Arham Petrochem-C10	80	901.92	Ex-Ahmedabad
Arham Petrochem-C10 (Imported Repack)	86.75	978.02	Ex-Bhiwandi
Arham Petrochem-MTO/White Spirit (KL)	59.65	672.49	Ex-Kandla
Arham Petrochem-MTO/White Spirit (KL)	60.65	683.77	Ex-Ahmedabad
Arham Petrochem-De-Aromatised D40	130	1465.61	Ex-Kandla
Arham Petrochem-De-Aromatised D40	131	1476.89	Ex-Ahmedabad
Arham Petrochem-De-Aromatised D60	139	1567.08	Ex-Kandla
Arham Petrochem-De-Aromatised D60	140	1578.35	Ex-Ahmedabad
Andhra Petrochemicals-Iso-Butanol	75	845.55	Ex-Vishakhapatnam
Andhra Petrochemicals-N-Butanol	78.75	887.82	Ex-Vishakhapatnam
Andhra Petrochemicals-Octanol	90.5	1020.29	Ex-Vishakhapatnam
BASF-Adipic Acid	132	1488.16	Imported
BPCL-2-Ethyl Hexanol (B)	90.25	1017.47	Ex-Kochi
BPCL-2-Ethyl Hexanol (P)	100.75	1135.85	Ex-Kochi

BPCL-2-Ethyl Hexyl Acrylate (B)	118	1330.33	Ex-Kochi
BPCL-2-Ethyl Hexyl Acrylate (P)	128	1443.07	Ex-Kochi
BPCL-Acrylic Acid (B)	80	901.92	Ex-Kochi
BPCL-Acrylic Acid (P)	89	1003.38	Ex-Kochi
BPCL-Benzene	68.25	769.45	Ex-Mumbai
BPCL-Butyl Acrylate (B)	97	1093.57	Ex-Kochi
BPCL-Butyl Acrylate (B)	99	1116.12	Ex-Kandla
BPCL-Butyl Acrylate (P)	107	1206.31	Ex-Kochi
BPCL-Hexane (KL)	78	879.37	Ex-Mumbai
BPCL-Hexane (MT)	117.47	1324.35	Ex-Mumbai
BPCL-Iso-Butanol (B)	75.5	851.18	Ex-Kochi
BPCL-Iso-Butanol (P)	86.5	975.20	Ex-Kochi
BPCL-MTO (KL)	85.25	961.10	Ex-Mumbai
BPCL-MTO (MT)	110.99	1251.30	Ex-Mumbai
BPCL-N-Butanol (B)	80	901.92	Ex-Kochi
BPCL-N-Butanol (B)	80.5	907.55	Ex-Kandla
BPCL-N-Butanol (P)	91	1025.93	Ex-Kochi
BPCL-Paraffin Wax	118	1330.33	Ex-Delhi
BPCL-Sulphur (Molten)	33.57	378.47	Ex-Mumbai
BPCL-Toluene	72	811.72	Ex-Mumbai
Deepak Phenolics-Acetone	57	642.62	Ex-Dahej Gujarat
Deepak Phenolics-IPA	76.75	865.28	Ex-Dahej Gujarat
Deepak Phenolics-Phenol	84	947.01	Ex-Dahej Gujarat
GACL-Caustic Soda Lye	36.25	408.68	Ex-Dahej Gujarat
GACL-MDC	29.75	335.40	Ex-Bharuch Gujarat
GNFC-Acetic Acid	29.2	329.20	Ex-Bharuch Gujarat
GNFC-Aniline Oil	110	1240.14	Ex-Bharuch Gujarat
GNFC-Ethyl Acetate	63.5	715.90	Ex-Bharuch Gujarat
GNFC-TDI Drum	185	2085.68	Ex-Bharuch Gujarat
Grasim-MDC	29.75	335.40	Ex-Gujarat
GSFC-Cyclohexane	76	856.82	Ex-Gujarat
HOCL-Acetone	87.5	986.47	Ex-Kochi
HOCL-Phenol	106	1195.04	Ex-Kochi
HPCL-Hexane	116.26	1310.71	Ex-Mumbai
HPCL-MTO	108.74	1225.93	Ex-Mumbai

IOCL-Banzene	70	789.18	Ex-Vadodara Gujarat
IOCL-DEG	57.6	649.38	Ex-Odisha(Paradip)
IOCL-DEG	58.7	661.78	Ex-Panipat
IOCL-LAB	157	1770.01	Ex-Gujarat
IOCL-MEG	52.6	593.01	Ex-Odisha(Paradip)
IOCL-MEG	54.1	609.92	Ex-Panipat
IOCL-Paraffin Wax	105	1183.77	Ex-Delhi
Jubilant-Ethyl Acetate	63.75	718.71	Ex-Maharashtra
Laxmi-Ethyl Acetate	63	710.26	Ex-Maharashtra
Meghmani-Caustic Soda Lye	36.75	414.32	Ex-Bharuch Gujarat
Meghmani-MDC	29.75	335.40	Ex-Ankleshwar Gujarat
NIRMA-LAB	157	1770.01	Ex-Vadodra
Reliance-Caustic Soda Lye	36.25	408.68	Ex-Gujarat
Reliance-DEG	58.1	655.02	Ex-Jamnagar
Reliance-LAB	160	1803.83	Ex-Vadodra
Reliance-MEG	56.5	636.98	Ex-Jamnagar
Reliance-Mix Xylene	71	800.45	Ex-Jamnagar
Reliance-PTA	72.3	815.11	Ex-Dahej Gujarat
Reliance-Toluene	68.5	772.27	Ex-Jamnagar
SI GROUP-Phthalic Anhydride	91.5	1031.57	Ex-Navi Mumbai
TATA Chemicals-Soda Ash light	34	383.31	Ex-Bhiwandi

All of the above prices are provided by chemicalsupdates.com. If you wish to subscribe to the pricing module, please send us an email at info@chemicalmarket.net or call us on +91-877-9830-330

FCO and Biostimulants What India's Stricter Regulation 2025 Means for SMEs

Vinodhini Harish

Introduction:

India's agricultural sector is undergoing a major regulatory shift with the inclusion of biostimulants under the Fertilizer Control Order. The products have long been sold without central oversight and must now meet strict standards for safety, efficacy, and traceability. While the strategy aligns the country with global best practices and promises greater protection for the farmers, it has created significant compliance challenges for the small and aspiring enterprises. We have explored the context in detail in the article. What are the key challenges faced by the SMEs, and why should they reconsider their survival strategies? What is the new framework? Let's find the answers and a lot more interesting information in the article. let's begin!

Biostimulant regulation in India:

Before regulation, especially prior to 2021, biostimulants in India were largely unregulated, with little consistency in quality control. Products entered the market absent central specifications or mandatory registration. In February 2021, the government officially included biostimulants in the Fertilizer Control Order. Previously, unregulated biostimulantsfueled the rise of untested, unreliable products. The new framework introduced enforceable standards, registration processes, and committee supervision. Companies now must demonstrate product safety, quality, and efficacy before sale. This marks the transition from an unregulated to a monitored system, delivering greater farmer protection.

Today, the amendments and specs are tighter, and the regulations are stricter. After the 2021 inclusion, draft and provisional registration pathways were provided. A Central Biostimulant Committee was empowered to set data requirements that include toxicity, eco-safety, bio-efficacy, and product categories. The provisional registrations were used while standards were finalized.

The third amendment order further tightened product specifications, introduced tracer molecules, recognized live micro-organisms as a distinct category, raised detection and limit thresholds, and mandated that biostimulants cannot be manufactured or imported unless listed by the central government in Schedule VI. Many products lacked scientific validation for safety and performance. This amendment implemented stricter criteria and more explicit requirements. One major change was mandating tracer molecules—unique compounds that verify product authenticity and batch consistency. The amendment also formally defined live micro-organisms as a biostimulant category, ensuring microbial products undergo rigorous safety and efficacy assessments. Higher quality standards are now enforced.

Above all of this, the order stated that no person can manufacture or import a biostimulant unless it is officially notified by the central government in Schedule VI. This means the provisional listings are no longer enough and only the products that have complete dossiers – composition, toxicology, and bio-efficacy trials, and government approval can remain on the market.

By mid-2025, the government announcements were clear that only the products officially notified in Schedule VI of the Fertilizer Control Order (FCO) would remain legal in the market. This move was widely reported in the industry outlets such as Agropages, which highlighted that thousands of provisional entries were delisted. The action left only a handful of biostimulants with full approval. The intention behind this strict enforcement was to remove spurious and untested products from the market. This act will also build farmer trust and encourage scientific compliance. Although it caused concern among

smaller manufacturers who are struggling with the costs and timelines of compliance, the period marked a major market consolidation and has pushed the biostimulant industry forward, while reducing the number of players.

Current obligations:

As of 2025, companies wishing to manufacture or import biostimulants in India must comply with the strict regulations under the Fertilizer Control Order. Every product must comply with Schedule VI specifications and be notified or listed by the Central government before it can be legally sold. Provisional registration is no longer accepted. To get the approval, every biostimulant must have a proper dossier with essential details to pass through the requirements. This includes the product's identity and composition to show what the components are. The companies must also list down the active or tracer molecules inside them, which help to confirm the product's quality and thereby allow easy tracking. In addition to all this, companies must provide safety and toxicity data to prove the product doesn't harm humans, animals, or the environment. Overall, they need results from bio-efficacy or field trials that are carried out under approved scientific methods to show that the product really works and benefits crops as claimed.

The live microbiostimulants are products made with good bacteria or fungi. These products receive more attention from the regulators. This is because the live organisms can act differently in various soils and climates. Therefore, they must be checked more carefully. The companies need to prove in their reports that these microbes are safe, stable, and can be effective on the crops. They also have to follow strict labelling and quality rules so the farmers know exactly what they are buying. Overall, the country now requires solid scientific proof and official approval before such products are sold, making sure they meet the global safety and quality standards.

Policy meeting business reality:

The regulations are affecting the small manufacturers that were previously operated without registration. Before 2021, almost anyone could make or import a biostimulant with little or no oversight at all. Many small firms thrived in this grey space. At present, especially after February 2025, only a handful of notified products with full dossiers are legal.

Entry barriers for small firms are steep. They must conduct lab testing, toxicology studies, bio-efficacy trials, and tracer molecule analyses. These steps require significant capital, technical expertise, and time. Firms unable to convert provisional registrations to full approval see their products removed from the market. Thousands of provisional entries have been scrapped, putting small firms at risk of losing their market position.

Larger players with R&D budgets are more likely to survive, while many SMEs may exit or emerge.

As of mid-2025, the government reports show that there are thousands of provisional registrations cancelled because the dossiers weren't submitted on time. There are hundreds of them under final review by the central biostimulant committee, and only those that are notified in Schedule VI are considered fully approved. Overall, many stimulants are still waiting in the approval pipeline, but the list is shrinking fast, and the government is deliberately filtering out weak or unsubstantiated products.

The costs involved in the compliance tests show why the SMEs are worried. The bio-efficacy trials are between INR 15-25 lakh per product, the toxicology and eco-tox studies charge up to INR 20-50 lakh depending on the scope, the lab analysis and trace molecules validation are between 5-10 lakhs, and regulatory and consultancy fees fall between 2-5 lakhs.

Therefore, a single product dossier could easily cost INR40-80 lakh and is a huge burden for SMEs that used to operate with low overhead.

SMEs are also fearing being forced out. The small firms cannot afford full compliance and may have to shut down. The approvals can take about 24 months, thereby making these SMEs lose sales during the transition period. The larger agrochemical and fertilizer companies may dominate, which can reduce the competition. Some genuine but resource-poor innovators might get squeezed out even though their products work.

Takeaway:

India's stricter biostimulant regulation is designed to ensure safe, effective, and traceable products. This act is expected to benefit the farmers in the long run, balancing the scientific standards with affordable compliance support. These are crucial to prevent innovation from being stifled and to keep the SMEs in the game. Although these rules align the country with the global best practices and protect the farmers from unreliable products, they impose challenges for small and medium enterprises. It would be helpful if the SMEs were given longer timelines and reduced fees for completing the dossiers. Likewise, the subsidies and tax debates for R&D and trial costs can make compliance affordable. If they are bringing in similar formulations, they can be given group registrations; this way, the SMEs producing comparable products don't have to take up identical testing.

₹13,000 Crore Deal Akzo Nobel to Sell Dulux Paints India

Vinodhini Harish

Introduction:

Selling an Indian unit is significant. Akzo Nobel, a Dutch company, has decided to sell its Indian unit, valued at INR 13,000 crores. The deal is attracting Indian companies that are competing to acquire it. This comes at the right time for the Indian paint industry, now worth USD 9 billion and growing faster than most global markets. Players believe that acquiring the company is better than starting from scratch—it's seen as a shortcut to scale, credibility, and premium positioning in a highly competitive sector. Let's begin.

Akzo Nobel wants to exit India- why?

There is no better way than adopting a global strategy – rather than fighting the tough competition, it is better to focus on the existing business. Akzo Nobel is a very large Dutch Paint and coatings company that has decided to sell their Indian business, because India's paint market is growing tremendously and the competition is very tough; they don't want to spend all their assets and money here in India. Therefore, the Dutch company has decided to sell its Indian unit, and Indian paint companies like Pidilite, JSW Paints, Berger, and Indigo Paints have shown their interest in buying the company. The deal was around INR13,000 crore. Since running the Indian unit requires massive investment in factories, marketing, and distribution to compete with giants like Asian Paints, they have decided to simplify their portfolio by selling smaller or non-core businesses.

The Indian paint market is growing at a rapid pace and has growing opportunities. The Indian paints and coatings industry is currently valued at around USD 9 billion and is growing much faster than other global markets. The growth emerges from factors like rapid urbanization, new housing construction, and rising disposable income, which is leading towards demand for premium paints. There are other factors, such as a shift from unorganized or local paints to branded decorative paints. The government has also shifted its focus to infrastructure and smart cities. These factors are pushing the Indian paint market further and further. Therefore, every company in the market wants a bigger slice of the pie. For several years now, the market has been led by Asian Paints, which is followed by Berger Paints and Kansai Nerolac.

Akzo Nobel brand, despite owning the famous "Dulux", has managed to hold only 7% share in the market. The game has changed in 2023, when the Aditya Birla group entered the industry with its Birla Opus brand. Their emergence has shaken the Indian market, as the Aditya Birla group has deeper pockets to spend on marketing, distribution, capacity, and so on. Other companies now feel the need to consolidate/ combine their businesses or buy out competitors to stay strong.

Akzo Nobel NV, the Dutch parent company, has been restructuring across the globe, and its strategy is to focus on factors like:

Strengthening core markets: Akzo Nobel wants to focus more on the regions where it already has a dominant presence, such as Europe and North America.

Simplifying their portfolio: instead of competing with fragmented markets, Akzo is selling its smaller and less profitable businesses. In India, it needs massive investment to fight against the giants like Asian Paints and Aditya Birla. Freeing up capital: By selling Akzo Nobel India, the company can raise INR 13,000+ crore, and this money can be used(will be effective when used):

- Investing in R&D for eco-friendly, sustainable paints
- Expanding into the regions where profits are higher
- Reducing debt and rewarding shareholders

Avoiding heavy future costs- to increase market share in India, Akzo would need to spend aggressively on new plants, distribution, and advertisements. Instead of selling, it allows them to exit at a high valuation without the risk.

The announcement of Akzo Nobel NV has excited Indian players.

Immediately after the announcement made by Akzo Nobel NV that they wanted to exit Indian operations and wanted to set off a race among India's top paint makers, companies like Pidillite industries, JSW paints, Berger paints, and Indigo paints have submitted their initial bids that they are going to acquire Akzo.

- They are competing for the following reasons:

There is no better way than this to gain market share very quickly. Akzo Nobel India currently has around 7% of the market, although this is not as large as one would desire, the paint industry is a place where every percentage counts. It is still a big deal, and building this kind of market presence requires years of investment, marketing, expansion, and so much more. By acquiring Akzo Nobel India, the buyer instantly gains the following:

- A ready customer base across India
- Access to premium segments where Dulux has established its expertise
- A strong foothold to compete with giants like Asian Paints and Berger Paints.

Since Indigo paints and JSW paints are smaller but ambitious companies, this share of 7% can be a game changer, and for bigger companies like Berger and Pidilite, it adds to their scale and further strengthens their defense against new entrants such as Aditya Birla.

In simple terms, the deal is like buying a shortcut to size and relevance in an extremely competitive industry.

- Strong brand equity: Dulux paints:

The Dulux paint brand has covered the household sector, and they have produced premium decorative paints for the segment. Over the decades, they have built consumer trust and a reputation for quality. Customers associate Dulux with the following:

- Superior finish and long-lasting quality
- Stylish and aspirational colors
- International brand prestige

Therefore, Indian companies understand that brands like Dulux are huge, and building the brand from scratch would cost thousands of crores in advertising and years of hard work. Therefore, the buyers are not after the factories and distribution networks alone; they are after a ready-made, respected brand name that can be marketed more aggressively.

Pidillite is strong in adhesives and construction chemicals, and could use the brand Dulux to cross-sell to its existing customer network. JSW Paints is a relatively new player that could instantly elevate its image by owning Dulux. Indigo Paints is known for its smaller towns and value categories that could use Dulux to break into the premium urban market.

Akzo Nobel India has a strong manufacturing base, with an annual production capacity of around 250 million liters. This is a massive advantage for any company that is striving to expand. The setting up of factories in India is not only expensive but time-consuming as well. The company has to begin with acquiring land to set up factories, getting environmental and governmental clearances, building plants and supply chain infrastructure, and recruiting and training workforce. The process can take about 5-7 years before a new factory is running at full efficiency.

JSW Paints has ambitious growth plans, but they have limited capacity right now.

Indigo Paints would otherwise have to invest heavily in the new plants to catch up with Asian Paints and Berger Paints. Even Berger Paints and Pidilite are those that can use their extra capacity to grow faster without overburdening their existing facilities.

This is a game-changer for the challengers:

The biggest reason for the Indian bidders lining up is that acquiring Akzo

Nobel could be a game-changer.

JSW paints: JSW paints has ambitions of becoming a serious premium brand, and buying Akzo Nobel would give them credibility as a premium brand and significant market presence overnight. The company wants to replicate its success in steel and cement by becoming a household name in paints. So far, they have introduced products Any Color, one price; this tag has challenged traditional pricing models in the paint industry. But despite such innovations, JSW still lacks a premium identity, and the urban consumers can't associate with it.

The company will largely benefit from the massive dealer network the brand has created. For instance, Akzo Nobel's wide dealer network across India will save years of groundwork for JSW, if they could buy it. In short, Dulux could transform JSW paints from a challenger to a top-tier competitor within a short period of time.

Indigo paints: Indigo paints have been one of the fastest-growing paint brands in the country, and they stood out because of their quirky advertising and unique products like floor paints, ceiling paints, and dirt-proof emulsions. These innovations have helped them to capture the rural and semi-rural markets where the customers are quite price-sensitive, yet they are very open to experimenting. Indigo struggles in big cities and premium paint categories where Asian paints and Berger dominate.

If Indigo could acquire Dulux, it could fill the gap. Dulux is strong in metros and regions where the premium customers reside; these are the regions where Indigo is weak. For example, if a rural customer may choose Indigo for affordability, while an urban apartment buyer may prefer Dulux for its luxury appeal, then owning both would give Indigo a balanced portfolio across all segments.

Pidilite Industries is the maker of Fevicol and has long been the leader in adhesives and construction chemicals. But over the years, they have expanded into categories like waterproofing and tile adhesives. But one missing element in Pidilite Industries is decorative paints. Their launch of products like Pidilite paints in the smaller markets has never competed head-on with Asian Paints or Berger.

Acquiring Dulux would change that overnight, and they already have brand recognition and distribution. By combining Dulux paints with Fevicol adhesives, Pidilite can offer complete home-building and renovation solutions. This will mirror the strategy of companies like Asian Paints, which moved beyond paints into modular kitchens, bath fittings, and home decor. For example, imagine if a contractor is looking for products to renovate a house, he doesn't have to purchase paints, adhesives, and waterproofing solutions from different companies. He can simply purchase them all from Pidilite Industries if they have purchased Dulux.

Overall, Dulux could be the catalyst for its rise in paints, and thereby making Pidilite a 360-degree home solutions giant.

Take away:

India's paint industry faces intense competition from local giants with aggressive expansion plans. Dulux, with its strong brand and 7% market share, presents a rare opportunity. Akzo Nobel's exit is about global strategy, not weakness. For Indian companies like JSW, Indigo, Pidilite, and Berger, this is a unique chance to gain scale, enter premium segments, and reinforce market positions. Akzo Nobel's departure could reshape the competitive landscape for years to come.

From Risk to Innovation How the EPA's D4 Review Could Transform Silicone Production

Vinodhini Harish

Introduction:

We are living in a resource-conscious world, and we are in a critical position to balance innovation with sustainability and regulation in the silicone industry. As global demand for silicones rises for versatile, high-performance materials, companies and governments are turning their attention to the environmental impact of core chemicals, such as Octamethylcyclotetrasiloxane (D4). With new initiatives like Elkem's REPOS project and the U.S. EPA's draft risk evaluation, a new narrative is emerging that redefines how silicones are produced, used, and recycled in a resource-conscious world.

D4 Octamethylcyclotetrasiloxane- the dimensions and growth:

Octamethylcyclotetrasiloxane is commonly known as D4, which is a colorless, odorless, and cyclic siloxane compound. This forms the backbone of the modern silicone industry. The modern silicone industry is bringing in environmentally friendly silicone production, which includes chemical

recycling processes that break down silicone products back into their basic building blocks, such as monomers like D4, D5, and D6.

For instance, the REPOS project by ELKEM and its research partners under the Cefic Responsible Care initiative is a breakthrough in the sector. The goal is to create new catalytic systems that can depolymerize silicon waste, which breaks down the used silicone materials back into their original chemical building blocks, like cyclic siloxanes.

In a conventional way, recycling silicones is pretty difficult due to their properties, such as being heat-resistant, chemically stable, they get mixed up with fillers, pigments, reinforcements, and so on. REPOS is aiming to overcome the challenges by developing low-temperature catalytic processes that can handle even the complex or filled silicon waste.

The goal is to drastically improve the circularity of the silicone industry, which is allowing valuable raw materials to be reused, reducing the waste volumes, and thereby minimizing the need for virgin resources.

REPOS emphasize energy efficiency by carrying out the depolymerization at lower temperatures; therefore, less fuel is required, and the emissions have been reduced as well. The process successfully regenerates monomers such as Octamethylcyclotetrasiloxane (D4); therefore, through the process, we can establish a more sustainable production cycle where new silicone products are continuously created from recovered materials rather than from fresh raw silica.

Recycling of cyclic monomers such as D4, D5, and D6 offers massive environmental advantages compared to producing silicones that are entirely from raw materials. The conventional method of producing silicones begins with silicon metal, which is extracted from quartz through high-temperature smelting. This is energy energy-intensive process. The raw materials then undergo multiple chemical steps to create siloxane monomers. By recovering and reusing these monomers from the waste silicones, manufacturers can skip several energy-heavy stages. Therefore, leading to large reductions in carbon emissions and resource use.

Every time the monomers are recycled, the need for new silica mining, chlorosilane synthesis, and high-temperature polymerization is reduced. This directly translates to lower environmental impact and improved sustainability performance.

D4 serves as a starting point for the production of silicones:

Silicone-based materials exist today because of D4. We can declare that D4 serves as the starting point for producing most silicon-based materials in existence today. Its role in silicone manufacturing is repetitive because almost every silicone polymer chain can be traced back to the D4 molecule as its chemical foundation.

There are several types of silicone products derived from D4, such as:

Silicone fluids: The silicone fluids are used in lubricants, polishes, and hydraulic fluids due to their thermal stability and smooth texture.

Silicone elastomers and rubbers: The silicone elastomers and rubbers provide elasticity, waterproofing, and durability; therefore, they are widely used in automotive parts, electrical insulation, and consumer goods.

Silicone resins: The silicone resins are used in coatings, adhesives, and paints for weather resistance and gloss retention.

Role of D4 in cosmetics and personal care:

Apart from industrial uses, D4 plays an essential role in the personal care and cosmetics industry. Due to its volatility and smooth spreading properties, D4 is used in a wide range of skincare and beauty formulations. There are excellent functional benefits in cosmetics. D4 creates a soft, powdery feel on the skin and helps creams and lotions glide on effortlessly. It evaporates quickly after application, thereby leaving no greasy residue behind, which is a desirable property for products like deodorants and primers. Especially in foundations and serums, D4 ensures even distribution of pigments and active ingredients.

In the beauty industry, the user experience is highly critical; customers prefer products that offer a luxurious feel to the skin and the products that are light. D4 provides sensory performance to the cosmetics product, yet maintains product stability or shelf life.

Even though some manufacturers have shifted to D4-free formulas due to regulatory discussions about their environmental persistence, there are still several brands that are relying on cycling siloxanes because of their proven sensory and performance advantages.

Role of D4 in industrial applications:

D4 is extensively used in industrial processes as solvents, processing aids, or as a raw material in the formulation of adhesives, sealants, lubricants, and coatings. The silicone-based adhesives and sealants are made using D4-derived polymers, and thus, they are valued for their flexibility, weather resistance, and longevity. These are applied in construction joints, glazing applications, automotive assembly, and electronic encapsulation and waterproofing sealing.

Silicone lubricants are non-corrosive, thermally stable, and resist oxidation, thus they are perfectly suitable for industrial machinery, conveyor belts, precision instruments, mold release applications, and so on. D4's volatility and compatibility with various organic and inorganic compounds make it an excellent processing solvent. Thus it aids in dissolving and mixing ingredients during silicon polymer or coating manufacture, thereby ensures uniform consistency.

Role of D4 in automotive applications:

Insulating and protecting sensitive components is critical in the automotive industry and silicones derived from D4 play a crucial role in insulation and protection. The encapsulation and potting compounds made of silicones protect the circuits from moisture, dust, and vibration. The silicones also act as thermal interface materials to manage heat dissipation in semiconductors. They are also utilized as coatings for cables and sensors, offering electrical insulation and resistance to chemicals and temperature extremes.

The repetitive use here stems from the consistency and reliability of silicone materials derived from D4.

The rise of chemical depolymerization is not the end of the story:

The innovative thought of chemical depolymerization helps manufacturers to stabilize supply chains that are often affected by raw material shortages or energy price volatility. By regenerating materials in-house, producers gain better control over costs, quality, and production timelines. Moreover, in a time when nations are striving for energy independence and resource security, circular silicone manufacturing aligns perfectly with the global policy goals.

Silicone recycling is emerging as a critical focus area in the global materials industry. Traditional silicone production depends heavily on energy-intensive processes and raw materials derived from quartz and hydrocarbons. Therefore, the companies are working towards developing chemical recycling technologies that recover cycling monomers like D4 and D5, allowing continuous reuse without performance loss.

The advancements are not limited to recycling; the researchers are exploring bio-based silicone precursors, derived from renewable feedstocks like plant oils or biomass. Although the process is in its early stages, this approach could reduce reliance on mined silica and fossil-derived inputs. The parallel developments in green catalysis are using milder, less toxic catalysts for polymerization and depolymerization, which are further improving the eco-efficiency of silicone manufacturing.

These innovations are crucial because silicones have always been celebrated for their resilience, flexibility, and near-universal application from medical implants to space-grade lubricants. Yet this very durability also poses an environmental paradox: silicones resist degradation, making their disposal a long-term challenge. Historically, end-of-life silicone products ended up in landfills or incinerators, leading to both waste and emissions.

Therefore, the transformation is not just about environmental responsibility but also includes intelligent reinvention. By combining chemical recycling, digital process control, regulatory awareness, and circular design, the sector is proving that progress and sustainability can move hand in hand.

The same D4 molecule that once symbolized environmental concern is now at the heart of innovation, guiding the industry toward a cleaner, smarter, and more resilient future.

Final thoughts:

The global silicone industry is transforming slowly as it balances technological progress with environmental accountability. Some market players with very good insight about the sector are investing in projects like REPOS that are supported by Elkem and partners under Cefic to show how the industry can recover key monomers like D4. These innovations make it possible to recycle complex silicone waste, lower production temperatures, and substantially reduce the carbon footprint associated with raw material extraction and energy-intensive synthesis. On the other hand, the regulatory agencies, such as the U.S Environmental Protection Agency, are closely monitoring the safety and environmental impact of cyclic siloxanes like D4. These assessments underscore the importance of responsible production, strict exposure control, and continued investment in cleaner technologies. Overall, the efforts combined, the EPA's rigorous oversight, and Cefic's industry-led recycling programs reflect a global shift toward sustainable material management. By aligning innovation with environmental regulation, the silicone industry is moving towards achieving a closed-loop, low-emission, and future-ready production system that ensures materials like D4 are both essential and responsibly managed.

Ahmedabad to host Cosmetics and Homecare Ingredients Expo this December

Press Release

The Cosmetics & Homecare Ingredients Expo will take place on 11–12 December 2025 at EKA Club, Ahmedabad, bringing together the region's cosmetics, personal care, and homecare industry under one roof.

This focused two-day exhibition will showcase over 90 exhibitors presenting more than 1500 ingredients across skincare, haircare, personal hygiene, fragrances, Ayurveda, and homecare. Alongside, CospackExpo (Cosmetics Packaging Expo) will feature the latest in cosmetic and personal care packaging solutionshelping brands deliver products to market efficiently and attractively.

Visitors will benefit from a comprehensive lineup of expert-led sessions featuring over 35 speakers, along with live workshops and ingredient demonstrations designed to showcase practical applications and the latest industry trends. The expo will put a strong spotlight on natural extracts and essential oils, Ayurvedic and cruelty-free formulations, high-performance skincare actives, as well as ready-to-use packaging solutions, offering attendees a complete view of innovations driving growth in the cosmetics and homecare sectors.

The expo is supported by regional industry associations including All-India Cosmetologists & Beauticians Association, Maharashtra Detergent Manufacturers Association, and Gujarat Small-Scale Detergent & Soap Manufacturers Association, India Drugs Manufacturers Associations and many more ensuring strong participation from Western and Northern India's markets.

Anuj Mathur, Managing Director of Future Market Events, shared:

"With Ahmedabad strategically located to serve Western and Northern markets, this edition will provide a valuable platform for local and regional businesses to connect with leading ingredient and packaging suppliers. Our goal is to help brands innovate and grow with the right resources and insights."

Cosmetics & Homecare Ingredients Expo, together with CosPack International Expo, is the must-attend platform for brand owners, raw material suppliers, product formulators, and packaging professionals looking to expand in India's growing beauty and homecare sectors.

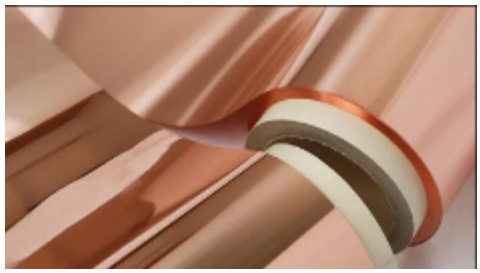
Chemetall launches first global chromium- and fluoride-free Gardolene® D passivation solution for copper foils to the market

- Pioneering innovation that supports green transformation by enhancing the performance of electric vehicles and energy storage systems
- New Gardolene D passivation solution provides superior corrosion protection and improves battery performance

Chemetall, the global surface treatment business unit of BASF Coatings and a leading provider of innovative surface treatment solutions, introduces the first chromium-free and fluoride-free passivation technology for copper foils, Gardolene D. This pioneering solution is unique in the industry and offers superior corrosion protection as well as improved performance of copper foils used in electric vehicle battery packs, energy generation and storage systems. The new Gardolene D technology sets a new benchmark for sustainability and performance while also offering long-term regulatory compliance in copper foil treatment for the battery manufacturing market.

The world has seen an increasing demand for high-performance batteries in electric vehicles (NEV), consumer electronics (3C), and energy storage systems (ESS) over recent years – a trend that is expected to continue. A key element for the success of a global green transformation is battery performance in electric mobility and energy storage systems. The new Chemetall Gardolene D passivation solution for copper foils enhances battery performance, is more sustainable, and is fully compliant with the European Union's new Battery Regulation (EU 2023/1542), which mandates carbon footprint declarations, digital battery passports, and strict limits on hazardous substances. From 2027, only batteries meeting these standards will be allowed on the European market, driving the need for green manufacturing and chromium-free pretreatment technologies.

Gardolene D directly enables superior battery performance in the end product. A key feature of the new Gardolene D for copper foils is the improvement of surface energy, which enables better adhesion of anode active materials and reduces electrical resistivity, which results in higher battery efficiency. Intensive analyses and tests have proven



that batteries treated with Gardolene D benefit from extended lifespans and improved capacity retention, extending lifetime by up to 6 percent after 1,000 cycles at 25 degrees Celsius. This is a significant performance increase compared to batteries using copper foil pretreated with traditional chromium (VI) passivation methods.

Perhaps most importantly from a sustainability perspective, Chemetall's new Gardolene D products, such as Gardolene D 6701 and Gardolene D 6702, are the first chromium-free and fluoride-free passivation solutions for copper foil in the world. They thereby significantly improve the eco-friendliness of the entire battery value chain in a way no other products can. The new solutions are compatible with existing equipment and suitable for both electro-deposited and rolled annealed copper foil substrates used in the production of batteries for electric vehicles and a wide range of other energy generation and storage applications. This innovative technology delivers superior heat and corrosion resistance compared to existing solutions.

"The green transformation, with continuously rising electric vehicle numbers and an increasing market for new concepts in energy generation and storage systems, needs new, innovative surface treatment solutions. At Chemetall, we are committed to solving our customers' challenges and supporting their business with our expertise. The new Gardolene D passivation solution for copper foil ushers in a new era for copper foil passivation, with increased battery performance, greater sustainability, and future-proof customer processes. It is another great example of what our claim 'expect more' means for us: providing innovative solutions in the metal-using industry that offer added value to customers," says Frank Naber, Senior Vice President Global Surface Treatment at BASF Coatings.

"The new Gardolene D passivation solutions for copper foil are a pioneering innovation for the market. Our dedicated research and technology teams across the globe have intensively analyzed available solutions and market needs. Based on our comprehensive expertise in surface treatment and close exchange with our customers, we were able to push boundaries and develop this one-of-a-kind global solution for copper foil pretreatment. It ensures stable copper foil properties, improved electrode conductivity, and supports manufacturers in meeting evolving regulatory and sustainability requirements compared to standard passivation processes," says Arjan Termaten, Head of Global Technology at Chemetall.

As the first surface treatment solutions provider to offer chromium-free and fluoride-free passivation technology for copper foil, Chemetall reaffirms its commitment to innovation, sustainability, and customer success. Gardolene D solutions for copper foil treatment are now available globally, enabling battery manufacturers to improve their processes and end-products through this next-generation technology without extra investments in existing operations.

Source : BASF