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*CHEMICAL MARKET

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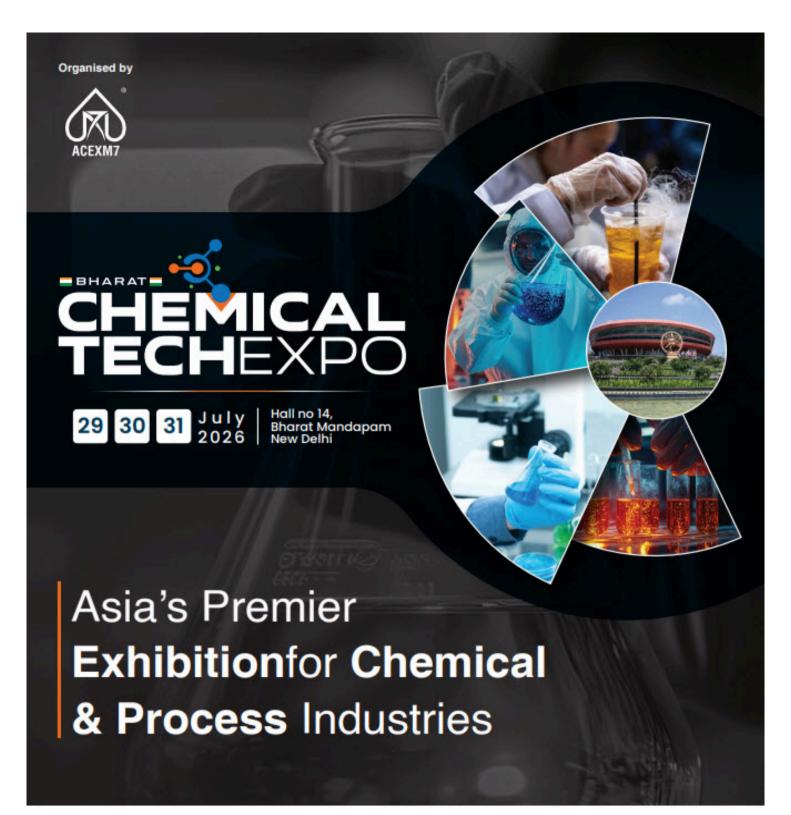
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India's Green Steel Revolution 25 Companies Earn Certification for Low-Carbon Production -pg39 India Imposes Up to Dollar 130 Anti-Dumping Duty on Met Coke Imports What It Means for Steelmakers -pg53 -pg53

India's Electronics Sector Grows 8× in Exports: Can India Compete With China and Vietnam? Analysts Sav Yes -pg 76



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

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





28-30 January 2026

Astana, Kazakhstan International Exhibition Center "EXPO"









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

\$11.5 billion (12.6% more than in January-November 2023) Volume of construction work in January-March 2024

Exhibition topics:



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Finished products



New technologies





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Benefits of participation:

In 3 days you will be able to:

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What does participation in the exhibition give?

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98%

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89%

Visitors agreed on a deal

95%

Visitors are satisfied with the quality of business contracts

99%

Visitors recommend the exhibition to their partners

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1	CPhI North America	June 2-4, 2026	Pennsylvania Convention Center, Philadelphia	
2	CPhI Frankfurt	TBD	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 23-25, 2026	IICC, Yashobhoomi, Dwarka, Delhi	
	MEC	(Coating Show)		
1	Asia Pacific Coatings Show	Aug 26-28, 2026	Indonesia	
2	Saudi Arabia Coatings Show	Jan 17-19, 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 3-5, 2026	Morocco	
2	51st Dye+Chem Sri Lanka International Expo	March 5-7, 2026	Colombo Sri Lanka	
3	Dye+Chem Bangladesh International Expo	Sept 2-5, 2026	Bangladesh, Dhaka	
4	50th Dye+Chem Brazil International Expo	Nov 17-19, 2025	Brazil	
	Rec	Carpet Events		
1	Bangladesh Int'l Dyes, Pigments and Chemicals Expo	TBD		
	Turke	y (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 Germany	Apr 14-17, 2026	Karlsruhe, Germany	
	Oth	ner Exhibitions		
1	Paint India	Feb 19-21, 2026	Bombay Exhibition Centre, Mumbai	
2	India Paint and Coating Expo	Apr, 13-15, 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	









CONTENTS

Click on the article title to go to the respective page		Why Pharma-Linked Specialty Chemical Makers Are	
Editorial		Outperforming the Entire Sector	74
Resilience, Reinvention, and a Renewed Community		India's Electronics Sector Grows 8× in Exports: Can Ind	ia
	13	Compete With China and Vietnam? Analysts Say Yes	76
Research Reports		SABIC launches new NORYL [™] resin for water managem applications in anticipation of upcoming butadiene-free	
P2 Science and Algenesis Partner to Develop		regulations	78
Algae-Derived Chemicals and 100% Biobased,		DuPont launches disposable chemical protective garmer	
č	20	material Tyvek APX	79
From Waste to Value: Recycling Automotive Shredder		•	
Residue and Bio-Waste into High-Value Feedstock	21	List of Events	11
News RoundUp		Free Service Subscribers - Sub. Today	8
The Fast Rise of Perovskite Cells and the Decline of Foss	il	Market Prices	
Fuels	22	Chennai Inorganic & Organic Chemicals Prices	14
India's Green Steel Revolution 25 Companies Earn		Mumbai Market Prices	60
Certification for Low-Carbon Production	39		
From Plant Waste to Pixels Scientists Create Eco-Friend	ly	International Market Prices	61
Light-Emitting Material Big appreciation to Yale and		Opening Port Prices	66
8	41	Producer Prices	68
ICEA Warns Lower US Tariffs on China May Hurt India			00
1 0	43	News Snippets	
Tinci's Sulfide Electrolyte Breakthroughs: What 8 New Patents Mean for EVs	46	Automobiles	23
Gas-Proof Innovation How a Breakthrough Polymer		Drug & Pharma News	27
• •	48	Chemical Technology	29
Tata Chemicals Invests ₹910 Crore to Boost Soda Ash an	nd	•	
Silica Capacity A Major Strategic Shift	51	New Products	31
India Imposes Up to Dollar 130 Anti-Dumping Duty on	1	Mergers & Acquisitions	33
1	53	International News	35
Next-Gen PO Production by UNIST Scientists How			
8 8	58	Magazine Advertisement Tariffs	16
Tata Chemicals Invests ₹910 Crore to Boost Soda Ash an		Buy Enquiries	17
Silica Capacity A Major Strategic Shift	72		

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CHEMICAL MARKET

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

Resilience, Reinvention, and a Renewed Community Vision for 2026

s 2025 concludes, the global chemical Aindustry stands at a turning point. Growth has resumed, yet the year demonstrated that resilience—not scale alone—defines competitive advantage. Markets continued to stabilize after prior disruptions, but structural overcapacity, energy volatility, regulatory tightening, and shifting geopolitical dynamics shaped an environment where strategic discipline mattered more than ever.

2025: A Year of Reset and Strategic Realignment

Global chemical demand grew modestly in 2025. Asia, particularly India and Southeast Asia, drove most of the expansion, while Europe remained constrained by high operating costs and regulatory pressure. Producers worldwide focused on portfolio rebalancing, shifting away from low-margin chains toward commodity specialty chemicals, performance materials, and sustainable chemistries.

Sustainability advanced from an aspirational goal to a business imperative. Companies adopted carbon-accounting tools, explored feedstocks, and renewable initiated circularity pilots. Digital transformation accelerated, with AI-enabled procurement, predictive logistics, and integrated supply chain visibility becoming mainstream, especially as global freight disruptions persisted through parts of the year.

Major Developments That Shaped 2025

- India's continued ascent: Strong domestic consumption, growth in pharmaceuticals, agrochemicals, construction chemicals, and exportoriented intermediates positioned India as a critical global hub.
- Consolidation and capacity rationalization: Several global chemical players streamlined operations, retired

- older assets, and concentrated investments on higher-value segments.
- Sustainability and compliance momentum: Governments strengthened frameworks around circular economy practices emissions reporting, pushing industry alignment faster than anticipated.
- Technology leaps: Automated carbon tracing, digital twins, and bio-based material optimization moved from trial stages to broader adoption, signaling a maturing transition to Industry 4.0 in chemicals.

India Outlook: Ready for a Larger Global

In 2026, Indian chemical companies are expected to deepen global integration through specialty manufacturing, contract development, and diversified sourcing strategies. Increasing capex in downstream petrochemicals, specialty intermediates, and green chemistry solutions will enhance competitiveness. Public-private **India's** momentum is also growing around sustainability, infrastructure, and digital adoption-key drivers for long-term sectoral leadership.

2026 Global Outlook: Disciplined Growth, Selective Strength

Looking ahead, 2026 will likely bring steady but measured progress:

- Specialty chemicals will outperform commodities, driven by electronics, pharma, EVs, coatings, and highperformance polymers.
- Circularity and decarbonization will become operational mandates, not strategic options.
- Further consolidation is expected in unfavorable regions with cost structures, while Asia attracts

incremental investment.

- AI-driven supply chain systems will reshape procurement, forecasting, and compliance.
- Customer expectations will shift toward transparency and reliability, favouring companies with robust digital and ESG systems.

Editor's Note: Strengthening Our **Community Platform**

As we move into 2026, our vision for the Market community grows stronger. Chemical Market is more than a publication—it is a platform that connects suppliers, distributors, and purchasers across India and globally. The value of this ecosystem increases when the community participates actively.

The more businesses list their products, capabilities, and services on the Chemical Market portal, the more powerful and useful the platform becomes for everyone. A richer product base helps buyers discover the right suppliers faster, enables suppliers to reach new markets, and strengthens the credibility of the community as a trusted industry network.

We encourage every company—large or small—to contribute by adding their product portfolios, updating listings, and engaging with the marketplace. Together, we can build a more transparent, efficient, and collaborative chemical ecosystem.

Closing Perspective

2025 reminded us that adaptability is the industry's greatest strength. As we step into opportunities will favour organisations that embrace innovation, sustainability, digital transformation, and collaborative ecosystems. Chemical Market remains committed to supporting this journey—informing, connecting, empowering the chemical community to grow stronger together.

- Rajiv Parikh









CHENNAI PRICE TREND – 10.12.2025		
Inorganic Chemicals	No/ of Units Per Pack	Price Rs.
Acid Slurry (Soft)	50Kgs	145
Alum- Ferric	50Kgs	22
Ammonium Bicarbonate	25Kgs	23
Ammonium Bi fluoride [sugar- grade]	50Kgs	178
Ammonium Carbonate	50Kgs	95
Ammonium Chloride	50Kgs	25
Ammonium Nitrate	50Kgs	30
Ammonium Phosphate (Mono)	50Kgs	135
Ammonium Sulphate	50Kgs	22
Antimony Trioxide	50Kgs	9,000.00
Barium Chloride	50Kgs	58
Bleaching Powder (33% CI)	25Kgs	15
Borax (Granular)	50Kgs	88
Boric Acid (Tech.)	50Kgs	150
Calcium Carbonate (Activate)	50Kgs	20
Calcium Carbonate (Precipitated)	50Kgs	19
Calcium Chloride Lump 70%	50Kgs	12
Calcium Chloride-Anhydrous	50Kgs	28
Camphor Oil	200Litrs	135
Caustic Potash (Flakes)	50Kgs	89
Caustic Soda (Flakes)	50Kgs	48
Caustic Soda (Prills)	50Kgs	92
Chromic Acid Flakes	50Kgs	285
Chlorinated Xylene	25kgs	85
Copper Sulphate	50Kgs	255
Di ammonium Phosphate	50Kgs	34
Dioctylmalite	180kgs	82
Ferric Chloride (Anhydrous)	50Kgs	32
Ferrous Sulphate – crystals	50Kgs	16
Hydrochloric Acid	Naked	6
Hydrogen Peroxide 50%	50Kgs	33
Hyflosupercell	22.7Kgs	138
Litharge	50Kgs	220
Lithopone B301(China)	25Kgs	124
Magnesium Carbonate (Indian)	50Kgs	125
Magnesium Sulphate	50Kgs	16
Mercury	34.5Kgs	24,800.00
Napthaline Balls	50Kgs	130
Nickel Chloride	25Kgs	620

Inorganic Chemicals	No/ of Units Per Pack	Price Rs.
Phosphoric Acid (85% Tech)	50Kgs	102
Potassium Carbonate (Powder)	25Kgs	115 .00
Potassium Carbonate (Granules)	25Kgs	87
Potassium Nitrate	50Kgs	115
Potassium Permanganate [Tech]	50Kgs	166
Potassium Permanganate [Pure]	50kgs.	185
Potassium Phosphate (Di)	50Kgs	158
S.L.E.S	50kgs	70
Soda Ash Light	50Kgs	28
Sodium Bicarbonate	50Kgs	28
Sodium Bichromate	50Kgs	160
Sodium Bisulphite	50Kgs	52
Sodium Chlorite 50% (India)	50Kgs	240
Sodium Chlorite 80% (India)	50Kgs	280
Sodium Cyanide	50Kgs	650
Sodium Fluoride	50Kgs	150
Sodium Formate	50Kgs	52
Sodium Hexameta Phosphate 68%	50Kgs	128
Sodium Hydrosulphite [China]	50Kgs	185
Sodium Metabisulphite	50Kgs	35
Sodium Nitrate	50Kgs	52
Sodium Nitrite (China)	50Kgs	60
Sodium Silicate	Naked	28
Sodium Sulphate (Anhydrous)	50Kgs	15
Sodium Sulphide 50-52% (Flakes)	50Kgs	58
Sodium Sulphide 58-60% (Flakes)	50Kgs	52
Sodium Sulphite 92%	50Kgs	50
Sodium Tri polyphosphate	50Kgs	95
Titanium Dioxide Anatase	25Kgs	220
Titanium Dioxide (Rutile - R-902)	25Kgs	250
Trisodium Phosphate	25Kgs	36
Zinc Chloride Powder (Tech.)	50Kgs	88
Zinc Oxide White Seal	50Kgs	230
Zinc Stearate [Pure]	25kgs	175
Zinc Sulphate (Tech.)	50Kgs	58
Organic Che		
Organic Chemicals	No/ of Units Per Pack	Price Rs.
Acetic Acid Glacial	35Kgs	55
Acetone	160Kgs	78
Benzene	195Litrs	85









Per Pack	Price Rs.
200Kgs	133
25Kgs	140
170Kgs	92
165kgs	98
195kgs	120
25Kgs	415
195Kgs	138
300Kgs	23
25Kgs	74
25Kgs	65
50Kgs	88
190kgs	135
200Litrs	145
195Kgs	120
230Kgs	68.00
195kgs	80
200Kgs	120
200Litrs	125
25Kgs	198
25Kgs	188
25Kgs	188
185Kgs	82
200 Kgs	65
230Kgs	65
65Kgs	26
35Kgs	62
250Kgs	121
50Kgs	104
160Litrs	62
25Kgs	580
160Kgs	120
	200Kgs 25Kgs 170Kgs 165kgs 195kgs 25Kgs 195Kgs 300Kgs 25Kgs 25Kgs 50Kgs 190kgs 200Litrs 195Kgs 230Kgs 200Kgs 25Kgs

Ororganic Chemicals	No/ of Units Per Pack	Price Rs.
Isopropyl Alcohol (Refill)	160Kgs	98
Maleic Anhydride	25kgs	105
Methyl Ethyl Ketone	166Kgs	112
Methyl Isobutyl Ketone	160Kgs	130
Methyl Isobutyl Ketone (Refill)	160Kgs	120
Methylene Dichloride	250Kgs	48
Methylene Dichloride (Refill)	250Kgs	40
Mineral Turpentine Oil	50kgs	92
Monochloro Phenol	50Kgs	120
Nitrobenzene	200Kgs	102
Octanol (2-ethylhexanol)	160Kgs	128
Oleic Acid	50 kg	128
Oxalic Acid (Punjab)	50Kgs	62
Paraffin Wax (White)	50Kgs	107
Para formaldehyde 91%	25Kgs	96
Perchloroethylene	320Kgs	89
Phenyl Liquid	230Kgs	105
Phthalic anhydride	25Kgs	105
Pine Oil 22%	200Litrs	155
Pine Oil 40%	200Litrs	190
Polyethelene Glycol 400	230Kgs	120
Polyethelene Glycol 600	230Kgs	150
Propylene Glycol	215Kgs	104
Poly Aluminium Chloride	25kgs	34
Red Lead	50kgs	220
Renine	180Kgs	72
Rosin	17Kgs	115
Sodium Acetate	50Kgs	38
Sodium Benzoate	50Kgs	108
Sorbitol	250Kgs	50

Above prices are given in good faith by : MR. SUBHASH GHORAWAT M/S. CHEMICAL (INDIA) COMPANY

'Eden Plaza', 3rd Floor, 87-Perumber Barrack Road, (Near Doveton Signal), Purusaiwakkam, Chennai - 600007 (India).

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Market Prices given in this magazine is to know market trend only. We assume no responsibility for availability of products at quoted prices.









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Last Modified: April 2022









BUY INQUIRIES

Product Grade Quantity

Cocodimethylamine 500 Kg **Industrial**

Details: Need 5 Kg.paid sample

CLICK HERE TO VIEW

Tamilnadu, India

Triphenyl Phosphine 80 Tonnes Any

Details: We are having spent Triphenyl Phosphine 99% available in stock. Buyers can contact us.

CLICK HERE TO VIEW

Hyderabad, India

Hydrobromic Acid 48% 400 Tonnes Any

Details: We currently have a large stock of Hydrobromic Acid (HBr) 48% (Water White in colour) available. If you or your organization are in need of this product, we're offering it at highly competitive prices lower than current market rates. High-quality product. Bulk quantities ready for dispatch. Best pricing guaranteed.

CLICK HERE TO VIEW

Hyderabad, India

(4-Methylphenyl) acetonitrile **200 Kgs Anatase**

Details: Call

CLICK HERE TO VIEW

Mumbai, Maharashtra, India

TrilsoPropanolAmine 200 Kgs Any

Details: Please connect with me and reply to my inquiry

asap

CLICK HERE TO VIEW

Mumbai, Maharashtra, India









BUY INQUIRIES

Product Grade Quantity

Mix Xylene isomer Technical 25 Tonnes

Details: We require 25 tons of Mix Xylene Isomer grade by

14.07.2025

CLICK HERE TO VIEW

Mumbai, Maharashtra, India

Toluene 10 Kgs VirginPure

Details: Need it to export to China on a repeat basis.

CLICK HERE TO VIEW

Mumbai, Maharashtra, India

20000 Kgs **Any** Styrene

Details: We require 20 tons of Styrene at Chiplun by 4.7.2025.

CLICK HERE TO VIEW

Mumbai, Maharashtra, India

Monoethanolamine 12000 Kgs Industrial

Details: we require MonoethanolAmine 12 tons at Chiplun. It is requres in barrels as soon as possible.

CLICK HERE TO VIEW

Chennai, Tamil Nadu, India

N-Ethyl-O-P-Toluene Sulfonamide 50 Kgs Any

Details: Used in manufacturing ink for batch coding machines. Quantity: 50 Kgs Urgent Requirement.

CLICK HERE TO VIEW

Chennai, Tamil Nadu, India









BUY INQUIRIES

Product Quantity **Grade**

Hydroxypropylcellulose (HPC)

25 Kgs

Any

Details: HPC 25KG Ashland make only Bhiwandi

CLICK HERE TO VIEW

Bhiwandi, Maharashtra, India

Sodium Periodate Chemical **100 Kgs**

Details: Urgent Requirement.

CLICK HERE TO VIEW

Telangana, India

n-Butyllithium solution 2.5 M in THF

1 Pkt

Any

Details: Quantity: Minimum possible package ×1 Grade/ Document Required: COA (Certificate of Analysis) requested

CLICK HERE TO VIEW

Poland

Zinc Sulphate Industrial 3000 Kgs

Details: Di ethylene Glycol

CLICK HERE TO VIEW

Bhiwandi, Maharashtra, India

METHYL TRICHLOROSILANE 200 Litres

Details: We Request You To Send The Quotation, Specification And Delivery Period As Early As Possible

CLICK HERE TO VIEW

VirginPure

Mumbai, Maharashtra, India









RESEARCH REPORT ABSTRACTS

P2 Science and Algenesis Partner to Develop Algae-Chemicals and **Derived** Biobased, 100% **Biodegradable Polyurethanes**

WOODBRIDGE, Conn. and SAN DIEGO, Nov. 12, 2025 / PRNewswire/ -- P2 Science, Inc., a pioneer in green chemistry and sustainable materials, and Algenesis Corporation, a leader in bio-based and biodegradable polyurethanes, today announced a strategic collaboration to create and commercialize the raw materials to produce 100% biobased polyurethane materials. The partnership leverages P2's proprietary PIOz™ process, which converts oils derived from algae feedstocks into advanced chemical intermediates, and Algenesis' recently commissioned Bio-Iso™ pilot cutting-edge plant and biobased polyurethane platforms.

Together, the companies are scaling a new chemical and polymer supply chain for the production of 100% biopolyurethanes that are biodegradable and deliver high performance without reliance on petrochemical content or toxic phosgene - expanding the availability of sustainable solutions for applications in footwear, apparel, coatings, adhesives, and consumer products. P2 is synthesizing algae-based azelaic acid at its Naugatuck, Connecticut manufacturing site to supply Algenesis with a key chemical for the production of polymers and isocyanates.

"This collaboration accelerates our shared vision: to eliminate petroleumbased carbon from everyday materials," said Oihana Elizalde, CEO of P2 Science. "By leveraging our process intensified ozonolysis platform to



plant-based unlock intermediates, together with Algenesis' remarkable polyurethane technology, we can bring brand owners measurable sustainability advantage without performance compromise."

The partnership supports the global transition to eliminate microplastics from commerce and the environment and complements both companies' commercialization efforts with leading consumer brands across multiple product categories.

"Our mission is to replace traditional plastics with plant-based materials that safely degrade at the end of life," said Steve Mayfield, CEO of Algenesis. "Working with P2 allows us to incorporate a new class of biobased

intermediates into our formulations and continue delivering superior polyurethane performance, ensuring a cleaner, healthier planet."

Both companies are committed to scaling production of their respective materials. plant-based making bio-polyurethanes chemicals and broadly available to the market.

Read the full report : https://www. algenesislabs.com

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









From Waste to Value: Recycling Automotive Shredder Residue and Bio-Waste into High-Value **Feedstock**

- ETH Zurich assesses the emissions of a new, non-fossil feedstock
- Feasibility of Chemical Recycling via gasification of mixed plastic waste demonstrated

udwigshafen, Zurich, 30 October **2**2025. A new research study by ETH Zurich, in collaboration with BASF SE, has investigated an alternative route for mixed plastic waste streams from endof-life vehicles: to recycle it alongside biomass. The results show: the recycling of one kg of automotive shredder residues with 3 kg of biomass reduces greenhouse gas emissions by more than 3 kg CO2-eq. as compared to their incineration for energy recovery. As the European Union prepares legislation on end-of-life vehicles, these findings have implications for policy makers.

The ETH study follows a gasification pilot project conducted by BASF and BEST GmbH/Austria mid of 2025. For the first time, the project in BEST's pilot plant combined the gasification of biomass together with plastic waste from automotive shredder residue.

Less waste, new feedstocks, emissions reduced

This study shows: Instead of incinerating plastics and biomass to generate electricity and steam, co-gasification produces steam and synthesis gas, a valuable feedstock for chemicals. Providing this novel circular raw material to the chemical industry reduces consumption of fossil resources, thus lowering emissions and keeping carbon in the loop.

"Closing the carbon loop by plastics recycling is not only beneficial for the climate but also crucial for conserving resources, an essential step toward a plastics industry that operates within planetary boundaries," says André Bardow, Professor from ETH Zurich.

However, to replace fossil feedstocks with alternatives made from plastic waste streams and bio-waste, a supportive legal framework is needed that acknowledges mixed plastic waste as recyclable and sets long-term targets to society for this replacement.

"Ambition in target-setting rather than opt-out and review clauses should be the baseline for policies that allow industries to reach ecological goals. Furthermore, sector-coupling and collaboration across industries is essential to speed up emission reductions," states Catharina Bening from ETH Zurich.

But while legislation already supports gasification of bio-waste - leading to first investments in maritime and aviation fuel - there is no comparable support for recycling plastic waste streams via gasification. "It is simply not efficient to operate separate gasification plants for bio-waste and for plastics waste streams. Instead, we call for policy to enable a multi-purpose of the plants through an balance audited. flexible mass approach," concludes Martin Jung, President of BASF's Performance Materials division.

Using one million tons of plastic waste from end-of-life vehicles reasonably

The volume potential for non-fossil



feedstock from automotive plastic waste is significant. Research estimates that over one million tons of automotive plastic waste is being either incinerated or landfilled in Europe every year. While there are opportunities to sort out more plastic waste (e.g., for mechanical recycling), there always remains a residual mixed plastic waste stream. The research results show that the recycling of this plastics waste, alongside biomass, is possible in a multi-purpose asset and results in lower CO2 emissions than via incineration for energy recovery.

Due to the high quality of the new circular raw materials stemming from this waste, the manufactured new materials, e.g. plastics, have the quality of new goods and meet the demanding requirements of high-performance plastics, as they are particularly needed for safety-relevant automotive components.

Read the full report : https://www. indianchemicalnews.com/rd/godavaribiorefineries-and-ict-mumbai-launchco2-to-dme-pilot-plant-28130

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NEWS ROUND UP

The Fast Rise of Perovskite Cells and the Decline of **Fossil Fuels**

Vinodhini Harish

Introduction:

Colar power is a sector that is growing at a massive pace in the United States. It is considered the most affordable vet quickest way to add new electricity to the grid. The solar panels are becoming cheaper, hassle-free installation, safer to the environment, and so on. At the same time, the technologies are making solar even more powerful. Among many such technologies, perovskite cells attracting mass attention as they promise higher efficiency at lower cost. The shift justifies why experts believe fossil fuels will retire soon from the sector. In this article, we have discussed the rise of perovskite cells and the fall of fossil fuels. Let's begin.

The strength of the Perovskite solar cell market:

Perovskite cells are already commercially recognized, which means the technology is no longer only in labs; they are tested, funded, bought, or manufactured by real companies. Some of the major companies across the globe are already investing, believing that the technology will be sold at a profit.

For instance, Oxford PV (U.K.) is Manufacturing Tandem Perovskite-Silicon Solar Cells.

Oxford PV is one of the strongest proofs cells perovskite solar commercially viable. The company operates a high-tech manufacturing line Germany, producing perovskite-silicon cells that have already set world-record efficiencies above 28%.



These cells fit directly onto existing silicon production infrastructure, adoption making easier manufacturers. Oxford PV has longterm partnerships with major solar companies and continuous investor support, showing confidence perovskite's scalability.

On the other hand, Saule Technologies is one of the first companies to commercialize perovskite photovoltaics by launching flexible, printed perovskite solar panels. Their inkjet-printing process allows low-cost, lightweight modules suitable for building-integrated photovoltaics (BIPV), smart windows,

IoT devices, and portable electronics. By actual products—not prototypes—Saule proves that perovskite PV can survive real-world use and meet customer requirements.

Furthermore, Saule Technologies is giving hope to the market and strong market validation through their pilot projects with global corporations such as Skanska, Investors see Saule's business model as transformative because it opens new solar applications that traditional silicon cannot serve. boosting confidence in perovskite's

Continued on page 37







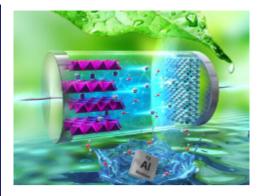


AUTOMOBILES

GREEN SCIENCE ALLIANCE DEVELOPED RECHARGEABLE ALUMINUM ION BATTERY WITH AQUEOUS ELECTROLYTE AND INVENTOR MADE THE FRONT COVER OF **BRITISH ACADEMIC JOURNAL**

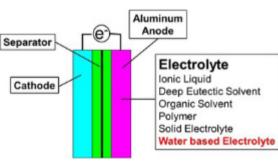
AWANISHI-CITY, Japan, Nov. 13, 2025 /PRNewswire/ Rechargeable batteries are verv important electrical device because they can store electricity produced by sustainable renewable energy such as solar power, wind power, hydrogen, fuel cells, geothermal power, wave power and biomass power generation Therefore, it is necessary to create rechargeable battery which can be cheaper stronger and than conventionally used lithium ion battery.

Green Science Alliance has been developing various type next generation rechargeable battery technologies and materials such as lithium sulfur battery, lithium rich cathode, silicon type anode, metal organic framework derived anode, all solid state lithium ion battery etc...They have also developed recycled type lithium ion battery from black mass (waste materials from lithium ion battery scrap).



On the other hand, aluminum based battery such as aluminum ion battery, aluminum sulfur battery, aluminum air battery are one of good candidate postlithium ion battery due to some advantages of aluminum. Compared to lithium which has high risk of price soring and scarcity, aluminum is an abundant, rich natural resource and most recycled metal on earth. So that aluminum based rechargeable battery can be cheaper and do not have to worry about raw material scarcity. In theoretical capacity addition, aluminum ion battery is approximately 2980 mAh/g which is about 10 times

higher than that of lithium batterv (200 300 mAh/g). On top of that, aluminum based battery can be safe and non-



flammable since lithium ion battery is flammable and can be dangerous.

Thus, the company have developed rechargeable aluminum air battery in the past. However, due to its complicated structure and unstable aluminum reduction reaction aluminum ion to aluminum metal in the electrolyte, it was difficult to achieve commercialization.

And this time, Dr. Ryohei Mori has developed aluminum ion battery with aluminum anode and water based electrolyte. He also has tested a few types of cathode materials such as oxide, carbon based materials. Under 0.025 C at room temperature, prepared cell capacity was approximately 103 at the beginning mAhg-1 maintained for about 50 cycles although capacity decayed after. Therefore, charge-discharge stability still needs to be improved. It is also necessary to improve cell capacity since it was much lower than its theoretical capacity. The cell voltage was about 0.7 - 0.8 V which is lower than that of lithium ion battery although low voltage problem can be solved when they were electrically connected in series.

electrochemical Even these performance were inferior to that of lithium ion battery, the most profitable feature of aqueous electrolyte based aluminum ion battery is that this battery can be extremely cheap. So far,

> researchers have been developed aluminum battery although their electrolyte was often ionic liquid based. In addition, thev need be

prepared in an inert atmosphere such as nitrogen or argon. Thus, ionic liquid based aluminum ion battery can be cheaper than lithium ion battery although it is not drastically cheap because of the cost of ionic liquid and the necessity for special gas. contract, aqueous electrolyte based aluminum ion battery can be drastically because thev manufactured in ambient an atmosphere and all the components









(electrode, separator and electrolyte) are ordinary cheap materials.

Even cell capacity and charge-discharge cycle stability needs to be improved, this extreme cheap cost is the big advantage compared to lithium ion battery and other type of aluminum ion It might be a bit of an exaggeration to say this but aqueous electrolyte based aluminum ion battery could be the cheapest battery of all. On top of that, aqueous aluminum ion battery can be non-flammable and safe as described above.

Dr. Ryohei Mori as an inventor of this aqueous aluminum ion battery has wrote review article including a series of his works in one of British scientific academic journal, with the title "Aqueous rechargeable aluminum battery - a mini review". And made front cover of the journal.

Source: Green Science Alliance Co.,

BASF COATINGS LAUNCHES NEW AUTOMOTIVE OEM COATINGS PLANT IN MUENSTER, **GERMANY**

- New facility strengthens market position, meeting customer demand for high-runner products
- enhances High automation sustainability and ensures process stability

ASF Coatings has successfully **B**commissioned a state-of-the-art production plant for automotive OEM coatings at its Muenster site in Germany. The new facility is designed to produce high-runner products, namely colors

that currently represent the majority of market demand, and ensure consistent product quality and enhanced production efficiency.

The investment marks a strategic milestone for **BASF** Coatings, reinforcing its long-term competitiveness in the high-volume coatings facility's segment. advanced automation enables more sustainable operations, while enhancing process stability and reliability.

The new plant is one of the most transformative investments of BASF Coatings in the past five years. From the initial conceptual studies in 2019, through two and a half years of construction, to the start of regular production today, this project has been shaped by the deep expertise of BASF Coatings teams.

"Our innovative strength and continuous drive for improvement make us a successful industry player and more importantly, a valued partner to our customers," emphasized Uta Holzenkamp, President of BASF "This Coatings. project is outstanding team achievement, coordinated and executed by a global network of experts across multiple BASF locations."

"We have invested in a more advanced process with the new facility, which ensures high and consistent product quality and stability. In this way, our customers benefit from our expertise, knowledge, and experience," added Nils Lessmann, Senior Vice President, **Global Operations Paint &**

Resin. "As the next step, our teams in Asia Pacific and North America will adopt these best practices and strengthen our global manufacturing network."

The new plant is designed to optimize energy consumption, thereby reducing CO₂ emissions, marking another important step in BASF Coatings' sustainability journey. Since 2022, the Muenster site has been powered entirely by renewable wind energy, saving approximately 4,000 tonnes of CO₂ annually. Muenster joins other BASF Coatings sites across Europe, Asia Pacific, and North America that operate on 100% renewable electricity.

Source: BASF

AION'S FIRST DUAL-POWER MODEL OF EXTENDED-RANGE AND PURE ELECTRIC **AION 160 OFFICIALLY LAUNCHED**

TONG KONG, Nov. 17, 2025 / PRNewswire/ -- On November 16, AION's first dual-power model—the AION i60, featuring both extendedrange and pure electric optionsofficially launched, entering the 100,000yuan SUV market with a limited-time starting price of 104,800 yuan. Packed with over 100 standard features, the AION i60 aims to become a popularizer of Chinese extended-range SUV.

As the core technological highlight, the AION i60 range-extended version is equipped with GAC ADiMOTION









extended range technology, which is used in premium 200,000-yuan-class extended-range SUVs. It represents a breakthrough in energy efficiency, achieving an industry-leading fuel-toelectricity conversion rate of 3.73 kWh/L, which has received the "Range Extender Efficiency Star" certification from the CAERI. The vehicle delivers 7.2 km of range per kWh of electricity and records a fuel consumption as low as 5.5 L/100 km when the voltage is low, even achieving more impressive result of 4.9 L/100 km in media tests.

powertrain equally delivers impressive performance. The range extender provides a continuous output of up to 85 kW — the highest in its class, and is paired with a high-power 180 kW electric motor, enabling the vehicle to sustain a speed of 150 km/h even under low voltage conditions.

The AION i60 is also available in pure electric version, equipped with a larger 75 kWh battery for its class, delivering an extended and reliable range of 650 km on a full charge. With 3C fastcharging technology, it can regain 200 km of range in just five minutes. The AION i60 supports over 99% of public charging stations and has received the CCTA Charging Compatibility Certification from the CAERI, Backed AION's leading replenishment ecosystem, the brand has deployed more than 20,000 proprietary charging stations and offers access to over 1.37 million interconnected chargers, forming a charging network of "fast, widespread, and nearby".

The successful launch of the AION i60 epitomized AION's focused execution under the "Panyu Action" strategy, demonstrating its precision in understanding

user needs and rapid advancement in technological innovation. By establishing a professional user insight team and implementing the IPD and IPMS systems, AION has truly achieved the goal of "understanding what users want and delivering what users need". From brand philosophy to channel development, from R&D to service upgrades, AION is now fully transitioning toward "creating sustainable value for users".

Source: GAC

LG CHEM DEVELOPS CORE TECHNOLOGY FOR COMMER-CIALIZING SOLID-STATE BATTERIES

G Chem has announced a significant Lbreakthrough in developing core technology for commercializing solidstate batteries by improving uniformity of solid electrolyte particles.

This research was conducted jointly with the LG Chem Next Generation Materials Research Center Professor Song Tae- seop's research team at Hanyang University, and is a result that greatly increases the possibility of commercializing all-solidstate batteries. The process involves

spraying an electrolyte solution into fine droplets, which then form uniform spherical particles as the solvent evaporates.

The title of the paper is: Manipulating the size of solid electrolyte particles via spray-recrystallization: Toward reliable and high energy density all-solid-state batteries.

All-solid-state batteries use solid electrolytes instead of the liquid electrolytes used in conventional lithium batteries. While safe and energy- efficient, their solid nature can lead to voids within the battery if the particle size is not uniform, which can reduce performance.

To solve this problem, the research team from LG Chem and Hanyang University applied spray recrystallization technology to the production process of electrolyte particles.

recrystallization technology sprays an electrolyte solution into fine droplets, which are then evaporated to produce uniform, spherical particles. This effectively addresses the uneven size of electrolyte particles produced using conventional methods.

The uniform electrolyte adheres more tightly to the positive electrode active material, allowing lithium ions to move more easily. Compared to batteries using conventional electrolytes, the basic capacity increases by approximately 15%, and the fastdischarge capacity increases approximately 50%. The fast-discharge capacity of a battery is a key performance factor for its application in high-power devices.

Based on this technology, LG Chem plans to accelerate the development of solid electrolytes and accelerate the commercialization of all-solid-state batteries.









LG Chem Vice Chairman Shin Hak-cheol said, "This research is a meaningful achievement that solves the key task of commercializing all-solid-state batteries," and "LG Chem will strengthen its competitiveness in nextgeneration battery technology and lead the global market."

Source: Indian Chemical News

INGEVITY SECURES CARBON NANOTUBE **TECH IN PUSH FOR EV BATTERY** DOMINANCE

▼ngevity Corporation is doubling down Lon its EV battery ambitions, signing a with CHASM agreement license Advanced Materials to produce the latter's advanced carbon nanotube (CNT) technology.

The deal positions the \$1.79 billion market cap company to expand its materials portfolio amid a 22% stock gain year-to-date.

Under the agreement, Ingevity gains rights to manufacture CHASM's NTeC-E CNT conductive additives for batteries in North America and select European markets, building on a joint development pact inked in February 2024.

CHASM's CNTs have been tested to outperform existing commercial products, delivering higher conductivity and stronger capacity retention in lithium-ion cathodes and silicon anodes-even under high Crates and extended cycling.

"These CNT additives are key to integrating into multiple battery chemistries, from lithium-ion to solidstate," said David Arthur, CHASM CEO and co-founder. "This agreement is a major step toward building a reliable, regionally sourced CNT supply for the rapidly growing EV battery industry."

Ingevity CEO David Li added, "We are accelerating our EV battery materials strategy, investing in scalable CNT manufacturing to build a stronger, more resilient supply chain across North America and Europe."

The partnership is expected to secure local supply chains for the EV gigafactory ecosystem, supporting the industry's rapid growth.

Source: Indian Chemical News

BOREALIS UNVEILS NEXT-GEN CPP LAMINATE TO POWER THE BATTERY REVOLUTION

norealis' innovative three-layer cast **D**polypropylene (cPP) concept for polymer-aluminum laminates used in lithium-ion battery (LIB) pouch cells first introduced in September and showcased at K 2025 in Octobercontinues to address the growing demand for high-performance, locally available materials in the rapidly evolving battery ecosystem.

With a longstanding heritage in the

energy and mobility sectors and deep expertise in flexible packaging, Borealis is uniquely positioned to meet the complex requirements of LIB pouch films, packaging, Borealis is uniquely positioned to meet the complex requirements of LIB pouch films, ensuring durability safety, processing efficiency. The new threelayer cPP laminate structure offers excellent deep-drawing behavior for efficient cell manufacturing, helps enable hermetic pouch seals with high seal strength to support battery safety, and provides durable laminate bonding long-term and adhesion for performance.

As global battery production expands, the ability to source key materials locally is becoming a critical strategic advantage. Portable energy storage plays a central role in decarbonization, supports strategic autonomy and enables applications well beyond electric vehicles. Borealis' efforts align with European initiatives such as the EU Battery Booster package, as well as major public investments regulatory frameworks—including Horizon Europe and the Innovation Fund— designed to accelerate battery manufacturing, secure critical raw materials and strengthen Europe's industrial competitiveness and energy resilience.

This development also underscores the importance of collaboration. From the Borealis innovation lab to film producers, laminators, adhesive specialists, battery technology advisors and cell manufacturers, partners across the value chain bring essential expertise to advance the project. Following successful internal testing and strong early results from customer trials, the solution is now moving into the next phase of validation with independent testing institute specializing in advanced battery technologies.

Source: Indian Chemical News









DRUG & PHARMA

NEFECON INCLUDED IN THE UPDATED **KDIGO CLINICAL PRACTICE GUIDELINE**, **STRENGTHENING ASAHI KASEI'S POSITION IN IGA NEPHROPATHY** TREATMENT

sahi Kasei, a global provider of Asani Nasci, a green in healthcare and pharmaceutical solutions, announced that Nefecon (marketed in the United States as (budesonide) TARPEYO* release capsules), has been included in the Kidney Disease: Improving Global Outcomes (KDIGO) 2025 Clinical Practice Guideline for the Management of IgA Nephropathy (IgAN) and Immunoglobulin A Vasculitis (IgAV).

TARPEYO is a key product in Asahi Kasei's pharmaceutical business, which the company has identified as a strategic growth area in its mediumterm management plan. The inclusion of Nefecon in the KDIGO guidelines underscores its place in therapy and is expected to further support sustainable, long-term growth within Asahi Kasei's healthcare portfolio.

The updated KDIGO 2025 guideline aims to standardize care and improve outcomes by providing evidence-based recommendations related to IgAN diagnosis, prognosis and treatment.1 It is considered the global standard for nephrology practice and plays a central role in shaping treatment decisions for patients with IgAN.

The KDIGO 2025 guideline suggests treatment with a 9-month course of Nefecon for patients at risk of progressive loss of kidney function, recognizing the treatment benefit of Nefecon in reducing the loss of kidney function and reducing proteinuria as demonstrated in the NefIgArd phase 3 placebo-controlled randomized trial.2,3 The effect of Nefecon on proteinuria and kidney function was assessed in adults with biopsy-proven IgAN who were on a stable dose of maximally tolerated RAS inhibitor therapy. Adverse events were mild or moderate and generally resolved after treatment cessation. KDIGO also notes that Nefecon is the only treatment approved for IgAN to date that has been proven to reduce the levels of pathogenic forms of IgA, which is an underlying cause of the disease.1,4*

"The inclusion of Nefecon in the KDIGO 2025 Guideline provides important external validation of its place in therapy. It also reinforces its role as the first and only approved therapy for IgAN shown to reduce the levels of pathogenic IgA and as an essential part of the comprehensive treatment approach now suggested by KDIGO," said Ken Shinomiya, Leader of the Healthcare sector of Asahi

Kasei.

Source: Asahi Kasei

NEW SYSTEM TO SAFELY REMOVE VERTIFLEX IMPLANTS AND PRESERVE THE SPINOUS PROCESSES ---LAUNCHED BY KIC VENTURES

ORT LAUDERDALE, Fla., Dec. 1, **\(\Gamma\)** 2025 /PRNewswire/ -- KIC Ventures, inventor of the global movement in LESS Exposure Spine Surgery (LESS™) and a leader in interventional spine surgery innovation, today announced the release of VertiFix, a breakthrough technology designed to address a critical growing challenge interventional pain management (IPM) physicians: the safe removal of failed or improperly placed interspinous process implants while preserving the spinous processes.

Following widespread implantation of various interspinous process devices, such as Boston Scientific Vertiflex Superion device, the industry is now seeing an increasing number of revision cases attributed to poor placement, suboptimal patient selection, or disease progression—factors that ultimately contributed to the device's recall. While Vertiflex offered value for patients with mild spinal stenosis, physicians are now confronting a harsh reality: removal is extremely difficult-and often sometimes nearly impossible—without









causing significant anatomical damage.

Dr. Kingsley R. Chin, orthopedic spine surgeon, CEO and Founder of KIC Ventures, personally observed the magnitude of this issue during a case in Long Island.

"I watched an IPM physician struggle for more than two hours to remove a Vertiflex implant so he could revise with InSpan—if he could preserve the spinous processes. The case was eventually aborted because the device could not be removed. The patient ultimately required a full laminectomy by a spine surgeon, and both spinous processes had to be sacrificed. That moment made it clear: the industry needed a solution—and quickly." Dr. Kingsley R. Chin

This scenario is becoming increasingly common nationwide. IPM physicians are struggling to revise interspinous fixation devices without damaging anatomy or escalating patients to major surgery, highlighting the need for better education and supportive clinical systems.

In response, KIC Ventures began educating physicians to use the InSpan® instrumentation system to carefully dissect around interspinous implants and remove them with minimal disruption. These early successful revisions sparked a deeper engineering effort to create a definitive long-term solution.

That solution is VertiFix — a patented system developed in collaboration between spine surgeons and leading IPM physicians, including Dr. Luis Fandos (NY) and Dr. Jonathan Daitch (FL), who personally faced these revision challenges and urged the team to engineer a solution, and Vito Lore, CTO of KIC Ventures. The system underwent extensive clinical insight development, engineering refinement, and cadaveric validation.

VertiFix works by reversing the mechanical steps used to insert an interspinous device like Vertiflex, giving physicians—for the first time—a predictable and controlled method to:

Safely dissect around interspinous



implants

- Reverse the device's deployment mechanism
- Extract the implant without destroying the spinous processes
- Immediately stabilize the segment with InSpan®

KIC Ventures has successfully completed multiple VertiFix removals in real-world clinical cases and has extensively validated the system in cadaver laboratories. Results demonstrate that:

- The spinous processes can be preserved, preventing unnecessary laminectomies
- Revisions can remain in the domain LESS invasive outpatient procedures
- Physicians can immediately restore stability with InSpan® following

device removal

With Boston Scientific recalling Vertiflex, tens of thousands of implanted patients may require evaluation and possible revision. VertiFix is the first and only system designed specifically to address this emerging need.

"Our goal is to support physicians and patients during this transition. VertiFix gives doctors, orthopedic IPM surgeons, and neurosurgeons the ability to safely remove Vertiflex and preserve spinal anatomy. We stand ready to assist Boston Scientific and the entire clinical community in addressing this growing demand." — Dr. Erik Spayde, CTO and Harvard-trained orthopedic spine surgeon, and Dr. Josue Gabriel, Director of Physician Training and orthopedic spine surgeon

VertiFix represents a significant milestone in KIC Ventures' mission to innovate specialized solutions for interventional spine surgery under its portfolio company NANISX, dedicated advancing anatomy-preserving outpatient spine surgery globally. The company continues to invest in technologies that empower physicians to treat patients earlier via LESS™ invasive, anatomy-preserving REP principles—before major reconstructive becomes surgery necessary.

Disclaimer

This press release is for educational and informational purposes only and does not constitute financial, investment, or tax advice. All financial examples are illustrative and hypothetical based on commonly used assumptions. Results will vary. Individuals should always consult with a licensed financial advisor before making any investment or retirement planning decisions.

Source: KIC Ventures









CHEMICAL TECHNOLOGY

BASF AND EXXONMOBIL JOIN FORCES TO ADVANCE LOW - EMISSION HYDROGEN THROUGH METHANE **PYROLYSIS TECHNOLOGY**

- Industry leaders team up to accelerate methane pyrolysis - a technology that produces lowemission hydrogen and solid carbon
- Methane pyrolysis complements companies' technology both portfolios
- A demonstration plant is planned in Baytown, Texas, to validate the technology at scale

UDWIGSHAFEN, Germany, and →HOUSTON, USA - November 17, 2025 - BASF and ExxonMobil have formed a strategic collaboration to advance methane pyrolysis technology, a next step toward delivering efficient, cost-competitive low-emission hydrogen solutions for industrial use. The companies have signed a joint development agreement to co-develop methane pyrolysis technology, including plans to construct a demonstration plant aimed at commercial readiness.

Strength in collaboration

"This collaboration combines technological innovations and industrial expertise of ExxonMobil and BASF to accelerate the development of low-emission hydrogen," said Mike



Zamora, president of ExxonMobil Technology and Engineering Company. "Methane pyrolysis holds real potential, especially in regions where traditional carbon capture and storage solutions are less viable. ExxonMobil brings decades of deep technical knowledge in methane pyrolysis and a shared commitment to innovation."

BASF has been developing methane pyrolysis technology over the past several years in a project funded by the German Federal Ministry of Research, Technology and Space (BMFTR).

"This novel methane pyrolysis technology generates competitive lowemission hydrogen and has a high potential for further reduction of the carbon footprint of our product portfolio. In line with our

Winning Ways strategy, it will contribute to our ambition to be the preferred chemical company to enable our customers' green transformation," said Dr. Stephan Kothrade, member of the Board of Executive **Directors and Chief** Technology Officer at BASF. "We have been working on this technology for more than a decade and developed a superior reactor concept that we successfully validated at our test plant in Ludwigshafen. By combining BASF's process









innovation with ExxonMobil's scale-up expertise we are bringing this cost-efficient lowemission hydrogen solution closer to economically viable industrial deployment."

A Competitive Approach to Low-**Emission Hydrogen**

Methane pyrolysis uses electricity to convert natural gas or other gases, like bio-methane, into hydrogen and solid carbon. The technology offers several significant advantages: it does not process-related generate emissions, unlike traditional methods for hydrogen production such as steamreforming, methane requires approximately five times less electrical energy than water electrolysis and does not require the use of water. Moreover, it leverages existing natural gas infrastructure, and therefore is easily deployable in different locations. The lack of process CO2 emissions makes it particularly attractive for regions where carbon capture and storage face geologic, technical or policy-related challenges.

This process creates two valuable products: low-emission hydrogen and high-purity solid carbon. Hydrogen is both an important energy carrier and an essential feedstock in the chemical industry. The solid carbon has applications across multiple industries including aluminum steel, manufacturing, construction advanced carbon products, like battery materials.

Demonstration Plant to Advance **Commercial Readiness**

The companies plan to construct and operate a demonstration plant capable of producing up to 2,000 tons of lowcarbon emission hydrogen and 6,000 tons of solid carbon product annually. This facility - which will be located at ExxonMobil's Baytown Complex - will serve as a critical step toward commercial readiness and help validate the technology at scale.

Source: BASF

EMIRATES BIOTECH LAUNCHES PLA BIOPOLYMER 'EMBIO'

Emirates Biotech has unveiled Embio, its new line of PolyLactic Acid (PLA)

biopolymers, offering a plantbased alternative to traditional plastics. The name reflects the company's Emirates roots while signalling its commitment to biotechnology and sustainability.

With the launch, Emirates Biotech has begun premarketing Embio across the Middle East, providing I locally

stocked PLA for faster delivery and smaller minimum order volumes. The move aims to simplify the shift to renewable materials for regional converters. brand owners, and packaging manufacturers.

"Our launch of Embio products marks a major milestone in our journey to make renewable and compostable plastics accessible across the Middle East," said Marc Verbruggen, CEO of Emirates Biotech. "The Embio name covers more than a product and stands as a symbol of our commitment to innovation, to reducing dependence on fossil resources, and to supporting the region in building a circular economy."

The Embio portfolio spans PLA grades

suitable for rigid and flexible packaging, coated paperboard, fibers, nonwovens, and 3D printing.

Prashant Lohade, Sales Development Manager, emphasized the benefits of local availability: "Our decision to maintain local inventory was driven by the need for greater flexibility and faster response times for our customers. With Embio grades now available in the UAE, customers can



access PLA in smaller volumes and benefit from shorter lead times."

"This marks an important milestone for companies in the Middle East looking to integrate sustainable materials into their existing production lines."

Embio PLA combines high clarity, strength, and processability with a footprint lower carbon conventional plastics. It is recyclable or industrially compostable and does not persistent microplastics, supporting regional waste reduction









and circular economy initiatives.

The company's technical team will assist with processing trials application development.

Watid Watanyupaisan, Technical Solutions Manager, said: "Our goal was to design a product that performs similarly to traditional plastics yet runs smoothly on existing equipment. This

makes the transition to sustainable materials simple and seamless for grades converters. Embio versatility, efficiency, and reliability across a wide range of processing technologies."

Christophe Enkiri, Product Manager, added: "Each Embio grade has been carefully developed and tested under strict conditions to ensure verified compliance with food-contact, biobased, and compostability standards. This proves that performance and sustainability can coexist without sacrificing a material's functionality."

Source: Indian Chemical New

NEW PRODUCTS

BASF'S PERSONAL CARE BUSINESS LAUNCHES AMERIFLOR CALM

- A new active ingredient to help sensitive skin regain resilience by reducing the appearance of redness, minimizing trans-epidermal water defending loss, and against environmental aggressors
- Sourced and formulated in the United States, Ameriflor Calm is derived from plants grown on regenerative organic certified farms and is manufactured at a site that uses 100% renewable electricity

LORHAM PARK, NJ, October 15, Γ_{2025} – In response to the growing demand for effective solutions for sensitive skin, BASF's Personal Care business has introduced Ameriflor™ Calm, a botanical active ingredient that has been shown to make sensitive skin more resilient. This innovative product not only helps to reduce redness appearance and trans-epidermal water defends but also against environmental aggressors. Sourced from



regenerative organic certified farms in Oregon by the Regenerative Organic Alliance and produced in the United States at a manufacturing site that runs renewable 100% electricity1, Ameriflor Calm exemplifies BASF's commitment to sustainability and ethical practices.

A new botanical active to help sensitive skin regain resilience

Sensitive skin impacts up to 70% of women and 60% of men globally.2

"In today's market where consumers value transparency and efficiency, Ameriflor Calm reduces the appearance of redness, supports skin barrier function, and strengthens resistance to environmental stressors, seamlessly blending the plant-based knowledge from Indigenous traditions in the

Americas with modern scientific techniques enhance the resilience of sensitive skin." savs Lucilene Veira-Nunes, Global Business Management, Beauty Care Solutions at BASF. "Ameriflor Calm

addresses the pervasive issue of sensitive skin by combining modern science with bioactive compounds from the Self-Heal plant (Prunella vulgaris), a resilient botanical that has long been utilized in traditional practices by Indigenous nations such as the Nitassinan, Catawba, Cherokee and the Algonquin-speaking nations."3

Ameriflor Calm was tested in clinical studies with participants showing signs of sensitive skin, applied at 1% concentration over 28 days, with evaluations at baseline, 7 days, and 28 days. After 7 days of use, the ingredient demonstrated a 10% improvement in skin redness appearance and showed a significant improvement compared to the placebo (8%), with continued positive results observed after 28 days of use. Trans-epidermal water loss also









improved substantially by 11% compared to placebo after 7 days of use.

Promoting sustainability and ethical sourcing in the Americas

Ameriflor Calm reflects BASF's commitment to sustainability and ethical sourcing within its Responsibly Active program for bioactive cosmetic ingredients. The new ingredient is responsibly sourced from regenerative organic farms in Oregon that are certified by the Regenerative Organic Alliance. This ensures full traceability, fair labor practices and environmental stewardship. Ameriflor Calm is manufactured at a site that runs on 100% renewable electricity, contributing to environmental resilience by reducing CO2 emissions.

Source: BASF

DOW PRESENTS NEW **LAUNCHES AND INNOVATIVE BEAUTY SOLUTIONS AT IN-COSMETICS ASIA** 2025

 $B_{\text{2025}-\text{Dow}\,(\text{NYSE:DOW}),\,\text{a global}}^{\text{angkok, Thailand, - November 4,}}$ leader in specialty materials, is bringing four new personal care ingredients and debuting "Beauty in Harmony" concepts collection during in-cosmetics Asia 2025. These launches reflect Dow's commitment to advancing sciencedriven solutions for beauty brands and consumers across Asia Pacific.

New product launches

DOWSIL™ FC-5012 ID Resin Gum: A flexible, breathable film former designed to elevate color cosmetic formulations with superior sebum and water repellency, and improved rub

resistance.

DEXCARE™ CD-2 Polymer: Silver award in the Innovation Zone Best Ingredient Award for functional ingredients at in-cosmetics Asia 2025. A biobased low-viscosity, dual-cationic dextran functioning as a superior deposition aid and conditioning agent for Hair Care formulations

DOWSIL™ CB-2251 Fluid: A hair conditioning agent delivering alignment, moisture, and softness for healthy, radiant hair.

ACUDYNE™ 2000 Polymer: A dualphase styling polymer offering longlasting style control, high hold, humidity resistance, and no flaking.

"Asian beauty consumers are redefining global trends. At Dow, we're not just responding—we're shaping the future with data-backed, high-performing and sustainable solutions tailored for Asia's dynamic market." said Iennifer Marques, Global Strategic Marketing Director of Dow's Personal Care business. "Our Asia-focused concepts collection - "Beauty in Harmony" is a showcase of how we can empower brand owners and formulators with formulation expertise, regulatory insight, and a keen understanding of regional consumer needs.", Marques added.

Beauty Harmony concepts collection

Dow's 2025 "Beauty in Harmony" collection features seven innovative prototypes that blend customers' needs for authenticity, self-expression, and well-being with advanced beauty science. These multifunctional care solutions deliver performance, sustainability and creative inspiration for brands seeking to meet evolving consumer needs in skincare, haircare, and colour cosmetics.

"We're excited to attend in-cosmetics

Asia and engage with the visionary community of brands, professionals and formulators across the region. Asia Pacific is a hub of innovation happening at a pace unmatched anywhere else. Thanks to our strong local footprint and deep market understanding, we can offer tailored support to co-create high-performing solutions that truly resonate with consumers. This event provides opportunities for conversations around how our innovations can help in driving the next wave of beauty in Asia", concludes Marques.

Dow's scientists will be available at booth #F10, Hall 101, to introduce these innovations and will also present "Unlock the Future of Colour Cosmetics with Silicone Resin Gum Film Former" at the Technical Seminar 1 (Booth AC80) on Tuesday, November 4th at 2:30 pm.

About Dow Personal Care Solutions

Dow Personal Care offers innovative ingredients that empower customers around the world to create products with exceptional performance and exciting benefits that consumers can trust and believe in. Consumers that seek the confidence of a healthy appearance can see and feel the difference in our products through their lustrous hair or radiant and protected skin. We leverage our understanding of customer needs, deep industry knowledge and technical expertise combined with one of the broadest portfolios of technologies-to offer personal care products with exceptional performance that are safe for people and the planet. We foster these innovations on global and local levels to address the needs of diverse consumers through business centers, research and development (R&D), manufacturing plants and customer applications centers around the world. Please visit www.dow.com/personalcare.

Source: DOW









MERGERS AND ACQUISITIONS

PARTNERSHIP BETWEEN BRASKEM AND COMBIO DRIVES **COMPETITIVENESS** AND DECARBO-**NIZATION WITH ELECTRIFICATION** PROJECT IN PAULÍNIA

 $B^{\rm raskem,\ a\ global\ petrochemical}$ company that develops sustainable solutions in chemicals and plastics, announces a project at its industrial unit in Paulínia (SP) aimed at enhancing competitiveness and reducing operational costs. Developed partnership with ComBio, a Brazilian company that supplies renewable thermal energy to the industry through biomass and renewable electricity, the initiative involves installing a boiler powered by renewable electricity, which will replace part of the steam currently produced using fossil fuels-a more renewable, efficient, and economically advantageous solution.

With a capacity of 12 t/h of steam production, the project represents a significant technological advancement for the petrochemical sector. This change will reduce the consumption of higher-cost fossil sources, providing predictability greater competitiveness, while cutting approximately 65% of CO² emissions-Scopes 1 and 2-at the PP 3 PLN unit, contributing to Braskem's goal of reducing its carbon emissions by 15% by 2030.

According to Gustavo



Checcucci, Director of **Energy and Industrial** Decarbonization, the initiative reflects the company's strategic vision: "This project represents another important step toward increasing efficiency and reducing costs in our operations, while advancing the construction of a more sustainable production model. With this, we reaffirm our commitment to driving the transition to a low-carbon industry, while boosting productivity and competitiveness in our operations."

The partnership with ComBio was structured under a 15-year contract that includes acquisition, implementation, and maintenance of the assets. Braskem will be responsible for operations, while ComBio will act as a technical and partner commercial to ensure equipment performance. The project ComBio's debut in the petrochemical sector, in partnership with the market leader in large-scale biopolymer production.

This achievement also consolidates the implementation of ComBio's first electric boiler and one of the first in Brazil since the last wave of electric boilers in the 1980s. "This partnership with Braskem reinforces our purpose of solutions that combine enabling sustainability, competitiveness, and energy security for the industry, whether through renewable electricity or biomass. By implementing our first electric boiler for a client of Braskem's scale, we demonstrate that it is possible to reduce costs and emissions simultaneously, accelerating the energy transition in Brazil's chemical and petrochemical sector," says Gustavo









ComBio's Marchezin, Commercial Director.

Currently in the licensing implementation phase, the boiler is expected to begin operating in the second half of 2026. The initiative reinforces Braskem's position as an active agent in building a low-carbon industry, while representing a strategic step for ComBio, which expands its presence in the petrochemical sector and consolidates its reputation for innovation and renewable thermal energy solutions for Brazilian industry.

Source: Braskem

COVESTRO AND NIPPON PAINT **STRENGTHEN STRATEGIC** PARTNERSHIP IN **CHINA AT CIIE**

hina's automotive industry shifting from rapid growth to structural adjustment and upgrading, while the broader industrial sector is intensifying efforts to tackle climate challenges and accelerate green transformation. As a key enabler for both sectors, the coatings industry supports this transition with lowcarbon, safe and durable solutions. In this context, materials manufacturer Covestro and Nippon Paint have formed a strategic partnership to strengthen collaboration in automotive industrial coatings. Together, the two companies aim to co-develop efficient, high-performance sustainable and coatings that drive industry innovation support downstream and transformation.

Based on deep industry insights, the companies will focus two

automotive and industrial coatings, applications covering such automotive **OEM** coatings, components, refinish paints, as well as coil steel, construction machinery, wind and photovoltaics. power collaboration will encompass lowcarbon material development, technological innovation, energy efficiency improvements and VOC emission reduction to drive sustainable and high-quality industry development through enhanced supply chain coordination.

This agreement, signed at Nippon Paint's booth during the 8th China International Import Expo (CIIE), reflects a shared commitment between Covestro and Nippon Paint to explore new collaborative pathways.

Over the years, both companies have built extensive experience in product development and material innovation. At the 2022 CIIE, Nippon Paint and Covestro unveiled a pioneering biobased automotive coatings solution that enables matte-finish gradient colors—a technologically challenging feat that addresses the automotive industry's demand for outstanding performance, distinctive design and sustainability. This latest partnership expands the collaboration from automotive coatings to broader industrial applications, aiming to establish a comprehensive low-carbon coating system covering raw materials to finished products through deeper technical collaboration and resource integration.

"CIIE serves not only as a showcase for global innovations but also as an important platform for fostering supply chain collaboration and building sustainable ecosystems.

We're delighted to leverage CIIE's momentum once again, continuing our partnership with Covestro to explore innovative breakthroughs in lowcarbon materials and green coating technologies. Through this open platform, Nippon Paint will continue deepening local innovation, partnering to bring more valuable and sustainable coating solutions to the Chinese market," said Bai Yi, Vice President of Nippon Paint China Purchasing Headquarters.

"This strategic partnership will fully unlock the synergistic potential of both companies in technology development and resource integration. We look forward to working with Nippon Paint to advance cutting-edge technology development and implementation, drive green transformation across the industry through innovative material and circular science economy principles, and contribute technological expertise to China's dual carbon goals and industrial upgrading," said Anand Khot, Head of Coatings and Adhesives Asia Pacific, Covestro.

Source: Covestro









INTERNATIONAL NEWS

BASF COATINGS LAUNCHES NEW AUTOMOTIVE OEM COATINGS PLANT IN MUENSTER, **GERMANY**

Tew facility strengthens market position, meeting customer demand for high-runner products

automation enhances sustainability and ensures process stability

BASF Coatings successfully has commissioned a state-of-the-art production plant for automotive OEM coatings at its Muenster site in Germany. The new facility is designed to produce high-runner products, namely colors that currently represent the majority of market demand, and ensure consistent product quality and enhanced production efficiency.

The investment marks a strategic **BASF** Coatings, milestone for reinforcing its long-term competitiveness in the high-volume coatings segment. The facility's advanced automation enables more sustainable operations, while enhancing process stability and reliability.

The new plant is one of the most transformative investments of BASF Coatings in the past five years. From the initial conceptual studies in 2019, through two and a half years of construction, to the start of regular production today, this project has been shaped by the deep expertise of BASF Coatings teams.

innovative strength continuous drive for improvement make us a successful industry player and more importantly, a valued partner to our customers," emphasized Uta Holzenkamp, President of BASF "This Coatings. project is outstanding team achievement, coordinated and executed by a global network of experts across multiple BASF locations."

"We have invested in a more advanced process with the new facility, which ensures high and consistent product quality and stability. In this way, our customers benefit from our expertise, knowledge, and experience," added Nils Lessmann, Senior Vice President, Global Operations Paint & Resin. "As the next step, our teams in Asia Pacific and North America will adopt these best practices and strengthen our global manufacturing network."

The new plant is designed to optimize energy consumption, thereby reducing CO₂ emissions, marking another important step in BASF Coatings' sustainability journey. Since 2022, the Muenster site has been powered entirely by renewable wind energy, saving approximately 4,000 tonnes of CO₂ annually. Muenster joins other BASF Coatings sites across Europe, Asia Pacific, and North America that operate on 100% renewable electricity.

Source: BASF

EUROFRAGANCE UNVEILS OPULENT NEW INGREDIENT 'OLIVANTE' AT

BEAUTYWORLD **MIDDLE EAST**

Spanish fragrance house Eurofragance has debuted its fourth proprietary perfumery ingredient, positioning the material as a new benchmark for sustainable luxury in scent creation.

The rollout of Olivante at Beautyworld Middle East on October 27, positions Eurofragance at the center of a growing global appetite for rich, culturally rooted scent profiles reimagined for a wider market.

Billed as a more caring, eco-conscious path to olfactive richness, Olivante is designed to deliver the opulence that defines the Gulf region's most coveted perfumes. Known for complex, phenolic and animalic nuances reminiscent of castoreum, the ingredient slots naturally into mukhallat-style creations—an area where Eurofragance is a global leader.

But the company said its potential stretches far beyond the Middle East.

"On its own the natural animalic character of Olivante is ideal for an Indian target that loves powerful profiles such as shamama," said Mayur Kapse, General Manager India. "In fragrance compositions that include typical Indian ingredients it works wonders too; a jasmine sambac will smell more fruity and a pink lotus note more leathery."

Perfumers working with the captive ingredient report Olivante that amplifies character across categories deepening fruity notes, enriching gourmand tones, and boosting the intensity of white florals. Made from olive residual matter left after oil extraction, the ingredient avoids the









oily scent typically associated with olive-based products.

Master Perfumer Belén Garcia noted the ingredient's relevance to shifting Western tastes. "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."

Olivante also embodies Eurofragance's sustainability agenda. Developed in partnership with a collaborator in the olive oil industry who upcycles production residues, the ingredient took over two years to perfect.

R&D Manager Felipe San Juan and Technical Perfumer Magdalena Rey scoured the Spanish countryside to identify the ideal olive variety, working with a regional waste-management engineer to secure a pulp with the exact concentration of volatiles needed. Through a multi-step, eco-friendly purification process, Eurofragance isolated the key odorant moleculescreating a 100% natural ingredient now under patent review.

The name Olivante nods to the Levant, cradle of the olive tree, whose westward journey across the Mediterranean eventually reached Spain. Eurofragance frames the ingredient as both an emblem of Spanish heritage and a new global olfactive proposition.

Global Marketing Director Sine Guçetil highlighted its versatility and market promise: "Olivante stands out for its ability to offer perfume richness, or opulence, in a manner that is fresher and less heavy. And, it's not just intended for fine fragrances."

"Our initial trials formulating personal care and home fragrancing products with Olivante are promising and we feel that this a proprietary ingredient with strong potential for broader market adoption."

Source: Indian Chemical News

WORLD FIRST: AIR LIQUIDE'S **INNOVATIVE TECHNOLOGY CONVERTS AMMONIA** INTO HYDROGEN AT **INDUSTRIAL SCALE, PAVING THE WAY FOR NEW LOW-CARBON SUPPLY CHAINS**

ir Liquide announced the successful Astart-up of the world's first industrial-scale ammonia cracking pilot unit with a 30 tons per day ammonia to hydrogen conversion capacity at the Port of Antwerp-Bruges, Belgium. This groundbreaking innovation demonstrates a key missing technology brick to a viable pathway for converting ammonia into hydrogen, and unlocks challenges of transportation hydrogen. This technology proven at the industrial scale for the development of world scale ammonia cracking plants enables access to low-carbon and renewable hydrogen for the decarbonization of industry mobility.

The ability to efficiently transport hydrogen over long distances is a persistent challenge in developing a robust global hydrogen economy. Ammonia (NH3), formed by hydrogen and nitrogen molecules, emerges as a

valuable hydrogen carrier. It can be cost-effectively produced in regions rich in renewable energy sources, such as solar, hydro, and wind or other lowcarbon power. A well-established global infrastructure already exists for the large-scale production, transportation, and utilization of ammonia. This allows for the export of ammonia from energyabundant regions to end-users worldwide, where it can then be "cracked" hydrogen, back into providing a crucial component for decarbonizing industry and mobility.

This new, proprietary ammonia cracking technology expands Air Liquide's portfolio for low-carbon and renewable hydrogen production. As part of the successful development of this unit, key proprietary innovations were developed across critical areas including process safety, material testing, advanced catalysis for ammonia cracking, ammonia combustion, and efficient molecule separation. success showcases project's Air Liquide's ability to scale technologies from laboratory research to industrial applications and develop first-of-their-kind solutions for its clients.

Armelle Levieux, member of Air Liquide's Executive Committee, notably supervising Innovation and Technology activities as well Hydrogen Energy activities, stated:

"The commissioning of our ammonia cracking pilot unit in Antwerp is a key milestone. This is a world's first which paves the way for new low-carbon hydrogen supply chains. By proving the viability of industrial-scale ammonia cracking, Air Liquide demonstrates its capacity to innovate and provide concrete solutions for its customers, and contributing to the Energy Transition. I am immensely proud of the work and commitment of all our teams who made this achievement possible."









NEWS ROUND UP

Continued from page 22

commercial future.

Likewise, Swift Solar (U.S.) is Building Manufacturing Capacity for Tandem Cells. This demonstrates their faith in the technology. Swift Solar is a U.S. startup specializing in high-efficiency perovskite tandem cells designed for aerospace, electric vehicles, consumer electronics, and future rooftop markets. proprietary materials encapsulation technologies aim to extend perovskite lifetime and reliability—two critical commercial barriers. Swift Solar has attracted funding from major American investors, climate-tech accelerators, government agencies such as ARPA-E. Their construction of dedicated manufacturing facilities shows that perovskites are moving beyond research into real industrial scaling.

Other reasons why the Perovskite cells market is growing into a big market:

Slowly into full-scale getting installations:

Perovskite cells are increasingly adopted building-integrated photovoltaics (BIPV), where solar power is embedded directly into construction materials rather than mounted separately.

Companies across the globe are installing perovskite-coated facade panels, flexible window films, and semitransparent perovskite sheets commercial buildings. These products allow architects to design energygenerating structures without compromising aesthetics, weight, or design freedom—something silicon panels cannot offer due to rigidity and opacity.

How is this done? Perovskite solar films

can be laminated onto glass, metal, or composite surfaces, making them ideal for skyscraper glass windows and modern infrastructure projects.

Initially, they were installed in corporate offices, malls, and smart buildings to demonstrate that the technology works reliably across weather conditions, dust exposure, humidity, and daily sunlight variations. As building owners start generating clean energy from walls and windows, demand for such solutions grows. They are observed by general consumers and the construction sector, and thus they attract attention from realestate developers and sustainability investors looking for next-generation green-building certification.

Getting tested in Microgrids in the U.S

The U.S defence sector adopts technologies that are highly reliable, durable, and safe. The fact that the perovskite cells are being tested in the defense microgrids indicates that it is growing in commercial credibility.

Military bases demand ambitious features in the energy systems that can operate in extreme climates, withstand physical stress, and deliver consistent power during emergencies or grid failures. Perovskite cells are lightweight, and their high energy-to-weight ratio makes them ideal for mobile military operations, remote camps, and portable power units used by soldiers in the field.

Integrated in IoT Devices and chargers:

Perovskite solar cells are increasingly being used in Internet-of-Things (IoT) devices, portable chargers, and small electronics where lightweight, flexible, and low-light-efficient power sources are essential. Perovskite cells perform far

better than traditional silicon panels.

Traditional silicon panels perform poorly indoors or in shaded areas, but perovskites low-light excel in conditions—fluorescent lighting, office lighting, and even diffuse sunlight. This makes them ideal for powering sensors, smart tags, wearables, indoor trackers, remote controllers, and smart-home IoT nodes.

Companies are now embedding thin perovskite layers into device surfaces, enabling "battery-less" electronics that generate their own energy. Smart packaging, logistics trackers, industrial sensors benefit from this integration, reducing maintenance costs and eliminating frequent battery replacements. Portable perovskite chargers for phones and gadgets are also entering the market, proving the technology's scalability in consumer devices.

These integrations position the perovskite cells market very high, as it has excelled in the electronics sector, which is one of the fastest-growing sectors. When manufacturers begin embedding perovskite solar cells into millions of small devices, mass adoption becomes inevitable. It also showcases reliability during everyday use—drops, bending, handling, and temperature changes.

High CAGR, the demand is rising very fast:

The growth rate is above 40% and the companies increasing are their investments, buyers are showing great interest, and the production capacity is also expected to increase quickly. Therefore, when there is a significant growth in the market, you can expect a









transition from niche to mainstream pretty quickly.

We can still refer to the growth pattern of the silicon solar cells years before, how they became mainstream. Silicon also grew at a high-double-digit rate between 2005-2015. During that period, the silicon solar cells became the global standard; we can observe the same pattern with the perovskite cells.

Rapid efficiency improvements:

It is observed that the perovskite cells showcase efficiencies from 3% to >25% in just 12 years. This is a massive increase, and therefore, this reduces the technology development time; this means that the perovskite cells can hit the market faster than the previous technologies.

Falling production costs accelerating adoption:

The one major challenge in any solar cell is the manufacturing costs. manufacturers are finding ways and exploring ways to cut down these massive costs. Perovskite cells can be manufactured by printing them using "roll-to-roll manufacturing", "inkjet printing", "spray coating", or "blade coating". These techniques are as simple as printing the newspapers or packaging films.

This is extremely simple when compared to the traditional silicon solar cells that high-temperature reauire furnaces, expensive vacuum chambers, complex fabrication steps.

Therefore, the mass production of solar films with high speed, further lowering costs per square meter, is possible. Furthermore, the raw materials used are generally cheaper than those required for traditional solar cells.

These raw materials can be applied onto flexible substrates like plastics, metal foils, creating lightweight and versatile solar solutions.

Overall, when manufacturing becomes cheaper and easier, the adoption rate will increase rapidly. This pattern has been seen before as well. The LED bulbs were replaced with CFLs almost overnight once the production costs were dropped. The mass manufacturing scaled up in no time. A similar pattern is possible in this case as well.

What can we expect to see in India in the near future?

Imagine building Mumbai, in Bengaluru, Chennai, and Hyderabad with solar-coated glass windows. These windows can generate electricity, yet withstand harsh and different temperatures. The demand would be mounting if the already existing commercialization expands.

- Offices can reduce electricity bills.
- Malls and airports can produce clean power from their own walls and facades.
- Builders may use perovskite films during construction because they are light, thin, and flexible.

These can be done with minimal manufacturing and operational costs, as perovskite cells can be printed cheaply like stickers, thus making them perfect for large buildings and installations.

India is known for its humid climate and varying weather conditions. Harsh climatic conditions are one of the main challenges in the installation and operation of solar cells. Most of the houses or commercial buildings are built in such a way that their rooftops are not exposed to direct sunlight. There is are dust problem as well. Perovskite panels perform better in these conditions compared to the traditional silicone panels. Therefore, these panels can generate electricity for Indian

households, more power even on dull days, especially in Kerala, North East India, Karnataka, and hill regions.

The structural benefits of perovskite cells are perfect for Indian customers. Indian customers intensely use lanterns, microchargers, solar backpacks, and portable microgrids. Since Perovskite cells are lightweight, foldable, and easy to carry, they can be easily integrated into these lanterns, micro-chargers, and solar backpacks. Thus 90% of Indian customers who are farmers, students, and rural healthcare workers can hugely benefit from these cells.

Perovskite cells can cater to the demand rising from parking sheds, bus stops, and highway rest areas. These are the areas where India's EV growth needs clean charging, and the light and flexible perovskite films can provide low-cost solar charging points.

Final takeaway:

Gone are the days of silicon cells ruling; perovskite solar cells have come a long way from being just experimental. They are on their strong path toward mainstream adoption. There is a rapid rise in efficiency, low manufacturing costs, and compatibility with flexible and lightweight applications, making them one of the most promising technologies in the global solar market. Therefore, the technology can now be considered mature, as it has gained commercial credibility, strong investor confidence, government interest, and rising demand for high-performance solar products, which are combined to accelerate their progress. On the other hand, the stability challenges are addressed as well. These are making perovskite cells transform from niche to dominant, thereby reshaping how solar power is produced and used across the globe.









India's Green Steel Revolution 25 Companies Earn Certification for Low-Carbon Production

Team Chemical Market

Introduction:

Tndia's steel industry is taking a Imassive step towards sustainability as the government issues green steel certificates to 25 companies, as they have successfully reduced

carbon emissions in manufacturing processes. The move comes as part of India's broader push to decarbonize heavy industries and align with global climate goals. In this article, we discussed have how these certificates play a major role in future business opportunities and how well these certificates can opportunities for the companies. There are a lot of opportunities, and India shown some amazing potential as well. Let's elaborate on the news.

Indian companies are working harder - good enough they earned themselves "Green Steel Certificates":

The Indian government has been very encouraging and motivating, as they "Green given away certificates" to 25 companies that have successfully reduced their carbon emissions in their steel-making process. These certificates have 12 12-month validity and this makes the companies eligible for government incentives or priority in steel purchases. Some wellknown companies like Shree TMT, Kalyani Steels, and Vardhman Special Steel are among those companies that are certified. The certificates are issued by the National Institute of Secondary Steel Technology (NISST), which checks how much carbon each company emits. NISST acts as the official authority for

checking emission data from the steel plants. They measure and verify how much carbon dioxide each factory emits. Only after confirming that companies are within the limits does NISST issue the certificate, ensuring transparency, credibility,



accountability **India's** green certification system.

These major steel producers, who have earned the "Green steel certificates," have already been recognized for their efforts in low-carbon manufacturing, yet these companies are leaders in adopting innovative production methods, thereby setting an example for the rest of the industry to follow India's green transition roadmap.

The move supports India's goal of producing low-carbon or green steel. The specification requires the facility should manufacture steel with emissions below 2.2 tonnes of CO2 per tonne of steel. A special star rating system measures how cleanly the steel is

produced, with a 5-star rating for the lowest emissions. The initiative also helps the Indian exporters meet the European Union carbon rules and avoid carbon taxes when selling steel abroad.

These

certificates recognize companies' efforts toward cleaner production but also offer incentives and priority access government When procurement. companies produce certified low-carbon steel, companies can avoid heavy carbon taxes when exporting to Europe. This could be a vital shift for India's steel sector, setting the stage for greener growth, technological innovation, and alignment with sustainability international standards.

Why is the move crucial?

The "Green Steel certificates" issued by the government are a

massive move. This has encouraged other companies in Indian to work towards manufacturing "Green Steel". The industries are shifting towards sustainable and low-carbon materials. Construction firms, automakers, and even electronics manufacturers now prefer green steel to meet their own carbon reduction goals. Therefore, we can expect a change in consumer preferences. Companies with green certificates can attract new clients and premium pricing from eco-conscious buyers in India and abroad.

There are so many other benefits, especially with the exports. From 2026, the European Union's Carbon Border Adjustment Mechanism (CBAM) will impose a carbon tax on imported steel









with high emissions. Thus, it is extremely crucial for the Indian companies to produce green steel can avoid these taxes, making their exports cheaper and more competitive. This could help them retain key European customers and expand into international markets. This paves a massive way for the Indian companies to expand their business in foreign countries. Let's take an example: If a European buyer imports traditional (high-emission) steel from India, they might pay, say, €80 per tonne in carbon tax. But if they import certified green steel, the tax could be much lower or even zero.

So, Indian exporters with green certification can sell their steel at more competitive prices, while those without certification may lose out on export orders.

The national climate goals of India are extremely ambitious. Especially, the steel industry is aiming to attain net-zero emissions by 2070 under India's national climate goals. If the Indian companies adopt the strategy of manufacturing green steel early, they can find easier and cheaper methods to comply with future environmental laws. Late adopters might face penalties, market exclusion, or loss of government contracts later. Therefore, the Indian companies need to strategize with the future in mind.

Moreover, with this determination of manufacturing "Green steel," Indian companies can attract a wide range of financial and non-financial benefits offered by the Indian government. Possessing a Green certificate makes these companies eligible for benefits given by the Indian government. Some of them include:

- Subsidies or tax rebates for energyefficient technology upgrades.
- Access to green financing or lowinterest loans from governmentbacked banks and international

- agencies.
- Eligibility for production-linked incentive (PLI) schemes focused on clean manufacturing.
- Easier environmental clearances and faster project approvals.

Furthermore, the Ministry of Steel plans that over one-third of all steel used in government projects will be sourced from low-carbon or green sources. The certified companies will get the priority contracts for supplying steel to the infrastructure, railways, defence, and housing projects- thereby creating major business opportunities.

To cut emissions, steelmakers are using energy-efficient technologies replacing coal with renewable or nonfossil fuels like hydrogen, biochar, or electricity from solar power. These cleaner inputs reduce greenhouse gases while maintaining production quality, making the steel sector more sustainable and globally competitive. Thus, this initiative also helps these Indian companies to build their brand reputation.

Company highlights: how are they known as India's green steel leaders?

There are about two dozen companies that have received the government's green steel certification, but only three names stood out. Shree TMT, Kalyani Steels, and Vardhman Special Steels. Each of these firms is driving India's transition towards sustainable steel production using different technologies and energy-efficient processes.

Shree TMT is a Hyderabad-based company, has become one of the first to receive a five-star green steel certificate, representing the highest level emission reduction under the government's new framework. The company has achieved this by adopting scrap-based steelmaking using electric induction furnaces, which significantly

cut carbon emissions compared to the traditional blast furnace route that relies heavily on coal. By focusing on 100% recycled scrap, Shree TMT not only reduces carbon output but also natural conserves resources and minimizes industrial waste.

Kalyani Steels, part of the Pune-based Kalyani Group, has made strong investments in electric arc furnace technology (EAF) powered renewable energy sources. conventional blast furnaces, EAFs can melt scrap or direct reduced iron (DRI) using electricity instead of coal or coke. Kalyani Steels has focused on improving energy efficiency and carbon capture, while gradually shifting to solar and wind-powered electricity. decarbonisation journey also involves reducing process waste and improving furnace efficiency through digital monitoring and automation. Their approach demonstrates how a largescale industrial player can integrate sustainability into a high-demand manufacturing without setup compromising product quality.

Vardhman Special Steels, headquartered in Ludhiana, specializes in alloy and engineering-grade steels primarily used in the automobile and industrial sectors. The company's focus has been on using low-carbon raw materials, adopting efficient reheating furnaces, exploring hydrogen-based reduction technologies for the future. It has been investing in R&D and collaborating with technology partners to reduce specific energy consumption per tonne of steel This gradual transition produced. ensures the company stays competitive in global markets, particularly in Europe, where carbon standards are tightening under the EU's Carbon Border Adjustment Mechanism (CBAM).

Together, these companies demonstrate that sustainability in steelmaking is









achievable through innovation, recycling, and renewable energy. Their certification signals a new era in India's industry environmental responsibility meets economic opportunity.

India is aiming to make 25% of its steel "Green" by 2030. We can expect the government to launch the Green Steel Mission under the National Green Hydrogen Mission. The country can also extend collaboration with the EU and Japan on clean technologies, as it is under discussion.

Final takeaway:

The objective of the classification is to develop structured framework encouraging low-carbon production. This involves the adoption of energy-efficient technologies and shifting from coal to non-fossil fuels such as hydrogen, electricity, and bioenergy. By setting clear emission standards and rewarding sustainable practices, the government aims to build

a foundation for an industry that is both environmentally responsible globally competitive. The issuance of green steel certificates marks a significant stride towards India's longterm goal of achieving net-zero emissions by 2070, strengthening its position as a leader in sustainable industrial growth. Therefore, the success of these early adopters proves that sustainable transformation is not only an environmental necessity but is an economic opportunity.

From Plant Waste to Pixels Scientists Create Eco-Friendly Light-Emitting Material Big appreciation to **Yale and Nottingham Scientists**

Vinodhini Harish

Introduction:

To one would have believed that there is an eco-friendly technology, a new type of light-emitting material made of plant waste and amino acids. But now, the scientists from Yale University and Nottingham Trent University have created a new type of light-emitting material made entirely from plant waste and amino acids. This technology is a greener, safer alternative to the toxic and metal-based materials which is currently used in TVs and smartphones. Back in time, the scientists were still exploring the foundations of green chemistry. The processes used only eco-friendly solvents like water and acetone were still in the early stages. The green electronics and circular materials have accelerated only in recent years. In this article, we have discussed this new technology in detail, and we have included what makes it more special and why it is a great example of green chemistry. Let's begin.

Massive "Green breakthrough" in light-



emitting materials:

For many years, the light-emitting materials used in electronic displays









have relied on toxic metals and nonrenewable resources. These materials were effective, but they are often harmful to both human health and the environment. The practical tools and techniques were limited. Over the past decade. advances sustainable in synthesis and eco-friendly solvent systems have transformed this field. Scientists learned how to use green solvents like water, ethanol, and acetone in place of dangerous chemicals. They also discovered mild reaction pathways - where light, enzymes, or renewable could drive feedstocks chemical reactions without needing heat or pressure.

Another challenge was that the scientists had a Limited Understanding of Plant-Based Materials Like Lignin.

Lignin is one of the most abundant natural polymers on Earth, found in almost all plants and trees. It gives wood its strength and rigidity. Yet, for most of industrial history, lignin has been seen as waste — a by-product of paper mills and biofuel plants. Only in the past few years have scientists learned how to break down and rebuild lignin in controlled ways. New methods in biopolymer chemistry, molecular mapping, and chemical modification have allowed researchers to turn lignin into high-value products like carbon fibers, adhesives, and now - lightemitting materials.

This change was powered by better tools like nuclear magnetic resonance (NMR) spectroscopy and mass spectrometry, which reveal how lignin's molecular parts are arranged. Once scientists understood where the "phenolic groups" (the parts that react to light) were located, they could finally take advantage of them for photoluminescence.

The understanding of plant-based materials, green chemistry, and other advanced technologies has had a huge

global impact and industrial potential beyond academic research. Companies could reduce reliance on toxic metals and move toward green displays and LED lighting. Since toxicity eliminated. these glow-in-the-dark materials made from natural sources could replace harmful phosphors in toys, signs, and paints. Now, this aligns well with the United Nations Sustainable Development Goals. (SDGs). organization promotes responsible production, climate and action, innovation.

Currently, the research team is working on studying how to make the material brighter and more durable for use in commercial electronics. They developing testing methods and performing testing to evaluate how it performs under different conditions, such as temperature, humidity, and electrical stimulation. This also includes exploring color tuning, which produces different colors of glow for display applications and scaling up production while maintaining green chemistry standards.

If successful, this could lead to a new class of sustainable optoelectronic materials that rival or even surpass the performance of metal-based systems.

The new plant waste-based lightemitting material represents a scientific milestone- for a reason:

This innovation is significant for the industry. Until now, materials used in TVs, smartphones, LED lights, and display panels have relied on rare, toxic metals such as cadmium, iridium, and lead. These metals are expensive to mine and process, environmentally harmful, and non-renewable.

The new material — made from plant waste (lignin) and amino (histidine) — offers a completely green, biodegradable, and sustainable option. It's lightweight, non-toxic, tunable, and cheap to produce. This combination makes it valuable for a wide range of industries - from electronics and lighting to biotechnology, packaging, and even defense.

How this innovation creates an Impact on the Indian industry:

Indian industries are diverse, from electronic manufacturing biomaterials, chemicals, and paper production, all of which stand to benefit directly from this kind of innovation.

Boost for India's "Make in India" and green tech goals:

India is actively pushing for self-reliance in electronics under the Make in India and Digital India programs. India currently imports most of its display panels and semiconductors, which adds to the trade deficit. If Indian scientists or companies adopt bio-based lightemitting materials, it can have a great impact on the following aspects:

Reduce dependence on imported toxic photoluminescent metal-based materials. This would also encourage local production using abundant agricultural and paper industry waste, which India produces in massive quantities. This would also help in supporting green manufacturing hubs, especially in states like Tamil Nadu, Maharashtra, and Guiarat, which already host electronics parks. It would also strengthen India's circular economy, turning waste into value-added technology. We can see how big the news already is!

Huge opportunity for the paper and biomass industry:

There are new opportunities for the paper and biomass industry. India's paper industry produces millions of tonnes of lignin-rich waste every year, most of which is either burned or discarded. This new discovery shows a









profitable alternative that turns the waste into high-value glowing materials.

Paper mills and biomass plants could form partnerships with research centers or startups to extract and refine lignin photoluminescent material production. This could create a new revenue system!

R&D boost for Indian universities and startups:

The discovery opens doors for Indian institutions like IITs, IISc Bengaluru, and CSIR labs as they explore biopolymer photonics, green chemistry, • and bio-based electronic materials. The startups are focusing on bio-materials, sustainable electronics that can use lignin-based light materials in: LED alternatives, Security and counterfeiting inks, Biosensors and medical imaging devices, eco-friendly toys or packaging.

Cuts down on the mining:

Mining pollution, manufacturing waste, toxicity, and production costs are eliminated by using plant waste instead of mined metals. Production costs are reduced because plant-based materials are locally sourced and renewable. For a nation like India, balancing industrial growth environmental with responsibility is critical.

impact on the global industry?

Huge shift in the electronics industry:

The display industry produces TVs, smartphones, tablets, and monitors as they are worth over USD 150 billion across the globe. The shift to bio-based photoluminescent materials could transform this market by:

- Reducing dependence on rare-earth metals like cadmium, iridium, and
- Making device manufacturing safer and cheaper.
- biodegradable Enabling recyclable display components, reducing e-waste.

Countries like South Korea, Japan, China, and the US, which lead in display technologies (Samsung, LG, Sony, Apple), may invest heavily in adapting this green luminescent chemistry.

Multinational companies are under pressure to cut carbon emissions. Adopting plant-based materials helps them meet sustainability targets and improve their brand image.

Huge environmental impact:

The innovation is expected to have a huge environmental impact in both India and foreign countries. This helps in reducing waste. Reusing Lignin cuts How does this innovation create an down on biomass waste from the paper

and pulp industries. This leads to less landfill and lowers CO₂ emissions.

The manufacturing process is cleaner, as it uses only water and acetone. They are both non-toxic and recyclable. There is no need for acids, heavy metals, or hazardous by-products. The green chemistry processes often require less heat or pressure. This reduces overall energy consumption in manufacturing. The bio-based components are easier to degrade or recycle. Thereby, the entire process can be tackled easily by the countries.

Final thoughts:

The discovery of plant waste-based light-emitting materials represents more than just a scientific triumph, and it is a blueprint for the future of sustainable technology. The innovation has paved the way for bio-based electronics, just with materials like lignin and histidine. Especially for India, this innovation could mean turning industrial waste into economic opportunity, reducing imports of hazardous materials, and boosting green manufacturing. For the global industry, it is a chance to shift toward circular production systems where innovation and environmental responsibility go hand in hand. Overall, innovation the is massive breakthrough for the next generation of screens, sensors, and devices that could truly shine.

ICEA Warns Lower US Tariffs on China May Hurt **India's Export Advantage**

Team Chemical Market

Introduction:

and the electronics sector: Can India maintain its manufacturing edge as China regains lost competitiveness? changes in global trade fter the announcement about US dynamics, particularly the easing of US- $\mathbf{\Lambda}$ tariffs on Chinese goods, a crucial China tensions and the resulting question arises for Indian manufacturers reduction in US tariffs on Chinese

goods, have prompted the India Cellular and Electronics Association (ICEA) to issue a clear warning. ICEA states that if US tariffs on Chinese products drop, India risks losing its vital cost advantage, slowing export growth, and undermining recent manufacturing









gains under initiatives like Make in India. This urgent warning from ICEA frames the core challenge addressed in this article

The US-China relations are improving; thus, the Electronics industry urges the government to continue its support.

India's electronics industry wants the government to keep giving strong policy support because better trade ties between the US and China could hurt India's export edge. Since the tensions are getting settled, the situation is expected to shrink the country's export advantage. The US recently reduced the tariffs on Chinese products from 20% to 10% after talks between President Donald Trump and China's President Xi Jinping. This explains what triggered the Industry's concern- the tariff cuts make the Chinese goods cheaper again.

This change has made the Indian electronics slightly less competitive in the global markets, and we can see why there is a need for government support, as the cost advantage has reduced.

How will this tariff cut affect India?

The India Cellular and Electronics Association (ICEA) sent a letter dated November 6, in which they expressed serious concern over the recent US decision to cut tariffs on Chinese goods from 20% to 10%. According to the association, this move will narrow the country's cost advantage by nearly 10 percentage points. This will directly affect the competitiveness of India-made electronics in the global markets. For the past few years, India has benefited from higher US tariffs on Chinese imports, which encouraged multinational companies to diversify their manufacturing and sourcing towards India. The tariff cut now threatens to reverse that trend, making Chinese exports cheaper and more attractive once again.

The ICEA represents leading global and Indian electronics companies that including Apple, Foxconn, Vivo, and Tata Electronics. This cautioned that if these relaxed tariffs continue or are further reduced. This could have longterm consequences for India's export performance.

Reduced cost competitiveness could make the global investors hesitant to losing its recent manufacturing progress unless the government immediately preserves strong support to maintain export competitiveness.

ICEA argues that India has just begun to benefit from diversification, and thus, they explain why the timing matters. This situation, China regaining its price advantage, could weaken India's position, just when it has begun to



expand or set up manufacturing units in India, slowing the momentum the country has built under the "Make in and "Atmanirbhar Bharat" India" incentives. The letter also highlighted the potential risks to India's Production-Linked Incentive (PLI) scheme, which has been instrumental in boosting domestic manufacturing and exports in the electronics sector. The PLI schemes rely heavily on consistent global demand and India's relative cost edge to attract new investments. If Chinese goods regain their pricing advantage, India's manufacturing expansion production targets may face setbacks.

ICEA's message to policymakers is clear: as US-China trade dynamics evolve and tariffs on Chinese goods fall, India risks

attract global supply chains shifting away from China.

India's exports are growing- specific evidence:

In the first half of FY26, India's electronic exports to the United States recorded an impressive 42% growth, and it is expected to reach about \$22 billion compared to \$15.6 billion during the same period in FY25. This is a remarkable rise, and this highlights the country's rapidly expanding footprint in the global electronics market. Thereby, it also reflects the success of incentives like the Production Linked Scheme (PLI) scheme and "Make in India". This increase demonstrates how India has effectively leveraged global supply chain









shifts, policy reforms, and rising investments from multinational manufacturers seeking alternatives to

Within this surge, smartphone exports have been the biggest growth driver. The shipments of smartphones from India to the US rose by nearly 60% jumping from \$8.4 billion in FY25 to \$13.4 billion in FY26. This indicates strong demand for India-assembled devices and also shows how global technology brands such as Apple, Samsung, and Xiaomi are increasingly using India as their major production and export hub. The smartphone segment now forms a dominant share of the overall electronics export basket.

However, the India Cellular and Association (ICEA) Electronics cautioned that these hard-won gains could be at risk due to the recent halving of US tariffs on Chinese goods. The association warned that if China's products become cheaper again in the US market, it could reverse much of the progress India has made in expanding its exports. The restored cost competitiveness of Chinese goods may encourage buyers and manufacturers to shift sourcing back to China. ICEA's concern underscores the fragility of India's current advantage — and the urgent need for continued government support to ensure that this growth momentum is not lost amid changing global trade dynamics.

Major challenge for India's electronic sectors:

Electronics firms should closely monitor the developments and adapt their strategies early. This will help them to be better positioned to protect their margins, secure government support, and remain competitive in a rapidly changing global trade environment. In 2019, before the launch of the smartphone Production Linked Incentive (PLI) scheme, **India's**

electronics manufacturing costs were estimated to be around 18-19% higher than China's.

This gap represented a major challenge for India's electronics sector as manufacturers faced higher expenses in areas such as logistics, power, taxation, capital investment, and supply chain operations.

China's well-established infrastructure, economies of scale, government support allowed it to maintain a significant cost advantage, making it the global leader in electronics manufacturing for over two decades.

However, in the past five years, India has made remarkable progress in closing this cost gap. With the introduction of government favourable policies, particularly the PLI scheme, duty infrastructure benefits, and improvements, the cost of disability has now reduced to about 12%.

The Production Linked Incentive (PLI) scheme was launched to boost local manufacturing and exports. It offers performance-based incentives that have helped major companies such as Apple, Foxconn, and Dixon Technologies expand their production in India. Along with better logistics, lower capital costs, and a stable policy environment, these reforms have made India an increasingly strong alternative to China in global supply chains.

However, the India Cellular Electronics Association (ICEA) has warned that the recent cut in US tariffs on Chinese goods could undo much of this progress. If Chinese products become cheaper again in key markets like the US, India's manufacturing advantage could shrink. ICEA believes that this situation makes it necessary for the government to continue and strengthen its support to keep India competitive in global electronics trade.

The industry is urging policymakers to maintain and extend programs such as scheme, import-duty PLI supply-chain protections. and incentives. Industry leaders caution that if these supports are reduced or withdrawn too soon, India could lose investor confidence, slow down its export growth, and see a decline in new manufacturing projects. This concern comes at a critical time, as India's biggest-ever component manufacturing initiative has received record interest and nearly doubled planned investments through 2025. A stable and consistent policy environment is essential to achieve the national targets of \$400 billion in electronics output by 2025 and \$500 billion by 2030.

Even though trade relations between the US and China are improving, the global supply chain remains uncertain and unpredictable. **ICEA's** message straightforward — India must stay proactive and consistent in its policies. Continued government support will help the country strengthen its position a reliable and competitive manufacturing hub in the world.

Industry response: Voice from the field:

When the US decided to halve tariffs on Chinese goods- a move that directly influences the global cost structure of electronics manufacturing- the reaction from the Electronics manufacturing community was immediate and forceful.

Industry people also expressed their concern by mentioning the quote from ICEA. They express that this is not a passing worry but a serious structural challenge. The phrase "investment attractiveness" signals that companies are re-evaluating the cost or benefit of India as a location for manufacturingsomething Indian policy makers must heed.

The industry has mentioned key aspects like policy stability, manufacturers want









a simpler, predictable duty regime, production, and exports." development of the component ecosystem, and R&D incentives. For Such statements give voice to the example, ICEA Chairman Pankai Mohindroo has openly stated that the duty-complexity "impacts global competitiveness and export potential" and called for the reduction of input tariffs to zero.

Another industry commentary noted:

their intended purpose by adversely cost gap with China, and attracting impacting costs, growing domestic major global players. However, the

manufacturers' perspective. They are not only appealing for help — they are warning of a reversal of progress unless action is taken.

Summary:

India has made remarkable progress in strong "Tariffs act in the reverse direction to manufacturing ecosystem, reducing its changing global trade environment, driven by easing US-China relations, could challenge this progress. The ICEA's appeal highlights the need for continuous government support, policy stability, and proactive reforms to ensure that India doesn't lose its competitive edge. With the right mix of incentives, infrastructure, and predictability, India can continue its journey toward becoming a \$500 billion electronics powerhouse by 2030 and remain a trusted global manufacturing destination.

Tinci's Sulfide Electrolyte Breakthroughs: What 8 **New Patents Mean for EVs**

Team Chemical Market

Introduction:

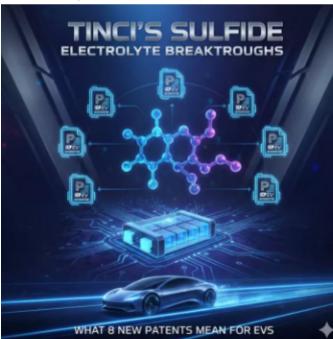
Tinci, a major Chinese supplier of lithium-ion battery materials specialty chemicals, is now a global leader in electrolyte materials for

batteries. With eight newly granted patents related to sulfide electrolytes for solid-state batteries, Tinci is reinforcing its role in the energy storage supply chain. These patents signify more than incremental progress—they mark a strategic move to lead in the next generation of battery technology. In this article, we explore what these advances mean for the industry and how they set an example of bold innovation worldwide.

How Tinci Is Strengthening China's Lead?

Tinci, a major Chinese battery materials producer, has secured 8 new patents related to solid-state EV battery technology. This demonstrates China's

strong push to lead globally in the solidstate battery market, gaining a major competitive edge. Tinci's share of the lithium-ion battery electrolyte market grew from about 28.8% in 2021 to 36.4% in 2023. Originally focused on battery Tinci is now chemicals, deeply integrated into the supply chain for EVs



and energy storage, reinforcing its central role in the sector.

Now, in 2025, they have received 8 patents, and all of them focus on sulfidebased solid electrolytes and their use in all-solid-state lithium batteries.

Out of the 8 patents, four cover electrolyte formulations and preparation methods, and the remaining four focus

> on full solid-state battery system applications, which means how the electrolyte can be integrated into real battery cells. This creates a technical framework not just for lab-scale tests but for real-world battery applications. The aim is to improve safety, higher energy density, longer cycle life, and operational stability. Therefore, they are building a complete IP and materials foundation for the solid-state batteries. We can see that this is a full-stack approach, as Tinci is patenting both the material and how to use it. This can block competitors and secure commercial advantage.

Tinci declared that their sulfide-

electrolyte program is at the pilot stage, and they have already supplied kilogram-level samples to downstream









battery cell manufacturers for testing. The company is working on a mid-scale pilot production line and is expecting to complete it by mid-2026. It is noteworthy that the company has ramped up its scale, R&D investment, global integration, and moved beyond just electrolytes to cathode materials. This has reflected a strategic shift to become a more diversified battery materials powerhouse.

Do you know that you need one ton of sulfide solid-state electrolyte to produce about 400 Kg of lithium sulfide? This indicates the material intensity and seriousness of the manufacturing process. Solid-state batteries are widely seen as an important step for EVs and energy storage, and they promise higher energy density, better safety, and longer life compared to traditional lithium-ion batteries. These patents are mostly about sulfide-based solid electrolytes, and they are the most promising types as they conduct lithium ions very well and support high energy density. company is thus positioning itself as a key enabler of next-generation battery technology and not just as a materials supplier. They are strategically smart. Many solid-state technologies never leave the lab, but Tinci is now signalling that theirs is already meant for commercialization.

China is also ready to give strong institutional support to the local battery materials players through fast patent approvals and thereby pushing them quickly in innovation.

Although these patents won't change Tinci's everyday business overnight, they will help the company to protect its ideas and strengthen its future research.

Tinci's sulfide electrolyte program is still in the pilot phase:

Tinci's sulfide-based solid electrolyte program is now in the test-production or pilot verification stage, and the company is no longer working only at the lab scale; they have advanced to producing the materials in kilogramlevel batches, and this shows the process can be repeated reliably with consistent quality. This delivery also ensures that the process can be done using larger reactors and more industrial-friendly methods.

These kilograms of solid-state electrolyte material are provided to major battery manufacturers, who are currently testing them inside prototype solid-state cells. These tests focus on checking ionic conductivity, stability, manufacturability, compatibility with cathodes, and anodes. This is standard industry practice of companies as they test in coin cells, then they move towards small pouch cells, and then finally full-size modules. Since Tinci has reached this stage, it means they have crossed key scientific hurdles.

However, know that we commercialization is not immediate in the battery industry. Even after sample validation, the materials require at least 4 years of evaluations, redesigns, longsafety testing, validation, integration with cell production lines, and so on. Therefore, it takes time for commercialization. Although company is moving in the right direction, the mass adoption will depend on how quickly OEMs validate performance. Overall, Tinci is now one of the very few companies with sulfide electrolytes advanced enough for realworld evaluation.

Mid-scale production line, expected to be completed by mid-2026:

Tinci is currently working on its midscale production line, which is a special type of pre-industrial factor that is designed to bridge the gap between laboratory-scale production and full commercial manufacturing. The facility will not produce millions of tons of electrolyte, but it will be large enough to

test automated equipment, continuous processes, impurity control, and cost optimization. The company announced that the construction is underway and scheduled is completion by mid-2026.

The development process is based on a liquid phase reaction method:

Tinci's solid-state electrolyte production method is built on a liquid-phase chemical reaction system, and it is essentially a wet chemical process. Instead of using complicated hightemperature vacuum milling or techniques, they are adapting technology from its existing lithium salt manufacturing capabilities. Why not use the proven technique? Thus, they are using similar reactors, solvents, purification methods, and processcontrol techniques that are already proven for producing battery-grade lithium salts at an industrial scale. It reduces risks and assessments. But the company is modifying these methods; they can synthesize sulfide-based solid electrolytes with higher purity, better ion conductivity, and controlled particle morphology. This approach is significant because making sulfideelectrolytes is normally hazardous and difficult; the aggressively with materials react moisture and release hydrogen sulfide gas. They are also leveraging established liquid-phase technology, and thus they are reducing risks and pushing from small-scale experiments to industrial production. It also increases reproducibility, which is highly important for battery manufacturers who need consistent-quality material.

Tinci entered CATL's supply chain: their relationship:

Tinci entered the supply chain of CATL, which is now the world's largest EV battery manufacturer. Back in 2015, CATL began to expand globally, and they were seeking reliable material partners who could support high-purity









lithium-ion electrolyte production at They have experience electrolyte salts and additives. Thereby, they have proved themselves to be a strong fit. Over the years, their role grew significantly, and they are not just a vendor but one of CATL's most important strategic suppliers, especially for core electrolyte materials such as lithium hexafluorophosphate, functional additives, and high-purity solvents.

CATL relies on these materials to ensure battery safety, stability, and long cycle life. Being a long-term partner means passed CATL's Tinci has strict qualification processes, survived multiple rounds of technical audits, and demonstrated consistency in quality, purity, and supply reliability. This trust places Tinci in a privileged and influential position.

Tinci has got massive advantages by acquiring CATL as its supplier. If CATL trusts a material supplier, then the rest of the industry pays attention. Second, CATL guarantees large, predictable, and long-term demand for Tinci's products, thereby giving them financial stability and allowing them to invest in R&D, pilot lines, and solid-state technologies.

Third, CATL's technical requirements push suppliers to innovate, and this translates into faster technological upgrades and deeper expertise. The supplier relationship strengthened the company's reputation with other major players like BYD and CALB. Overall, the partnership puts Tinci in a strategically powerful position, helping it transition from a regular materials manufacturer to a long-term innovation partner in the battery ecosystem.

This kind of deep technical partnership is a major sign of mutual trust. It makes us think of one such kind, the close relationships between automakers and their long-term component suppliers like Toyota and Denso, or Tesla and Panasonic. When two companies align their technology roadmaps, innovation becomes faster, smoother, and more predictable. For Tinci, this cooperation means they always know what CATL will need 2-5 years ahead, giving them a huge planning advantage. It also means that Tinci's materials are "built into" CATL's future designs, and this makes it harder for competitors to replace them. For CATL, working closely with Tinci ensures they get optimized electrolytes

that improve battery performance, and reliability. safety, This codevelopment combo is at the heart of China's rapid progress in battery technology, and it puts Tinci as a longterm innovation partner rather than a commodity supplier.

Takeaway:

Tinci's eight new patents mark a turning point not only for the company but for the entire country's ambitions. China has huge plans and broader solid-state battery ambitions. The patents demonstrate a carefully designed strategy to protect core electrolyte chemistry, secure application methods, and build a strong IP wall that ensures long-term competitive advantage. The sulfide-based solid electrolytes are the most promising pathways and are safer too. Therefore, Tinci has definitely placed itself at the center of the industry's next evolution. With the faster patent approvals from China and their strategic support for advanced materials, companies like this are going to stand out in the competition, expanding their global presence in solid-state battery materials.

Gas-Proof Innovation How a Breakthrough Polymer Could Transform Electronics and Packaging

Team Chemical Market

ntroduction:

nolymer films have recently advanced, P excelling across industries due to their lightweight, flexible nature and scalable manufacturing. Manufacturers have long sought a material with such versatility. Now, a multidisciplinary team of chemical engineers and nanomaterials researchers developed a gas-impermeable polymer film. Noted for blocking oxygen, moisture, and corrosive gases, this film is highly valued in electronics and packaging. This article explores its applications in food, pharmaceuticals, electronics, and more. Let's begin.

Gas impermeable Hybrid polymer film:

There is no commercial name for the hybrid polymer film at the moment, but we can safely call it "Gas impermeable hybrid polymer film" as it matches the standard scientific name, used in materials science papers. This new

polymer film blocks the gases extremely well and thus could be used as a protective coating in several industries. The gas-tight films can prevent corrosion, moisture damage, oxidation, and degradation of materials that are critical for electronics, food packaging, and infrastructure.

This cutting-edge gas-impermeable polymer film has captured industry attention because of its ability to significantly enhance durability across a wide range of applications, and its extremely low permeability to oxygen,









moisture, and airborne contaminants gives it a major advantage conventional coating materials. electronics, this translates into improved protection for semiconductors, sensors, flexible circuits, and next-gen displays, where even minor exposure to humidity can cause failure. The film forms a stable, uniform barrier that prevents corrosion and degradation, extending product lifespan.

The films can also be used as coatings, sealants for steel structures, concrete surfaces. pipelines, and outdoor installations. When the films are used in infrastructure, they can limit gas diffusion by blocking environmental pollutants and thereby reducing maintenance cycles and offering better resistance to weathering.

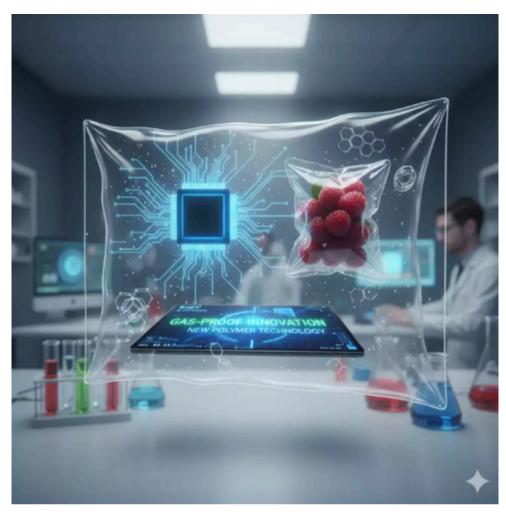
The polymer films block nitrogen and other gases effectively, thus it is useful in solar cells, buildings, and even food or pharmaceutical packaging. When the films are very thin yet provide strong gas barriers, then they serve as ideal barriers as they reduce material use, cost, and weight while increasing durability.

Tests confirmed outstanding its impermeability and thickness:

Test for impermeability:

understand the gas-blocking performance of the new polymer film, the researchers designed a deceptively experiment: they created simple extremely tiny gas-filled bubbles and allowed them to sit undisturbed for months and eventually years. These bubbles were formed by stretching the thin polymer film over microscopic wells and then introducing gases such as nitrogen, helium, argon, oxygen, hexafluoride methane. or sulfur underneath the film.

The test was impressive as the bubbles were formed and yielded long-term results. Most polymer films, even the



high-quality barrier materials used in packaging or electronics, lose their internal gas pressure gradually. Over time, gas molecules diffuse through polymer chains, slowly escaping from the bubble until it collapses or flattens. Over time, the gas molecules diffuse polymer chains. through irrespective of the thickness of the polymer, the structural gaps allow the gas molecules to diffuse through at measurable rates.

In the case of these newly developed gasimpermeable polymer films, the researchers observed something dramatically different. The nanobubbles remained perfectly inflated extraordinarily long periods—some for several years.

The bubbles essentially showed no signs of gas loss even after extensive testing. For scientists in materials research, such a result is striking because it directly demonstrates that gas molecules could not escape. If even the smallest, lightest gases like helium or hydrogen cannot find a way through, it suggests that the film possesses an unprecedented level of molecular density and structural tightness.

The bubble test provides a real-world visual confirmation that complements the numerical measurements, such as Barrer values. Researchers often use complex equipment to measure gas diffusion rates, but long-term bubble inflation offers an intuitive and undisputable way prove impermeability. If the film had even a single nano-scale defect or microscopic pore, the gas would find a path to escape, and the bubble would shrink. The fact that it does not provide strong evidence that the film is structurally flawless in the area tested.









Test for a high degree of uniformity.

Then the researchers put the material under the microscope to observe its interference effects. The film looks colorful because of the thin-film interference effects. When the material was put under the microscope, the researchers noticed something visually striking: the film appeared to display a range of bright, iridescent colors. These were not pigments or dyes but rather a natural optical phenomenon known as thin-film interference. This effect occurs when light reflects from the top and bottom surfaces of a very thin layer of material. The fact that the researchers observed clear, consistent, colorful patches means that the film has a high degree of uniformity.

Uniformity is critical in many applications, especially in electronics, where uneven coatings can cause device failure, short circuits, or reduced performance. For example, protective layers on semiconductor chips need to be perfectly smooth and defect-free. Similarly, coatings for solar cells must have consistent optical and electrical characteristics across their entire surface. The thin-film interference observed in this polymer confirms that it can be produced in extremely thin layers without structural defects.

Finally, thin-film interference patterns also suggest that the film is free of cracks, pinholes, or ruptures. Any tear or defect would disrupt the optical effect, resulting in dark spots where the light does not interact properly with the film. Because the researchers reported seeing consistent colorful areas, it strongly implies that the film has excellent mechanical integrity at the nanoscale. This is especially impressive because many polymer films become brittle when stretched thin. The fact that this film remains robust is a positive sign for practical uses where durability matters.

The building blocks organize themselves

into flat layers, or sheets of molecules, that pack closely together. The tight stacking removes the pathways for gas to leak through, explaining the extremely low permeability (the ability of gases to pass through a material). The smaller more efficient electronic and components are needed. nanotechnology (the use of very small, nanometer-scale materials) allows this miniaturization. Ultra-thin protective films like 2DPA-1 enable smaller components by offering barriers without adding bulk or weight. They made very thin films, turned them into bubbles, and tested how different gases escaped through them. Bubble tests are a goldstandard method for measuring permeability because any gas leakage causes the bubble to deflate. The polymer is nearly as gas-tight as graphene. Graphene is widely considered the most impermeable material on Earth—matching it is a huge achievement.

What's next: demonstration workthick coating of the film applied over a perovskite material reduced its lattice degradation rate:

Perovskite solar cells are known for their high efficiency and low manufacturing cost, but they suffer from an enormous drawback—they degrade extremely fast, especially when exposed to oxygen and moisture. Even small traces of humidity entering a perovskite layer can rapidly damage its crystal structure, causing the device's performance to plummet. When the researchers applied this new ultrabarrier polymer film onto perovskite materials—only about 60 nanometers thick—it acted as a powerful shield. The result was remarkable: the coated perovskite degraded 14 times more slowly than the uncoated version.

This means the protective film is not merely slowing degradation, but almost freezing it compared to typical behavior. Perovskite solar technology considered one of the most promising

future energy solutions, but its commercial adoption has been held back because these materials deteriorate too quickly in real-world environments. Conventional encapsulation methods like glass layers or epoxy sealants—are often too thick, too heavy, or still insufficient for long-term outdoor exposure. The new polymer film, being gas-impermeable, ultra-thin and solves this problem by preventing oxygen and water molecules from reaching the perovskite crystals.

Perovskites are some of the most moisture-sensitive materials ever used in the solar sector. Even a small amount of water vapor can transform their chemical structure. The vulnerability makes them unsuitable for long-term outdoor use without a strong barrier. Now the polymer film's extraordinary impermeability—comparable graphene—means almost gas molecules can pass through. If moisture cannot reach the perovskite layer, the material stabilizes and retains its longterm performance. Increasing lifetime by 14× is a major leap that could push perovskite solar cells much closer to mass-market adoption.

How can this innovation be taken to the next step?

The breakthrough polymer film already shows rare properties like extremely low gas permeability (bubbles survive for years), Nanoscale uniformity (colorful thin-film interference under microscope), and Graphene-like impermeability (without graphene's cost or scaling issues). These properties can be further advanced into four big categories, like materials science. engineering, validation, and commercialization.

Under the material science section, if the film is impermeable, we can add reinforcing nano-fillers such as cellulose nanofibers, silica, Mxene flakes, and crosslink the polymer to boost









mechanical strength, study how the film behaves in humidity, heat, and repeated stress cycles.

The researchers should try understand the exact polymer arrangement that blocks the gas, or find out if it is due to the chain alignment or crystal-like domains or self-assembled layers. If they can learn the mechanism better, they can come up with or design improved versions, cheaper versions, versions that are tailored for specific industries. This will positively transform the material from accidental success.

Furthermore, they can move from

micro-scale to macro-scale production. currently tiny films manufactured, the next step is to enter the real-world scale. The strategies such as roll-to-roll coating methods, blade coating, slot-die coating, dip coating can be adopted.

Takeaway:

The discovery of an ultra-thin polymer film matches graphene's impermeability. This marks a major moment in material science. The innovation began as a laboratory curiosity, tiny colorful films suspended over microwells. This has proven to be a highly capable barrier

material that retains gas for years, maintains nanoscale uniformity, and performs with crystalline level precision. These features signal a fundamental shift in the high-performance gas barriers that may no longer require exotic, costly, difficult-to-scale materials like graphene. However, the real impact of this innovation will emerge only when it transitions from controlled experiments to large-scale production. We can be certain that the next chapter now depends on engineering ambition, strategic partnerships, and continued innovation.

Tata Chemicals Invests ₹910 Crore to Boost Soda Ash and Silica Capacity A Major Strategic Shift

Vinodhini Harish

Introduction:

¬ATA Chemicals has taken a decisive **⊥** step forward with a major investment of INR 910 crore to expand production capabilities in two critical product segments—soda ash precipitated silica. The headline signals a substantial financial commitment and underscores the deeper significance of this move as a long-term strategy for positioning. competitive This announcement also sends a clear message to investors and analysts: Tata Chemicals intends to reinforce its leadership in basic chemicals while accelerating its shift toward high-value speciality materials. The strategic mix of products targeted under this investment is central to shaping the company's next phase of growth. We discuss the news in detail in this article. Let's begin.

A strategic ₹910 crore capacity expansion signals Tata Chemicals' shift toward high-value speciality chemicals and long-term growth leadership.

Tata Chemicals will commit INR 910 crore to grow its production capacity in two product lines: soda ash and precipitated silica. A single material capex signals number strategic and multiyear investment that can change revenue mix and margins. Soda ash is a basic inorganic chemical that is widely used in glass-making, detergents, paper and chemicals. Whereas precipitated silica is a speciality high-value chemical used in tyres,

rubber reinforcement, oral coatings, and various performance materials. The company is now grouping both product lines in a single investment figure, and thus is not simply a small or routine capex cycle but a sizable, strategic and multi-segment expansion undertaken simultaneously.



The INR 910 crore sum is significant relative to Tata Chemicals' annual revenue, indicating a large-scale, multiyear project. This signals a strategic commitment following detailed evaluations of project feasibility and profitability.

By making this announcement, TATA









chemicals is sending a clear message to the market: "We are confident about the future demand for both our basic chemicals and our speciality ones"

For the investors and analysts, the number could be a quick signal of what the company wants to focus on. We can conclude that TATA Chemicals is planning to grow both in its traditional chemical business and its newer, highmargin speciality chemical segment. These investments will affect how the company earns money in the future. These big investments also show how profitable these companies can become and how much they can export, and how they compete with others in the long run.

Since the investment amount is shown as a single consolidated figure, the investment signals that the entire expansion plan is one coordinated strategic vision rather than scattered small upgrades. The strategy represents a clarity of direction. The company is placing their big bets on products that will shape its next phase of growth. The mix of products targeted is also important.

How is this a big deal?

Tata Chemicals is putting most of the money (almost 85%) into this one speciality product. This tells us that the company sees big future demand and high profits in the speciality chemicals business. It also shows that they want to move more into premium products rather than staying dependent on lowmargin basic chemicals. Investors read this as a positive long-term direction.

The company confirmed that about INR 135 crore will be used to increase the production of dense soda ash at the Mithapur plant. The plant already has a very large capacity, and it is about 1091 kilotonnes per year, which is operating at about 90% utilisation. When the factory is already running at 90%

capacity, it shows a strong demand; almost everything it makes is already sold. This makes the expansion a smart move, as the company will not waste the money running an underused plant. Increasing the capacity will help Tata Chemicals meet demand and earn more revenue.

Expanding precipitated silica capacity at the Cuddalore facility:

Out of the total ₹910 crore investment, a major portion—₹775 crore—will go towards the expansion of precipitated silica production at the Cuddalore, Tamil Nadu plant. Precipitated silica is a speciality material known for its use in tyres (premium, fuel-efficient tyres), products, personal formulations (toothpastes), coatings, and industrial applications requiring reinforcement, abrasion resistance, or controlled rheology.

The Cuddalore plant currently produces 13.8 kilotonnes per year and runs at 86% utilisation.

An 86% utilisation means the plant is already busy and operating near full capacity. Speciality chemical plants rarely run at such high levels unless demand is strong. This shows that customers want more silica than Tata Chemicals can currently supply. So expanding the plant will help them meet market demand, possibly charge better prices, and improve profits. It also shows that this is a high-growth segment for the company.

The key insight here is that 85% of the entire capex is directed specifically at the speciality chemicals segment. This is not accidental. Speciality chemicals offer much higher margins compared to basic chemicals like soda ash. They typically require expertise, customer-specific formulations, deep R&D investment, and quality control. Because not all companies can produce speciality silica at scale, competition is limited, and

pricing tends to be more stable. The large allocation, therefore, signals that Tata Chemicals sees strong future demand in the speciality chemicals space—in particular, tyres, automotive components, and rubber applications.

The automotive tyre industry, driven by fuel-efficiency norms and rising demand for radial tyres, increasingly requires high-dispersion, high-performance silica. Major tyre companies like MRF, Apollo, Michelin, Continental, and Bridgestone are shifting towards silicareinforced compounds. This trend provides strong visibility for long-term demand growth.

By allocating ₹775 crore to Cuddalore, Tata Chemicals is essentially prioritising profitability over pure volume growth.

Key learnings from this strategy:

Invest When Utilisation Is High — Scale Only When Demand Is Real

Tata Chemicals has expanded two plants that are already operating at 86-90% utilisation.

This is a textbook signal: expand only when your existing assets are running efficiently and close to maximum output. We can see that the company didn't expand blindly. They have already used their capacity utilisation as a key decision metric. When the plants are above 80% utilisation, adding capacity is profitable. prevents usually This unnecessary capex and ensures a strong return on investment.

Tata Chemicals invested:

- ₹135 crore in soda ash (core, highvolume basic chemical)
- ₹775 crore in precipitated silica (speciality, high-margin chemical)

This shows a balanced growth planmaintaining bread-and-butter products while aggressively moving into high-









value segments. The company has struck a balance in maintaining volume-driven core products while building speciality or innovative products to improve margins, and this differentiates them from the competitors.

They have also observed the demand for soda ash, which is rising due to solar detergents, glass, and technologies. The precipitated silica demand is growing due to EV tyres, fuelefficient tyres and advanced rubber applications.

Tata Chemicals aligned expansions with future demand drives, and it is not just current pricing.

The investments were approved only

- feasibility studies
- demand analysis
- capacity planning
- cost modelling

This prevents half-baked projects from moving forward.

Final takeaway:

Tata Chemicals' ₹910 crore capacity expansion is far more than an industrial upgrade—it is a forward-looking move that positions the company for stronger margins, higher market share, and longterm leadership across both basic and speciality chemicals. By dedicating nearly 85% of the total investment to precipitated silica, the company clearly signals a strategic emphasis on highvalue, technology-driven, and demandresilient products. This reflects an global understanding of especially the rapid shift in the automotive and tyre industries toward silica-reinforced compounds enhance fuel efficiency and meet sustainability norms. Ultimately, this expansion is one of a kind.

India Imposes Up to Dollar 130 Anti-Dumping Duty on Met Coke Imports What It Means for Steelmakers

Vinodhini Harish

Introduction:

Directorate General of Trade Remedies producers. the met coke from these nations was significant expected to cause a major shift in endto this decision. Let's begin.

India proposes anti-dumping duty as manufacturers. high as \$130 per tonne on met coke imports:

India is planning to charge an antidumping duty of up to USD 130 per tonne on imports of metallurgical coke (Met Coke). The Indian government has India has taken a serious and most recommended different anti-dumping crucial step towards safeguarding its duty rates for met coke imports based on metallurgical coke industry. Recently, how severely each country was found to the country proposed anti-dumping be dumping. China faces the highest duties as high as USD 130 per tonne on duty, which is \$130 per tonne. This is imports from key supplier countries because the investigation showed the such as China, Colombia, Russia, country has the largest dumping margin, Australia, Indonesia, and Japan. The causing maximum injury to Indian The investigation has been receiving complaints from the revealed the following rates: Colombia local manufacturers and confirmed that (\$120) and Russia (\$85) also showed underpricing. entering India at unfairly low prices, (\$73.5) and Indonesia (\$83) showed thereby causing material injury to the moderate dumping levels, while Japan domestic producers. This decision is faces the lowest duty (\$61) because its price difference and injury impact were user industries and global industries as smaller. The varying rates are to ensure well. In this article, we have explained the duties are proportionate to the harm the decision and their strategy to come caused, thereby preventing unfair imports. This is expected to restore a level playing field for domestic coke

> Now, Low-ash metallurgical coke (met coke) is a crucial raw material used in

steel production, and thus the country's decision might affect major steel makers such as JSW Steel and ArcelorMittal Nippon Steel. These industries rely on imported met coke for blast-furnace operations.

The action follows months of lobbying by Indian met coke manufacturers, who argued that a surge in low-priced imports had depressed domestic prices and cut into their sales. In the previous month, one of the leading reporters, Money Control, reported that the government was actively considering such duties to safeguard the domestic while industries. signalling policymakers' seriousness reducing the country's dependence on imported coke.

After a detailed investigation, the Directorate General of Trade Remedies confirmed that the imports from these countries were being dumped well below fair market value and were undercutting the Indian producers. They also confirmed that the dumping levels exceeded the minimum threshold, and DGTR recommended corrective duties.









EVENTS AND CONFERENCES

PAINT INDIA

Date: Feb, 19-21, 2026

City: Bombay Exhibition Center, Mumbai

Country: India

Website: https://www.paintindia.in/

Description: India's leading platform for paints, coatings, inks, construction chemicals, and allied industries. Building a Brighter, Sustainable Future: Paint India is a trusted platform for innovation and networking in the surface coatings industry, known for its flagship exhibition and respected journal that connect professionals across the value chain.

CPHI MIDDLE EAST & AFRICA

Date: Apr, 13-15, 2026

City: Bangalore International Exibition Centre

Country: India

Website: https://paintandcoatingexpo.com/

Description: The Paint and Industry Expo in Bangalore, India from 13th to 15th April 2026, will be a three-day event that gathers industry professionals, service providers, machinery and equipment manufacturers, technology innovators, and related stakeholders. This unique platform will facilitate networking, knowledge sharing, and business opportunities in the Paint and Coating sector, ultimately benefiting all participants. The Paint and coating Expo is an event designed to stimulate investment in the Paint and Coating industry, fostering a platform for local and national investors and experts to share knowledge, exchange business ideas, and ultimately drive business growth. By bringing together industry stakeholders, the expo aims to promote trade, improve competitiveness, and increase the overall value of the Paint and coating sector. The right technology, practices and equipment play a very crucial role in getting the right output in the Paint And Coating industry. The choice of right equipment and right quality is very important to create the perfect ground for a very successful position in the Paint and Coating industry.

51ST DYE+CHEM SRI LANKA INTERNATIONAL EXPO

Date: March, 5-7, 2026

City: Sri Lanka Exhibition & Convention Centre (SLECC), Colombo - Sri Lanka

Country: Sri Lanka

Website: https://www.lk.cems-dyechem.com/

Description: 1. The South Asia's Expanding Chemical Market: Sri Lanka's textile and garment industry continues to grow, driving demand for high-quality dyes, chemicals, and auxiliaries. Participating in the Dye+Chem Expo allows stakeholders to access one of South Asia's fastest-evolving industrial sectors and connect directly with leading manufacturers and processors. 2. Meet Key Decision-Makers & Industry Buyers: This is Sri Lanka's premier platform for dye and chemical sourcing. The event brings together senior procurement teams, R&D specialists, production heads, and purchasing professionals from across the









textile, leather, paper, plastic, and printing industries. 3. Showcase Innovations & Build Brand Authority: Position your brand as an innovator in the chemical sector. Whether it's eco-friendly dyes, specialty chemicals, or sustainable processing solutions, the Dye+Chem Expo gives you the opportunity to launch new products and demonstrate technological advantages to a highly focused audience. 4. Significant Investments in Textile Sector: Major investments in Sri Lanka are happening in the textile & garment sector. The dye chemical industry is a key sector that needs continuous upgrading and acquisition of new technology and equipment. 5. Integral Role in Sri Lanka's Export Economy: The garment industry accounts for over 50% of Sri Lanka's total export earnings. The final products of the apparel sector are heavily dependent on the dye chemicals sector, making the dyestuff sector one of the key components of the country's chemical industry. 6. Leverage Sri Lanka's Strategic Trade Location: Sri Lanka serves as a vital gateway between South Asia and the rest of the world, offering unmatched connectivity to regional and international buyers. Participating in the show positions your brand at the heart of a dynamic trade hub—ideal for expanding your regional footprint. 7. Networking Opportunities: Participating in this one-of-a-kind exhibition allows businesses to meet and connect with potential buyers through the expo, facilitating valuable business relationships and collaborations.

MIDDLE EAST COATINGS SHOW

Date: Apr 14-16, 2026

City: North Halls, Dubai Exhibition Centre (Dec), Expo City Dubai

Country: Dubai

Website: https://www.middleeastcoatingsshow.com/?utm_source=referral-traffic&utm_medium=ref-visit&utm_

campaign=google.com

Description: The Middle East Coatings Show returns from 14-16 April 2026 at the Dubai Exhibition Centre (North Halls) in Expo City Dubai. With over 30 years of industry presence, it remains the only event in the Middle East and North Africa dedicated to the coatings industry and the largest gathering for professionals looking to connect, source products and explore the latest industry developments. Over three days, the event provides a focused platform for business, networking and product discovery. Hosted in a modern venue designed to maximise visibility and growth, it brings together manufacturers, raw material suppliers, distributors, buyers and technical experts to meet, share insights and build valuable business relationships.

PAINT EXPO GERMANY

Date: Apr 14-17, 2026

City: Messe Karlsruhe, Germany

Country: Germany

Website: https://www.paintexpo.de/en/

Description: PaintExpo takes place every other year in Karlsruhe as a showcase for innovations, applications, future technologies and trends covering all aspects of industrial coating. The trade fair spans the entire range of international products and services in the supply chain for industrial coating technology. The wide spectrum of products extends from spray guns, equipment and materials to automation technology. This globally unique get-together of companies from the industry is unparalleled worldwide, making it highly attractive for coating service providers and in-house coating companies from around the world.









In its report dated 14 November, the DGTR proposed country-specific duties ranging from USD 60.87 to USD 130.66 per tonne. These variations reflect the different dumping margins calculated for each exporting country. For instance, countries like China and Colombia showed significantly higher dumping

intensity, resulting in higher recommended duties, while Japan and Australia showed relatively lower dumping margins and therefore received comparatively lower duty rates. The purpose of this structure is not to block imports but to neutralize the unfair price advantage created by dumping.

How are Indian steel companies affected by the decision?

Reports stating how India's steel companies have been sourcing metallurgical coke (Met coke) and thus showing why the proposed antidumping duties matter.

For instance, JSW Steel increased its met coke imports by nearly 50%, reaching 0.22 million tonnes. This indicated strong dependence on imported cokelikely due to cost advantages or specific quality requirements.

The ArcelorMittal Nippon Steel India reduces its imports by 10% to 0.78 million tonnes. Tata Steel cut imports by 18% to 0.27 million tonnes. These numbers suggest that these companies are either relying more on captive production or responding to rising import risks. Therefore, the most dramatic shift came from Jindal Steel and Power, which expanded its met coke imports more than 14 times to 0.08 million tonnes.

These factors signal either new production requirements or a strategic shift to imports during the period from January to August.

Varied import patterns prompted the government to intervene. After a thorough review, DGTR recommended



anti-dumping duties on imports from Australia, China, Japan, Russia, Colombia, Indonesia, and citing substantial dumping. These unchecked imports lowered market prices and harmed domestic producers' profitability and capacity utilization. By imposing duties, the government seeks to restore competitive balance, protect local industry, and reduce the steel sector's dependence on volatile international coke markets.

Deep dive into the investigation details:

The DGTR has recommended countryspecific anti-dumping duties on low-ash metallurgical coke (met coke), with rates tied to the level of dumping confirmed

in the investigation. Recommendations include USD 82.75/tonne for Indonesia, USD 130.66/tonne for China, USD 119.51/tonne for Colombia, USD 85.12/ tonne for Russia, USD 73.55/tonne for Australia, and USD 60.87/tonne for Japan. These rates mirror each country's dumping margin and harm done to

> Indian producers. China receives the steepest duty due aggressive dumping, while Japan has the lowest because of minimal distortion.

> The duties apply specifically to lowash met coke with ash content below 18%, identified under HS codes 27040010, 27040020, 27040030, and 27040090. Importantly, **DGTR** has excluded ultralow-phosphorus met coke (with phosphorus up to

0.03% and particle size up to 30 mm). This exclusion is intentional because such specialty coke is not manufactured in sufficient quantity in India, and penalizing its imports could disrupt high-grade steel production.

India carried out the anti-dumping investigation in March after receiving a formal complaint by the Metallurgical Coke Manufacturers Association. The complaint stated that low-priced imports were causing material injury to domestic producers. The damage could put the steel sector down and take the country to a point of no return. To prevent further damage during the investigation, the government also imposed a temporary import quota from









January to June, later extending it to December based on preliminary a related safeguard findings of investigation. These actions highlighted growing market concerns about imbalances.

Once quotas were extended in July, imports from Indonesia declined sharply, indicating the effectiveness of initial restrictions. Imports from other countries remained limited because higher costs and uncertainties made alternative supply sources unattractive for end-users. The recommended antidumping duties aim to restore fair pricing, protect domestic manufacturing capacity, and reduce strategic dependency on cheap foreign coke.

Before the anti-dumping duties, the government had already restricted how much met coke could be imported. This shows the issue was considered, and authorities were taking multiple protective measures to stabilize the domestic market. Once the quotas were tightened, the imports from Indonesia dropped, and other countries' imports slowed because the costs were already high. This process that the market was shifting even before formal duties. The anti-dumping duties will further tighten imports and encourage domestic sourcing.

DGTR strengthens India's ability to respond aggressive pricing strategies:

India has been suffering from pricing strategies by foreign manufacturers. The Directorate General of Trade Remedies works closely with multiple government departments to create a unified trade protection ecosystem. The DGTR investigates dumping, subsidies, and sudden import surges, and recommendations cannot come into effect unless the Department of Revenue under the Ministry of Finance officially notifies the duty.

Since they carry out two-step mechanisms, this ensures strong checks and balances, thereby preventing misuse of protectionist measures. They also increasingly use data analytics and digital tools. The investigations relied heavily on physical documents and manual calculations.

These days, DGTR uses automated cost comparison systems, real-time import data from the Directorate General of Commercial Intelligence and Statistics (DGCI&S), and industry-submitted digital evidence. This has resulted in faster investigations and strengthened India's ability to respond to aggressive pricing strategies by foreign manufacturers.

DGTR also notices other harmful conditions, which can be categorized as "non-pricing injury factors" such as job losses, plant shutdowns, declining investments, and lower capacity utilization. For example, in many cases, even if the price difference between domestic and imported goods is not very large, DGTR still recommends duties if Indian companies are suffering from financial stress or if the imports are preventing new investments. This marks a shift toward a more holistic injury evaluation rather than only price-based judgments.

Another less-discussed trend is India's increasing focus on ensuring that all trade protection measures are fully WTO-compliant.

As global trade rules become stricter and many countries challenge each other's tariffs at the WTO. India has realized that any duty imposed without solid evidence could easily be questioned internationally. They have come to these terms.

DGTR follows a highly transparent, data-driven process before anti-dumping, recommending countervailing, or safeguard duties. Therefore, they carefully document

every price comparison, cost structure, injury margin, and profitability trend of domestic companies.

The organization also maintains detailed records of import volumes, export behaviour of foreign producers, and the impact on the Indian market. These data-backed findings make India's duty decisions stronger and less vulnerable to WTO disputes.

This approach helps India maintain a diplomatic balance. On one side, domestic industries receive the protection they need against unfair trade practices like dumping or subsidised imports. On the other side, India avoids unnecessary conflicts with key trading partners because the duties are imposed strictly within WTO rules and supported by clear evidence.

Takeaway:

India's proposed anti-dumping duties on metallurgical coke imports reflect a broader shift towards strategic, rulesbased trade protection. The DGTR's investigation confirmed that dumped imports were distorting the prices, reducing producers' domestic profitability, and threatening long-term capacity growth. The recommendation of country-specific duties based on the precise dumping margin and injury impact can restore market balance without disrupting essential supplies for the steel industry. The data-driven also underscores India's approach commitment to WTO-compliant trade ensuring remedies. thereby measures remain defensible on the global stage. For the steel makers, the decision acts as a signal to diversify sourcing strategies and strengthen domestic linkages. Overall, with these steps, the industry is corrective preparing for new pricing a environment shaped by fairness, transparency, and strategic economic protection.









Next-Gen PO Production by UNIST Scientists How In-House H₂O₂ Is Changing the Chemical Industry

Team Chemical Market

Introduction:

propylene Oxide is a Vital chemical used in everyday materials such foams, textiles, coatings, and plastic bottles. The traditional PO production is energyintensive and dependent fossil-fuel-derived hydrogen peroxide. Therefore, the process results in high emissions and is costly. We have discussed a major breakthrough, which is a new study published in Nature Communications that presents remarkable alternative: a self-driving, energy-free PO production system that is powered by inhouse-generated hydrogen peroxide. We have discussed how the

innovation solved a long-standing technical challenge and made the system run under mild and alkaline conditions. Let's dive deeper.

Self-driving, energy-free PO production system powered by inhouse-generated hydrogen peroxide (H_2O_2) . – How did it begin?

The chemical industry is expecting a fully autonomous chemical production system that can create an important plastic precursor using hydrogen peroxide generated in-house without external chemicals, with no manual operation, thereby reducing dependence on industrial oxidant suppliers while making the entire process safer, cleaner, and more efficient.

scientists have developed a production setup that makes PO in a

to create PO. This eliminates typical hazards, inefficiencies, and high energy needs associated with transporting and producing H₂O₂. The peer-reviewed

> published work, Nature Communications. contrasts this cleaner method with the conventional, energyintensive anthraquinone process.

> The self-driven PO production system is capable of producing H₂O₂ internally through chemical produces that don't require external energy. Therefore, it is cheap, and doesn't require abundant raw materials such as oxygen, formaldehyde, which costs massively. It also reduces carbon. This system runs by itself using inherent chemical energy differences. Therefore, this can be

termed as a self-sustaining system that boosts scalability, reduces operational complexity, and enables decentralized, off-grid chemical manufacturing.

Here in the system, the H₂O₂ never leaves the system; it is generated and Thereby, consumed onsite. amounts of waste are reduced, avoiding transportation hazards and ensuring more efficient conversion.

Overcoming TS-1 Limitations Through **Catalyst Engineering**

A major achievement of the research was done through the redesign of the catalyst. This new material helps speed up the chemical reaction. The scientists



completely self-powered manner, with no plugging into the grid, no solar panels. It is called a self-driven PO production system. Most of the chemical oxidation processes need an energy source for functioning, and the system uses only chemical energy, eliminating carbon emissions from electricity and making the process more versatile and deployable anywhere.

Propylene oxide (PO) is a foundational industrial chemical used in products like foam, fibres, packaging, and furniture, making the technology economically and socially significant.

The self-driven PO production system generates H₂O₂ on-site, directly using it









were looking for a way to eliminate the usage of TS-1 as it doesn't work well in alkaline(basic) conditions. This is a huge challenge as the new self-driven system creates hydrogen peroxide (H₂O₂) in an alkaline environment, and H2O2 is needed to make propylene oxide (PO). Therefore, the scientists were looking for a way or a catalyst that could work well in alkaline conditions.

In traditional methods of making PO, TS-1 works perfectly because the environment is not strongly alkaline. But in this new eco-friendly method, alkaline conditions are necessary for producing H₂O₂ without electricity or sunlight. Unfortunately, TS-1 becomes weak in this environment—it cannot activate hydrogen peroxide properly, which means it cannot convert propylene into PO efficiently. This mismatch between the catalyst and the reaction conditions was a major scientific obstacle.

To solve this, the team redesigned the catalyst so that it stays active and stable even when the surroundings are alkaline. This likely involved adjusting the structure, strengthening the active sites, and making sure the material does not break down or lose efficiency. By doing this, the researchers created a catalyst that works smoothly with the system's unique conditions.

The redesigned catalyst allows both steps—making H₂O₂ and turning propylene into PO-to happen in the same setup without any extra energy input. This is a major breakthrough because it makes the entire process simpler, cleaner, and much more efficient.

In simple terms, fixing the catalyst was the key that unlocked the entire system. Without this improvement, the selfpowered PO production method would not have been possible. The new catalyst is what makes the whole reaction chain work smoothly from start to finish.

Measuring its efficiency: why it • produces more Propylene Oxide and why it matters?

The redesign of the catalyst greatly boosts the efficiency of the entire PO production system. The improved catalyst helps produce more propylene oxide than before. In chemical manufacturing, producing more product from the same raw materials and under the same operating conditions is a major advantage. It reduces waste, increases profitability, and makes the process more appealing to industries looking to adopt greener technologies.

Propylene oxide (PO) is not a smallscale chemical. It is used to make foams, cushioning, adhesives, coatings, polyester fabrics, and even everyday items like mattresses, car seats, shoes, and water bottles. Because it is so widely used, global demand for PO is extremely high. So, when a new eco-friendly system claims to improve PO yield, it becomes a major breakthrough. Higher yields mean that companies can produce the same volume of PO using fewer resources, less energy, and smaller equipment. This is why improving efficiency is directly linked to both commercial viability and sustainability.

Performance Results: Eight Times Higher Output Than Earlier Green Methods

According to the research, the new system produced 1,657 micromoles (µmol) of PO per square centimeter in just 24 hours. To appreciate how impressive this number is, it's important to compare it with earlier attempts. Previous eco-friendly hydrogen peroxide-based PO production methods generated far less output, meaning the new method is about eight times more productive.

This comparison demonstrates two things:

- The innovation is theoretical; it shows practical success.
- It solves the long-standing problem of low efficiency in clean PO production.

Most earlier green chemistry approaches failed to reach industrially relevant production levels. They were great in concept, but too slow or inefficient to be put into real factories. But this new system shows a production rate that is strong enough to interest manufacturers worldwide.

High-performance metrics like these indicate that the method can grow from laboratory scale to pilot plants and eventually to commercial adoption. In scientific research, strong numbers are the strongest proof that an innovation works — and these results speak loudly.

Lower Cost of PO Production — About 8% Cheaper

The economic analysis shows that PO produced via this new method costs around 8% less than PO produced through traditional fossil-fueldependent processes. At first glance, 8% may seem like a small number. But in an industry where millions of tonnes of PO are produced each year, even a small percentage improvement adds up to enormous savings.

For companies, lower production cost means:

- Higher profits
- Ability to reduce the selling price
- Greater competitiveness in global markets
- Lower dependency on volatile fossil fuel prices
- Stronger justification for adopting greener technology









MUMBAI MARKET PRICE AS ON 10/12/2025

Acetic Acid-Imported Repack 41 Mumbai Acetic Acid-Imported Repack 41 Mumbai Acetic Acid-Domestic Intact 52 Mumbai Acetic Acid-Domestic Repack 41 Mumbai Acetone-Imported Repack 64 Mumbai Acetone-Domestic Intact 76 Mumbai Acetone-Domestic Intact 64 Mumbai Acetone-Domestic Intact 140 Mumbai Acetonitrile-Imported Intact 155 Mumbai Acetonitrile-Domestic Repack 135 Mumbai Acrylonitrile-Imported Intact 155 Mumbai Acrylonitrile-Imported Repack 170 Mumbai Aniline-Imported Intact 130 Mumbai Aniline-Imported Intact 130 Mumbai
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Aniline-Imported Intact 130 Mumbai
Aniline-Domestic Intact 135 Mumbai
Benzene-Domestic Repack 74 Mumbai
Cyclohexane-Imported Intact 100 Mumbai
Cyclohexane-Domestic Intact 89 Mumbai
Cyclohexane-Domestic Repack 85 Mumbai
Cyclohexanone-Imported Intact 112 Mumbai
Cyclohexanone-Imported Repack 112 Mumbai
Cyclohexanone-Domestic Intact 125 Mumbai
Cyclohexanone-Domestic Repack 137 Mumbai
C9 Solvent (99.99% purity)-Imported Repack 97 Mumbai
C9 Solvent (Arham Petrochem)-Imported Repack 96.75 Mumbai
Dibutyl Phthalate-Domestic Intact 105 Mumbai
Dioctyl Phthalate-Domestic Intact 115 Mumbai
Ethyl Acetate-Domestic Intact 80 Mumbai
Ethyl Acetate-Domestic Repack 77 Mumbai
Formaldehyde(37%)-Domestic Repack 22.5 Mumbai
Methanol-Imported Repack 39 Mumbai
Methyl Ethyl Ketone-Imported Intact 112 Mumbai
Methyl Ethyl Ketone-Imported Repack 100 Mumbai









Methyl Isobutyl Ketone-Imported Intact	111	Mumbai
Methyl Isobutyl Ketone-Imported Repack	99	Mumbai
Methyl Methacrylate-Imported Intact	134	Mumbai
Mixed Xylene-Imported Repack	88	Mumbai
Mixed Xylene-Domestic Repack	88	Mumbai
Monoethylene Glycol-Imported Repack	47	Mumbai
Monoethylene Glycol-Domestic Intact	52	Mumbai
Monoethylene Glycol-Domestic Repack	48	Mumbai
Iso propyl Alcohol-Imported Repack	86	Mumbai
Iso propyl Alcohol-Domestic Intact	108	Mumbai
Iso propyl Alcohol-Domestic Repack	86	Mumbai
nButanol-Imported Repack	83	Mumbai
nButanol-Domestic Intact	99	Mumbai
nButanol-Domestic Repack	83	Mumbai
Ortho Xylene-Imported Repack	90	Mumbai
Phenol-Imported Repack	100	Mumbai
Phenol-Domestic Intact	107	Mumbai
Phenol-Domestic Repack	102	Mumbai
Phthalic Anhydride-Imported Intact	86	Mumbai
Phthalic Anhydride-Domestic Intact	87	Mumbai
Styrene Monomer-Imported Repack	91	Mumbai
Toluene-Imported Repack	105	Mumbai
Toluene-Domestic Repack	105	Mumbai
Vinyl Acetate Monomer-Imported Repack	80	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 10/12/2025

Product	Regions	Current prices
Feedstock Prices \$/unit		
Crude Oil (\$/barrel)	WTI CRUDE	58.37
	BRENT CRUDE	62.06
	MARS US	70.36
	OPEC BASKET	63.86
Natural Gas	New York	4.55
Gasoline	RBOB	1.79









Heating Oil	US	2.26
Ethanol	US	1.57
Naphtha	FOB US Gulf	485
	European	515
	CFR Far East Asia	565
Propane	New York	0.7
Aromatics prices \$/MT		
Benzene	FOB Korea	670
	CFR Japan	675
Styrene	CFR Japan	820
	CFR South East Asia	850
	CFR China	820
	FOB Korea	810
Toluene	CFR China	650
	CFR South East Asia	715
	FOB Korea	655
	CFR Japan	650
Iso-Mix Xylene	CFR South East Asia	700
	CFR Taiwan	690
	FOB Korea	680
MEG	CFR China	440
	CFR South East Asia	450
Methanol	CFR China	242
	CFR Korea	305
	CFR South East Asia	317
	CFR Taiwan	289
Solvent-MX	CFR South East Asia	725
	FOB Korea	650
	CFR China	700
Ortho Xylene	CFR South East Asia	750
	FOB Korea	760
	CFR China	725
Para Xylene	CFR South East Asia	835
	FOB Korea	810
	CFR Taiwan	830









Propylene	FOB Japan	715
	FOB Korea	710
	CFR China	740
	CFR South East Asia	765
Propylene Glycol	FOB Korea	785
	CFR China	785
Ethylene	CFR North East Asia	740
	CFR South East Asia	720
	FOB Japan	695
	FOB Korea	700
EDC	CFR Far East Asia	170
	CFR South East Asia	175
Butadiene	CFR China	855
	CFR South East Asia	785
	FOB Korea	825
Benzene	FOB Rotterdam	750
Methanol	FOB Rotterdam	257
Ortho Xylene	FOB Rotterdam	1025
Para Xylene	FOB Rotterdam	825
Solvent-MX	FOB Rotterdam	755
Styrene	FOB Rotterdam	890
Toluene	FOB Rotterdam	760
Benzene C/G	FOB US Gulf	289
Toluene C/G	FOB US Gulf	289
Styrene C/LB	FOB US Gulf	37.4
Para Xylene \$/MT	FOB US Gulf	885
Mix Xylene C/G	FOB US Gulf	272
Methanol C/G	FOB US Gulf	89
Intermediates prices \$/MT		
Acrylonitrile	CFR Far East Asia	1085
	CFR South East Asia	1095
	CFR South Asia	1055
VCM	CFR Far East Asia	415
	CFR South East Asia	475
МТВЕ	FOB Singapore	655









	FOB US Gulf C/G	233.7
Phenol	CFR China	710
	CFR South East Asia	770
	FOB US Gulf	882
	FOB Rotterdam	866
Acetone	CFR China	515
	CFR South East Asia	590
	CFR Far East Asia	515
	FOB US Gulf	766
	FOB Rotterdam	442
Caprolactum	CFR Far East Asia	1255
	CFR South East Asia	1260
Caustic Soda	FOB North East Asia	355
	CFR South East Asia	420
Ethyl Acetate	FOB US Gulf	1300
	FOB Rotterdam	885
	FD North West Europe(Euro/mt)	860
Butyl Acetate	FOB US Gulf	1472
	FOB Rotterdam	989
	FD North West Europe(Euro/mt)	950
MEK	FOB Rotterdam	1024
	FD North West Europe(Euro/mt)	980
IPA	FOB US Gulf	934
	FOB Rotterdam	931
	FD North West Europe(Euro/mt)	900
NBA	CFR China	725
	CFR South East Asia	725
	CFR Far East Asia	720
Octanol	CFR China	925
	CFR South East Asia	950
	CFR Far East Asia	920
DOP	CFR China	970
	CFR South East Asia	975
	CFR Far East Asia	965









Phthalic Anhydride	CFR China	785
	CFR South East Asia	805
	CFR Far East Asia	780
РТА	CFR Far East Asia	605
	CFR South East Asia	630
Acetic Acid	CFR Far East Asia	394
	CFR South East Asia	370
	CFR South Asia	337
	FOB China	295
VAM	CFR China	845
	CFR South East Asia	730
	CFR South Asia	790

Shipping term Description

FOB Free on Board

The seller quotes a price including the cost of delivering goods to the nearest port. The buyer bears all the shipping expenses and is responsible to get the products from that port to its final destination. In simple terms, FOB price means the buyer has to bear the shipping costs completely. This is one of the most used shipping terms by international buyers and sellers.

EXW Ex-Works

The seller has no involvement with the transportation costs and risks. The buyer has to collect the goods from the seller's site and get them to the final destination. All the costs and risks are borne by the buyer. It is advisable that the buyer purchases insurance since the goods can get damaged in transit. EXW is ideal when the buyer and seller are in the same country or region.

CFR Cost and Freight

The seller pays the loading and freight costs from his premises up to the destination port. Then, the buyer has to arrange for the goods to be transported from the port to his premises. The seller is only responsible for the cost of shipping the products to the destination port. CFR is used for products transported by sea or inland waterways only. The seller does not bear the risk of loss or damage during transit.

CIF

Cost, Insurance, and Freight If the buyer opts for CIF price, the seller pays for the loading and freight costs right from his premises up to the destination port as well as insurance. In the case of damage or loss, the seller bears the risk completely. The buyer has to arrange for transportation of the goods from the port to his premises. CIF is a safer option than CFR since the goods are insured by the seller up to their arrival at the destination port.

DAP Delivered at Place

It was previously known as DDU, Delivery Duty Unpaid. In this case, the seller is responsible for getting the goods from his own factory up to the premises of the buyer. He also bears the risk in the case of loss or damage of the goods right until the products are delivered to the buyer. The buyer only has to pay the import duties or custom clearance charges.

DDP Delivery Duty Paid

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









FD North West Europe

Countries

Groups

Southeast Asia is composed of eleven countries: Brunei, Burma (Myanmar), Cambodia, Timor-Leste, Indonesia, Laos, Malaysia, the Philippines, Singapore, Thailand

and Vietnam.

Free Delivered

Free Delivered North **West Europe**

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.

Free Delivered **North West** Europe

South Asia: The region consists of the countries of Afghanistan, Pakistan, India, Nepal, Bhutan, Bangladesh, the Maldives, and Sri Lanka

Free Delivered North West Europe

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 10/12/2025

USD Exchange Rate: 89.89 INR

Producers	Current Prices (INR/kg)	Prices in USD/mt Equivalent to IN	R/kg Location
Acetic Acid	39	433.86	Ex-Kandla
Acetic Acid	39.25	436.64	Ex-Mumbai
Acetonitrile-imported intact	137	1524.08	Ex-Bhiwandi
Acetone	57.5	639.67	Ex-Mumbai
Acrylic Acid	85.5	951.16	Ex-Mumbai
Acrylonitrile	99	1101.35	Ex-Kandla
Adipic Acid	120.5	1340.53	Ex-Bhiwandi
Aniline Oil	103	1145.84	Ex-Kandla
Benzene	60.5	673.04	Ex-Vizaz
Butyl Acetate	76	845.48	Ex-Kandla
Butyl Acrylate Monomer	95	1056.85	Ex-Kandla
Butyl Glycol	88	978.97	Ex-Kandla
C9	70	778.73	Ex-Kandla
C10	84	934.48	Ex-Kandla
Caustic Soda Lye	35.5	394.93	Ex-Dahej
Chloroform	7	77.87	Ex-Dahej









Citric Acid-ANHYD	70	778.73	Ex-Bhiwandi
Citric Acid-Mono	64	711.98	Ex-Bhiwandi
Cyclohexane	74	823.23	Ex-Hazira
Cyclohexanone	97	1079.10	Ex-Kandla
DMF	55	611.86	Ex-Bhiwandi
DEG	42	467.24	Ex-Hazira
EDC	27	300.37	Ex-Kandla
Epoxy Resin	190	2113.69	Ex-Nhava Sheva
Ethyl Acrylate	117.25	1304.37	Ex-Kandla
Formic Acid	65	723.11	Ex-Bhiwandi
Glycerine	98	1090.22	CIF Nhava Sheva
N-Heptane	175	1946.82	Ex-Bhiwandi
Hexane	73.5	817.67	Ex-Kandla
Hydrogen Peroxide-50%	22	244.74	Ex-Bhiwandi
Isobutanol	74.5	828.79	Ex-Kandla
IPA	76	845.48	Ex-Kandla
IPA	77	856.60	Ex-Mumbai
LAB	138.5	1540.77	Imported
Maleic Anhydride-Drum	79	878.85	Ex-Mumbai
MDC	28	311.49	Ex-Dahej
MEG	44	489.49	Ex-Mumbai
MEK	89	990.10	Ex-Kandla
Melamine	68.5	762.04	Imported
Methanol	31.5	350.43	Ex-Kandla
Methanol	31.5	350.43	Ex-Mumbai
MIBK	88	978.97	Ex-Hazira
Mix Xylene-Solvent Grade	80.5	895.54	Ex-Kandla
Mix Xylene-Solvent Grade	81.5	906.66	Ex-Mumbai
MMA	120	1334.96	Ex-Hazira
N-Butanol	74	823.23	Ex-Kandla
N-Propanol	84	934.48	Ex-Kandla
NPAC	82.5	917.79	Ex-Kandla
Octanol	89	990.10	Ex-Kandla
Ortho Xylene	79	878.85	Ex-Kandla
Phenol	84	934.48	Ex-Kandla









Phenolic Resin	180	2002.45	Ex-Indore
Phthalic Anhydride	86.5	962.29	Ex-Mumbai
Propylene Glycol	83	923.35	Ex-Kandla
Sodium Nitrate (50Kg Bag)	61	678.61	Ex-Make-Lasons
Styrene Monomer	82	912.23	Ex-Kandla
Styrene Monomer	84.5	940.04	Ex-Mumbai
Sulphuric Acid	15.5	172.43	Ex-Vapi
Tio2 (Anatase Grade)	225	2503.06	Ex-Bhiwandi
Tio2 (Rutile Grade)	250	2781.18	Ex-Bhiwandi
Toluene	88	978.97	Ex-Kandla
Toluene	94	1045.72	Ex-Mumbai
VAM	76	845.48	Ex-Kandla
VAM	77	856.60	Ex-Hazira

PRODUCER PRICES (RS/KG) OF CHEMICALS AS ON 10/12/2025

Producers	Current Price (INR/Kg)	Import parity Price	e in USD/MT Location
Accord-Ethyl Acetate	66.5	739.79	Ex-Maharashtra
Arham Petrochem-C9	69.75	775.95	Ex-Kandla
Arham Petrochem-C9	70.75	787.07	Ex-Ahmedabad
Arham Petrochem-C10	88.5	984.54	Ex-Kandla
Arham Petrochem-C10	88	978.97	Ex-Ahmedabad
Arham Petrochem-C10 (Imported Rep	ack) 94.75	1054.07	Ex-Bhiwandi
Arham Petrochem-MTO/White Spirit	(KL) 59.65	663.59	Ex-Kandla
Arham Petrochem-MTO/White Spirit	(KL) 60.65	674.71	Ex-Ahmedabad
Arham Petrochem-De-Aromatised D4	0 130	1446.21	Ex-Kandla
Arham Petrochem-De-Aromatised D4	0 131	1457.34	Ex-Ahmedabad
Arham Petrochem-De-Aromatised D6	0 139	1546.33	Ex-Kandla
Arham Petrochem-De-Aromatised D6	0 140	1557.46	Ex-Ahmedabad
Andhra Petrochemicals-Iso-Butanol	72	800.98	Ex-Vishakhapatnam
Andhra Petrochemicals-N-Butanol	78.75	876.07	Ex-Vishakhapatnam
Andhra Petrochemicals-Octanol	90.5	1006.79	Ex-Vishakhapatnam
BASF-Adipic Acid	114	1268.22	Imported
BPCL-2-Ethyl Hexanol (B)	89.75	998.44	Ex-Kochi
BPCL-2-Ethyl Hexanol (P)	100	1112.47	Ex-Kochi









DDCL 2 February Associate (D)	442	4245.07	F. Vaala!
BPCL-2-Ethyl Hexyl Acrylate (B)	112	1245.97	Ex-Kochi
BPCL-2-Ethyl Hexyl Acrylate (P)	122	1357.21	Ex-Kochi
BPCL-Acrylic Acid (B)	80	889.98	Ex-Kochi
BPCL-Acrylic Acid (P)	89	990.10	Ex-Kochi
BPCL-Benzene	63.25	703.64	Ex-Mumbai
BPCL-Butyl Acrylate (B)	92	1023.47	Ex-Kochi
BPCL-Butyl Acrylate (B)	90.5	1006.79	Ex-Kandla
BPCL-Butyl Acrylate (P)	102	1134.72	Ex-Kochi
BPCL-Hexane (KL)	75.8	843.25	Ex-Mumbai
BPCL-Hexane (MT)	114.16	1270.00	Ex-Mumbai
BPCL-Iso-Butanol (B)	74.75	831.57	Ex-Kochi
BPCL-Iso-Butanol (P)	85.75	953.94	Ex-Kochi
BPCL-MTO (KL)	88.85	988.43	Ex-Mumbai
BPCL-MTO (MT)	115.68	1286.91	Ex-Mumbai
BPCL-N-Butanol (B)	72	800.98	Ex-Kochi
BPCL-N-Butanol (B)	73.5	817.67	Ex-Kandla
BPCL-N-Butanol (P)	83	923.35	Ex-Kochi
BPCL-Paraffin Wax	118	1312.72	Ex-Delhi
BPCL-Sulphur (Molten)	45	500.61	Ex-Mumbai
BPCL-Toluene	90	1001.22	Ex-Mumbai
Deepak Phenolics-Acetone	56	622.98	Ex-Dahej Gujarat
Deepak Phenolics-IPA	75.25	837.13	Ex-Dahej Gujarat
Deepak Phenolics-Phenol	NA	Not Available	Ex-Dahej Gujarat
GACL-Caustic Soda Lye	35.5	394.93	Ex-Dahej Gujarat
GACL-MDC	26.25	292.02	Ex-Bharuch Gujarat
GNFC-Acetic Acid	36	400.49	Ex-Bharuch Gujarat
GNFC-Aniline Oil	108.5	1207.03	Ex-Bharuch Gujarat
GNFC-Ethyl Acetate	69	767.60	Ex-Bharuch Gujarat
GNFC-TDI Drum	185	2058.07	Ex-Bharuch Gujarat
Grasim-MDC	26.25	292.02	Ex-Gujarat
GSFC-Cyclohexane	71.5	795.42	Ex-Gujarat
HOCL-Acetone	78.5	873.29	Ex-Kochi
HOCL-Phenol	102	1134.72	Ex-Kochi
HPCL-Hexane	116.26	1293.36	Ex-Mumbai
HPCL-MTO	111.86	1244.41	Ex-Mumbai



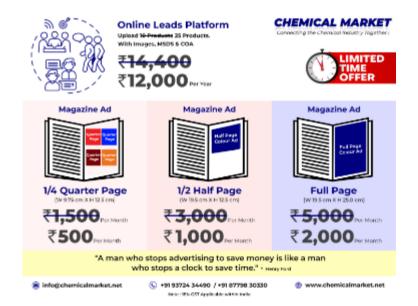






IOCL-Banzene	63	700.86	Ex-Vadodara Gujarat
IOCL-DEG	41.5	461.68	Ex-Odisha(Paradip)
IOCL-DEG	42.5	472.80	Ex-Panipat
IOCL-LAB	157	1746.58	Ex-Gujarat
IOCL-MEG	50	556.24	Ex-Odisha(Paradip)
IOCL-MEG	51	567.36	Ex-Panipat
IOCL-PTA	72.1	802.09	Ex-Panipat
IOCL-Paraffin Wax	105	1168.09	Ex-Delhi
Jubilant-Ethyl Acetate	63.75	709.20	Ex-Maharashtra
Laxmi-Ethyl Acetate	72	800.98	Ex-Maharashtra
Meghmani-Caustic Soda Lye	36.75	408.83	Ex-Bharuch Gujarat
Meghmani-MDC	26.25	292.02	Ex-Ankleshwar Gujarat
NIRMA-LAB	157	1746.58	Ex-Vadodra
Reliance-Caustic Soda Lye	36.5	406.05	Ex-Gujarat
Reliance-DEG	42.3	470.58	Ex-Jamnagar
Reliance-LAB	160	1779.95	Ex-Vadodra
Reliance-MEG	50.6	562.91	Ex-Jamnagar
Reliance-Mix Xylene	80	889.98	Ex-Jamnagar
Reliance-PTA	71.9	799.87	Ex-Dahej Gujarat
Reliance-Toluene	82	912.23	Ex-Jamnagar
SI GROUP-Phthalic Anhydride	91.5	1017.91	Ex-Navi Mumbai
TATA Chemicals-Soda Ash light	34	378.24	Ex-Bhiwandi

All of the above prices are provided by chemical supdates.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













For consumers and the environment:

- Lower cost of everyday items derived from PO
- Reduced carbon emissions worldwide
- More sustainable manufacturing practices across multiple sectors

Therefore, reducing the cost of PO production is not just a financial benefit; it is a step toward making green chemistry mainstream and accessible.

Simplified System Design: No High Heat, No High Pressure, No Complex Pre-Treatment

Another major advantage of this technology is its simple design. Traditional chemical plants depend on high-temperature boilers, pressurized reactors, and multiple purification steps. These add complexity, increase energy consumption, raise safety risks, and demand heavy capital investment.

In contrast, the new system operates under mild, everyday conditions — no high heat and no high pressure. There are fewer steps before and after the reaction. This simplified design has several benefits:

Lower energy usage:

Running chemical reactions at room temperature saves enormous energy.

Improved safety:

High-pressure and high-temperature systems carry risks of explosion, leaks, and equipment failure. Mild conditions are inherently safer.

Easier maintenance:

Fewer complicated machines mean lower cost and less downtime.

Faster setup:

Companies can build and start using this system quickly, without needing

specialized high-end equipment.

Reduced carbon footprint:

Lower energy usage directly translates to fewer emissions.

A simpler system is always easier to scale, operate, and maintain — which is crucial for industrial acceptance.

No External Energy Input: A Game-Changer for Operating Costs

We can call this invention a revolutionary one, because of the fact that it does not require external electricity, fuel, or solar power. Instead, it uses the natural energy difference between two chemical reactions to run on its own.

This means:

- No power bills
- No dependence on the electricity grid
- No fossil fuel consumption
- No solar panels required
- No turbines or generators
- No need for backup power during outages

This could be a great breakthrough for the factories, as energy costs are often the biggest expense after raw materials. Removing energy dependence dramatically cuts operating costs and makes the process more stable. It also makes the system ideal for remote locations, small plants, decentralized setups.

This kind of self-powered chemical production is rare and extremely valuable, especially as industries move toward sustainability and energy efficiency.

How can Indian companies benefit immediately?

Consider large petrochemical players like Reliance Industries, they consume PO for manufacturing Plastics and Polyols. They can immediately benefit from the green PO and improve their sustainability profile. Also, the on-site generation of H₂O₂ eliminates logistical hazards.

There are other Indian companies like Manali Petrochemicals, a leading producer of polyols, that can immensely benefit from the lower-cost PO and have stronger competitiveness, and cut down on their imports. They could also integrate self-driving PO systems in their upcoming expansions.

Meanwhile, BASF India could operate their PU plants across India with cheaper local PO production through the system. Since PO is used in the production of Propylene Glycol and surfactants, they are essential for detergents and cosmetics. Therefore, the system could become a ray of hope for companies like Procter & Gamble, Unilever, Henkel, Godrej Consumer Products (India), and others.

Takeaway:

The new a self-driving, energy-free PO production system is a master stroke as it combines all the benefits while addressing possible challenges in the sector. The system also addresses the requirement for hydrogen in the industry. Hydrogen can be used in fuel cells, industrial heating, and even electricity generation. As the system generates hydrogen in a clean process, this innovation is expected to be hugely appreciated by the industry players and Indian companies. The system also comes with a modular design, and thus, this can be used in decentralized, smallscale chemical plants. Overall, the system sets a stage for a new era for ecofriendly and energy-dependent chemical production.









Tata Chemicals Invests ₹910 Crore to Boost Soda Ash and Silica Capacity A Major Strategic Shift

Vinodhini Harish

Introduction:

¬ATA Chemicals has taken a decisive **⊥** step with a major forward investment of INR 910 crore to expand production capabilities in two critical product segments—soda ash precipitated silica. The headline signals a substantial financial commitment and underscores the deeper significance of this move as a long-term strategy for positioning. competitive This announcement also sends a clear message to investors and analysts: Tata Chemicals intends to reinforce its leadership in basic chemicals while accelerating its shift toward high-value speciality materials. The strategic mix of products targeted under this investment is central to shaping the company's next phase of growth. We discuss the news in detail in this article. Let's begin.

A strategic ₹910 crore capacity expansion signals Tata Chemicals' shift toward high-value speciality chemicals and long-term growth leadership.

Tata Chemicals will commit INR 910 crore to grow its production capacity in two product lines: soda ash and precipitated silica. A single material capex number signals a strategic and multivear investment that can change revenue mix and margins. Soda ash is a basic inorganic chemical that is widely used in glass-making, detergents, paper and chemicals. Whereas precipitated silica is a high-value speciality chemical used in tyres, rubber reinforcement, oral care, coatings, and various performance materials. The company is now grouping both product lines in a single investment figure, and thus is not simply a small or routine capex cycle but a sizable,

strategic and multi-segment expansion undertaken simultaneously.

The INR 910 crore sum is significant relative to Tata Chemicals' annual revenue, indicating a large-scale, multiyear project. This signals a strategic commitment following detailed evaluations of project feasibility and profitability.

By making this announcement, TATA chemicals is sending a clear message to the market: "We are confident about the Since the investment amount is shown as a single consolidated figure, the investment signals that the entire expansion plan is one coordinated strategic vision rather than scattered small upgrades. The strategy represents a clarity of direction. The company is

placing their big bets on products that

These big investments also show how

profitable these companies can become and how much they can export, and how

they compete with others in the long

will shape its next phase of growth. The mix of products targeted is also important.

future demand for both our basic chemicals and our speciality ones"

For the investors and analysts, the number could be a quick signal of what the company wants to focus on. We can conclude that TATA Chemicals is planning to grow both in its traditional chemical business and its newer, highmargin speciality chemical segment. These investments will affect how the company earns money in the future.

How is this a big deal?

Tata Chemicals is putting most of the money (almost 85%) into this one speciality product. This tells us that the company sees big future demand and high profits in the speciality chemicals business. It also shows that they want to move more into premium products

rather than staying dependent on lowmargin basic chemicals. Investors read this as a positive long-term direction

The company confirmed that about INR 135 crore will be used to increase the production of dense soda ash at the Mithapur plant. The plant already has a very large capacity, and it is about 1091 kilotonnes per year, which is operating at about 90% utilisation. When the factory is already running at 90%









capacity, it shows a strong demand; almost everything it makes is already sold. This makes the expansion a smart move, as the company will not waste the money running an underused plant. Increasing the capacity will help Tata Chemicals meet demand and earn more revenue.

Expanding precipitated silica capacity at the Cuddalore facility:

Out of the total ₹910 crore investment, a major portion—₹775 crore—will go towards the expansion of precipitated silica production at the Cuddalore, Tamil Nadu plant. Precipitated silica is a speciality material known for its use in tyres (premium, fuel-efficient tyres), rubber products, personal formulations (toothpastes), coatings, and industrial applications requiring reinforcement, abrasion resistance, or controlled rheology.

The Cuddalore plant currently produces 13.8 kilotonnes per year and runs at 86% utilisation.

An 86% utilisation means the plant is already busy and operating near full capacity. Speciality chemical plants rarely run at such high levels unless demand is strong. This shows that customers want more silica than Tata Chemicals can currently supply. So expanding the plant will help them meet market demand, possibly charge better prices, and improve profits. It also shows that this is a high-growth segment for the company.

The key insight here is that 85% of the entire capex is directed specifically at the speciality chemicals segment. This is not accidental. Speciality chemicals offer much higher margins compared to basic chemicals like soda ash. They typically require expertise, customer-specific formulations, deep R&D investment, and quality control. Because not all companies can produce speciality silica at scale, competition is limited, and

pricing tends to be more stable. The large allocation, therefore, signals that Tata Chemicals sees strong future demand in the speciality chemicals space—in particular, tyres, automotive components, and rubber applications

The automotive tyre industry, driven by fuel-efficiency norms and rising demand for radial tyres, increasingly requires high-dispersion, high-performance silica. Major tyre companies like MRF, Apollo, Michelin, Continental, and Bridgestone are shifting towards silicareinforced compounds. This trend provides strong visibility for long-term demand growth.

By allocating ₹775 crore to Cuddalore, Tata Chemicals is essentially prioritising profitability over pure volume growth.

Key learnings from this strategy:

Invest When Utilisation Is High — Scale Only When Demand Is Real

Tata Chemicals has expanded two plants that are already operating at 86-90% utilisation.

This is a textbook signal: expand only when your existing assets are running efficiently and close to maximum output. We can see that the company didn't expand blindly. They have already used their capacity utilisation as a key decision metric. When the plants are above 80% utilisation, adding capacity is usually profitable. This prevents unnecessary capex and ensures a strong return on investment.

Tata Chemicals invested:

₹135 crore in soda ash (core, highvolume basic chemical)

₹775 crore in precipitated silica (speciality, high-margin chemical)

This shows a balanced growth planmaintaining bread-and-butter products

while aggressively moving into highvalue segments. The company has struck a balance in maintaining volume-driven core products while building speciality or innovative products to improve margins, and this differentiates them from the competitors.

They have also observed the demand for soda ash, which is rising due to solar glass, detergents, and green technologies. The precipitated silica demand is growing due to EV tyres, fuelefficient tyres and advanced rubber applications.

Tata Chemicals aligned expansions with future demand drives, and it is not just current pricing.

The investments were approved only after:

feasibility studies demand analysis capacity planning cost modelling

This prevents half-baked projects from moving forward.

Final takeaway:

Tata Chemicals' ₹910 crore capacity expansion is far more than an industrial upgrade—it is a forward-looking move that positions the company for stronger margins, higher market share, and longterm leadership across both basic and speciality chemicals. By dedicating nearly 85% of the total investment to precipitated silica, the company clearly signals a strategic emphasis on highvalue, technology-driven, and demandresilient products. This reflects an global understanding of trends, especially the rapid shift in the automotive and tyre industries toward silica-reinforced compounds that enhance fuel efficiency and meet sustainability norms. Ultimately, this expansion is one of a kind.









Why Pharma-Linked Specialty Chemical Makers Are **Outperforming the Entire Sector**

Team Chemical Market

Introduction:

The Indian specialty chemicals sector **⊥** is entering a phase of uneven growth. One segment is clearly pulling ahead: Pharma-linked specialty chemicals and CDMO adjacent companies. The broader chemical industry is battling with weak global demand and competition. by difference must be noticed stakeholders and investors for them to flourish. There could be a structural change in the industry as there are a few factors, such as stability, specialisation, and regulatory credibility, that matter the most than the scalability alone. In this article, we have taken a deep dive into the news and let's begin.

Specialty chemicals and why pharmalinked players stand out? - a deep analysis:

In general, specialty chemicals are highvalue products that are designed for specific applications; they rely heavily on innovation, customer relationships. They serve multiple industries like pharma, electronics, and agriculture. Among these broad categories, the pharma-linked specialty companies stand out as they are connected to the most stable and highvalue end market, pharmaceuticals.

Some of the specialty chemical companies have started to focus on their product mix and sales to serve the pharmaceutical value chain such as APIs, Intermediates, CDMOs and so on. This strategy has helped in delivering measurable business Since benefits. pharma-facing chemicals are relatively defensive and higher-value, they are subject to strict quality, regulatory requirements and

thus have longer qualification cycles, and often involve long contracts. Those features make revenues stickier and margins higher compared the commodity chemical sales. Therefore, when the demand for pharma is growing steadily least at stable, remains the then suppliers capture outsized benefits



Currently, the pharmaceutical markets, especially generics and contract manufacturing, are growing at a steady pace. This situation has created a steady demand for inputs.

A group of 10 specialty chemical companies that mainly supply to the pharmaceutical sector, including CDMOs, grew their sales by around 7% compared to the same quarter last year. At the same time, other specialty chemical companies that don't supply to the pharma industry have grown only by 4%. Therefore, the results show that the pharma-linked companies grew faster than the companies that supply to the industrial, agrochemical or consumer sectors. We can bifurcate them into two segments, namely, pharma-linked chemical makers and non-pharma specialty chemical makers. The former one outperforms the latter.

Understanding the reasons why there is a huge difference in growth:

To understand why this happens, we have to look at how the demand works in different parts of the chemical industry. The specialty chemical industry is very broad, and it includes Pharma-related chemicals, API intermediates. CDMO support chemicals, Agrochemicals, Dyes and pigments, plastics additives, electronics chemicals, coatings and paints. But we should understand that all of these segments behave differently.

The chemical industry is related to the economic cycles affect much more, because of the core reason that they are all related to the economic cycle. These segments are affected by problems such as weak demand, heavy oversupply, higher tariffs, and customers reducing inventories and placing few orders. On the other hand, the demand in pharmaceuticals is much more stable as people always need medicines. treatments, vaccines, and healthcare









products, and that doesn't affect with the global economy.

Steady demand is one primary reason why the growth is never disturbed. But there are other reasons that are supporting the growth of the sector. Let's go through those reasons in detail:

The pharma companies are not like normal industrial chemical companies. They must meet strict purity standards, regulated manufacturing processes, validated documentation, and highquality multi-step synthesis requirements. Because of these standards, only a handful of companies enter the sector and are able to produce chemicals successfully. Therefore, there is much less competition. Their products have higher margins, and customers stick with them for the long term.

The CDMO industry in India has been growing at a faster pace as it handles manufacturing and research work on behalf of global pharma companies. They take more orders for drug developments, clinical-stage production, formulation development, complex chemistry and much more. Therefore, CDMO need a steady supply of high-purity specialty chemicals and intermediates. This means chemical companies that sell to CDMOs see more orders and much better visibility for future growth. The CDMO boom directly lifts the chemical companies supplying them.

The Pharma-linked companies have long-term contracts in general. These contracts help them stay longer in the market. These contracts guarantee minimum purchase volumes, protect the prices from other aspects or changes, ensure steady demand, and reduce business risks. However, these factors don't apply to the industrial chemical companies, as they often rely on spot contracts, short-term purchases and fluctuating global demand.

Chinese oversupply is hurting the

broader chemical industry - China is the world's biggest producer of most chemicals. Since China has increased production across various their segments, this has caused the domestic demand to slow down. This has led to global oversupply, very low prices, dumping of cheap chemicals, aggressive export pricing, and so on. Segments like agrochemicals, dyes, and industrial chemicals are suffering heavily from

These differences help us understand why pharma suppliers show higher and steadier growth.

The numbers 7% and 4% look believable- why?

The growth difference looks believable because of two important effects:

Selection effect: the companies that supply to pharma naturally work in high-value segments, and they have strong entry barriers. They regulated, high-purity, high-margin products. These types of companies are more resilient in a slow down. Therefore, selecting a group of 10 such companies and seeing their growth is logical.

Macro environment effects: the global environment is weak for the industrial chemicals. They are stable for pharma. The industrial chemicals are hit by oversupply, low prices, and weak demand. The pharma chemicals benefit from stable demand, rising CDMO orders, and long-term contracts.

CDMO-linked chemical makers are outperforming: why is it believable?

The companies supplying CDMOs (and pharma) are outperforming because there are other forces, such as trade shocks, too much supply from China, and weak worldwide demand. These have hurt the rest of the specialtychemicals industry, which in turn benefits the pharma-focused subset by comparison.

Let's get into the details.

Tariff shocks: Trade policies and sudden tariff changes raise the cost or uncertainty of importing certain chemicals/components. When the government suddently increases the taxes on the imported chemicals. Then it becomes difficult for the companies to buy chemicals from other countries. In such situations, the buyers start preferring Indian chemical suppliers to cut down on tariffs. These Indian companies are already trusted by pharma companies. The pharma companies can't take risks with supply, so they stick with the reliable, nearby suppliers when the trade rules keep changing.

Chinese oversupply: China makes a huge amount of basic chemicals and sells them at very low prices across the globe. The situation has caused prices to fall in prices and Indian chemical companies are operating with very little profit. But this has not affected the pharma chemicals as they cant compete in the segment easily.

Final takeaway:

The recent performance gap between the pharma-linked specialty chemical firms and the wider chemicals sectors explains the market players that resilience lies in regulated, high-value, less cyclical markets. The global industrial demand remains soft, and oversupply pressures intensify, the companies supplying the pharma and CDMO are benefitting from steady demand, stronger margins and lower competitive threats. Therefore, this segment is becoming more attractive to investors as they are seeking sustained growth. Going forward, there will be a clear division in the Indian chemical industry- commodity and industrial segments facing slower recovery, and the other one, pharmalinked specialty chemicals continuing to lead in growth, reliability and strategic importance.









India's Electronics Sector Grows 8× in Exports: Can **India Compete With China and Vietnam? Analysts** Say Yes

Vinodhini Harish

Introduction:

Tndia's Electronics Manufacturing LServices (EMS) sector is undergoing its most significant transformation in decades. Once upon a time, it was merely an assembly-driven industry, and it is now scaling into higher-value, technology-intensive, component-level manufacturing. The production and exports have grown massively. The rising domestic demand, global supply chain, and diversification are pushing the growth. There are strong government schemes as well, such as PLI, SPECS, ECMS, and so on. In this article, we have discussed the growth, what is to be done next, and key highlights of Kaynes Technology and Dixon Technologies as top picks poised to benefit from backward integration, component production, and high-value electronics manufacturing. Let's begin.

The Indian EMS sector is transforming. What is the big news?

India's EMS sector is now moving from assembling electronics to technology, components, deep-tech and manufacturing. There is a rapid growth in India's electronics manufacturing, where the production has grown 6 times in 10 years, exports have grown 8 times in 10 years, and FY25 exports have grown to USD 38.6 billion from USD 29.1 billion. India has ventured into manufacturing key components such as Multi-layer PCBs, camera modules, Enclosures, electronic sub-assemblies, AI-enabled chip design, capital equipment, and semiconductor-related technologies.



Government schemes help in these developments as well. For instance, PLI, SPECS, and ECMS are highly beneficial. About 17 new component projects worth INR 71 billion were just approved. When the growth and developments were discussed among the industry experts, we understand that they are expecting factors like policy stability, Faster PLI payouts, Tariff rationalisation, and Global-quality standards.

The analysts consider Kaynes and Dixon technologies to be at the top stock picks, and they are positioned to benefit from the shift towards backward integration, component production, and highervalue-added manufacturing.

The growth is anticipated due to drivers like growing local consumer/business demand, efforts to make parts incountry (localization), and supportive public policy/programs. Even though this is the common development pattern, large domestic market demand creates incentives to localize inputs, and governments use incentives to attract investments into high-value activities. Firms also work towards margin improvements by owning upstream components rather than sticking with assembling jobs.









The environment is changing. The production volumes and exports are rising at a faster pace. The sector has the scale and momentum to invest in more complex and higher-value products. Therefore, building all the factors to compete internationally.

Why is this happening? How are experts viewing this change?

When a company or an industry scales, it can afford to specialize and invest in better and more advanced technology. When the exports go up, it shows that other countries trust and want their products. This trust is crucial for the companies, investors, government to spend their money on building factories for components and advanced technologies, as the trust helps them to believe that the demand will continue.

The industry leaders discussed the growth at a major summit, where the ecosystem is evolving from simple, highvolume assembly towards producing technology-intensive components and IP. The summits bring policymakers, manufacturers, and investors together. The public remarks and project announcements at such events commonly reflect concrete commitments.

Conversations among the companies and stakeholders indicate that the favourable conditions are driven by three broad forces, such as domestic market growth, local sourcing of parts, and continuous government backing.

Manufacturers have started making their own components and parts instead of buying them from other countries. Because of this, more of the profit stays within the country. The companies can earn better margins, too. Imagine, when the companies make their own components - backward integration, then they don't have to depend too much on outside suppliers, their costs go

down, and thus their profits go up. They can also control the quality much better. The companies usually do this only when their production volume is high, and they have enough profit to invest in these new facilities.

Is it a massive growth?

In the last 10 years, the Indian electronics manufacturing has grown very fast, and the amount of production is now 6 times bigger than before. The exports have grown as well, which is almost 8 times bigger now. The growth is mainly due to the manufacturing of mobile phones, solar panels, networking equipment, and electronic parts. The rapid growth is well shown across several industrial reports.

The growth factors are as follows:

- Mobile phone and solar panel demand increased worldwide.
- Costs came down.
- special The government gave incentives.

Companies built large factories and improved capacity.

Indian electronics exports reached USD 38.6 billion in FY25, having grown from USD 29.1 billion in FY24. The exports increased by USD 9.5 billion or roughly 33% growth. When the factories increase their production capacity or new manufacturing lines start operating, or when more global companies choose a country to source their products, this kind of 30% growth in exports happens. Exports are growing because the factories in India are becoming big enough to produce large quantities at low cost, their quality and efficiency improved, have and the global companies now see India as a dependable place to manufacture largevolume products that are not just China or Vietnam.

What's next?

Big international buyers such as phones, electronics, and solar firms are looking for three things, mainly. Low costs, reliable quality, and the ability to produce huge quantities. India is winning orders for smartphones, solar modules, and components shows that global companies trust the Indian manufacturers. When such large orders keep coming, it naturally boosts the exports and thereby India's reputation further.

To sustain this momentum, companies seek stable government policies, faster PLI scheme payments, streamlined tariffs, and Indian quality standards aligned with international benchmarks. These improvements make exports more efficient, encouraging further sector expansion.

Manufacturing requires huge investments such as factories, machines, and a workforce. Therefore, the companies are expected predictable and have long-term policies. For instance, delayed PLI payouts create cash flow issues. High or complicated tariffs can increase costs and reduce competitiveness, and matching global standards makes it easier for the exports because the products don't need extra testing or redesigning for the foreign markets.

The policy steps above are critical to help the country match or beat the costs and ease of doing business offered by other manufacturing centres. The competing supplier hubs have entrenched networks, logistic efficiencies, and policy regimes. Policy clarity and faster incentives are the levers India can use to close gaps in unit cost, lead times, and certifications.

The companies can add more value domestically by producing complex multilayer printed circuit boards, optics, metal or plastic enclosures, and









intermediate assemblies inside India. But the companies are simply relying on imported parts. This must be reduced. The government has approved about 17 new component manufacturing projects under a supporting scheme, which together plan to invest INR 71 billion indicating that concrete capital allocations toward component capacity. Scheme approvals and committed investment numbers are tangible evidence of policy implementation, translating into planned industry expansion. Beyond the components, industry activity and investment are starting to focus on advanced areas: chip fabrication or design that includes AIfocused designs and the machines used to make electronics, which is moving into deep-tech.h.

The experts say India must create its own intellectual property, have supply chains that withstand disruptions, and grow a component sector large and capable enough to sell both locally and globally. Also, regarding the funding, the experts understand that moving from product design to full manufacturing requires a lot of money; therefore, strategies like mixing financing sources, such as public funds, PE, and VC, are to be done. This will help to spread the risk and provide sufficient capital.

It also notes that schemes like Production-linked schemes, SPECs, and Electronic component manufacturing Schemes have helped spur investment. However, stakeholders are calling for policy refinements additional supportive measures to maximize sector growth.

Areas that need our attention:

Despite active component projects, India is still importing about 70% of high-value components such as display panels, chipsets, batteries, semiconductor components, sensors, advanced PCBs, and so on. Therefore, if the global supply chains get disrupted, then Indian factories may shutdowns or production delays.

There is a possibility of reciprocal tariffs by the US. This could increase the cost for Indian exports, and the industry leaders believe that this won't help too much. But the reality shows differently, even the small tariff changes can reduce India's competitiveness Vs. Vietnam, Mexico, China, etc.

Dixon, Kaynes, and others are rapidly scaling their capacities. If global demand slows down or large clients shift their strategies, then it could lead to overcapacity strain. This will put more pressure on financials. Thus, Indian companies must adopt controlled, demand-aligned growth and not blind expansion.

Key takeaway:

The Indian EMS sector has entered a defining expansion stage that is driven by manufacturing scale, improved export performance, and policy-backed incentives. The shift from assembly to advanced component and deep-tech manufacturing shows that the ecosystem is maturing and is now capable of competing globally. The global companies are also trusting Indian companies for high volume, costefficient, reliable production, and so on. Companies like Kaynes Technology and Dixon Technologies stand at the forefront of this transformation. India's EMS industry is well-positioned to unlock its next phase of global-scale growth and build a resilient, innovationdriven electronics ecosystem.

SABIC launches new NORYLTM resin for water management applications in anticipation upcoming butadiene-free regulations

ABIC, a global leader in the chemical Jindustry, today introduced NORYL™ WM300G resin, a specialty material for water management applications that delivers high impact resistance and high strength without the use of traditional impact modifiers that can potentially release butadiene during processing or operational use. Adopting this new resin can help customers proactively address regulatory restrictions butadiene in drinking water, while

gaining improved properties compared to the incumbent NORYL 713S resin.

"Drawing on our deep expertise and years of experience in water management, SABIC anticipates customers'

future needs by addressing issues such as new possible regulatory restrictions on butadiene," said Sergi Monros, vice president, **SABIC Polymers, Specialties BU.** "The new NORYL WM300G resin offers a









drop-in replacement for the incumbent resin and delivers improved properties, providing a seamless transition to the newest material technology."

Bypassing butadiene

New NORYL WM300G resin is formulated without conventional impact modifiers that can degrade under exposure to high molding temperatures and long barrel residence times. The butadiene molecules that are released can leach into drinking water. potentially affecting human health.

Instead, the product new uses

pioneering impact chemistry that improves processing stability to avoid the release of butadiene, while ensuring high impact performance and high strength to meet burst pressure test requirements in shower heads, faucets, valves, water meter internal components and other parts. NORYL WM300G resin provides 20 to 30 percent higher burst strength (80-81 Mpa) compared to its legacy counterpart, NORYL 713S resin, at 64-65 Mpa.

The new product also surpasses the incumbent NORYL resin in fatigue performance and flexural and tensile modulus. It features an attractive surface appearance, low moisture absorption and good dimensional stability. It is food contact compliant and is formulated bisphenol A (BPA) intentionally added perpolyfluoroalkyl substances (PFAS). It is currently awaiting global drinking water certifications.

NORYL WM300G resin is a nonreinforced, impact-modified blend of polyphenylene ether (PPE) polystyrene (PS). In addition to injection molding, it can be extruded to produce pipes and profiles.

SABIC provides technical support to NORYL resin customers via the Water Management Center of Excellence in the Netherlands. This specialized facility offers technical services including predictive engineering, mold flow analysis, 3D simulation, testing and validation. The center is accessible to customers worldwide via a digital interface that enables engagement with experts.

Source: BASF

DuPont launches disposable chemical protective garment material Tyvek APX

DuPont announced the launch of Tyvek APX, a next-generation disposable chemical protective garment material designed to significantly enhance comfort without compromising protection or durability. Introduced at A+A 2025 in Düsseldorf, Germany, Tyvek APX represents the most advanced evolution of the Tyvek fabric platform to date, developed through extensive scientific research collaboration with end-users across industries.

"Tyvek APX addresses one of the most persistent challenges in the safety industry—delivering true breathability while maintaining the high levels of protection and durability expected of Tyvek garments," said Dave Kee, Global Business Director, DuPont Personal Protection. "By offering an exceptional balance of comfort and protective performance, Tyvek APX enables

workers to operate more confidently effectively, particularly demanding environments."

As organizations place increasing focus on worker well-being, the ability to manage heat stress and maintain comfort in protective clothing has become essential. Overheating remains a critical safety risk in sectors such as chemical processing, pharmaceuticals, utilities, and heavy industry. Tyvek APX is engineered to help dissipate body heat more efficiently by allowing moisture to escape and air to circulate, supporting worker endurance and comfort during extended wear. The comfort benefits of supported Tyvek APX are independent physiological conducted by Empa, which evaluated the performance of workers wearing Tyvek APX compared to traditional chemical protective garments across varying environmental conditions and

activity levels. DuPont also conducted global wear trials involving nearly 300 participants working in a wide range of climates and job roles. Across all regions and applications, wearers consistently reported a clear preference for the enhanced breathability of Tyvek APX.

"For more than five decades, the DuPont Tyvek brand has set the benchmark for trusted innovation in protective apparel," Kee added. "With Tyvek APX, we are advancing that legacy and redefining what it means to feel protected and comfortable on the job."

Tyvek APX underscores DuPont's ongoing commitment to safeguarding workers through science-backed material innovation, reinforcing its role as a leader in personal protection solutions worldwide.

Source: Indian Chemical News











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- Your Own Product List Page (with COA/MSDS)
- Create & Download your PDF catalog to share
- Membership approved only to verified Members
- View all your incoming Leads/ Enquiries
- Feature Your Products/Tech.
- No Fake Enquiries
- Post Multiple Buy Enquiries Broadcasted to Suppliers
- Global Reach / Targeted Audiece (80,000+ Organic Reach)
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