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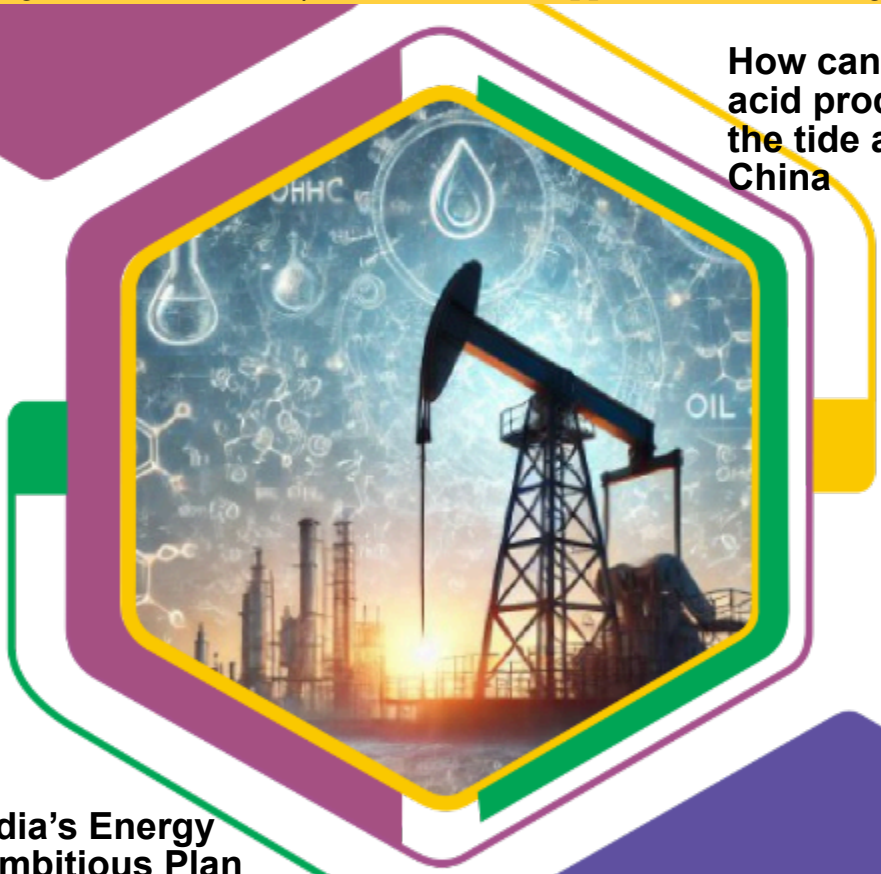
DYES &

CHEMICAL MARKET

Connecting the Chemical Industry Together !

A MONTHLY MAGAZINE DEVOTED TO

DYES CHEMICALS PHARMACEUTICALS API TEXTILE AUXILIARIES PAINTS SOLVENTS COSMETICS

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Ministry of Chemicals and Fertilizers
Department of Chemicals and Petrochemicals
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INDIA CHEM 2024
"Advantage Bharat: Indian Chemicals and Petrochemicals Paving the Future"
17th – 19th October 2024
Bombay Exhbition Centre (BEC)
Mumbai
Concurrent Event
INDIA PROMACH 2024
17th – 19th October 2024
Bombay Exhbition Centre (BEC), Mumbai
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Agro Chemicals & Fertilizers
Basic Chemicals, Dyes and Pigments
Chemicals from Herbal and other natural resources
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CphI - Informa Group			
No	**Exibitions**	**Date**	**Place**
1	CPhI North America	May 20-22, 2025	Pennsylvania Convention Center, Philadelphia
2	CPhI Barcelona	Oct 24-26, 2024	Fira Barcelona Gran Via, Spain
3	CPhI Middle East & Africa	Dec 10-12, 2024	Riyadh, Saudi Arabia
4	CPhI China- Virtual CPhI	June 24-26, 2025	Shanghai New International Expo Center
5	CPhI Japan	Apr 09-11, 2025	Tokyo, Japan
6	CPhI Korea	Aug 27 - 29, 2024	COEX, Seoul, Korea
7	CPhI India	Nov 26-28, 2024	Noida, India
MECS (Coating Show)			
1	Asia Pacific Coatings Show	Sept 11-13, 2024	Indonesia
2	Saudi Arabia Coatings Show	May 13-15, 2025	Dammam Saudi Arabia
3	Middle East Coatings Show	2026	Dubai World Trade Centre
4	Coatings For Africa	2026	Johannesburg, South Africa
DYE+CHEM			
1	Dye+Chem Morocco International Expo	Nov 7-9, 2024	Morocco
2	43rd Dye+Chem Sri Lanka International Expo	March 20-22, 2025	Colombo Sri Lanka
3	Dye+Chem Bangladesh International Expo	Sept 4-7 2024	Bangladesh
4	44th Dye+Chem Brazil International Expo	July 10-12 2024	Brazil
Red Carpet Events			
1	Bangladesh Int'l Dyes, Pigments and Chemicals Expo	Oct 24-26, 2024	Dhaka, Bangladesh
Turkey (Arkim Group)			
1	InterDye Textile Printing Eurasia	Nov 27-29 2024	Istanbul, Turkey
2	Paint Istanbul TURKCOAT	2026	Istanbul
3	Paint Expo Eurosia	Oct 01-03, 2025	Istanbul Expo Center / Istanbul Fuar Merkezi
Other Exhibitions			
1	Paint India	Jan 30-31, 2025	Bombay Exhibition Centre, Mumbai
2	Expo Paint and Coating	June 27-29, 2024	Pragati Maidan, New Delhi
3	CIPI	TBD	Mumbai, India
4	Chemspec Europe	TBD	Germany
5	ChemUK Expo	May 21-22, 2025	NEC, Birmingham, UK
6	American Coatings Show	2026	Indianapolis
7	China Coat China	Dec-24	China Import & Export Complex, Guangzhou
8	Interdye China	TBD	Shanghai, China
9	Paint Expo Germany	Apr 14-17, 2026	Messe Karlsruhe Germany
10	India Chem	Oct 17-19 2024	Mumbai Exibition Centre, India
11	Water Expo 2024	Feb 26-28 2025	New Delhi
12	Inacoating 2024	July 30-Aug 1, 2024	JlExpo Kemayoran, Jakarta - Indonesia
13	Expo Paint & Coating	Sept 19-21, 2024	ICC Dhaka, Bangladesh

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Sodium Chlorite 50% (India)	50Kgs	240.00
Sodium Chlorite 80% (India)	50Kgs	280.00
Sodium Cyanide	50Kgs	650.00
Sodium Fluoride	50Kgs	150.00
Sodium Formate	50Kgs	55.00
Sodium Hexameta Phosphate 68%	50Kgs	128.00
Sodium Hydrosulphite [China]	50Kgs	180.00
Sodium Metabisulphite	50Kgs	37.00
Sodium Nitrate	50Kgs	52.00
Sodium Nitrite (China)	50Kgs	68.00
Sodium Silicate	Naked	28.50
Sodium Sulphate (Anhydrous)	50Kgs	15.00
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Sodium Sulphide 58-60% (Flakes)	50Kgs	52.00
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Sodium Tri polyphosphate	50Kgs	95.00
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CHEMICAL MARKET

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

Challenges for Startups in the Chemical Industry

Startups in the chemical industry face significant challenges due to the sector's complexity, strict regulations, and high capital requirements. Below are the key hurdles faced by these companies:

1. High Capital Requirements

- Initial Investment: Chemical manufacturing demands large upfront investment in equipment, plants, and R&D facilities. These costs are especially high for startups developing large-scale chemical processes.
- Operating Costs: Raw materials, energy, and waste disposal costs are substantial. Scaling production to compete with established companies is capital-intensive, limiting price competitiveness.

2. Regulatory and Compliance Issues

- Environmental Regulations: The industry is subject to strict global standards like REACH (Europe) and EPA (U.S.). Complying with these regulations requires significant resources, making it harder for startups to operate.
- Safety Standards: Chemical handling requires investment in robust safety protocols, adding to operational expenses.
- Licensing and Permits: Securing permits for operations, exports, and hazardous material handling is a lengthy, complex process delaying a startup's market entry.

3. R&D and Innovation Challenges

- Long Development Cycles: Developing and commercializing new chemicals takes years, delaying revenue generation. Startups face long R&D timelines from discovery to market introduction.
- Innovation Costs: Continuous innovation requires heavy spending on research, specialized equipment, and talent, which can be difficult for startups to sustain.
- Intellectual Property (IP) Protection: Securing patents is both expensive and time-consuming. Startups may also face legal disputes over IP with larger competitors.

4. Supply Chain and Raw Material Dependence

- Volatile Raw Material Prices: The chemical industry relies heavily on petrochemical-based materials, which are subject to global price fluctuations, affecting profitability.
- Supply Chain Disruptions: Delays in sourcing materials or geopolitical issues can disrupt production schedules and delivery timelines, posing significant risks to startups.
- Sourcing Specialized Materials: Acquiring rare or specialized materials is costly and can limit a startup's ability to scale.

5. Intense Competition and Market Dynamics

- Established Competitors: Large multinational corporations dominate the market, making it difficult for startups to compete due to their strong distribution networks and brand recognition.
- Buyer Skepticism: Buyers prefer established suppliers with proven reliability. Building customer trust takes time, making market penetration difficult for new entrants.
- Global Trade Challenges: Exporting chemicals involves navigating international regulatory standards and logistics, which increase costs for startups aiming for global expansion.

6. Sustainability and Green Chemistry

- Eco-friendly Practices: Global demand for sustainable, eco-friendly chemicals forces startups to adopt green practices, which are costly to implement.
- Circular Economy: Startups must invest in processes to minimize waste and recycle by-products, requiring high upfront costs for technology and innovation.

7. Talent and Expertise Shortages

- Skilled Workforce: Finding and retaining specialized talent in chemistry, engineering, and safety management is challenging for startups with limited resources.
- Technical Expertise: Startups need experts in safety, process optimization, and compliance, but attracting this expertise is costly.

8. Funding and Investor Confidence

- Access to Capital: Raising funds is difficult due to the high risks, capital intensity, and long timelines of the chemical industry. Investors often prefer quicker returns.
- Long Payback Periods: The extended time to profitability discourages many investors.

Government Support and Initiatives

The Indian government has introduced several initiatives to support startups:

- Startup India Program: Offers easier compliance, funding support, and mentorship for startups.
- Make in India: Promotes manufacturing in India, encouraging exports and global competitiveness.
- Bilateral Trade Agreements: India is actively pursuing trade agreements to ease market access for Indian startups globally.

- Rajiv Parikh

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Dyes Chemical Market

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BUY INQUIRIES

Product	Quantity	Grade
Vitamin-E Acetate Details : Cosmatic Grade - Vitamin-E Acetate Make-BASF Application - Cosmetic use . Gaziabad, Uttar Pradesh, India	100 Kgs	None
Dilute Acetic Acid CAS#- 7585-20-8 Details : Need it on a regular basis. Mumbai, Maharashtra, India	30 Tonnes	None
Copper Sulphate - CAS# 7758-99-8 Details : Need it on a regular basis. Mumbai, Maharashtra, India	10 Tonnes	None
Titanium Dioxide TIO2 - CAS#: 1317-70-0 Details : Anatase Grade. Mumbai, Maharashtra, India	5 Tonnes	Chemical
XANTHAN GUM FOOD GRADE 80 MESH Details : Shipping location:- CIF offer to Mombasa Port. Currently in need of this item to support our operations, and we would like to know if your company can supply this product. We value quality and require suppliers that can provide us with consistent and reliable products that meet our stringent standards. Ellesmere Port, Cheshire West and Chester, UK	40 Tonnes	Not Applicable

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BUY INQUIRIES

Product	Quantity	Grade

Xanthan Gum

200 Kgs **None**

Details : Application - Cosmetic Use . Xanthan Gum transparent Make-Jungbunzlauer CAS No:- 11138-66-2

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Ghaziabad, Uttar Pradesh, India

Cyanuric Acid CAS#: 108-80-5

1 Tonnes **Industrial**

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

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Chennai, Tamil Nadu, India

Epibromohydrin CAS No:- 3132-64-7

100 Kgs **Industrial**

Details : Please quote the best CIF Air (Shanghai, China) price, with shortest lead time & COA/MSDS

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China

4-Piperidone Hydrochloride Monohydrate 99% CAS No:- 40064-34-4

1 Kgs **Industrial**

Details : Please share your best offer along with the COA, delivery time, packing detail and payment terms.

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Ahmedabad, Gujarat, India

Starvis 3003F BASF CONSTRUCTION POLYMERS GmbH

200 Kgs **Chemical**

Details : Looking to buy 200kg Starvis, 1000kg Vinapor 2941 DF and 100 kg Kelco Crete DG-F of genuince BASF material

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Melbourne

BUY INQUIRIES

Product	Quantity	Grade

Dilute Acetic Acid

50 Tonnes **Chemical**

Details : Sir , We Are Dealing In Acetic Acid , Dilute Acetic Acid And Hydrochloric Acid Since 1987 Here In Ahmedabad... Sir , We Are In Regularly Need Of Dilute Acetic Acid... Will Be Waiting For Your Positive Approach... Thanks And Regards Dinesh Gupta... Haresh Acids And Chemicals Pvt Ltd

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Ahmedabad, Gujarat, India

Corium 4040

1 Litres **Industrial**

Details : Description:- Please quote the best price with lead time & COA/MSDS Purpose:- Heavy Duty metal repair compound. It quickly repairs leaks, cracks, fractures, and groves in metal. Technical Parameters:- a. Composed: Base (type A) and Reactor (type B) b. Part No: 4040 c. Chemical Category: Industrial Chemical

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Kolkata, West Bengal, India

Corium 4040

250 Other **Industrial**

Details : Please quote the best price with lead time & COA/MSDS, Technical document, Brochure of the product, Cost of Shipping to Bangladesh by Sea/AIR (Dhaka Air Port)Both Ways

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Bangladesh

Selenium dioxide CAS No:- 7446-08-4

25 Kgs **Industrial**

Details : Please quote the best price with lead time & COA/MSDS.

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Blovice, Czech Republic

Nickel Sulphamate

500 Litres **Technical**

Details : Packing Size:- 25 Ltr Can Spec : IS 1809 : 1979 Technical Grade Description:- Please quote the best price with lead time & COA/MSDS.

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Indiranagar, Bangalore, Karnataka, India

BUY INQUIRIES

Product	Quantity	Grade

Hydrofluoric Acid

50 Kgs **Technical**

Details : Packing Size:- 25 Kgs Spec: LR Grade - 40% Packing Description:- Please quote the best price with lead time & COA/MSDS.

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Indiranagar, Bangalore, Karnataka, India

Manganese Sulphate

100 Kgs **Technical**

Details : Packing Size : 500 Gms Spec: L R Grade Free from Chloride Description:- Please quote the best price with lead time & COA/MSDS.

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Indiranagar, Bangalore, Karnataka, India

Boric Acid Crystal Pure

60 Kgs **Industrial**

Details : Packing Size: 01 Kg Description:- Spec: IS 10116:2015. Please quote the best price with lead time & COA/MSDS.

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Indiranagar, Bangalore, Karnataka, India

Metal Cleaner

100 Kgs **Industrial**

Details : Packing Size: 50 Kg Description:- Spec: IS 3194-1982. Please quote the best price with lead time & COA/MSDS.

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Indiranagar, Bangalore, Karnataka, India

Mixed Salt Standard Solution

18 Cans **Industrial**

Details : Description:- Please quote the best price with lead time & COA/MSDS. ASTM D-3230 Mixed Salt Solution.

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Ulundurpet, Kallakurichi, Tamil Nadu, India

Scientists discover a single-electron bond in a carbon-based compound

SAPPORO, Japan , Sept. 25, 2024 / PRNewswire/ -- Researchers at Hokkaido University and the University of Tokyo have discovered a stable single-electron covalent bond between two carbon atoms, validating a century-old theory.

Covalent bonds, in which two atoms are bound together by sharing a pair of electrons, form the scaffolding that underpins the majority of organic compounds. In 1931, the Nobel Laureate Linus Pauling suggested that covalent bonds made from just a single, unpaired electron could exist, but these single-electron bonds would likely be much weaker than a standard covalent bond involving a pair of electrons.

Since then, single-electron bonds have been observed, but never in carbon or hydrogen — the hunt for one-electron bonds shared between carbon atoms has stymied scientists.

Now, a team of researchers from Hokkaido University has isolated a compound in which a single electron is shared between two carbon atoms in a remarkably stable covalent bond, known as a sigma bond. Their findings are published in the journal Nature.

"Elucidating the nature of single-electron sigma-bonds between two carbon atoms is essential to gain a deeper understanding of chemical-bonding theories and would provide further insights into chemical reactions," explains Professor Yusuke Ishigaki, of the Department of Chemistry at Hokkaido University, who co-authored the study.

The single-electron bond was formed by subjecting a derivative of hexaphenylethane, which contains an extremely stretched out paired-electron covalent bond between two carbon atoms, to an oxidation reaction in the presence of iodine. The reaction produced dark violet-colored crystals of an iodine salt.

The team used X-ray diffraction analysis to study the crystals and found that the carbon atoms in them were extremely close together, suggesting the presence of single-electron covalent bonds between carbon atoms. They were then able to confirm this using a form of chemical analysis called Raman spectroscopy.

"These results thus constitute the first piece of experimental evidence for a carbon-carbon single-electron covalent bond, which can be expected to pave the way for further developments of the chemistry of this scarcely-explored type of bonding," Takuya Shimajiri, the lead author of the paper and now at the University of Tokyo, says.

Read the full report : https://www.global.hokudai.ac.jp/blog/scientists-discover-a-single-electron-bond-in-a-carbon-based-compound/

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

LG Chem Finds Key to Suppressing Thermal Runaway in Batteries

LG Chem announced on the 1st that its Platform Technology R&D team, under the CTO division, has developed a temperature-responsive Safety Reinforced Layer (SRL), a material designed to suppress thermal runaway. In collaboration with Professor Lee Minah's team from the Department of Battery Science at POSTECH, the material was analyzed, while the safety verification was conducted in partnership with LG Energy Solution. The research findings were published online in the September edition of Nature Communications, one of the world's leading scientific journals.

*Paper title: "Thermal Runaway Prevention through Scalable Fabrication of Safety Reinforced Layer in Practical Li-ion Batteries"

The thermal runaway suppression material developed by LG Chem is a composite material that changes its

electrical resistance based on temperature, acting as a "fuse" that blocks the flow of electricity in the early stages of overheating.

The research team created this thermal runaway suppression material in the form of a thin layer, just 1 micrometer (1μm) thick—about 1/100th the thickness of a human hair—positioned between the cathode layer and the current collector (an aluminum foil that acts as the electron pathway) in the battery. When the battery's temperature rises beyond the normal range, between 90°C and 130°C, the material reacts to the heat, altering its molecular structure and effectively suppressing the flow of current.

This thermal runaway suppression material is highly responsive to temperature, with its electrical resistance increasing by 5,000 ohms (Ω) for every 1°C rise in temperature. The material's maximum resistance is over 1,000 times higher than at normal temperatures, and it also features reversibility, meaning the resistance decreases and returns to its original state, allowing the current to flow normally again once the temperature drops.

Thermal runaway, a leading cause of electric vehicle battery fires, occurs when the cathode and anode inside the battery unintentionally come into direct contact, causing a short circuit and generating heat. Within seconds, the temperature can rise to nearly 1,000°C, leading to a fire. The thermal runaway suppression material is expected to be effective in preventing fires by quickly blocking the reaction path at the early stages of overheating.

In both battery impact and penetration tests, the batteries equipped with the thermal runaway suppression material either did not catch fire at all or extinguished the flames shortly after they appeared, preventing a full-blown thermal runaway event.

In a penetration test involving mobile LCO (Lithium Cobalt Oxide) batteries, where a nail was used to puncture the battery, only 16% of regular batteries did not catch fire. However, none of the batteries with the thermal runaway suppression material experienced any fire incidents.

In an impact test on NCM (Nickel Cobalt Manganese) batteries for electric vehicles, where a 10kg weight was dropped onto the batteries, all of the standard batteries caught fire. In contrast, 70% of the batteries equipped with the thermal runaway suppression material did not ignite at all, while the remaining 30% saw flames, but they were extinguished within seconds.

While previous methods involved placing temperature-responsive materials inside the battery cell, they often faced issues with slow reaction times or reduced energy density. LG Chem, however, has successfully developed a material that resolves such issues, backed by their expertise and patented material design, allowing for rapid application in mass production processes.

LG Chem has completed safety verification tests for the thermal runaway suppression material in mobile batteries and plans to continue safety testing for large-capacity electric vehicle batteries through next year.

Lee Jong-gu, CTO of LG Chem, stated, "This is a tangible research achievement that can be applied to mass production in a short period of time. We will enhance safety technology to ensure customers can use electric vehicles with confidence and contribute to strengthening our competitiveness in the battery market."

Read the full report : https://www.lgchem.com/company/information-center/press-release/news-detail-9535?lang=en_GLOBAL

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

The Thriving Role of Chemical Testing in Indian Chemical Industries Strategies and Developments

Introduction:

The world we live in is governed by chemistry, from the air we breathe to the medicines we consume. Thus ensuring the safety and purity of the chemicals involved is more important. Imagine what would happen if you mixed the wrong chemicals, it could put your life at risk or impact the environment. Therefore chemical testing in Indian chemical industries is thriving as it serves as a critical checkpoint between innovation and impact. In this article, we have combined the benefits, advantages, and importance of chemical testing, so you get everything covered in one article. We have also explored some of the strategies and recent developments of Indian chemical testing providers and market scenarios behind chemical testing. Let's begin.

What is chemical testing and its role in the chemical industry:

Chemical testing is the process of analyzing and evaluating chemical substances to ascertain their composition, properties and quality. The testing methods involve varied methods to determine the presence of specific elements or compounds, assess purity and check the contaminants or hazardous materials. Chemical testing ensures product integrity, protecting public health and complying with stringent regulations.

The role of chemical testing is highly essential as they are involved in:

Quality control: the raw materials, intermediates and finished products meet the required specifications and performance standards.

Safety: chemical testing ensures safety as it identifies toxicity, flammable or inflammable aspects or hazardous chemicals and thereby helps in preventing accidents and health risks for the workers and consumers.

Regulatory compliances: Chemical testing helps chemical companies maintain regulatory compliances by ensuring their products and processes meet both local and international environmental, safety and health regulations. For instance, toxicology testing helps in identifying the harmful or toxic components in products thereby ensuring they meet safety standards set by the Indian regulatory bodies like the Central Pollution Control Board (CPCB), the Food Safety and Standards Authority of India (FSSAI) or global agencies like the Environmental Protection Agency (EPA).

Chemical testing also helps in evaluating potential risks associated with the chemicals used in the products. This helps in preventing exposure to harmful

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MICROVAST POWERS THE NEXT GENERATION OF ELECTRIC COMMERCIAL VEHICLES WITH GROUNDBREAKING BATTERY TECHNOLOGY AT IAA TRANSPORTATION 2024

Microvast Holdings, Inc. a technology innovator that designs, develops, and manufactures lithium-ion battery solutions, is advancing the adoption of electric commercial vehicles by launching its latest high-performance battery solutions at IAA Transportation 2024. The new lineup includes the introduction of silicon-based HnSO Cells, Lithium Titanate Oxide (LTO) Cells, and the third-generation MV-I Pack, offering an unprecedented combination of energy density, safety, and sustainability.

Microvast's advanced battery solutions are designed to meet the rigorous energy demands of commercial transportation, enabling manufacturers to accelerate their shift to cleaner, more efficient electric power-trains.

With an energy density of 300 Wh/kg, these cells provide high energy density, long cycle life (exceeding 4,000 cycles), and reduced total cost of ownership (TCO), making them ideal for long-range BEV and HEV applications. Lithium Titanate Oxide (LTO) Cells is Known for their enhanced safety and long cycle life of up to 20,000 cycles, LTO cells offer an energy density of 100Wh/kg, optimized for ultra high-power applications in challenging environments.A robust, lightweight, turn-key solution featuring up to 200 Wh/kg energy density and over 5,000 full cycles. The MV-I Pack also integrates Microvast's 5th generation Battery Management System (BMS), ensuring compliance with ISO 26262 ASIL-C and advanced cybersecurity standards.Additionally, Microvast introduces our fifth generation Battery Management System (BMS 5.0). BMS 5.0 is engineered for maximum functional safety, adhering to ISO 26262 ASIL-C standards and ISO/SAE 21434:2021 cybersecurity standards. This system ensures the highest levels of safety and security for electric vehicle operations.

Microvast's latest comprehensive solutions for electric commercial vehicles contain an array of cell, module, and pack solutions, providing a one-stop solution for electric commercial vehicle applications with various operational profiles. With vertical integration from raw materials to turn-key solutions, Microvast offers scalable and versatile products tailored to meet the specific needs of different commercial operations.

"Our new battery technology marks a significant advancement for electric commercial vehicles, boasting increased energy density. The rapid charging capabilities facilitate enhanced mobility, while the cycle life is reliably extended. We're driving the future of electric mobility with solutions that improve efficiency and reduce emissions," said Dr. Wenjuan Mattis, CTO of Microvast.

Faster innovation, tailored customization, and exceptional quality: the future of e-mobility. Microvast's vertically integrated model allows for complete control over all phases of development, from R&D to manufacturing. This unique model allows for faster innovation, tailored customization, and exceptional quality, providing commercial vehicle manufacturers with complete, scalable solutions that meet their specific operational needs.

Stefan Herr, Executive Vice President Microvast EMEA, added, "Our innovative battery technology is just the beginning. With a full-service approach, we provide end-to-end solutions for our customers from tailored energy systems to ongoing support and optimization. We're committed to delivering not just advanced technology, but a seamless, reliable partnership that ensures maximum performance and long-term success for electric commercial vehicle manufacturers and fleet operators alike."

Source : Automotive Industries

MOBILITYX 2024 TO SHOWCASE LATEST TRENDS IN EV MARKET

Exhibition and Summit in Malaysia to Feature Groundbreaking Innovations, Foster Partnerships, and Discuss Future Mobility Trends as Southeast Asia Emerges as a Global Hub for Electric Vehicles

MobilityX 2024 is set to take center stage

as one of the most anticipated exhibitions and summits in the electric vehicle (EV) industry, bringing together global leaders, innovators, and policymakers to explore the future of clean mobility at the Kuala Lumpur Convention Centre (KLCC) from 9-11 October, 2024. Co-located with the International Greentech & Eco Products Exhibition & Conference Malaysia (IGEM) and the Clean Energy Technology Asia (CETA) summit, MobilityX will highlight the latest advancements in the clean mobility market, facilitate cutting-edge partnerships, and ignite discussions that will shape the mobility landscape in Southeast Asia.

As Southeast Asia positions itself as a rising global hub for the electric vehicle industry, MobilityX 2024 will serve as a premier platform for stakeholders to exchange insights on EV trends, technology advancements, and policy frameworks that are driving the sector forward. From OEM automakers to energy providers, government bodies to tech innovators, the event will feature groundbreaking innovations that address the growing demand for clean, sustainable mobility solutions.

MobilityX 2024 will play a critical role in supporting Malaysia's aspirations as outlined in the National Energy Transition Roadmap (NETR), which identifies green mobility as a key pillar of the country's sustainable development strategy. The event will showcase how the growing

EV ecosystem can help operationalise a low-carbon transport system, aligning with Malaysia's goal of achieving net-zero carbon emissions by 2050.

"Electric vehicles are steering nations towards a cleaner future, and Malaysia has the right foundations in place to build a low-carbon transport infrastructure," said Mel Lanvers-Shah, CEO of The Co_Lab Pte Ltd, the event's owner and organiser. "With the support of initiatives like MobilityX and collaboration among industry leaders, we are well on track to establish Southeast Asia as a leader in future mobility."

As a dynamic platform for innovation, MobilityX 2024 will feature interactive exhibits, product launches, and expert panels at the co-located CETA Summit discussing the latest technologies shaping the future of mobility. Topics will include the integration of electric vehicles into smart cities, advancements in EV charging infrastructure, and the role of autonomous and connected vehicles in reducing emissions and transforming urban transport.

In addition to showcasing technological advancements, MobilityX 2024 will foster cross industry collaborations and partnerships essential to accelerating the global EV transition. It will provide opportunities for OEMs, Mobility Innovators, After Market Suppliers and Technology Providers to network and engage in strategic dialogues that address both the challenges and opportunities facing the clean mobility sector.

With Southeast Asia on the cusp of a mobility revolution, Malaysia stands at the forefront of this transformation. MobilityX 2024 is set to cement the nation's role as a leading player in the global EV market, propelling the region towards a sustainable, low-carbon future.

The IGEM, CETA,and MobilityX Exhibition and Summit is set to welcome nearly 50,000 attendees, with over 500 exhibitors and sponsors showcasing cutting-edge solutions. Energy professionals from across the region will gather to explore innovations and secure the resources needed to drive business growth and sustainability in the industry.

Organised by The Co_Lab Pte Ltd, MobilityX is held under the patronage of the Ministry of Natural Resources and Environmental Sustainability (NRES), with the Malaysian Green Technology and Climate Change Corporation (MGTC) as its strategic partner. To register and for more information, please visit www.mobilityx.asia.

Source : Automotive Industries

FARASIS ENERGY SIGNS STRATEGIC AGREEMENT FOR SOLID-STATE BATTERIES WITH JMEV; FIRST SPS BATTERY FOR JMEV'S 'ELIGHT' MODEL ROLLS OFF THE PRODUCTION LINE

GANZHOU, China, Oct. 2, 2024 / PRNewswire/ -- On September 29, JMEV and Farasis Energy signed a strategic cooperation agreement for the development of solid-state batteries, with the SPS (Super Pouch Solution) battery for the 'ELIGHT' model rolling off the production line at the same time.

According to the agreement, both parties aim to jointly promote the research, production, and market application of solid-state batteries. This

includes accelerating the research and development of key technologies for solid-state batteries, facilitating industrial transformation and upgrading, and advancing the maturity and commercialization process of solid-state battery technology.

Solid-state batteries are seen as a competitive edge in new energy vehicle technology due to their high energy density, fast charging, long cycle life, and enhanced safety. Farasis Energy has been deeply engaged in areas such as electrochemical systems and Pouch batteries stacking processes for many years, perfectly aligning with the development path of solid-state batteries. The product development strategy focuses on medium- to long-term R&D goals for solid-state batteries that are high-energy, high-rate, high-safety, and low-cost, ensuring timely conversion of research achievements.

Currently, Farasis Energy's first-generation semi-solid batteries have been mass-produced for passenger vehicles and have made breakthroughs in the commercial vehicle sector, forming a strategic alliance with FAW Jiefang to jointly promote the market and industrial chain development of semi-solid and solid-state batteries for commercial vehicles. Farasis Energy aims to complete the transition from semi-solid to solid-state battery commercialization within the next five years.

On the same day, the first SPS battery system of from Farasis Energy, designed to support the "ELIGHT" model, came off the production line. This follows previous supplies to Geely Radar Horizon and GAC Second-Gen Aion V models. The launch of the "ELIGHT" model's SPS battery aims to assist JMEV in upgrading its pure electric platform and creating a pioneering sports sedan for a better travel experience.

Farasis Energy's SPS features:

- A 10-minute charge for a 400-kilometer range
- Applicability to chassis heights from 85mm to 145mm
- A volume utilization rate of up to 75%
- Full chemical system compatibility, including sodium ion batteries, lithium iron phosphate, and semi-solid batteries, etc.

Source : Farasis Energy

ARKEMA SHOWCASES INNOVATION AND LEADING MATERIAL PORTFOLIO AT BATTERY SHOWS IN NORTH AMERICA AND INDIA

Arkema, a global leader in specialty materials, will showcase a unique portfolio of solutions for electric vehicle (EV) and energy storage system (ESS) battery systems in October.

- At the BATTERY SHOW INDIA at the India Expo Center in Greater Noida, October 3-5 (booth# B 300, Hall#5),
- At the BATTERY SHOW NORTH AMERICA at Huntington Place in Detroit, Michigan (US), October 7-10 (booth #5003),
- At the BATTERIES EVENT 2024 IN LYON, France from October 16-18.

Arkema has supported the battery industry by providing innovations for inside-the-cell and external components.

Arkema is dedicated to advancing the science of EV and ESS battery materials worldwide through continual investments, research and co-development initiatives. We are supporting these industries, critical for the energy transition, by helping battery manufacturers increase energy density and battery lifespan, enhance battery efficiency and improve safety." Said Woldemar D'AMBRIERES, Global Market Manager for Batteries at Arkema

Arkema offers a unique and wide range of specialty materials, coatings and adhesives designed for both internal and external battery cell applications, supported by robust global manufacturing and supply capabilities allowing to offer regional supply to our clients.

ARKEMA'S MATERIAL OFFERING FOR BATTERIES includes KYNAR® PVDF cell cathode binders and separator coatings, INCELLION acrylic based binders and additives for anode, separator and primer, FORANEXT® Ultra-pure LiFSI salts and LiTDI additives for electrolytes, GRAPHISTRENGTH® conductive additives, Bostik adhesives, Polytec PT Thermal Interface Materials, RILSAN®

Polyamide 11 for EV busbar insulation and cooling lines, KEPSTAN® PEKK and Polyimide films, and SARTOMER® UV curable solutions for insulation.

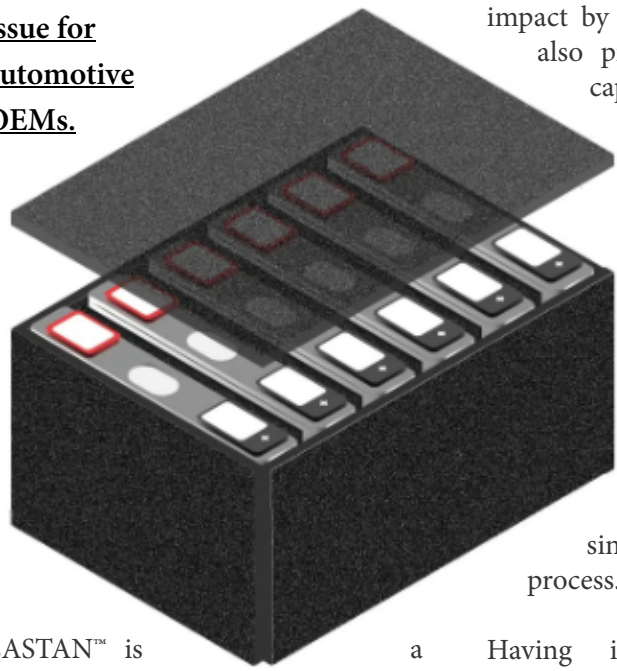
Source : Arkema

ASAHI KASEI LAUNCHES NEW GRADE OF LASTAN™ FLAME-RETARDANT NONWOVEN FABRIC – ENHANCING EV BATTERY SAFETY WITH SUPERIOR RESISTANCE TO FLAMES AND PARTICLE BLASTS

Düsseldorf, Tokyo and New York – September 19, 2024 – The Japanese technology company Asahi Kasei is introducing a new material solution for enhanced EV battery safety. A flame-retardant and highly flexible nonwoven fabric, LASTAN™ is an outstanding alternative to conventional materials for thermal runaway protection. It can be utilized in top covers, busbar protection sleeves, and other applications within the EV battery pack.

Although electric vehicles are becoming more common worldwide, battery safety is still a major concern for many car users. According to the latest "Asahi Kasei Automotive Consumer Survey," 34% of non-EV owners in China see improved safety as a primary consideration in buying an electric vehicle. Against this background, global OEMs seek to further raise the safety of EV batteries, and the market for materials to prevent thermal runaway is expected to grow by some 15% annually from 2024 onward, with even further expansion of demand in the future (IDTechEX: "Fire Protection Materials for Electric Vehicle Batteries 2024–2034").

In this context, there is increasing demand for materials in EV battery cover applications having excellent resistance against flames and particle blasts, as well as good electrical insulation properties. While mineral-based materials are generally used as protection against thermal runaway at present, such materials tend to be heavy and brittle. Being stiff, these materials are difficult to adapt to complex shapes, making processability an issue for automotive OEMs.



LASTAN™ is a non-mineral flame-resistant fabric made by air baking a special acrylic fiber at 200 –300°C. It is characterized by high flame resistance and good electrical insulation, which are further improved by a special coating process that also augments abrasion resistance. This allows the material to provide effective protection against particle bombardment from venting gas.

With these exceptional characteristics, LASTAN™ has been used for many years as an optimal material for failure prevention and safety in various industries.

Withstanding 1,300°C flames and impact of 200–500 µm particles

Even when a 1,300°C flame is applied, the temperature on the opposite side of LASTAN™ remains below 400°C. While a "limiting oxygen index" (LOI) value of 27 or higher is generally considered to indicate flame retardance, this material has an LOI value of 50 or higher. In UL94 flame retardance testing, LASTAN™ has obtained the highest rating of 5VA. No holes are formed in LASTAN™ even when it is exposed to a flame of 1,300°C for one minute.

In addition to its high flame resistance, LASTAN™ is resistant to high-pressure impact by particles of 200–500 µm. It also provides electrical insulating capacity of up to 3.5 kV at a thickness of 1 mm. LASTAN™ also features outstanding processability, being highly flexible while maintaining its performance characteristics in sheets as thin as 0.8 mm. This makes it easily processed with ordinary tools, contributing to a simplified manufacturing process.

Having integrated production of LASTAN™ currently in Japan, Asahi Kasei is considering production in the United States and other countries in the future. The company will exhibit the new LASTAN™ grade at the North American Battery Show from October 7 to 10, 2024, in Detroit, Michigan.

Source : Asahi Kasei

CHANGE IN OWNERSHIP RATIO IN REGENERATIVE MEDICINE AND CELL THERAPY CDMO

Sumitomo Chemical Company Limited (Head Office: Chuo-ku, Tokyo, Japan; "Sumitomo Chemical") and Sumitomo Pharma Co., Ltd. (Head Office: Chuo-ku, Osaka, Japan; "Sumitomo Pharma") announced that they have agreed to change their respective ownership ratios in their joint venture Contract Development and Manufacturing Organization (CDMO), S-RACMO Co., Ltd. ("S-RACMO"), a company that develops manufacturing methods and manufactures products for the regenerative medicine and cell therapy field. On October 1, 2024, Sumitomo Chemical's ownership ratio will increase to 66.6% from 49%, and it will lead the CDMO's business operations.

The field of cell therapy had a market size of approximately $2 billion in 2022, and it is expected to grow rapidly at an annual rate of 10-15% going forward. S-RACMO was established and began business operations in 2020. It has been leveraging Sumitomo Chemical's platform technology in iPS/ES cells, along with its know-how as a contract manufacturer of pharmaceuticals, while also taking advantage of Sumitomo Pharma's expertise gained by developing sophisticated manufacturing methods and pharmaceutical development through its many years of research and multiple projects in the regenerative medicine and cell therapy business. Combining these strengths, S-RACMO has been working to deepen and further enhance its capabilities as a CDMO in the regenerative medicine and cell therapy field. In addition to a manufacturing facility whose establishment was completed in 2021, it is in the midst of constructing a new manufacturing facility that is scheduled to be completed in 2025. In terms of its financial performance, as well, it has recorded profits in three consecutive years since fiscal 2021, while also achieving increasing profits.

As announced at its Investors' Meeting for the Current Priority Management Issues and Business Strategy held on April 30, 2024, Sumitomo Chemical has positioned the advanced medical solutions business as a new core area for growth, starting with its CDMO business in active ingredients and intermediates for small molecule drugs as well as in regenerative medicine and cell therapies. It is moving ahead in developing this business as a next-generation growth driver. The increase its ownership ratio announced today is an expression of Sumitomo Chemical's commitment to further developing the regenerative medicine and cell therapy CDMO business. Under Sumitomo Chemical's leadership, S-RACMO will accelerate its business, using the new manufacturing facility currently under construction in Osaka and entering the US market.

Sumitomo Pharma, meanwhile, is positioning itself as a front runner in developing cell therapy products using iPS cells in the regenerative medicine and cell therapy business. It is aiming to bring to market the world's first cell therapy product derived from iPS cells. To maximize group synergies in the research and development of regenerative medicine and cell therapies as well as their manufacturing and sales organization, Sumitomo Chemical and Sumitomo Pharma plan to establish a new joint company within fiscal 2024. They plan to publicly announce further details at an appropriate time once further details are determined.

Source : Sumitomo Chemical

INDONESIAN REGULATOR APPROVES REMITCH® OD TABLETS 2.5MG FOR PRURITUS RELIEF

Tokyo, Japan, September 26, 2024 – Toray Industries, Inc., and Meiji Seika Pharma Co., Ltd., announced today that PT. Meiji Indonesian Pharmaceutical Industries, a subsidiary of the latter company, obtained regulatory approval in August, to import and market REMITCH® OD Tablets 2.5μg (generic name: nalfurafine hydrochloride; see note below) in Indonesia. This medication is for dialysis patients and patients with chronic liver disease, amongst those who finds the existing pruritus therapies and treatments ineffective.

REMITCH® OD Tablets 2.5μg has already been marketed in Japan for dialysis patients and patients with chronic liver disease, amongst those who similarly finds the existing pruritus therapies and treatments ineffective. In January 2019, Toray and Meiji Seika Pharma signed an agreement to develop and market this medicine in Thailand and Indonesia, thereafter developing it in those countries.

PT. Meiji Indonesian Pharma-ceutical Industries filed an approval application with the Badan Pengawas Obat dan Makanan (BPOM) in March 2022.

Having obtained the regulatory approval in August 2024, it will now market and provide necessary information concerning REMITCH® OD Tablets 2.5µg in Indonesia. In addition, Thai Meiji Pharmaceutical Co., Ltd. obtained import and marketing approval for dialysis patients amongst those who finds the existing pruritus therapies and treatments ineffective from the Food and Drug Administration of Thailand's Ministry of Public Health in June 2023, and has already commenced its sales and information dissemination activities in Thailand this year.

Through the marketing and information dissemination activities of REMITCH® OD Tablets 2.5µg, Toray and Meiji Seika Pharma will contribute to alleviating refractory pruritus for dialysis patients and patients with chronic liver disease, amongst those who finds the existing pruritus therapies and treatments ineffective.

Source : Toray

IPCA TO MARKET NOVALEAD'S PATENTED, REPURPOSED DRUG DIULCUS® FOR THE TREATMENT OF DIABETIC FOOT ULCER (DFU)

The approval is based on Phase III study which established that NovaLead's patented drug branded as

Diulcus®, which will be marketed in India by Ipca Laboratories Ltd. Diulcus® promotes the complete closure of DFU significantly better than Standard of Care, which is the present treatment of choice. Currently there is a global unmet medical need for the treatment of DFU.

With over 15% Diabetic patients suffering from DFU at least once in their lifetime, DFU is the most prevalent complication caused by chronic diabetes. The approval of this patented repurposed drug is significant because DFU is the leading cause for lower limb amputations globally.

The approval of Diulcus® marks a pivotal moment for the people suffering from DFU, who until now had few effective drug options for complete wound closure. With 20% higher incidence of complete wound closure among DFU patients demonstrated in its pivotal Phase III trial over current standard of care, Diulcus® provides significantly superior treatment option to physicians treating DFU patients. Approval of Diulcus is also a demonstration of effective Public-Private partnership as its development was part funded through Grant-In-Aid from BIRAC, a Government of India initiative.

Diulcus® is a novel topical formulation of an active pharmaceutical ingredient which was originally approved for the treatment of Tachycardia as an intravenous injection. NovaLead has been granted patents for it in several countries including regulated markets of USA, EU and Japan.

Diulcus® will be made available to the patients of DFU by Ipca Laboratories Ltd. (Ipca) through an exclusive IP licensing arrangement with NovaLead for Indian market.

"We are delighted to partner with NovaLead through an IP Licensing arrangement to bring Diulcus® for DFU patients in India. It demonstrates Ipca's commitment towards to patients suffering from unmet medical need of DFU management and its focus on the diabetic sector. We are lining up for making Diulcus® available in India market from August, 2024." Said Mr. Premchand Godha, Executive Chairman of Ipca Laboratories Ltd."

Source : IPCA

DUTCH MNC AKZONOBEL LAUNCHES SUSTAINABLE METALLIC POWDER COATINGS

The new collection features patented stabilized particulate technology which results in a more concentrated, deeper metallic finish than conventional metallic powder coatings.

"Our scientists and expert team of color specialists are at the forefront of innovation and creative excellence and are constantly working with and for our customers," says Frank Vergeer, Research & Development director at AkzoNobel's Powder Coatings business.

"With this new offering, we're enabling architects and designers to not only reimagine how they can create a stunning metallic effect finish, but are also addressing their desire for a more sustainable world by overcoming the cost and practical handling considerations of using real metal."

Designed to protect and enhance even in the most challenging environments, the new range features a broad palette of superdurable on-trend finishes, from copper, brass, steel and nickel through to silver and iron.

As with all Interpon products, it contains no volatile organic compounds (VOCs) and is more sustainable in application, since any overspray can be captured and reused, leaving virtually zero waste.

It's the latest in a series of recent innovations from AkzoNobel's Powder Coatings business, which have included the company's first single layer powder coating for two-wheelers (Interpon A300) and an industry-first architectural powder coating which can be cured at temperatures as low as 150?C (Interpon D1036 Low-E and Interpon D2525 Low-E).

Source : Fibre2Fashion News Desk (HU)

TORAY ADVANCED COMPOSITES ANNOUNCE LAUNCH OF HIGH-PERFORMANCE TORAY CETEX® PESU THERMOPLASTIC COMPOSITE MATERIAL

NIJVERDAL, The Netherlands, September 26, 2024—Toray Advanced Composites, a leading innovator in advanced material technology, today announces the launch of Toray Cetex® TC1130 PESU thermoplastic composite material. This high-performance thermoplastic composite material is specifically engineered to address the growing need for lightweight and environmentally sustainable materials in aircraft interior applications, offering significant benefits to the aerospace industry.

Suited for monolithic and thermoplastic-based sandwich panel constructions, Toray Cetex® TC1130 PESU (PolyEtherSulphone) continuous fiber reinforced thermoplastic composite enables the creation of mono-material sandwich structures when combined with core materials of the same chemistry. Compared to materials currently used, this not only achieves additional weight savings and cost-effective post-processing, but also ensures fully recyclable homogeneous sandwich structures. Additionally, Toray Cetex® TC1130 offers excellent fire, smoke, and toxicity (FST) performance, outstanding impact resistance, and toughness, which are essential for demanding interior applications.

"We are excited to share our latest product development with the world," states Marc Huisman, Director Research and Development, Toray Advanced Composites Europe. "As a leading material supplier, we understand the challenges faced by the aerospace industry to achieve full circularity. We're proud to continue our long legacy of material technology innovation by bringing this latest generation of sustainable material solutions to market".

Source : Toray

ASAHI KASEI AND AQUAFIL COLLABORATE ON CELLULOSE NANOFIBER AND REGENERATED ECONYL® POLYMER FOR 3D PRINTING APPLICATIONS

The Japanese technology company Asahi Kasei recently signed a memorandum of understanding (MOU) with Aquafil S.p.A., an Italian manufacturer of polyamide 6 (PA6). The two companies agreed to develop a novel material for 3D printing (3DP) applications utilizing Aquafil's ECONYL® Polymer chemically recycled PA6 and Asahi Kasei's cellulose nanofiber (CNF), with the support of ITOCHU Corporation, which has made a capital investment in Aquafil. Pellets or filaments of this compound achieve superior formability and strength, which make them suitable for use in automotive and aeronautical applications.

ECONYL® Polymer is a chemically recycled PA6 derived from post and pre-consumer waste. Utilizing polyamide waste such as used fishing nets, old carpets, industrial waste and so on, the material is first depolymerized into monomers, and then re-polymerized into ECONYL® Polymer chips.

Asahi Kasei's CNF is made from cotton linter and features high heat resistance and network-forming ability. Furthermore, CNF has superior material recyclability compared to glass fiber. The new CNF/ECONYL® Polymer compound features excellent formability and strength especially in 3DP usage, and Asahi Kasei sees a great potential in high-performance applications mainly in the automotive and aeronautical fields.

Asahi Kasei plans to begin trial sales of filament of the new compound material in the EU, US, and Japan in Q3 2025. The new material will be showcased at the upcoming Fakuma (15-19 October, Germany), Sustainable Material Expo (29-31 October, Japan), and Formnext (19-22 November, Germany).

Source : Asahi Kasei

HANWHA AEROSPACE AND SK ENMOVE UNVEIL WORLD'S FIRST IMMERSION COOLING ESS: LEADING THE WAY IN NON-FLAMMABLE BATTERY SOLUTIONS

Hanwha Aerospace, in collaboration with SK Enmove, has unveiled the world's first immersion cooling energy storage system (ESS), marking a significant step toward non-flammable battery technology. This partnership is set to drive innovation and revolutionize the ESS market with safer, more sustainable energy storage solutions, bolstering South Korea's leadership in green energy storage. The newly developed immersion cooling ESS uses advanced thermal fluid technology to fill the lithium-ion battery modules, effectively isolating each cell. This innovative design prevents the spread of thermal runaway, even if a single cell experiences this issue, and addresses other safety risks such as insulation failures due to environmental factors like dust or salt.

"With decades of experience in ESS design and R&D, we have achieved industry leading levels of safety," said Seunghyun Son, Head of Energy Systems Center at Hanwha Aerospace. "Our immersion cooling ESS is set to lead the next generation of energy storage solutions, ensuring the highest levels of fire prevention. Safety is a critical requirement for maritime ESS applications."

By offering superior safety compared to conventional air- and water-cooled ESS models, the system enhances the non-flammable characteristics of the battery. It has received certifications from major global institutions, including DNV and the Korean Register of Shipping (KR), for its key model, SEAL.

SK Enmove, Hanwha Aerospace's partner providing thermal fluids for the immersion cooling ESS, also presented its differentiated fluid technology at the event.

"By leveraging SK Enmove's world class Group 3 base oil technology and unique additive formulations, we have maximized the non-flammable properties of the battery," said Sang-Hyuk Seo, Head of e-Fluids B2B Business at SK Enmove. "We are not only focusing on marine applications but are also developing submersion cooling ESS for land-based uses, including data centers and electric vehicles. Our goal is to position SK Enmove as a global leader in immersion cooling technology."

SK Enmove, renowned for its market-leading Group 3 base oils and the well-known ZIC lubricants, has been diversifying into electric vehicle fluids and cooling fluids since 2022, with plans to commercialize its immersion cooling technology. This strategic expansion aligns with its goal to capture a significant share of the projected KRW 42 trillion ($31.5 billion) power efficiency market by 2040. By leveraging its extensive experience in supplying ESS to public and maritime commercial vessels, Hanwha Aerospace aims to lead in eco-friendly maritime solutions. In synergy with Hanwha Ocean's maritime business initiatives, the company plans to accelerate the development of a value chain in the eco-friendly ship sector. These strategic initiatives are expected to enhance Hanwha's role in sustainable energy storage and maritime innovation.

Source : Hanwa

UNIVAR SOLUTIONS CHOSEN AS BASF'S EXCLUSIVE DISTRIBUTOR OF BAXXODUR® PRODUCT LINE FOR CUSTOMERS IN NORTH AMERICA

- Sustainable innovation: 100% natural, readily biodegradable biosurfactants.
- Excellent performance: Good pigment and filler wetting, improved substrate wetting, reduced grinding time.
- Environmentally friendly solutions: Suitable for waterborne coatings and inks, EU Ecolabel compliant.

Essen, Germany. Evonik Coating Additives is launching innovative biosurfactants specifically designed for coating and ink formulations. The two new products, TEGO® Wet 570 Terra and TEGO® Wet 580 Terra, are set to transform the paints, coatings and inks industry by combining high performance with an exceptional sustainability profile.

These biosurfactants are produced by microorganisms in a unique fermentation process. Unlike fossil-based surfactants, they are 100% derived from natural resources. Besides having very low levels of volatile organic compounds (VOCs), their natural origin makes them readily biodegradable and well tolerated by aquatic organisms. TEGO® Wet 570 Terra and TEGO® Wet 580 Terra are specifically designed for use in waterborne coatings and inks.

Elias Lacerda, Head of Coating Additives at Evonik, said: "With our TEGO® Wet 570 Terra and TEGO® Wet 580 Terra, we offer our customers completely new high-performance solutions that also drive the green transformation in the paint and coatings industry."

Their fast wetting of pigments and fillers leads to reduced grinding time and energy consumption, resulting in energy savings and efficient production processes for customers.

Katina Kiep, Head of Decorative Coatings at Evonik Coating Additives, added: "Our TEGO® Wet 570 Terra and TEGO® Wet 580 Terra are suitable for waterborne decorative paints, industrial and transportation coatings and inks. Their unique properties and the fact that they meet the stringent standards of the EU Ecolabel make them an ideal choice for our customers to formulate coatings for a sustainable future."

The majority of these biosurfactants are produced in Slovakia. Evonik is leading the development of biosurfactants on an industrial scale with its IP-protected, fermentation-based process for the production of rhamnolipids. Rhamnolipids are produced from renewable corn feedstock using a biotechnological process. The result is a high-performance, non-toxic, biodegradable biosurfactant.

"These new products not only demonstrate our strong innovation capabilities, but also our commitment to driving positive change in the development of environmentally friendly solutions and setting new standards for additives in the coatings and inks industry," added Tim-Frederic Sloot, Head of Sustainability at Evonik Coating Additives.

Benefits for Decorative Coatings

In decorative paints and pigment concentrates, these biosurfactants provide improved wetting of organic and inorganic pigments and act as beneficial co-dispersants. They improve the wetting speed of pigments and fillers, making the grinding step more efficient and reducing time and energy consumption. They support good hiding power performance without compromising film strength. They also help eliminate defects in sensitive binders and increase bio-based content. There is no negative interaction with rheology modifiers.

Benefits for Industrial Coatings

In industrial coatings, TEGO® Wet 570 Terra and TEGO® Wet 580 Terra provide excellent substrate wetting for protective coatings and improve pigment wetting and dispersion. They ensure optimum colour properties, improved storage stability and good corrosion resistance. These biosurfactants also support the anti-crater effect in can coatings.

Benefits for Printing Inks

In printing inks, these biosurfactants improve wetting on a variety of substrates. In the dispersion process they speed up and improve the wetting of pigments and fillers. They contribute to the sustainability profile of the inks by reducing VOC levels and improving the biodegradability of the final product.

Evonik's Coating Additives Business Line offers a wide range of speciality additives for coatings and printing inks. The business has decades of experience in developing products for a range of coatings markets, including decorative coatings, industrial coatings, automotive

coatings and printing inks.

Source : Evonik

EVONIK LAUNCHES NEW BIO-SURFACTANTS TEGO® WET 570 TERRA AND TEGO® WET 580 TERRA FOR COATINGS AND INKS

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Source : Evonik

HYGENCO ENTERS INTO MOU WITH REC TO FINANCE GREEN AMMONIA PROJECT IN GOPALPUR, ODISHA

GURUGRAM, India and AHMEDABAD, India, Sept. 18, 2024 /PRNewswire/ -- Hygenco Green Energies Pvt Ltd, a pioneer in producing low-cost green hydrogen, announced entering into a MOU with REC Limited (earlier Rural Electrification Corporation limited) for financing Hygenco's Green Ammonia Project in Gopalpur, Odisha. The MOU was formalized during the 4th Global Re-Invest held in Gandhinagar, Gujarat.

The company's Green Ammonia Project is part of its broader vision to reduce carbon emissions. Under the MOU, REC will fund upto $280 million for the project, even as Hygenco is planning to invest about US$2.5 billion towards its green hydrogen and green ammonia projects across India in the next few years.

Amit Bansal, Co-Founder and CEO of Hygenco, said, "We are committed to energy security and aligning with the Indian government's vision of Aatmanirbhar Bharat. Our projects will help reduce carbon emissions and pave the way for a sustainable future."

Hygenco has already made a name for itself in the green hydrogen space. In March 2024, Hygenco commissioned India's first commercial green hydrogen plant in Hisar, Haryana. In 2022, Hygenco had signed India's first-ever commercial

long-term offtake agreement of green hydrogen for the Hisar based project with Jindal Stainless. The developer has also signed agreements with major companies including Sterlite Technologies to supply green hydrogen. Hygenco's goal is to become a global leader in green hydrogen and green ammonia solutions.

Hygenco's success is a significant step towards reducing India's carbon footprint. Their projects will help decarbonize industries that are difficult to abate, such as steel and chemical. This will contribute to India's climate goals and help create a sustainable future.

Source : PRNewswire

SAUDI BASIC INDUSTRIES CORPORATION LAUNCHES LOW CARBON CHEMICALS

The first product in the portfolio will be methanol from SABIC's Chemicals business.

The methanol product in the new portfolio contain a lower carbon content than a traditional portfolio, with the same high quality product specifications. Its lower carbon footprint is due to the raw material used for production: by-product CO2 is captured from upstream processes (carbon capture and utilization - CCU), providing a valuable source of carbon needed to manufacture the methanol, while reducing usage of traditional feedstocks. As the captured CO2 is utilized as a raw material, the new product can enable Product Carbon Footprint (PCF) savings.

Certified low carbon methanol is being manufactured at SABIC's Joint Ventures' (JV) methanol production sites. It is typically used - for example – in maritime fuel, resins for laminate flooring and furniture panels and acrylic sheets.

More certified low carbon products in SABIC's global portfolios will be rolled out across the company's worldwide asset base.

"It is evident that the petrochemical industry plays a pivotal role in shaping a resilient and sustainable future. With the increasing demand for innovative materials and sustainable practices, the industry stands at the forefront of transformative trends towards carbon neutrality and a circular carbon economy. SABIC is deeply committed to pursue efforts and explore solutions together with our value chain partners, to help meet our carbon neutrality ambition," said Olivier Thorel, EVP Chemicals at SABIC.

As an early adopter, SABIC worked together with independent third parties to drive the development of the new ISCC Carbon Footprint Certification (CFC) module and execute a pilot audit for the certification at SABIC's JVs' methanol production sites. The Carbon Footprint Certification (CFC) module has been developed for the certification

of product carbon footprints for various products and value chains. The model will make it possible to link sustainability certifications and mass balancing along complex value chains.

"SABIC is advancing technologies to support its value chains in carbon footprint reduction, including electrification, hydrogen combustion, renewable energy, as well as carbon capture, utilization and storage. High-concentrated CO2 produced as a by-product can then be used as an alternative feedstock to make new products. This CCU project, which converts captured CO2 into low carbon methanol and its derivatives, is a great enabler to reduce the embedded carbon emissions in the value chains of SABIC and its customers", said Dr. Fahad Al Sherehy, VP Corporate Sustainability at SABIC.

SABIC is continually pursuing efforts and exploring solutions to meet carbon neutrality from operations under its control by 2050, taking into account different regional and national ambitions, commitments and initiatives. The new low carbon offering is another example of how SABIC is collaborating with partners along the value chain to reduce their indirect Scope 3 emissions.

Source Fibre2Fashion News Desk (HU)

CLARIANT MEGAMAX™ 800 SETS NEW PRODUCTION RECORD AT ZHONGTIAN HECHUANG METHANOL PLANTS

- **MegaMax 800 methanol synthesis catalyst installed at two Zhongtian Hechuang methanol production plants in July 2020**
- **Both units report excellent catalyst performance with record cumulative methanol production of 48,600 tons per metric ton of catalyst**
- **The catalyst offers high activity, selectivity and stability, allowing a long lifetime of productivity and improved energy efficiency**

MUNICH, October 16, 2024 - Clariant, a sustainability-focused specialty chemical company, today announced outstanding results regarding its MegaMax 800 methanol synthesis catalyst at Zhongtian Hechuang which operates with two methanol units, each producing 1.8 megatons of methanol annually through a Lurgi MegaMethanol™ process. Both had been operating favorably with Clariant's previous catalyst, MegaMax 700, for around 3.5 years prior to replacement with the newer MegaMax 800, as well as Clariant deep desulfurization systems ActiSorb™ S2 and ActiSorb S6 and successful startup in July 2020. Four-year results show excellent catalyst efficiency and productivity with operations at 110% of design capacity. Combined yield of MTO grade methanol has increased to 17,195 kilotons, and cumulative methanol production has soared to 48,600 tons per metric ton of catalyst, setting a new record among global coal-based mega-methanol plants.

Georg Anfang, Vice President Syngas and Fuels at Clariant Catalysts, commented, "We are delighted that our MegaMax 800 catalyst has set a new benchmark in mega-methanol production. The success is a result of our company's 50 years of experience in methanol catalysis. This important achievement would not have been possible without the strong collaboration between Zhongtian Hechuang's professional operations team and our technical experts."

Xiaohua Chu, Secretary of Party Committee of Zhongtian Hechuang Chemical Branch, stated, "We were very pleased with the performance of catalyst. Our methanol plants set a new record on lifetime operation and accumulative production since its commerce. The excellent performance of Clariant's methanol catalyst laid the foundation for 4 years continuous operation and high-efficient maintenance and start up. We look forward to even stronger results with the next load of catalyst."

Founded in 2007 in Eerduosi, Inner Mongolia, Zhongtian Hechuang Energy Co. Ltd. is a leading energy and chemicals joint venture between SINOPEC, China Coal Group, Shenergy Group, and Inner Mongolia Manshi Group. The company operates the world's largest coal-based methanol-to-olefin (MTO) production facility, with an annual capacity of 3.6 megatons of methanol, as well as 1.37 megatons of polyethylene and polypropylene. The methanol units are also the world's largest plants using Air Liquide's Lurgi MegaMethanol process and Clariant catalysts.

MegaMax 800 offers much higher activity than standard methanol

synthesis catalysts – even at low reactor temperatures and pressures. It also provides superior selectivity, excellent stability and high poison tolerance, ensuring a long lifetime of productivity and improved energy efficiency with lower carbon emissions. The catalyst is suitable for large or small production units and is proven to deliver excellent performance in various reactor types and with diverse feedstocks. For optimal catalyst performance, Clariant also offers the CLARITY™ digital service portal, which provides real-time data to enhance plant reliability, safety, and profitability.

With methanol being an important intermediate for ZhongTian HeChuang, the company benefited greatly from the installation of the deep desulfurization systems of ActiSorb S2 and ActiSorb S6 which held the Sulfur concentration below 10 ppb at the unit's outlet, protecting the downstream synthesis catalyst's lifetime and performance from upstream Sulfur fluctuation. This enabled ZhongTian HeChuang to skip a turnaround cycle providing considerable additional methanol production and economic benefits.

Source : Press Release

INTERNATIONAL NEWS

RICE BRAN WAX: A SUSTAINABLE AND SUPERIOR ALTERNATIVE TO MONTAN WAX

MUTTENZ, October 8, 2024 - In a world increasingly focused on sustainability, the materials we choose for our products have never been more important. For decades, montan wax has been a staple in the coatings and plastics industries, valued for its performance and cost-effectiveness. However, it's time to rethink our reliance on fossil-based materials like montan wax. Enter rice bran wax - a biobased, renewable option that offers performance comparable to montan wax while minimizing environmental impact.

Let's explore why the transition to rice bran wax is not only beneficial, but essential to the future of the coatings and plastics industries.

The hidden cost of Montan wax: fossil fuel dependence

Montan wax is derived from lignite coal, a non-renewable fossil fuel. Here's why long-term reliance on fossil fuels is problematic:

- **Environmental impact:** Lignite coal processing has a significant contribution to greenhouse gas emissions[1]. These emissions are accelerating global warming, leading to rising temperatures, more frequent and severe natural disasters, and disruptions to ecosystems. Additionally, open-cast mining can be linked to deforestation, loss of biodiversity, and soil and water contamination[2].

- **Resource depletion:** Fossil fuels are finite resources and continued reliance on them puts future generations at risk. Unlike renewable resources such as solar or wind power, fossil fuels are found in the earth's crust. They cannot be replenished on a human timescale[3].

- **Financial impact:** The European Union's Emissions Trading Scheme (EU ETS) imposes a cost on CO2 emissions that is steadily increasing. In Germany, for example, the CO2 price per ton of emissions is set at €45, with a further increase to €55 planned for 2025, putting further pressure on industries to reduce their reliance on fossil fuels[4]. The rising cost of CO2 permits has already begun affecting the profitability of industries dependent on fossil materials. This is leading to higher operational costs for companies and increasing pressure to transition to cleaner, more

sustainable resources[5].

The rise of rice bran wax: a more sustainable solution

Rice bran wax is a by-product of the rice industry, making it a renewable and more environmentally friendly option. Unlike montan wax, which is tied to finite fossil resources, rice bran wax is derived from an agricultural source. This by-product utilisation means that rice bran wax not only avoids the environmental pitfalls of mining, but also adds value to an existing industry.

Clariant's Licocare™ RBW Vita rice bran waxes illustrate the potential of this bio-based alternative. With over 98% renewable carbon index, these waxes dramatically reduce the carbon footprint by up to 80% compared to fossil-based montan wax. This reduction in carbon emissions is a significant advantage in meeting both regulatory requirements and corporate sustainability goals.

Advanced performance with added benefits

It's easy to assume that choosing a more sustainable wax means sacrificing performance, but rice bran wax challenges that perception. In coatings, consumer and care products, it delivers impressive gloss, hardness and compatibility, offering performance that can be a great alternative to montan wax. In some cases, it even offers additional benefits, making it an excellent choice for applications as diverse as metal packaging coatings, furniture finishes, protective and powder coatings.

Licocare RBW Vita additives also function as effective lubricants, dispersion aids, and nucleating agents, suitable for engineering thermoplastics and biopolymers, further reducing the industry's reliance on fossil-based materials. By incorporating rice bran wax into plastic formulations, manufacturers can improve processing efficiency and enhance material properties. The latest formulations of rice bran waxes are designed to meet the high-performance demands of the coatings and plastics industries, while supporting the transition towards renewable and more environmentally friendly materials.

Now is the time to consider the switch

As the coatings and plastics industries continue to prioritize sustainability, the choice between montan wax and rice bran wax becomes clear. Montan wax, with its fossil origin and high environmental cost, has served its purpose but is under increasing pressure concerning sustainability aspects, making it a less viable option for the future. Rice bran wax, with its renewable origins and high performance, represents the future of sustainable coatings and plastics.

By considering the adoption of rice bran wax, scientists, product managers, and formulators have the potential to contribute to environmental improvements while aiming to maintain, or possibly enhance, product performance as companies can support several UN Sustainable Development Goals (SDGs), including SDG 12: Responsible Consumption and Production and SDG 13: Climate Action, by reducing reliance on fossil materials and lowering emissions. The shift to rice bran wax drives innovation and offers a significant opportunity to align with broader sustainability goals.

Source : Press Release

SYENSQO UNVEILS MIRAPOL® HYGIENE BOOST FOR LONG-LASTING FRESHNESS IN FABRIC CARE

Syensqo introduces Mirapol® Hygiene Boost, an innovative ingredient designed to meet the rising demand for freshness in fabric care. This polymer interacts optimally with fabric surfaces to prevent the development of persistent odors wash after wash, a phenomenon commonly known as "permastink".

"Amid the growing trend of freshness claims in laundry products, consumers are increasingly seeking effective solutions against persistent malodors," says Max Chabert, Home Care Global Marketing Manager at Syensqo. "Many are turning to products like in-wash scent boosters to maintain pleasant odors across wash and wear cycles and extend fabric life. Mirapol® Hygiene Boost addresses these needs by offering long-lasting malodor control."

By preventing odor build-up across multiple washes, Mirapol® Hygiene Boost enhances a wide range of fabric care products, from liquid laundry detergents and fabric softeners to refreshing sprays. Its seamless integration into these formulations allows for enhanced performance without compromising their primary efficiency. Its concentrated liquid form makes it easy to integrate into continuous liquid manufacturing processes.

As Syensqo continues to innovate in the fabric care sector, Mirapol® Hygiene Boost stands as a cutting-edge addition to meet the growing market need for long-lasting freshness and protection against permastink, reinforcing Syensqo's commitment to delivering high-performance specialty solutions. Syensqo will be showcasing Mirapol® Hygiene Boost at the SEPAWA Congress in Berlin, Germany, from 16–18 October 2024.

Source : Press Release

Continued on Pg 28

substances and avoiding penalties for transporting or using unsafe products.

Any country's regulatory system mandates tests to check the levels of chemicals in their emissions, effluents, and waste. The testing helps in monitoring the composition and ensuring that they do not exceed permissible limits for pollutants such as heavy metals, and volatile organic compounds and therefore complying with the water and air Acts such as water and air Prevention and Control of Pollution Acts.

Testing of hazardous waste before their disposal ensures proper classification of the products, and treatment and thereby complying with the Hazardous waste management rules.

Likewise, the results of the chemical testing in terms of handling and managing the hazardous materials help in proper labelling of the hazardous substances as per the globally harmonized system of classification and labelling of chemicals and ensuring the users are informed about the potential risks.

Similarly, the role of chemical testing is crucial in generating Material Safety Data Sheets and their accuracy as the law mandates safe handling, storage and transportation of chemicals. In the case of chemical companies that are exporting their products, they must comply with international standards such as REACH in the EU or similar regulations in other regions.

Chemical testing plays an important role in audits and inspections as well as they avoid operational disruptions and legal consequences.

Chemical testing includes toxicology!

Toxicologists perform or conduct tests to determine how the chemicals interact with the biological systems and identify risks such as toxicity, carcinogenicity and environmental impacts.

Toxicologists conduct their series of tests and assessments to determine the lethal dose of chemicals that help in identifying the safe exposure limits for humans and animals. The health hazard evaluation covers the assessment of health risks such as respiratory, skin or reproductive hazards that ensure the products are safe for human use and comply with the regulatory safety standards.

They also assess the ecotoxicity of the chemicals to determine the toxicity they could cause 28

wildlife and ecosystems. Therefore, toxicology caters to benefits to society that include:

Providing a scientific basis for regulations to preserve the environment and safeguard human health.

Helping industries and manufacturers to regulate their production in terms of safety and design safer work environments. On the other hand, this set of tests and researches explores chemical agents properties. It all begins with the analysis of cellular and biochemical reactions to identify harmful compounds.

Provide consumer information so that they decide to protect their health.

Role of chemical testing in the growing chemical industry:

Chemical testing spans varied sectors such as pharmaceuticals, agrochemicals, and textiles. India is becoming a global hub for chemical production and chemical testing is gaining traction that ensures safer chemical products and processes that meet stringent safety, regulatory, and environmental safety.

Several trends in the Indian chemical market are influencing the chemical testing services in the country. For instance, the rising export activities of food and beverages and other products are increasing the demand for these chemical testing procedures.

Likewise, the emergence of REACH regulations and RoHS directives are considered the most trustworthy and well-established agency responsible for testing, and certifying a wide range of chemical products. Similarly, the chemical testing services market is constantly focusing on strengthening its global share by providing in-house services in rural areas.

Recent developments in the Indian chemical testing providers:

SGS India 2023: SGS India is a global leader in inspection, verification, testing and certification services. SGS India is known for their high-quality services and wide range of services that ensure products and services meet the required standards and regulations. The analytical tests on products and materials ensure they meet safety, quality and performance criteria. Recently they have enhanced their testing capabilities by incorporating state-of-the-art analytical equipment. The expansion allowed them to offer more detailed and accurate testing services for pharmaceuticals, environmental samples and other sectors.

SGS India has achieved ISO

certifications such as ISO or IEC 17025 for the testing and calibration laboratories.

Bureau Veritas 2023: Bureau Veritas India announced their new chemical testing services range that focuses on compliance with international standards such as REACH and RoHS. Their services are known for detailed analysis of chemical substances and navigating complex regulations. Especially their services related to chemical composition analysis, elemental trace analysis, petrochemicals, and petroleum testing are done in testing laboratories that are equipped with the very latest technologies to provide accurate and certifiable results. They claim that they follow ASTM, GLP, and ISO guidelines.

On May 16, 2022, they linked up with the supply chain traceability leader Optel. Although the company is not an Indian company, it provides similar services in India and their broadened its services to diverse industries in the Indian market. They provide a digital solution that provides added value including risk management, continuous supply chain improvement, and crisis response.

Bureau Veritas has a stronghold towards the petrochemicals industry and petroleum products, therefore their testing services in that area ensure the materials are safe, reliable and meet both national and international quality standards. The testing covers a wide range of parameters such as purity, composition, and performance characteristics.

Their partnership with Optel has helped in multiple factors such as supply chain traceability, risk management and others. Food, pharmaceutical, and chemical industries benefit from the collaboration. These products are carefully monitored right from the origin, and journey of raw materials to ensure quality, compliance and safety.

Overall, Bureau Veritas is not an Indian company, yet its services are widely available in India to cater broad spectrum of industries and thereby it has positioned itself as a critical player in the market.

Indocert:

Indocert is an Indian company known for its dedication to research and development in food safety, biochar, and varied organic certifications such as BioSuisse, Rainforest Alliance and Naturland. They have been focusing on sustainability that directly supports advanced testing protocols. They have come up with robust chemical testing techniques to ensure compliance with the organic and sustainability standards.

Recently, they have obtained international accreditations that expand its global footprint in organic product certification. Now they are recognized as an equivalent certification body by the European Union under the regulations EC 834/2007 and EU 2018/848. Therefore the company is now approved to certify unprocessed plant products, food and feed for the international markets.

The Indocert's compliance with the ISO/IEC 17065:2012 ensures a high standard of conformity assessment, especially in the organic agriculture sector.

They have expanded their offerings in certifications such as Rainforest Alliance and Trustee.

In 2023, they have continued to build their expertise offering a wide range of certification services and have been involved in Rainforest Alliance certification and UTZ certification that focuses on sustainable farming and improving the livelihoods of farmers while protecting the environment.

They also provide certifications for Food Safety Management Systems and their international collaboration with bodies such as Dakks and recognition by the European Union for their equivalent certifications for non-EU countries highlighting their growing role in the global organic movement.

Spectro Analytical Labs Limited:

They have made significant advancements in the testing services that include expanding their capabilities in food safety, environmental monitoring and industrial product testing. The company has been focusing on cutting-edge chemical analysis, especially for trace elements and hazardous substance detection.

Spectro Analytical Labs based in New Delhi offers a wide range of chemical testing services such as food safety, environment and industrial products. They are known for their specialized services in the petrochemical and industrial sectors.

Anacon Laboratories based in Nagpur:

Anacon Laboratories has expanded its testing capabilities to cover a wide range of environmental and industrial parameters. This includes advanced analytical techniques and industrial parameters. In recent years, they have invested in upgrading their technology and equipment for water and soil analysis that improve efficiency and accuracy.

In recent times, the company has understood the need for testing the plant growth hormones and regulators in India as the Agriculture and food industries are considered the most growing and expanding industries in India.

Although hormones in plants are produced naturally, advanced science techniques have helped to keep up the consistency of the production of the

plants. The plant growth hormones and regulators are biochemicals that alter the plant growth and specific parts of the plant. The testing of the formulations is important as they play an important role in cell growth as the growth regulators help in root growth, stem elongation, the volume of every individual fruit or vegetable, prevention of leafing, colour enhancement, and other conditions.

Anacon laboratories have developed techniques that test compounds such as Auxins, Gibberel, cytokinin, and Ethylene.

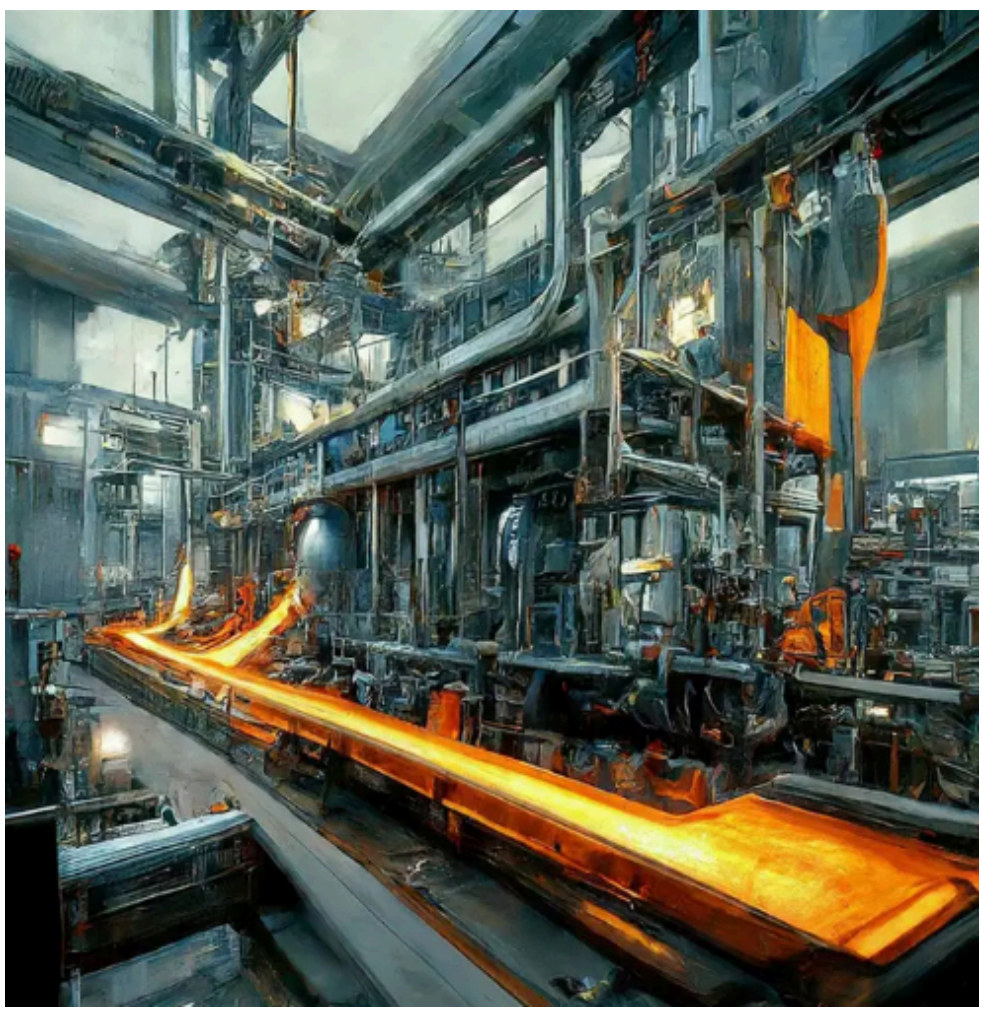
Wrapping up…

The commitment to environmental and sustainable practices across these advanced testing services is becoming more stronger and laboratories are adopting green practices and technologies. On the other hand, the companies based in India and the companies that are serving Indian industrial sectors are intensively focusing on expanding their service offerings by incorporating specialized tests and developing new methodologies. Therefore the laboratories are better equipped to meet the evolving demand across the industries of India. However, the predominant driver is the focus on quality assurance and regulatory compliance. Rigorous internal quality control measures and participation in the proficiency testing programs are further bolstering the reliability of the results. Overall the chemical testing industries are getting closer to excellence and getting better than ever.

Source : Vinodini Harish

Green chemistry AI innovations and Machine learning transforming the future of chemical industry

Introduction:



Imagine telling someone in the 1980s that the chemical industry which was known for pollution and harmful waste would one day lead the way in helping save the planet. They'd probably laugh at you or ask if you have been inhaling too many chemical fumes. Fast forward to today, this modern era, where we have AI and machine learning to optimize chemical production, green chemistry to clean up the mess and blockchain technology to track every molecule. In this article, we are exploring some of those advancements in the chemical industry and we are sure the article is going to excite you. Let's begin.

Inventive approach in the discovery and development of new chemical compounds:

There have been several trial and error methods and other methods that are expensive in the process of developing new chemical compounds. But with the advent of technologies like artificial

intelligence, machine learning, big data analytics and others, we have taken effective routes in terms of finding the optimal synthetic routes, predicting the potential hazards, estimating the cost of materials and others. Some of the technologies like green chemistry, carbon capture, and bio-based materials are making significant strides towards reducing the impact on the environment and reversing the decades of pollution. They have accelerated and refined these processes and pushed the boundaries. Let's explore how these technologies are integrated into these complex processes.

Optimization of synthetic routes with AI:

AI-driven reaction prediction: The technology has helped in analyzing large data sets of chemical reactions to predict the most efficient synthetic pathways for creating novel compounds. The algorithms suggest optimal reaction conditions such as temperature, solvents, catalysts and other conditions thereby reducing trial and error in the lab.

Retrosynthesis analysis: the machine learning algorithms perform a technique called as retrosynthesis that involves how a molecule can be synthesized from simpler building blocks. The tools are very handy in discovering novel routes that may not be obvious from conventional methods.

Automated lab systems: Robotics, AI-enabled laboratory setups automate the execution of synthetic routes speeding up the process of testing multiple pathways in parallel. The technology integrates robotics, artificial intelligence, machine learning and advanced software platforms that are revolutionizing the chemical industry. The technologies help in streamlining chemical processes such as synthesis, analysis, and testing. This led to faster and more efficient R&D.

For instance, Robotic arms and devices are used to automate repetitive manual tasks like mixing, measuring and dispensing chemicals. This eliminates the possibility of human errors and ensures precision in every experiment.

Automated lab systems also help in parallel synthesis, the robotics can carry out multiple experiments and chemical reactions in parallel thereby allowing the researchers to test several synthetic routes or material properties simultaneously. This accentuates the process of optimization in chemical synthesis and thereby cuts down the material costs.

Automation in lab systems helps in high throughput screening and thousands of compounds are tested in a short time, identifying optimal candidates for further research.

AI-Driven platforms:

- AL algorithms analyze the outcomes of varied experiments and recommend the best reaction conditions and synthetic routes. Therefore, the researchers can learn from every experiment to improve future predictions optimize the yield and reduce waste.

- AI monitors are deployed in the synthesizing labs and they help monitor this equipment for wear and tear, schedule maintenance before a breakdown occurs, reduce downtime, and enhance efficiency.

- These AI systems analyze real-time data and automate decisions during experiments. If the AI systems encounter signs of failure then they adjust parameters and move on to the next set of tests without human intervention.

Consider how automated systems helped these giant industrial leaders:

- TATA Chemicals has invested heavily in automated lab systems and that helped them in improving R &D processes, especially in optimizing chemical reactions and material synthesis. The systems help in the faster development of new chemicals with lesser environmental impact.

- UPL Ltd. is a major agrochemical and crop protection company in India and the company has helped in leveraging advanced technologies such as AI, robotics, and automation systems to enhance their R &D capabilities. They use AI-based platforms to predict the efficacy and toxicity of the new agrochemical formulations and this has reduced the necessity of extensive field trials and allowed quicker adjustments to the formulations thereby bringing them to the market.

- Reliance Industries is considered a giant in the Indian petrochemical industry and they have displayed an extensive portfolio spanning polymers, chemicals, and synthetic fibres. They have also deployed cutting-edge- automation and digital technologies to drive efficiency in the chemical manufacturing processes. They have deployed automated systems in their production processes in their petrochemical plants and that includes real-time monitoring and control of reactions. With AI and machine learning systems, they cut down a long series of predicting process inefficiencies and optimizing energy usage.

- SRF Limited is considered a giant as well and is known for its diversified chemical production in India, which primarily focuses on specialty chemicals, technical textiles, and packaging films. They have integrated automation and digital technologies to enhance their R&D and manufacturing processes. The

robotics and automation set up in their specialty chemicals division streamlines their production processes and ensures precise control over their reactions and formulations.

AI-enabled systems monitor quality at every step of the manufacturing process and reduce the chances of letting out products with defects to the packaging sector thereby optimizing the product yield.

Therefore SRF Limited has claimed that their production costs are reduced as they have reduced the wastage during the production and increased the operational efficiency.

Aarthi Industries is one of the key players in Indian chemical industries which is known for its intermediates for pharmaceuticals, agrochemicals and polymers. They have been deeply involved in improving sustainability, and automation to stay competitive in the market. Therefore they have integrated automated systems in their production lines all over India. Their major plants are situated in Gujarat and Maharashtra. They have reported a significant rise in the net profit for the quarter ending June 2024. Their consolidated net profit increased by 96% from INR 137 crore to INR 70 crore during the same period in 2023. [ChemAnalyst]

Their sales grew by 31% annually and reached INR 1855 crore in June 2024 and this growth is primarily driven by the increased production volumes that are geared up with automation. Additionally, the increasing demand for key products such as nitrochlorobenzene (NCB) has also contributed to their financial achievement.

The advent of "safe and sustainable-by-design" chemicals:

The intent of the "Safe and sustainable-by-design" chemicals is to prioritize human health, environmental protection and circular economy principles. The approach is backed by innovative design, green chemistry and life-cycle thinking. Some of their principles include:

Safety designing: The safety designing is planned in order to minimize the hazards and risks right from the stage of molecular design.

Sustainability: Reducing the environmental footprint, utilizing renewable resources at the maximum level, and promoting recyclability.

Circular economy: Designing chemicals for reuse, recycling and incorporating biodegradability.

Industrial impact due to the advent of SSbD chemicals:

The chemicals are termed safer chemicals and they have reduced the toxicity level and minimized the harm to humans and the environment.

The optimized production processes have reduced waste generation and energy consumption.

Some of the new business models have encouraged product-as-a-service, the companies share economies, and chemical leasing and they are focusing on the products-as-a-service. Therefore the chemicals produced are aligned with the regulatory compliances that are emerging such as the EU's chemicals strategy for sustainability.

Similarly, the approach encourages R&D in green chemistry, biotechnology and nanotechnology.

There are significant challenges in incorporating these technologies and advancements across the country, however, the outlook of the chemical industry in 2024 points out opportunities that arise from the energy transition. These advancements are backed by investments from the private sector which is about USD 88 billion in clean energy manufacturing.

The chemical industry is driven to meet the sustainability goals with more than 75% of all the emission reduction technologies and aiming to reduce the net-zero goals by 2050. The significant growth of clean energy manufacturing practices is expected to stimulate the demand for certain chemicals and materials in the upcoming years.

Some of the important examples that are driving the growth of the chemical industry include:

Bio-degradable plastics: these plastics are made from renewable biomass sources such as corn starch, sugarcane and cellulose and they reduce plastic waste. These are designed to break down quickly and safely when compared to conventional plastics and therefore they are environmentally friendly. The breakdown process is generally carried out using microbial activity and has reduced the accumulation of plastic waste in landfills and oceans. During the degradation process also, they don't release harmful chemicals.

However, there are some downsides to these bio-degradable plastics. They require specific industrial composting conditions for the breakdown process and they can contaminate conventional plastic recycling streams if they are not properly managed.

Plant-based surfactants:

The plant-based surfactants are derived from natural sources and they replace petroleum-based surfactants. The surfactants are used in detergents, shampoos and cleaners they reduce the surface tension and thereby improve the cleaning process. The plant-based surfactants are renewable materials and they replace synthetic and often non-

renewable, petroleum-derived surfactants.

Some of the common plant-based surfactants include Alkyl poly glucosides and methyl ester sulfonates that are derived from glucose and fatty acids.

Some of the challenges in using these plant-based surfactants include the scaling production of plant-based surfactants without leading to deforestation or other environmental issues such as the sourcing of crops like palm oil.

For instance, Godrej Industries is considered as a giant in the consumer goods and chemical sector, they have made significant strides in using plant-based surfactants. They primarily focus on the development of oleo chemicals derived from renewable vegetable oils such as coconut oils and palm oils.

Tata Chemicals have been expanding its portfolio towards sustainable chemicals and they are intensively focusing on bio-based products and they use plant-based feedstocks to create non-toxic and biodegradable surfactants. They are barging into the green chemicals as part of a broader commitment to reducing carbon emissions and advancing the circular economy.

Galaxy Surfactants is known as a leading supplier of specialty chemicals to the personal and home care industry in India. They have pioneered in developing plant-based surfactants and they have also developed a wide range of bio-based surfactants that are derived from renewable resources like coconut oil and palm kernel oil. They offer mild surfactants or green surfactants in their product range that include Sodium Cocoyl isethionate and Sodium Lauryl Sulfate which are derived from natural fats and oils. They have also taken part in the RSPO (Roundtable on Sustainable Palm Oil) initiative to ensure their responsible sourcing of palm oil.

Low-VOC coatings:

Volatile organic compounds are chemicals that evaporate easily at room temperature and thereby cause air pollution and health issues such as headaches, and respiratory problems. The Low VOC coatings are formulated to contain a minimal quantity of VOCs thereby reducing harmful emissions during the application and drying.

The low VOC coatings have improved in terms of indoor air pollution and thereby improved the indoor air quality and thereby minimized the health risks of both the users and professionals in the construction and painting department.

Although these coatings slightly differ in their performance characteristics such as drying duration and durability, they don't perform like conventional VOC coatings. However, the advancements in the formulation are continuously improving.

Sustainable solvents:

The sustainable solvents are used in industrial processes such as cleaning, manufacturing chemicals and pharmaceuticals. Traditional solvents like acetone and methylene chloride are hazardous and they contribute to toxic emissions and environmental disturbances. The sustainable solvents are bio-based and can be recycled thereby they reduce the environmental and health impacts comparatively.

Some of the commonly used sustainable solvents include Ethyl lactate, they are derived from corn and Limonene which is derived from citrus fruits.

These sustainable solvents are less toxic and biodegradable and since they are derived from renewable resources, they are considered environmentally friendly solvents and they can also be reused in the industrial processes further reducing waste.

The primary challenge in utilizing these sustainable solvents is that not all of them are suitable for all industrial purposes, some of them are expensive and some of them might be less effective for certain industrial processes. Therefore majority of the chemical companies stick to conventional solvents for such industrial processes.

The path towards sustainability and improvements is clear…

Each of these SSbD chemicals and the categories explained in the article offers a path toward safer and more sustainable industrial practices and products. The biodegradable plastics address the global plastic waste crisis and the plant-based surfactants reduce the reliance on petroleum-based processes. Similarly, the low-VOC coatings improve air quality and sustainable solvents and thereby decrease the environmental impact of the industrial processes. Since the leading chemical companies have adopted plant-based surfactants and bio-degradable practices, they not only meet consumer demands, but they are also working towards sustainability goals and leading the smaller chemical sectors to follow their path. Overall, these advancements embody the principles of SSbD by prioritizing safety, and sustainability and reducing toxicity from design through their disposal.

Source : Vinodini Harish

How can Indian acetic acid producers can turn the tide and compete with China

Introduction:

Have you caught the wind of the news, that China is solidifying its dominance in the acetic acid market and controlling about 60% of the global acetic acid production capacity? This has an impact on our nation and they are facing crucial crossroads. This rapid evolution of China from a net importer in 2019 to a leading exporter by now underscores their technological advancements and cost-efficient strategies. For now, Indian companies are battling their way up in the competition in terms of acetic acid production front. Can Indian companies survive the onslaught without embracing cutting-edge technologies like process automation, bio-based production and innovative catalysis? Probably not. The article comes up for the Indian acetic acid sector to turn this global shift into an opportunity and lead their way up through innovation and strategic moves. Let's begin.

Importance and demand of Acetic acid:

Acetic acid is an industrial chemical that is utilized across several fields and used primarily in the production of the material used in several applications including the production of photographic films. This cellulose acetate is known for its qualities such as transparency, toughness, and flexibility. Therefore, the material remains relevant in various modern applications including textiles, and coatings.

Likewise, acetic acid is used in the production of Polyvinyl acetate, which is then used in the production of wood glue. The strong adhesion to the porous surfaces like wood, water-based and non-toxic characteristics gains traction for the chemical. The involvement of acetic acid helps in creating a polymer that is water-soluble in its emulsion form and further makes the glue easier to apply and non-toxic. Now, polyvinyl acetate plays a significant role in the production of synthetic fibres and fabric.

Acetic acid is also used in the production of acetic anhydride which is used in the production of pharmaceuticals, perfumes and agricultural chemicals.

On the other hand, acetic acid is utilized as a descaling agent itself at the household level. Therefore, the versatile applications and growing demand of the sectors that involve the chemical compound that is derived from acetic acid ensure a steady demand for acetic acid.

The tremendous growth of these sectors is going to impact the demand for acetic acid on a larger scale. For instance, the Indian pharmaceutical industry is expected to grow $65 billion by 2024 and $130 billion by the year 2030. The backing of Ayushman Bharat Digital Mission to support the nation's integrated digital infrastructure is expected to further propel its growth.

Likewise, other sectors such as the food and beverage industry, biochemicals and green alternatives are also growing at their respective pace and effectiveness. These factors are expected to keep the demand for acetic acid at a high level and support the production requirements.

China accounts for about 60% of the global capacity of acetic acid- its impact on Indian industries:

China saw a huge shift in the production capacity of acetic acid which accounts for about 60% of the total production capacity. They were standing as a net importer in 2019 and now possess the largest acetic acid capacity.

How has this affected the Indian PTA producers?

The growing dominance of China in the production of PTA has created challenging situations for Indian companies such as Reliance Industries. The Indian companies are suffering to set up or compete on price, especially in the marketplace like Southeast Asia, and Africa.

Domestic price pressure is another factor that concerns Indian producers as cheaper imports affect margins and market share. At the same time, China is entering global markets with their cheaper market price.

The impact of raw material, Paraxylene on Indian companies is affecting the demand and pricing of Paraxylene globally. Although companies like reliance industries are major producers of paraxylene, the increased PTA capacity has affected the market to either stabilize or even rise. This influence of the cost structure for the Indian producers and traders is considered a big stumbling block to counter.

What about the other downstream industries like textiles and packaging?

PTA is a key component in the production of polyester that is widely used in the textile industry. Now, the cheaper imported PTA benefits the textile industries of India, however, the finished polyester products in the global markets are inducing stiffer competition

in the global markets.

The packaging sector utilizes PTA for the manufacturing of PET plastic and they are commonly used in packaging. The Indian packaging companies benefit from the cheaper PTA prices and intense competition from the Chinese packaging materials, especially the profitability.

India was thriving to catch hold of the "KEY" export destination of PTA and acetic acid. Due to China's self-sufficiency, India is losing their key export destination and they have switched their focus to other regions. However, the changes have caused some logistical challenges and cost adjustments.

China becomes a net exporter of PTA and the trade balance between India and China for the chemicals could shift. Overall, India is expected to see higher imports of cheaper Chinese PTA and lower export volumes to China, this change is expected to have a cascading effect on India, leading them to a deficit in the chemical sector.

What are the opportunities for the Indian acetic acid industry:

Indian companies should invest more in improving production efficiency and adopt advanced technologies. They should also increase their R&D efforts to develop their higher-value or specialty products where the competition in China is growing fierce.

Impact on the Indian acetic acid industry due to the growing dominance of Chinese companies has made Indian companies face downward pricing pressure and this has affected the profitability and pricing strategies of Indian companies.

China is leading the production capacity due to their vast coal-derived methanol production that acts as a primary raw material for acetic acid. The major compounds derived from acetic acid are Vinyl acetate monomer, purified terephthalic acid, ethyl acetate and acetic anhydride. The other products include monochloro acetic acid, butyl acetates and ethanol.

To combat the challenges, Indian companies should adopt a multi-prolonged approach focused on increasing efficiency, diversifying products, leveraging government support and investments in sustainability and technology.

Here we have discussed some of the strategies of Indian companies that come under the acetic acid sector:

- GNFC and Jubilant Life Science are set to explore more energy-efficient processes for acetic acid production to lower their cost per unit. In addition to that expanding the production facilities reducing their per unit cost and making them more competitive in the price-sensitive market is expected to work.
- Since GNFC is a larger player, they can invest in scaling up the capacity and smaller firms such as Pon Pure Chemicals Group can explore their mergers or collaborations to achieve similar outcomes.
- Indian companies should focus on expanding their portfolio and include high-value acetic acid derivatives such as acetate esters or acetic anhydride. Then these products can have more specialized uses and face less price competition from the Chinese firms.
- Indian companies can also focus on bio-based and eco-friendly acetic acid production methods. For instance, Godavari Bio-refineries have already developed a strong focus on bio-based products and they have set themselves as an example for other companies as these products are set for more specialized uses and face less price competition compared to the Chinese firms.
- Indian companies can invest in green production technologies and focus on environmental, social and governance factors as they are becoming crucial for businesses across the globe Indian acetic acid producers should look into green chemistry techniques and reduce the environmental footprint by aligning them with the global standards.
- Gujarat Narmada Valley Fertilizers and Chemicals Limited can focus on their demand of environmentally conscious clients and invest in carbon capture storage technologies.
- In addition, all these Indian companies should focus on circular

economy principles by recycling the waste products into acetic acid or using renewable feedstocks, this would differentiate them from the Chinese commodity producers.

Overall the strategies work when implemented the right ones at the right time and in the right geographical locations. For instance, Indian companies can explore new geographical markets and regions that are less dependent on Chinese imports. Implementing environmentally friendly procedures can appeal to environmentally conscious markets.

Take away:

The role of acetic acid is significant in sectors like pharmaceuticals, textiles and packaging. This has presented significant opportunities for Indian companies to innovate and diversify. Thus Indian companies must invest in advanced technologies, green production methods and expand their portfolios and regain their competitive edge. Also, strategic moves such as focusing on high-value derivatives and sustainable production processes will be crucial in navigating this global shift and securing long-term success.

Source : Vinodini Harish

Navigating Change How Latin Americas Palm Oil Surge Affects Indias Import Dynamics

Introduction:

There is a major shift in the global palm oil market as Latin America emerges as the leading force in the production of palm oil. The situation presents itself as a challenge for Southeast Asia dominating the sector. The transition is not limited to the numbers but is an intricate interplay regarding sustainability, land availability, and trade dynamics. On the other hand, India is a major importer of palm oil and is likely to be impacted when these Latin American countries are scaling up their exports. How will this transition affect Indian chemical companies and other industrial sectors? Will this changing landscape affect the country's economic and environmental sustainability? This quick read explores them all. Let's begin.

Latin American Palm oil exports - What does the report say?

There is growing competition between Indonesia and Latin America in the global palm oil market. Both Indonesia and Malaysia have reigned supreme for the longest period in the palm oil industry, now that a new contender emerges from Latin America, they are facing both challenges and opportunities. The shift impacts the agricultural businesses in Indonesia and there is a lot more to explore.

Latin America with its boundless horizons and tropical climate found its way to increase its production of palm oil. The production rate has increased by almost 60% during 2011 and 2012 thereby reaching about 4.6 million tons in 2020-2021. Reports show that further production increase is expected. Despite the growing export markets, the Latin American Region consumes 75% of its production. Food products involve 45% of palm oil consumption, energy uses about 20% and other consumer products involve about 35% of palm oil production.

Southeast Asian regions, especially Indonesia and Malaysia are major players in global palm oil production and these two countries account for about 85-90% of the world's palm oil exports. Indonesia is considered the largest producer and exporter of palm oil as it contributes over 60% of the global production. The region's tropical climate, large plantations and infrastructure support the massive industry.

However, now the tables are turned. Latin American countries like Colombia, Ecuador and Honduras have large tracts of underutilized lands that are considered degraded ones too that can be converted into palm oil plantations. Unlike in Southeast Asia, land availability is more limited due to previous deforestation.

How are India's agrochemical markets, and food processing industries affected?

India is considered one of the major importers of palm oil, in 2023, India stood as the leading importer of palm oil across the globe with an import value of about 8.7 billion US dollars. Reports claimed that the import volume of palm oil to India in 2020-2021 was about 8 million metric tons and it has increased to about 10 million metric tons in this oil year 2022-2023. This increase in the import of palm oil is due to the demand across a wide range of sectors such as food products, detergents, cosmetics and other domestic products.

Agrochemical markets:

The growing production rate in Latin America has caused the demand for agrochemicals to increase. The obvious relationship between palm oil plantations and pesticides, herbicides,

and fertilizers has caused their demand to increase and has created export opportunities for Indian agrochemical companies. Especially the ones that are thinking about expanding their presence globally.

Food processing industries:

The growing food processing sector in India and the country is focusing on the development and production of products such as margarine, baked goods and snacks have benefited from the competitive price of palm oil as a leading importer.

Latin American exports grow and Indian food processing companies benefit from the competitive palm oil prices which has lowered the input costs for the food manufacturers. On the other hand, the situation has improved the supply chain resilience for India.

Stabilize raw materials supply for the chemical industries across India:

The situation has created opportunities for Indian chemical companies to look for ways to establish stronger trade with Latin American Producers. This will eventually reduce their dependence on

Southeast Asian suppliers.

For instance, palm oil is a major raw material for the production of oleo chemicals that are utilized in products such as detergents, cosmetics, biodiesel etc.

The increase in the production of palm oil in Latin American regions has created opportunities for India to stabilize their palm oil supply, reduce price volatility, and ensure a consistent supply of oleochemical inputs.

Final thoughts:

Latin America's rapid expansion of palm oil production is a mix of good news and challenges for India as a leading importer. The benefits such as diversified supply chains, competitive pricing, and reduced dependency on Southeast Asia and others are massive and they lie in strategizing or channeling the benefits toward the growth of the country. Now it's time for India to rethink of the import strategies and invest in more sustainable and innovative practices across their industrial sectors.

Source : Vinodini Harish

The future of Indias Energy sector Indias Ambitious Plan to Expand Crude Oil Refining Capacity by 2030

Introduction:

India's energy sector is undergoing significant expansion to meet the growing domestic demand and the prime focus is on enhancing energy security, balancing domestic consumption and competing in the global energy market. This transformation has come at a time when the world is moving towards cleaner energy and sustainable options. How is the country going to deal with the critical decisions and how will this global shift move the country towards cleaner energy? In this article, we have explored different sections associated with the topic and let's begin.

The current status in the Indian energy market:

India is currently considered one of the fastest-growing energy markets in the world and is facing huge demand for crude oil due to its expanding economy and growing population. Therefore, there is a higher consumption of energy resources like coal, oil and natural gas. Russia faced sanctions due to its war with Ukraine and the global oil prices rose sharply. This condition has led to redirecting most of its exports including crude oil to Asian countries, including India which did not impose sanctions. Therefore India has been able to buy oil from Russia since then at discounted prices thereby increasing the imports from 950,000 barrels per day in June 2022 to about 2 million barrels per day by May 2023. These factors throw light on the fact that India relies on imports for 85% of its crude oil needs. Therefore it has to focus on other affordable sources.

India now is planning to boost its oil refining capacity which will eventually

allow it to export their petroleum products. Utilizing the advantages such as rising domestic fuel consumption, and government incentives several Indian companies have expanded their refining operations in recent times. State-run companies are set to serve the domestic market and private companies are focusing on exports. Major oil and gas producers such as ONGC, Oil India Limited and reliance industries are actively in line with the strategy.

The Indian government has also made some adjustments to attract investments in the oil and gas sector. It has changed the rule that the companies had to sell crude oil to government-nominated buyers first. But now, the companies are free to sell crude oil to private buyers under commercial agreements.

The government's Hydrocarbon Vision 2025 focuses on exploring 100% of the country's sedimentary basins, up from the current 50%. There are myriads of reforms to boost domestic oil and gas production and investment. The Hydrocarbon Exploration and Licensing Policy has simplified the licensing process by offering a single license for all types of hydrocarbons and introducing a flexible revenue-sharing model to attract investors.

India planning to boost crude oil refining capacity by 35-40 MT by Fiscal 2030

India is right on track to significantly expand its crude oil refining capacity by 2030. The projected increase of 35-40 million tonnes is expected during the forecast period. This growth is in response to rising domestic demand for petroleum products. The growing economic condition and population are contributing to this rising demand for these petroleum products. Therefore India is aiming to meet this increasing demand, improve energy security and remain competitive in the global energy markets. Although the expansion will require significant investment it comes with a clear strategy to minimize the risks and maximize the returns, especially through brownfield projects.

The strategy is to make the majority of capacity additions as brownfield expansions, that is enhancing the existing facilities rather than building new ones. This strategy is expected to lower the project risks and ensure steady returns on the investments. In the past decade, India saw a capacity increase of 42MT where the exports remained steady and the domestic consumption has seen significant growth.

Now this expansion will not only enhance India's energy security by meeting its domestic needs but will also solidify its position as a major player in the global energy market. This expansion is set to highlight the growing energy consumption patterns in developing economies like India, where industrial growth is linked to fuel consumption. The key question here is: how will the country balance the expansion with the global shift toward cleaner energy?

Domestic demand and its influence:

There have been some significant changes in the domestic usage of petroleum products during the past decade. For instance, the government has been aiming to focus more on blending 20% ethanol into petrol by 2026 as part of their effort to reduce reliance on conventional fuels.

The demand for petroleum products grew at a CAGR of 4% over the past decade and this growth rate is expected to slightly moderate to 3% over the next six years due to several external factors. The advent of fuel-efficient vehicles, and rise in the use of alternative fuels and push for the ethanol blending are all creating greater impact.

This demand growth is slowing but

remains significant. These factors reflect a broader trend where emerging markets as they slowly transition towards cleaner fuels. These markets although have considerable demand for conventional petroleum products. Ethanol blending is a promising strategy, but the question remains: will it alone be enough to significantly reduce the emissions and dependence on fossil fuels?

Transport fuel dynamics:

Transport fuels like diesel and petrol make up about 56% of total consumption and that growth is significantly lower than the historical levels. This slower growth in adoption is due to the increasing adoption of electric vehicles and natural gas-powered buses. For instance, the diesel consumption is expected to grow at only 2-2.5% CAGR. Now the question remains: How quickly can India build the necessary infrastructure for EVs and will the costs of EV adoption be affordable for the masses, especially in a developing economy?

Naphtha and petrochemical growth:

In the petrochemical industry, the demand for naphtha is expected to grow at 6-7% CAGR. Additionally, the expansion of the petrochemical industry in India is expected to expedite its growth. Since Naphtha is utilized in producing plastics, chemicals and other industrial materials, the demand growth is held higher than the transport fuels.

This highlights the country's growing industrial base and its ambition to become a global hub for the manufacturing and petrochemicals industry. However, naphtha is a fossil fuel product and questions long-term sustainability and the goal of reducing carbon footprints.

Brownfield expansions – strategy to reduce the project risks:

India's growth in the area is to focus on brownfield expansions, which are enhancing the existing facilities instead of building new ones. This strategy helps in reducing project risks as it accelerates the development timelines and the approach makes economic sense as it requires less capital and infrastructure compared to the greenfield projects.

The strategy allows the companies to use the existing lands and facilities thereby minimizing the potential delays from land acquisition or regulatory hurdles.

These expansions are faster and more cost-effective ways of expansion and they also reflect a pragmatic approach to managing the risks in the volatile oil sector.

India's position as a net exporter in the oil sector:

India is expected to reap huge benefits with the surplus refining capacity and strong domestic consumption. Although the fluctuations in global oil prices and demand from international markets are expected to affect this advantage the ability of Indian refiners is expected to remain competitive across the globe and remains crucial.

With the domestic oil demand growing, the country should balance its export-oriented refining capacity with meeting internal needs. A failure to do that could lead to supply shortages or over-reliance on imports in the future, despite growing domestic refining capacity.

Take away:

The Indian oil sector is all set and poised for significant growth due to the strategy of building refining capacity, deregulation and favourable governmental policies. However external factors such as geopolitical risks, volatility in the market and global shift towards sustainability are some factors that could influence its future trajectory. Therefore the country should carefully manage both domestic and international markets, diversify energy sources, and invest in technologies these factors are the key to sustainability and long-term growth.

Source : Vinodini Harish

Sabic Highlights Advanced Materials And Creative Solutions For Evs And Energy Storage At The Battery Show North America 2024

- At The Battery Show North America 2024, Booth 4807, SABIC is exhibiting a wide range of advanced materials, creative concepts and commercial applications in EVs and energy storage.
- The company spotlights solutions well suited for electric vehicle batteries, chargers, inverters, busbars and converters.
- SABIC is emphasizing its sustainable polymers and specialty thermoplastics, which can help

address critical fire safety concerns and expand the environmental benefits of EVs.

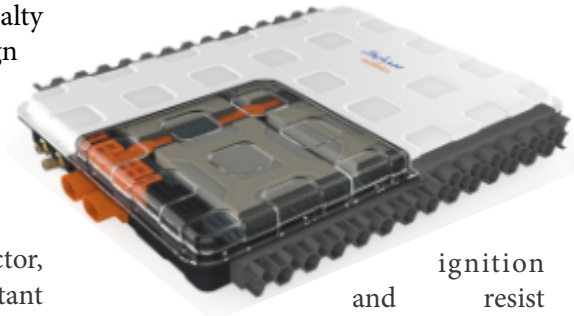
SABIC, a global leader in the chemicals industry, is spotlighting advanced material technologies and creative solutions for energy storage, particularly electric vehicle (EV) battery components and charging infrastructure, here at The Battery Show North America (Booth 4807). The company is displaying concepts and commercial applications that illustrate the value of its polymers and specialty thermoplastics for increasing design flexibility, improving safety and performance, streamlining manufacturing and enhancing sustainability.

Fahad Al-Harthi, global director, Automotive, SABIC, said "Important advancements in EV battery technology are being enabled by high-performance materials and innovative application approaches. SABIC invests in original research and development for energy storage solutions, and we also keep pace with the fast-changing requirements of the industry and individual customers. Our materials could make a significant contribution to solving emerging design, manufacturing and performance challenges."

At The Battery Show, SABIC is exhibiting noteworthy applications and use cases that can provide both inspiration and practical design and manufacturing guidance.

- **Multi-material EV battery pack enclosure:** This novel enclosure, an alternative to an all-aluminum design, reduces weight by 20 percent. Its cover panel uses a thermoplastic / organosheet sandwich structure; its tray is made completely from thermoplastic; and its underbody panel is metal. Flame-retardant (FR) STAMAX™ long glass fiber polypropylene (LGF-PP) is used for the thermoplastic components. Learn more.

- **Thermoformable insulation film in EV battery packs:** This film is based on chemically resistant NORYL™ NHP8000VT3 resin, which meets the UL94 V0 standard at 0.25 mm and achieves the highest comparative tracking index level (CTI-PLC0). These properties enable the insulation film to be used in higher-voltage (600V) EV batteries to help prevent ignition and resist breakdown. Sustainable versions of the film are available. Learn more.



- **DC-DC hybrid converter:** Another multi-material example is this demonstrator, which features a plastic-metal hybrid. The lightweight plastic housing is made with ULTEM™ resin, while a stamped sheet metal insert provides thermal management of the printed circuit board. This approach may reduce manufacturing costs by up to 30 percent compared to an all-aluminum version. Most ULTEM resin grades can be requested as ISCC+ certified renewable versions. Learn more.

- **Polypropylene (PP) replaces polyamide (PA) bringing more safety and value:** Replacing FR PA with intumescent FR PP in thermal runaway barriers, module housing, busbars, and other EV battery components could reduce weight and costs while equaling or surpassing PA's fire safety performance. Samples at the booth show the potential of intumescent FR PP STAMAX resin to reduce cold side temperatures by ~100°C vs. FR PA. Learn more

- **Cylindrical cell frames for EV battery protection:** Made with LNP copolymers, these thin-wall cell frames deliver UL94 V0 compliance at 1.5 mm. Compared to polyamide (PA) frames, they offer improved dimensional stability thanks to lower moisture uptake and lower warpage. Also, they meet low-temperature ductility requirements with impact resistance down to -40°C. For sustainability, grades can be requested as ISCC+ certified renewable versions. Learn more

- **Busbar insulation covers:** Prototype EV busbars on display use SABIC's FR PP resin and VALOX™ FR PBT resin for their insulation covers. These materials deliver outstanding fire safety (with PBT available to meet higher service temperature requirements) and superior arcing control and can be dyed orange for visibility and safety. The resins are formulated without intentionally adding per- and polyfluoroalkyl substances (PFAS) or halogen. Processing options include injection molding and extrusion. Compared to a traditional FR PA solution, use of SABIC's PP resin can potentially offer up to 20 percent in cost savings and 10 percent in weight savings, while SABIC's PBT resin can deliver reduced moisture absorption and improved dimensional stability. Learn more

- **Nichicon capacitors for EV AC-DC traction inverters:** In the first commercial application of ultra-thin ELCRES™ HTV150A dielectric film, Nichicon has developed high-temperature, high-voltage, commercial-quality capacitors for EV inverter modules. The film is the first in the industry to deliver stable

EVENTS AND CONFERENCES

DYE+CHEM MOROCCO INTERNATIONAL EXPO

Date : Nov. 7-9, 2024

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

Country : Morocco

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

Description : The 46th Dye+Chem Morocco 2024 International Expo is a Comprehensive International Exhibition featuring Worldwide Dyestuff and Fine & Specialty Chemical Manufacturers, focusing on the entire Textile, Apparel & Leather Industries of Morocco and Africa – the new & future market. The manufacturing sector in Morocco has been expanding, with the country becoming a hub for producing various types of Textiles, Apparel, and Leather. The industry has attracted both domestic and foreign investments. The country is now Europe's eighth-largest textile and clothing supplier. Morocco's strategic location, close to European markets, provides it with a competitive advantage in terms of logistics and transportation. This proximity allows for shorter lead times and cost-effective delivery to European customers. it has served as a very important Business hub between Europe, Africa, and the Middle East. The Moroccan government has been actively supporting the manufacturing industry through policies and incentives. This support includes measures to attract investments, improve infrastructure, and enhance the competitiveness of the sector. Morocco's status as a trade hub is bolstered by its trade agreements with the Persian Gulf, Mediterranean, and African nations, the United States of America, and the European Union. Morocco currently has duty-free access to a market of 55 countries representing more than one billion consumers and 60 percent of world GDP. Participate in the 46th Dye+Chem Morocco 2024 International Expo. Meet, network, explore new business partnerships and opportunities with potential buyers through the Expo from Morocco and Africa.

INTERDYE TEXTILE PRINTING EURASIA

Date : Nov. 27-29, 2024

City : Istanbul, Turkey

Country : Turkey

Website : https://interdyeprinting.com/en

Description : Interdye & Textile Printing Eurasia, where the pulse of the textile industry beats, brings together industry professionals between 27-29 November this year.

An unmissable opportunity to meet the latest technology, innovative products, and leading players in the industry! You can closely follow the developments in the sector and establish new business contacts with the seminars and workshops to be held during the exhibition.

CPHI INDIA

Date : Nov. 26-28, 2024

City : India Expo Centre, Greater Noida, Delhi NCR

Country : India

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

Description : 1. The DyeChem Bangladesh 2024 is a Comprehensive International Exhibition featuring Worldwide Dyestuffs & Fine & Specialty Chemical Manufacturers, focusing on the entire Textile & Apparel Industry of Bangladesh and South Asia. 2. In 2023, DyeChem attracted industry leaders, textile manufacturers, suppliers, visitors from Bangladesh and around the world, reaffirming Bangladesh's position as an emerging Global Textile Hub. 3. In the fiscal year 2021-2022, Bangladesh exported Apparels worth US $45 billion, maintaining the crown as the second-largest apparel exporter in the world and a highly potential buyer of Textiles and Apparel Trims, Accessories. 4. DyeChem Bangladesh is the Oldest, Biggest & Only International Exhibition of Bangladesh serving the Textile & Apparel Industry of Bangladesh for the past 23 years. 5. The DyeChem 2023 saw diverse global participation and visitors from across South Asia and Europe, who used the event as a Triangle-Trade platform where they could connect with Textile, Accessories Manufacturers in the Show as well as Garment factories in Bangladesh. 6. DyeChem has provided a unique platform for the Global Textile Industry for networking, discovering, collaborations, business development and highlighted the immense potential of Bangladesh's textile and apparel dyestuff industry on a global scale. 7. Participate in DyeChem Bangladesh 2024. Meet and connect with potential buyers from Bangladesh and beyond through the Expo.

INDIA CHEM

Date : Oct. 17-19, 2024

City : Bombay Exhibition Centre, Mumbai

Country : India

Website : https://indiachem.ficci.in/

Description : Department of Chemicals & Petrochemicals, Ministry of Chemicals & Fertilizers, Government of India, jointly with FICCI is organising the 13th Edition of "India Chem 2024" from 17th - 19th October 2024 at Bombay Exhibition Centre, Mumbai, India. India Chem, the flagship event of the Department, is one of the largest composite events of the industry in the Asia-Pacific region and comprises of an International Conference and Exhibition. India Chem 2024 will showcase tremendous potential and supportive government policy for sustainable growth in the sector and will be a single platform for investors, both domestic and international and other stakeholders to interact and forge alliances, thereby providing immense potential for trade and investment, in a mutually beneficial way. The concurrent sessions as part of conference includes Global CEOs Round Table as well as conclaves on different industry segments (e.g., Chemicals, Petrochemical, Agrochemical Industry, Process and machinery) and regional exchanges between India and the counties.

BANGLADESH INT'L DYES, PIGMENTS AND CHEMICALS EXPO

Date : Oct. 24-26, 2024

City : Dhaka, Bangladesh

Country : Bangladesh

Website : https://10times.com/dyes-pigments-and-chemicals

Description : "DyeChem Expo - Branded Int'l Expo on Dyes, Dyestuff, Pigments and all kind of Chemicals" 8th Edition of Bangladesh Int'l Dyes, Pigments and Chemicals Expo, to be held from 24 to 26 October 2024 at International Convention City Bashundhara - ICCB, Dhaka - Bangladesh. Dyes, Dyestuffs, Pigments and all kind of Chemicals - Manufacturer, Suppliers & Exporters from Home & Abroad will participate at this mega exhibition. This expo will help Foreign Manufacturer, Dealers & Suppliers to Showcase their products, where Bangladeshi Factory Owners & Exporters can get in touch with them. This Event will obviously encourage local manufacturers & producers to export their goods in foreign markets. Foreign buyers will also visit to check new trends & quality Dyes, Dyestuffs, Pigments and allied Chemicals.

performance at operating temperatures of -40°C to 150°C and frequencies up to 100 kHz. Watch video.

- **Charge Amps Dawn EV charger:** The housing of the Charge Amps Dawn EV charger contains in the range of 50 percent certified renewable LEXAN™ polycarbonate from SABIC's TRUCIRCLE™ portfolio, supporting the EV charger provider's commitment to develop the circular bio-economy and help mitigate climate change issues. Learn more

Visitors to the SABIC booth#4807 at The Battery Show North America 2024 can learn more about the company's materials and value-added services, including application development and technical support. The Battery Show North America 2024 takes place in Detroit, Mich., Oct. 8-10.

Source : Sabic

Researchers crack a key problem with sodium-ion batteries for electric vehicles and grid energy storage

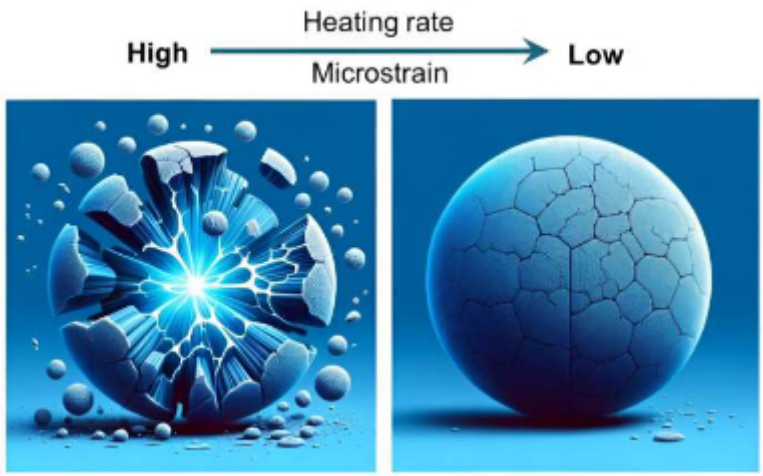
Lithium-ion batteries have long dominated the market as the go-to power source for electric vehicles. They are also increasingly being considered for storage of renewable energy to be used on the electric grid. However, with the rapid expansion of this market, supply shortages of lithium are projected within the next five to 10 years.

"Sodium-ion batteries are emerging as a compelling alternative to lithium-ion batteries due to the greater abundance and lower cost of sodium," said Gui-Liang Xu, a chemist at the U.S. Department of Energy's (DOE) Argonne National Laboratory.

To date, there has been a serious roadblock to the commercialization of such batteries. In particular, the performance of the sodium-containing cathode rapidly declines with repeated discharge and charge.

A team at Argonne has made important strides in resolving this issue with a new design for a sodium-ion oxide cathode. It is closely based on an earlier Argonne design for a lithium-ion oxide cathode with proven high energy storage capacity and long life. The research is published in the journal Nature Nanotechnology.

A key feature of both designs is that the microscopic cathode particles contain a mix of transition metals, which could include nickel, cobalt, iron or manganese. Importantly, these metals



are not uniformly distributed in individual cathode particles. As an example, nickel appears at the core; surrounding this core are cobalt and manganese, which form a shell.

These elements serve different purposes. The manganese-rich surface gives the particle its structural stability during charge-discharge cycling. The nickel-rich core provides high capacity for energy storage.

In testing this design, however, the cathode's energy storage capacity steadily declined during cycling. The problem was traced to the formation of cracks in the particles during cycling. These cracks formed due to strain arising between the shell and core in the particles. The team sought to eliminate that strain before cycling by fine-tuning their method of cathode preparation.

The precursor material used to start the synthesis process is a hydroxide. In addition to oxygen and hydrogen, it contains three metals: nickel, cobalt and manganese. The team made two versions of this hydroxide: One with the metals distributed in a gradient from core to shell and, for comparison, another with the three metals evenly distributed throughout each particle.

To form the final product, the team heated up a mixture of a precursor material and sodium hydroxide to as high as 600°C, maintained it at that

temperature for a select period, then cooled it to room temperature. They also tried different heat-up rates.

During this entire treatment, the team monitored the structural changes in the particle properties. This analysis involved use of two DOE Office of Science user facilities: the Advanced Photon Source (beamlines 17-BM and 11-ID) at Argonne and the National Synchrotron Light Source II (beamline 18-ID) at DOE's Brookhaven National Laboratory.

"With the X-ray beams at these facilities, we could determine real-time changes in the particle composition and structure under realistic synthesis conditions," said Argonne beamline scientist Wenqian Xu.

The team also used the Center for Nanoscale Materials (CNM) at Argonne for additional analysis to characterize the particles and the Polaris supercomputer at the Argonne Leadership Computing Facility (ALCF) to reconstruct the X-ray data into detailed 3D images. The CNM and ALCF are also DOE Office of Science user facilities.

The initial results revealed no cracks in the uniform particles, but cracks forming in the gradient particles at temperatures as low as 250°C. These cracks appeared at the core and the core-shell boundary and then moved to the surface. Clearly, the metal gradient caused significant strain leading to these cracks.

"Since we know that gradient particles can produce cathodes with high energy storage capacity, we wanted to find heat treatment conditions that will eliminate the cracks in the gradient particles," said Wenhua Zuo, an Argonne postdoctoral appointee.

The heat-up rate proved a critical factor. Cracks formed at a heat-up rate of five degrees per minute, but not at a slower rate of one degree per minute. Tests in small cells with cathode particles prepared at the slower rate maintained their high performance for more than 400 cycles.

"Preventing cracks during cathode synthesis pays big dividends when the cathode is later charged and discharged," said Gui-Liang Xu. "And while sodium-ion batteries do not yet have sufficient energy density to power vehicles over long distances, they are ideal for urban driving."

The team is now working to eliminate the nickel from the cathode, which would reduce the cost even further and be more sustainable.

"The prospects seem very good for future sodium-ion batteries with not only low cost and long life, but also energy density comparable to that of the lithium iron phosphate cathode now in many lithium-ion batteries," said Khalil Amine, an Argonne Distinguished Fellow. "This would result in more sustainable electric vehicles with good driving range."

Source : Argonne National Laboratory

Archroma introduces breakthrough in bio-based textile printing

Pratteln, Switzerland, October 14, 2024 - Archroma, a global leader in specialty chemicals towards sustainable solutions, today introduced the NTR Printing System to make bio-based pigment printing commercially possible for the first time. Based on renewable raw materials* and designed for safer chemistry, it helps apparel and textile brands reduce their environmental footprint while producing brilliant black shades on garments that deliver both comfort and durability.

Bio-based pigment printing is an emerging technology that is attracting major interest from brands that want to use pigments derived from natural sources, such as plants, in the production of environmentally conscious textiles. Until now, however, bio-based pigments have not delivered color fastness that is comparable to synthetic pigments, and color quality and production performance have not been sufficient to support commercial-scale production.

Archroma's NTR Printing System is the first to utilize renewable feedstock* across pigment dispersion, binder and fixing agent. Crucially, it ensures good wet-rubbing and dry-rubbing fastness, with outstanding softness on all kinds of fabrics. Furthermore, it is suitable for most popular application technologies, including printing, coating and continuous pigment dyeing, with outstanding runnability for production efficiency.

"These properties make the new NTR Printing System ideal for the highly competitive denim market, where sustainability, comfort and durability are important; for knits, where very soft handfeel is essential; and on babywear, where both exceptional softness and

safety are required," Joaquin Femat, Market Segment Director for Printing, Archroma, said.

"This latest breakthrough is another example of innovation under Archroma's "PLANET CONSCIOUS+" roadmap. We develop revolutionary products, systems, and technologies with increased sustainability features than available market alternatives and enhanced value so that brands and mills can differentiate themselves with solutions that meet their business goals and sustainability targets," he continued.

The result of more than two years of research and development, the innovative new NTR Printing System required Archroma to create customized binding and fixing agents to ensure fastness for the pigment black dispersion comparable to current petroleum-based printing systems. All three printing elements are partially based on renewable feedstock to reduce reliance on non-renewable petrochemicals.

Archroma also developed the new system to avoid toxic input streams and impurities, including formaldehyde. Two successful bulk trials were conducted with Textprint S. A. and Jeanologia.

The NTR printing system comprises the following highly efficient and robust printing elements:

- **PRINTOFIX® BLACK NTR-TF:** A non-gelling pigment black with 79% renewable carbon content*, designed for use in textile applications with no impact on fastness levels.
- **HELIZARIN® NTR-SS:** A formaldehyde-free super-soft binder with 40% renewable carbon content**, designed to ensure very good overall fastness levels.
- **LUPRINTOL® FIXING AGENT NTR-HF:** A formaldehyde-free fixing agent with 40% renewable carbon content**, designed for high wet fastness in rubbing and laundry.

All three elements are currently being evaluated for compliance with globally accepted standards like bluesign®, the Global Organic Textile Standard (GOTS) and Zero Discharge of Hazardous Chemicals (ZDHC). The system also supports major industry restricted substances list (RSL) requirements.

"With the launch of the bio-based NTR

Printing System, Archroma can now draw on the industry's most complete portfolio of innovative printing solutions to tailor systems for individual customer needs," Mr. Femat said. "We remain the global leader in pigment printing, with a history of innovation that includes the first formaldehyde-free pigment printing system, introduced in 2012."

Source : Press Release

Argent to start production at new glycerine refinery

Biofuels producer Argent Energy is expected to commence production at its new glycerine refinery in early October, a source told Argus.

The new Argent refinery, which is located at its Port of Amsterdam site, is Europe's largest facility dedicated to producing bio-based, technical-grade refined glycerine. The facility has a production capacity of 50,000 t/yr and will upgrade crude glycerine into 99.7pc technical-grade glycerine to supply the European chemical market, the company said.

Technical-grade refined glycerine can be used in the production of epichlorohydrin, polyether polyol and anti-freeze, among other applications. Additionally, its use as a feedstock for biofuels generation, such as marine fuels, is being studied as it could offer a cheaper alternative to LNG and distillates. The Netherlands has the largest marine fuel sector in the EU.

"Our entrance into the chemical market is driven by our goal to maximise product value and support the circular economy. By upgrading glycerine from our processes into a technical-grade product, we're giving the chemical industry a bio-based option they can confidently use in their own products," Argent Energy chief

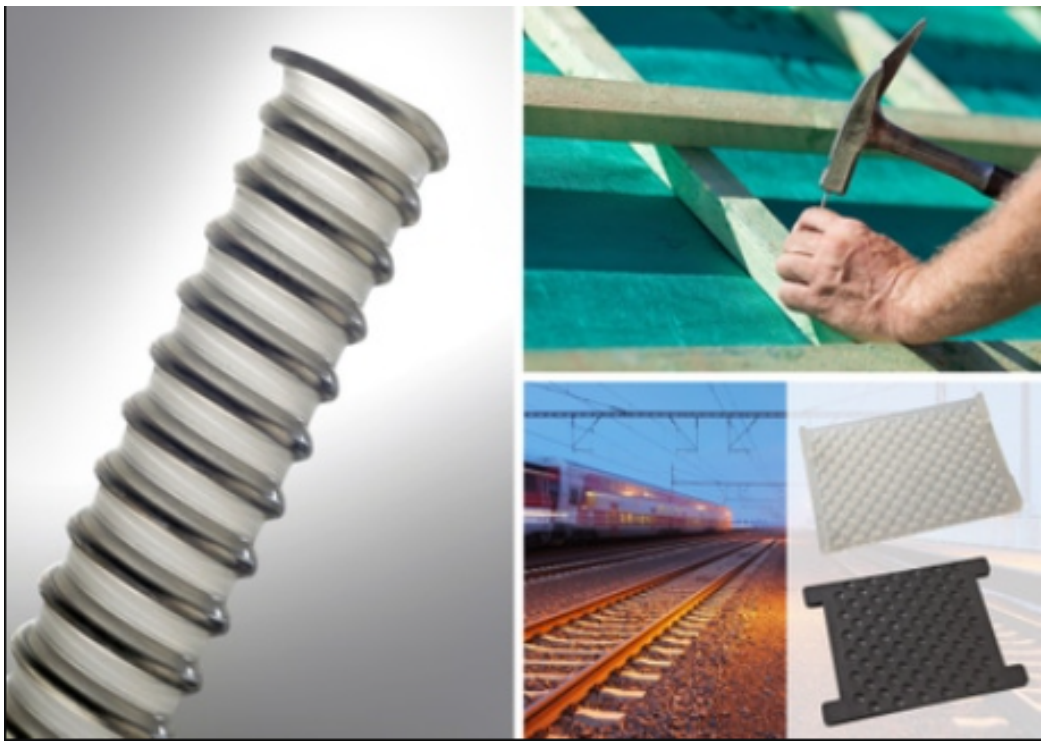
executive Louise Calviou said.

The glycerine produced in Argent's new facility will be made via the biodiesel production route, with the product being certified under International Sustainability and Carbon Certification (ISCC) guidelines.

Argent Energy currently has a capacity of 190,000 t/yr for waste-based biodiesel, with sites in Amsterdam and northwest England. The company plans to soon triple biofuel production at its Amsterdam site alone.

Source : Argus

BASF introduces new Elastollan 1400 TPU series



- **Ether-based thermoplastic polyurethane (TPU) with excellent hydrolysis resistance**
- **Enhanced performance for a variety of applications**
- **Experimental grades available for sampling**

BASF launches a new ether-based thermoplastic polyurethane: Elastollan® 1400. The new TPU series provides exceptional hydrolysis and microbe resistance and combines stable processing behavior with good compression set properties. The material delivers outstanding burst pressure performance and can be processed by extrusion and injection molding. The aging stability of Elastollan® 1400 ensures long-lasting performance – a versatile option for a wide range of applications.

Advanced material technology with excellent mechanical properties

Key advantages like hydrolysis resistance and excellent mechanical properties make Elastollan® 1400 an ideal choice for diverse industries such as transportation, industrial manufacturing, and footwear. Whether it is rail pads, cable sheathings, tubes and hoses, profiles, gearwheels, or shoe soles, the new grades provide reliability and long-lasting performance. For the footwear industry, superior wet slip resistance is a key benefit, ensuring enhanced safety and comfort.

The 1400 series offers unique dynamic properties originated from a discrete glass transition temperature (Tg) and an extended viscoelastic plateau. These features contribute to improved dimensional stability and a wide thermal application range.

Experimental grades ready for sampling

After more than two years of research, experimental grades for specific applications and processing technologies are available for sampling. Customers and interested prospects are invited to explore these new grades further and experience the product's performance firsthand.

Improved sustainability by lower product carbon footprint

The Elastollan® 1400 series has been designed with sustainability in mind, offering a lower carbon footprint when compared to TPU grades with a comparable performance (e.g., for a hardness of shore 80 A it is possible to reduce the carbon footprint by up to 30%). This sustainability advantage appeals to manufacturers prioritizing environmental concerns and seeking ways to minimize their ecological footprint.

Source : BASF

Booking price as on 11/06/2024

Current Exchange rate-$1= 83.50 INR

Chemicals	Current Prices	Location
Acetic Acid	410	CFR India
Acrylonitrile	1300	CFR India
Benzene	1055	CFR India
Phenol	1150	CFR India
Acetone	1210	CFR India
Butyl Acrylate Monomer	2300	CFR India
C9	990	CFR India
LAB	1650	CFR India
IPA	1210	CFR India
Methanol	290	CFR India
VAM	860	CFR South Asia
Toluene	1055	CFR India
Styrene Monomer	1210	CFR India
N-Butanol	1200	CFR India
Octanol	1490	CFR India
Isobutanol	1200	CFR India
MEG	615	CFR India
Mix Xylene-Solvent Grade	1030	CFR India
Gycerine	850	CIF India
DMF	850	CFR India
Acrylic Acid	1300	CIF India
Formic Acid	650	CFR India
Adipic Acid	1450	CIF India
Ethylene	940	CFR India
PTA	880	CFR India
Propylene	815	CFR India
THF	1600	CIF India

Mumbai Market Price as on10/10/2024

Name of Chemical	Current Price	Location
Acetic Acid-Imported Repack	44	Mumbai
Acetic Acid-Domestic Intact	55	Mumbai
Acetic Acid-Domestic Repack	44	Mumbai
Acetone-Imported Repack	92	Mumbai
Acetone-Domestic Intact	110	Mumbai
Acetone-Domestic Repack	92	Mumbai
Acetonitrile-Imported Intact	140	Mumbai

Acetonitrile-Domestic Intact	170	Mumbai
Acetonitrile-Domestic Repack	133	Mumbai
Acrylonitrile-Imported Intact	165	Mumbai
Acrylonitrile-Imported Repack	155	Mumbai
Aniline-Imported Intact	157	Mumbai
Aniline-Domestic Intact	156	Mumbai
Benzene-Domestic Repack	95	Mumbai
Cyclohexane-Imported Intact	125	Mumbai
Cyclohexane-Domestic Intact	117	Mumbai
Cyclohexane-Domestic Repack	110	Mumbai
Cyclohexanone-Imported Intact	145	Mumbai
Cyclohexanone-Imported Repack	132	Mumbai
Cyclohexanone-Domestic Intact	150	Mumbai
Cyclohexanone-Domestic Repack	137	Mumbai
C9 Solvent (99.99% purity)-Imported Repack	99	Mumbai
C9 Solvent (Arham Petrochem)-Imported Repack	98.75	Mumbai
Dibutyl Phthalate-Domestic Intact	125	Mumbai
Dioctyl Phthalate-Domestic Intact	123	Mumbai
Ethyl Acetate-Domestic Intact	79	Mumbai
Ethyl Acetate-Domestic Repack	76	Mumbai
Formaldehyde(37%)-Domestic Repack	19	Mumbai
Methanol-Imported Repack	35	Mumbai
Methyl Ethyl Ketone-Imported Intact	125	Mumbai
Methyl Ethyl Ketone-Imported Repack	112	Mumbai
Methyl Isobutyl Ketone-Imported Intact	164	Mumbai
Methyl Isobutyl Ketone-Imported Repack	160	Mumbai
Methyl Methacrylate-Imported Intact	184	Mumbai
Mixed Xylene-Imported Repack	83	Mumbai
Mixed Xylene-Domestic Repack	83	Mumbai
Monoethylene Glycol-Imported Repack	60	Mumbai
Monoethylene Glycol-Domestic Intact	65	Mumbai
Monoethylene Glycol-Domestic Repack	60	Mumbai
Iso propyl Alcohol-Imported Repack	113	Mumbai
Iso propyl Alcohol-Domestic Intact	131	Mumbai
Iso propyl Alcohol-Domestic Repack	113	Mumbai

nButanol-Imported Repack	99	Mumbai
nButanol-Domestic Intact	110	Mumbai
nButanol-Domestic Repack	100	Mumbai
Ortho Xylene-Imported Repack	100	Mumbai
Phenol-Imported Repack	112	Mumbai
Phenol-Domestic Intact	116	Mumbai
Phenol-Domestic Repack	112	Mumbai
Phthalic Anhydride-Imported Intact	95	Mumbai
Phthalic Anhydride-Domestic Intact	95	Mumbai
Styrene Monomer-Imported Repack	113	Mumbai
Toluene-Imported Repack	84	Mumbai
Toluene-Domestic Repack	84	Mumbai
Vinyl Acetate Monomer-Imported Repack	78	Mumbai

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

International market prices as on 10/10/2024

Products	Regions	Current prices
	Feedstock Prices $/unit	
Crude Oil ($/barrel)	WTI CRUDE	73.86
	BRENT CRUDE	77.18
	MARS US	75.14
	OPEC BASKET	78.26
Natural Gas	New York	2.64
Gasoline	RBOB	2.07
Heating Oil	US	2.29
Ethanol	US	1.58
Naphtha	FOB Singapore	632
	European	650
	CFR Far East Asia	690
Propane	New York	0.76
Aromatics prices $/MT		
Benzene	FOB Korea	945
	CFR Japan	960
Styrene	CFR Japan	1110
	CFR South East Asia	1150

	CFR China	1110
	FOB Korea	1100
Toluene	CFR China	750
	CFR South East Asia	875
	FOB Korea	790
	CFR Japan	750
Iso-Mix Xylene	CFR South East Asia	770
	CFR Taiwan	770
	FOB Korea	760
MEG	CFR China	580
	CFR South East Asia	585
Methanol	CFR China	304
	CFR Korea	347
	CFR South East Asia	348
	CFR Taiwan	337
Solvent-MX	CFR South East Asia	785
	FOB Korea	730
	CFR China	730
Ortho Xylene	CFR South East Asia	900
	FOB Korea	880
	CFR China	885
Para Xylene	CFR South East Asia	920
	FOB Korea	870
	CFR Taiwan	890
Propylene	FOB Japan	815
	FOB Korea	815
	CFR China	850
	CFR South East Asia	795
Propylene Glycol	FOB Korea	820
	CFR China	850
Ethylene	CFR North East Asia	835
	CFR South East Asia	945
	FOB Japan	765
	FOB Korea	770
EDC	CFR Far East Asia	280

	CFR South East Asia	285
Butadiene	CFR China	1585
	CFR South East Asia	1475
	FOB Korea	1545
Benzene	FOB Rotterdam	885
Methanol	FOB Rotterdam	362
Ortho Xylene	FOB Rotterdam	1195
Para Xylene	FOB Rotterdam	915
Solvent-MX	FOB Rotterdam	790
Styrene	FOB Rotterdam	1130
Toluene	FOB Rotterdam	840
Benzene C/G	FOB US Gulf	305
Toluene C/G	FOB US Gulf	319
Styrene C/LB	FOB US Gulf	47.1
Para Xylene $/MT	FOB US Gulf	950
Mix Xylene C/G	FOB US Gulf	299
Methanol C/G	FOB US Gulf	110
Intermediates prices $/MT		
Acrylonitrile	CFR Far East Asia	1145
	CFR South East Asia	1155
	CFR South Asia	1160
VCM	CFR Far East Asia	590
	CFR South East Asia	665
MTBE	FOB Singapore	773
	FOB US Gulf	900
Phenol	CFR China	995
	CFR South East Asia	1090
	FOB US Gulf	1089
	FOB Rotterdam	1061
Acetone	CFR China	780
	CFR South East Asia	830
	CFR Far East Asia	700
	FOB US Gulf	1234
	FOB Rotterdam	1140
Caprolactum	CFR Far East Asia	1650

	CFR South East Asia	1660
Caustic Soda	FOB North East Asia	415
	CFR South East Asia	480
Ethyl Acetate	FOB US Gulf	1499
	FOB Rotterdam	1096
	FD North West Europe(Euro/mt)	1090
Butyl Acetate	FOB US Gulf	1808
	FOB Rotterdam	1439
	FD North West Europe(Euro/mt)	1400
MEK	FOB Rotterdam	1483
	FD North West Europe(Euro/mt)	1440
IPA	FOB US Gulf	1318
	FOB Rotterdam	1250
	FD North West Europe(Euro/mt)	1230
NBA	CFR China	930
	CFR South East Asia	915
	CFR Far East Asia	915
Octanol	CFR China	1025
	CFR South East Asia	1175
	CFR Far East Asia	1115
DOP	CFR China	1150
	CFR South East Asia	1135
	CFR Far East Asia	1115
Phthalic Anhydride	CFR China	1000
	CFR South East Asia	955
	CFR Far East Asia	945
PTA	CFR Far East Asia	675
	CFR South East Asia	690
Acetic Acid	CFR Far East Asia	452
	CFR South East Asia	462
	CFR South Asia	390
	FOB China	345
VAM	CFR China	845
	CFR South East Asia	740
	CFR South Asia	775

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

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

Opening Ports Price (Rs/kg) of Chemicals as on 10/10/2024

USD Exchange Rate: 83.98 INR

Products	Current Prices (INR/kg)	Prices in USD/mt Equivalent to INR/kg	Location
Acetic Acid	37.5	446.69	Ex-Mumbai
Acetic Acid	36.5	434.78	Ex-Kandla
Acetonitrile-imported intact	140	1667.66	Ex-Bhiwandi
Acetone	83	988.68	Ex-Mumbai
Acrylic Acid	87.5	1042.29	Ex-Mumbai
Acrylonitrile	118	1405.60	Ex-Kandla
Adipic Acid	105	1250.74	Ex-Bhiwandi
Aniline Oil	138	1643.84	Ex-Kandla
Benzene	86	1024.42	Ex-Vizaz
Butyl Acetate	90	1072.07	Ex-Kandla
Butyl Acrylate Monomer	114	1357.95	Ex-Kandla
Butyl Glycol	117	1393.69	Ex-Kandla
C10	88	1048.24	Ex-Kandla
C9	81	964.86	Ex-Kandla
Carbon Black-regular grade	60	714.71	Ex-Mumbai
Caustic Soda Lye	38	452.65	Ex-Dahej
Chloroform	20	238.24	Ex-Dahej
Citric Acid-ANHYD	70	833.83	Ex-Bhiwandi
Citric Acid-Mono	63	750.45	Ex-Bhiwandi
Cyclohexane	98	1167.36	Ex-Hazira
Cyclohexanone	117	1393.69	Ex-Kandla
DMF Drum	79	941.04	Ex-Bhiwandi
DEG	61	726.62	Ex-Hazira
EDC	39	464.56	Ex-Kandla
Epoxy Resin	190	2263.25	Ex-Nhava Sheva
Ethyl Acrylate	122	1453.25	Ex-Kandla
Formic Acid	65	774.27	Ex-Bhiwandi
Glycerine	80	952.95	CIF Nhava Sheva
N-Heptane	210	2501.49	Ex-Bhiwandi
Hexane	92	1095.89	Ex-Kandla
Hydrogen Peroxide-50%	30	357.36	Ex-Bhiwandi
Isobutanol	93	1107.80	Ex-Kandla

IPA	104	1238.83	Ex-Kandla
IPA	105	1250.74	Ex-Mumbai
LAB	136	1620.01	Imported
Maleic Anhydride-Drum	91	1083.98	Ex-Mumbai
MDC	36	428.83	Ex-Dahej
MEG	52	619.42	Ex-Mumbai
MEK	99	1179.27	Ex-Kandla
Melamine	82	976.77	Imported
Methanol	30	357.36	Ex-Kandla
Methanol	30	357.36	Ex-Mumbai
MIBK	145	1727.22	Ex-Hazira
Mix Xylene-Solvent Grade	72	857.65	Ex-Kandla
Mix Xylene-Solvent Grade	73	869.57	Ex-Mumbai
MMA	178	2120.31	Ex-Hazira
N-Butanol	91.5	1089.93	Ex-Kandla
N-Propanol	104	1238.83	Ex-Kandla
Octanol	100	1191.19	Ex-Kandla
Ortho Cresol	NA	Not Available	Ex-Bhilai
Ortho Xylene	87	1036.33	Ex-Kandla
Phenol	105	1250.74	Ex-Kandla
Phenolic Resin	160	1905.90	Ex-Indore
Phthalic Anhydride	99	1179.27	Ex-Mumbai
Propylene Glycol	88	1048.24	Ex-Kandla
Sodium Nitrate (50Kg Bag)	61	726.62	Ex-Make-Lasons
Soda Ash Light	35	416.91	Ex-Bhiwandi
Styrene Monomer	101.5	1209.05	Ex-Kandla
Styrene Monomer	102	1215.01	Ex-Mumbai
Sulphuric Acid	11	131.03	Ex-Vapi
Tio2 (Anatase Grade)	190	2263.25	Ex-Bhiwandi
Tio2 (Rutile Grade)	218	2596.78	Ex-Bhiwandi
Toluene	80	952.95	Ex-Kandla
Toluene	80	952.95	Ex-Mumbai
VAM	70	833.83	Ex-Kandla
VAM	71	845.74	Ex-Hazira

Producer Prices (Rs/kg) of Chemicals as on 10/10/2024

Producers	Current Price (Rs/kg)	Import parity price in USD/MT	Location	Production capacity
Accord-Ethyl Acetate	65.5	780.23	Ex-Maharashtra	
Arham Petrochem-C9	77.75	926.15	Ex-Kandla	69,000 tonnes /year
Arham Petrochem-C9	78.75	938.06	Ex-Ahmedabad	69,000 tonnes /year
Arham Petrochem-C10	87.5	1042.29	Ex-Kandla	30,000 tonnes /year
Arham Petrochem-C10	87	1036.33	Ex-Ahmedabad	30,000 tonnes /year
Arham Petrochem-C10 (Imported Repack)	100.75	1200.12	Ex-Bhiwandi	30,000 tonnes /year
Arham Petrochem-MTO/ White Spirit (KL)	59.65	710.54	Ex-Kandla	75000 tonnes / Year
Arham Petrochem-MTO/ White Spirit (KL)	60.65	722.45	Ex-Ahmedabad	35,000 tonnes /year
Arham Petrochem-De-Aromatised D40	130	1548.54	Ex-Kandla	75000 tonnes / Year
Arham Petrochem-De-Aromatised D40	131	1560.45	Ex-Ahmedabad	35,000 tonnes /year
Arham Petrochem-De-Aromatised D60	139	1655.75	Ex-Kandla	75000 tonnes / Year
Arham Petrochem-De-Aromatised D60	140	1667.66	Ex-Ahmedabad	35,000 tonnes /year
Andhra Petrochemicals-Iso-Butanol	101.5	1209.05	Ex-Vishakhapatnam	4000 tonnes/year
Andhra Petrochemicals-N-Butanol	100	1191.19	Ex-Vishakhapatnam	30,000 tonnes/year
Andhra Petrochemicals-Octanol	106	1262.66	Ex-Vishakhapatnam	70,000 tonnes/year
BASF-Adipic Acid	122	1453.25	Imported	210,000 tonnes/year
BPCL-2-Ethyl Hexanol (B)	90.75	1081.00	Ex-Kochi	47000 tonnes/year
BPCL-2-Ethyl Hexanol (P)	107	1274.57	Ex-Kochi	
BPCL-2-Ethyl Hexyl Acrylate (B)	146	1739.13	Ex-Kochi	10000 tonnes/year
BPCL-2-Ethyl Hexyl Acrylate (P)	156	1858.25	Ex-Kochi	
BPCL-Acrylic Acid (B)	76.5	911.26	Ex-Kochi	47000 tonnes/year
BPCL-Acrylic Acid (P)	85.5	1018.46	Ex-Kochi	
BPCL-Benzene	85.45	1017.87	Ex-Mumbai	90,000 tonnes/year

BPCL-Butyl Acrylate (B)	125.1	1490.17	Ex-Kochi	180000 tonnes/year
BPCL-Butyl Acrylate (B)	147.5	1757.00	Ex-Kandla	
BPCL-Butyl Acrylate (P)	135.1	1609.29	Ex-Kochi	
BPCL-Hexane (KL)	97.4	1160.21	Ex-Mumbai	35,000 tonnes/year Kochi
BPCL-Hexane (MT)	146.69	1747.35	Ex-Mumbai	35,000 tonnes/year, Kochi
BPCL-Iso-Butanol (B)	89.5	1066.11	Ex-Kochi	7000 tonnes/year
BPCL-Iso-Butanol (P)	117.7	1402.03	Ex-Kochi	
BPCL-MTO (KL)	81.45	970.22	Ex-Mumbai	19,000 tonnes/year
BPCL-N-Butanol (B)	85	1012.51	Ex-Kochi	38000 tonnes/year
BPCL-N-Butanol (B)	104	1238.83	Ex-Kandla	
BPCL-N-Butanol (P)	105.5	1256.70	Ex-Kochi	
BPCL-Paraffin Wax	110	1310.30	Ex-Delhi	
BPCL-Sulphur (Molten)	16.48	196.31	Ex-Mumbai	19,000 tonnes/year
BPCL-Toluene	79.9	951.76	Ex-Mumbai	16,000 tonnes/year
Deepak Phenolics-Acetone	79.5	946.99	Ex-Dahej Gujarat	80.5
Deepak Phenolics-IPA	101.5	1209.05	Ex-Dahej Gujarat	30,000 tonnes/year
Deepak Phenolics-Phenol	101.5	1209.05	Ex-Dahej Gujarat	200,000 tonnes/year
GACL-Caustic Soda Lye	39.5	470.52	Ex-Dahej Gujarat	
GACL-MDC	36	428.83	Ex-Bharuch Gujarat	NA
GNFC-Acetic Acid	38	452.65	Ex-Bharuch Gujarat	160,000 tonnes/year
GNFC-Aniline Oil	145	1727.22	Ex-Bharuch Gujarat	
GNFC-Ethyl Acetate	68.5	815.96	Ex-Bharuch Gujarat	50000 tonnes/year
GNFC-TDI Drum	207	2465.75	Ex-Bharuch Gujarat	67000 tonnes/year
Grasim-MDC	35.5	422.87	Ex-Gujarat	33000 tonnes/year
GSFC-Cyclohexane	99	1179.27	Ex-Gujarat	NA
HOCL-Acetone	96	1143.54	Ex-Kochi	24640 tonnes/year
HOCL-Phenol	111	1322.22	Ex-Kochi	40,000 tonnes/year
IOCL-Banzene	91.5	1089.93	Ex-Vadodara Gujarat	
IOCL-DEG	59.3	706.37	Ex-Odisha(Paradip)	
IOCL-DEG	62.3	742.11	Ex-Panipat	
IOCL-LAB	142	1691.48	Ex-Gujarat	120,000 tonnes/year
IOCL-MEG	56.4	671.83	Ex-Odisha(Paradip)	
IOCL-MEG	58.2	693.27	Ex-Panipat	
IOCL-Paraffin Wax	110	1310.30	Ex-Delhi	
Jubilant-Ethyl Acetate	68.5	815.96	Ex-Maharashtra	280 tonnes/day
Laxmi-Ethyl Acetate	67.5	804.05	Ex-Maharashtra	100000 tonnes/annum
Meghmani-Caustic Soda Lye	39.5	470.52	Ex-Bharuch Gujarat	400000 tonnes/annum
Meghmani-MDC	35.5	422.87	Ex-Ankleshwar Gujarat	397500 kg/month
NIRMA-LAB	143	1703.39	Ex-Vadodra	120,000 tonnes/year
Reliance-Caustic Soda Lye	39.5	470.52	Ex-Gujarat	69500 tonnes/annum

Reliance-DEG	62.1	739.73	Ex-Jamnagar	65,000 tonnes/year
Reliance-LAB	144	1715.31	Ex-Vadodra	180,000 tonnes/year
Reliance-MEG	56.3	670.64	Ex-Jamnagar	750,000 tonnes/year
Reliance-Mix Xylene	68	810.01	Ex-Jamnagar	120,000 tonnes/year
Reliance-PTA	69	821.92	Ex-Dahej Gujarat	1,300,000 tonnes/year
Reliance-TEG	116.5	1387.73	Ex-Jamnagar	NA
Reliance-Toluene	71	845.74	Ex-Jamnagar	100,000 tonnes/year
SI GROUP-Phthalic Anhydride	107	1274.57	Ex-Navi Mumbai	11000 tonnes/year
TATA Chemicals-Soda Ash light	34	405.00	Ex-Bhiwandi	900,000 tonnes/year

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

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.

New Chemical Products Listed on Chemical Market Leads Platform

Colortherm Green GN-M / 1308-38-9 / 215-160-9 / COLORTHERM GREEN GN-M

CAS-Number : 1308-38-9

Molecular Weight : mol/g

Package Size :- 25

Markets :- Paints & Coatings | Industrial Minerals |

Molecular Formula :-

Available Qty :- 375.0000 Kgs

Price :- EUR 14.2000 / Kgs

SICOTRANS ROT L 2816 / 1309-37-1 / 215-168-2

CAS-Number : 1309-37-1

Molecular Weight : mol/g

Package Size :- 25

Markets :-Paints & Coatings | Industrial Minerals

Molecular Formula :- C6H15N

Available Qty :- 325.0000 Kgs

Price :- EUR 18.6000 / Kgs

TECHNOCELL 2500 /ARBOC B400 / 9004-34-6 / 232-674-9 / TECHNOCEL®

CAS-Number : 9004-34-6

Molecular Weight : mol/g

Package Size :- 15

Markets :-Paints & Coatings | Industrial Minerals |

Molecular Formula :-

Available Qty :- 375.0000 Kgs

Price :- EUR 1.7500 / Kgs

TINT-AYD WD 2018 / 55965-84-9 / 0000000

CAS-Number : 55965-84-9

Molecular Weight : mol/g

Package Size :- 25

Markets :-Paints & Coatings | Industrial Minerals |

Molecular Formula :-

Available Qty :- 16.0000 Kgs

Price :- EUR 42.2500 / Kgs

HEUCODUR-BLAU 2R / 1345-16-0 / 32064990 / COBALT PIGMENT BLUE 28

CAS-Number : 1345-16-0

Molecular Weight : mol/g

Package Size :- 20

Markets :- Paints & Coatings | Industrial Minerals |

Molecular Formula :- C6H15N

Available Qty :- 80.0000 Kgs

Price :- EUR 76.6000 / Kgs

RWE and AM Green Ammonia sign MoU to supply up to 250,000 tonnes per year of RFNBO-compliant ammonia from India

- RWE has secured the ammonia for its global supply portfolio for delivery from 2027
- The green ammonia produced at AM Green Ammonia's sites in India meets EU standards for Renewable Fuels from Non-Biological Origin (RFNBO), as defined in the RED III

ESSEN, Germany and Hyderabad, India, Sept. 18, 2024 /PRNewswire/ -- RWE Supply & Trading has signed a Memorandum of Understanding (MoU) with AM Green Ammonia B.V. (AMG) for the long-term supply of green ammonia from its plants based in India. It outlines the supply of up to 250,000 tonnes of green ammonia per year. The ammonia will be sourced from AMG's production sites in Kakinada and Tuticorin, India. Initially, 50,000 tonnes of green ammonia will be produced at the Kakinada site, with the remaining volume of up to 200,000 tonnes to be sourced from the Tuticorin facility.

AMG is a subsidiary of the AM Green Group. AMG's ammonia manufacturing facilities will be powered entirely by carbon-free energy sources such as solar, wind, and hydroelectric power. The produced ammonia will meet EU standards for Renewable Fuels of Non-Biological Origin (RFNBO) as defined in the Renewable Energy Directive (RED III). AMG's facility in Kakinada has already been pre-certified for RFNBO compliance. Pre-certification for other facilities is underway.

Deliveries of green ammonia from AMG's sites are expected to start by 2027. A subsequent offtake agreement between RWE and AMG will detail the contractual provisions.

Costas Papamantellos, Head of International Hydrogen Investments at RWE Supply & Trading said, "RWE is committed to investing in hydrogen and its low-carbon derivatives to help industries achieve their climate goals. For this end, we are building strong supply chains with partners globally. Partnering with AMG allows us to secure green ammonia capacities at an early stage."

Mahesh Kolli, Group President of AM Green said, "We are delighted to partner with RWE to propel the transformation of various industries and several OECD economies. This agreement emphasizes AM Green's ability to align itself with an innovative and flexible contracting structure in line with commodity trading practices. Continuous focus on innovation combined with execution reinforces AM Green's leadership position as a global clean energy transition solutions platform for low-cost green molecules such as hydrogen, ammonia, fuels and other chemicals."

Source : PRNewswire

RUS grants Gevo a patent for ethanol-to-olefin process

ENGLEWOOD, Colo., Sept. 16, 2024 (GLOBE NEWSWIRE) -- Gevo, Inc. (NASDAQ: GEVO) is proud to announce the U.S. Patent and Trademark Office has granted to Gevo, a patent for its ethanol to olefins ("ETO") process. This patent further cements Gevo's position as a leader in intellectual property ("IP") surrounding bio-based renewable fuel and chemical production from alcohols.

Gevo has been awarded U.S. Patent No. 12,043,587 B2 covering the ETO process. This patent protects the process of using certain proprietary catalyst combinations for converting ethanol into olefins. This process is designed to give best-in-class cost and yields of olefins from ethanol, with improved energy efficiency, which is intended to help to reduce the cost of bio-fuels and biochemicals.

Olefins with three or four carbon atoms are key building blocks to produce fuels or chemicals. Existing technology makes ethylene, a 2-carbon olefin, from ethanol, and then additional steps are needed to produce the larger and more useful olefins, such as three or four carbon olefins (e.g., propylene and butenes). This patent protects Gevo's ETO process, which makes three and/or four carbon olefins in addition to ethylene from ethanol in a single step with a high degree of selectivity and control, which is critical for success. The

ETO process is expected to reduce energy and capital cost because of the fewer unit operations involved; and reduce complexity of the process design. The ETO process technology can be optimized to produce fuels and/or chemicals, the latter of which has been licensed to LG Chem, Ltd. ("LG Chem") under the previously disclosed joint development agreement. Together Gevo and LG Chem are working to scale up the process for chemicals.

"We've been pursuing simplified alcohol to olefin technology since 2007, understanding that low cost, robust processes to make the right olefins is the critical step to make jet fuel, gasoline, and plastics. It's our mission to make the transition practical from fossil-based to renewable fuels and chemicals," says Dr. Pat Gruber, CEO of Gevo.

"Key to making the transition are low-cost, drop-in products. The ETO process technology covered by this patent is expected to be a step-change improvement in capital cost and energy efficiency to produce biofuels, such as sustainable aviation fuel ("SAF"), or chemicals, such as propylene, from ethanol."

Source : Gevo

ROASIS Unveils Three New Filtration Solutions: Setting the Standard in Safe, Clean Drinking Water

COLUMBUS, Ohio, Sept. 17, 2024 / PRNewswire/ -- OASIS International, a leader in innovative water solutions, proudly announces the launch of three new filtration products: the industry-exclusive Pharmaceutical and Outdoor filters and a robust Total PFAS filter. With growing concerns over contaminants like forever chemicals, pharmaceuticals, and lead in drinking water, many are seeking proactive ways to safeguard their health. OASIS's new filtration solutions are vital in improving water quality for schools, hospitals, commercial buildings, and public spaces.

The new Pharmaceutical filter, an industry first, protects against over twelve chemicals, including DEET, BPA, hormones, and NSAIDs. Certified to NSF/ANSI standards 42, 53, and 401, it reduces contaminants such as chlorine, lead, cysts, and microplastics, as well as emerging contaminants like atenolol and ibuprofen. Its 725-gallon capacity integrates seamlessly with other OASIS products using the versatile filter head.

OASIS also addresses PFAS contaminants, often called 'forever chemicals,' with the new Total PFAS filter. This filter reduces 5 groups of PFAS including PFOA, PFOS, PFHxS, PFNA, PFHpA, PFBS, and PFDA, and its impact on all of them has been tested to meet the more stringent EPA standards set in April 2024. Certified to NSF/ANSI standards 42, 53, and 401, it reduces some of the most persistent contaminants in U.S. tap water. With a 1,100-gallon capacity and compatibility with the standard filter head, the Total PFAS filter is one of the most adaptable and revolutionary solutions on the market.

"The OASIS Total PFAS filter offers one of the most comprehensive solutions on the market, effectively reducing a wide range of forever chemicals' contaminants, making it a vital tool in the effort to provide cleaner water," said Stephanie Guttas, Product Manager at OASIS International.

For outdoor applications, OASIS has introduced an industry-exclusive Outdoor filter designed to handle the challenges of higher-temperature environments. Certified according to NSF/ANSI standards 42, 53, and 401, it reduces contaminants such as chlorine, lead, cysts, and microplastics. The Outdoor filter is built for durability and can operate in temperatures ranging from 35°F to 122°F. With a 4,750-gallon capacity, this filter is designed to supply approximately 36,000 water bottle fills.

"This filter is engineered specifically for outdoor use and designed to meet the unique challenges of elevated temperatures, providing consistent, clean water without compromising performance," added Guttas.

With heightened awareness of contaminants like pharmaceuticals, PFAS, lead, and microplastics in U.S. drinking water, more consumers are taking action by investing in filtration systems. OASIS's new filters provide comprehensive solutions that improve water quality across various settings. All new OASIS filters are equipped with the company's Tilt' N Tether fast filter-change system, allowing users to change them in minutes. This innovation, combined with NSF-certified filters, ensures OASIS customers can enjoy faster, easier, and more reliable access to

improved drinking water.

OASIS continues to lead the industry in water filtration, offering robust, forward-thinking solutions for pharmaceuticals, PFAS, and outdoor environments. Whether in schools, hospitals, commercial buildings, or public spaces, OASIS's new filtration systems are providing the ultimate solution for safe, clean drinking water wherever you need it—indoors and outdoors. Learn more about OASIS's filtration assortment at www.oasiscoolers.com/filtration.

Source : PRNewswire

Introducing Nuturn: A Revolutionary Skincare Ingredient Driving the Regenerative Beauty Revolution

ENTERPRISE, Ore., Sept. 17, 2024 / PRNewswire/ -- Today marks the launch of Nuturn, a skincare super-ingredient that uses Biodynamic® raw compounds to nourish the skin as nature intended, while also contributing to the revitalization of the earth. Nuturn is not just another 'clean' beauty ingredient; it's a movement towards regenerative beauty, which is set to disrupt the skincare industry, much like the organic movement did for food.

"We are thrilled to announce the launch of Nuturn; a high performing, powerhouse of regenerative nutrients to heal the skin, that harmonizes the power of nature into one luxurious compound." said founder and CEO Stephen Smith.

What is Nuturn?

Nuturn is a super-ingredient that can be integrated into a variety of skincare products. Formulated from certified Biodynamic® raw flower oil, it is an estate-grown powerhouse rich in omega-3 fatty acids, terpenes, potent antioxidants, tallow, ozone and an array of vitamins that boost skin's natural regeneration process. Nuturn restores the skin barrier and stimulates cell turnover without harmful chemicals or synthetic additives, leaving the skin brighter and deeply hydrated while reducing inflammation. Nuturn works with skincare formulators, ingredient distributors, and brands seeking the highest quality raw elements that also support the regeneration of the earth. The words "Made with Nuturn" signal an approach to skincare that goes beyond organic or natural.

Why Regenerative Beauty?

Regenerative beauty is a movement to work with nature to nurture ecosystems and nutrient dense soil, resulting in plants that are more robust, resilient and expressive; untouched by modern chemicals, unspoiled by industrial processing, and undiluted in their efficacy. All of this allows for more efficacious skincare, giving the skin what it needs to regenerate and renew.

Today marks the first time Nuturn will be available to consumers, through the brand's debut partnership with Flamingo Estate, who feature Nuturn in their new and nourishing Manuka Rich Cream.

"We work with select partners, like Flamingo Estate, who value the profound benefits of regenerative compounds that honour the full expression of nature, going beyond 'clean beauty.'" added Smith.

Source :PRNewwire

Epionce Launches New Anti-Aging Product: Intense Recharge Mask

BOISE, Idaho, Sept. 17, 2024 / PRNewswire/ -- Epionce, a leader in innovative, barrier-first skincare, is thrilled to announce the launch of its latest groundbreaking product: Intense Recharge Mask. This luxurious mask is a game-changer in anti-aging skincare and is designed to combat the visible signs of aging while nourishing and revitalizing the skin.

Supercharged with next-generation botanical extracts and blended with Epionce's proven barrier-rejuvenating ingredients, this new clay-based mask is expertly formulated to help refine, smooth, and visibly improve the appearance of fine lines and wrinkles.

Intense Recharge Mask is clinically proven to enhance skin radiance, revealing a brighter, more healthy-looking complexion, and delivering visible results after just one use.

"New extraction methodologies have continued to evolve for botanically based ingredients. These methodologies significantly improve the therapeutic benefits by expanding the number of bioactives extracted from the plant," said Dr. Carl Thornfeldt, board-certified dermatologist and creator of Epionce skincare. "During my ongoing research in therapeutic botanicals, I have uncovered many new ingredients that I believe would enhance the skin. The best way to introduce these new ingredients specifically was within a wash-off mask that complements daily leave-on products."

"This launch represents a breakthrough in delivering a brighter, more youthful complexion," continues Dr. Thornfeldt, "As part of a barrier-boosting Epionce regimen, the Intense Recharge Mask serves as an adjunct to all the benefits already being realized within that regimen, such as minimizing multiple signs of visible aging."

Source : PRNewwire

BOY exhibits injection moulding solution with INEOS Styrolution's NAS® 30 and HNPM's colour dosing system at Fakuma 2024

Frankfurt, Neustadt/Fernthal, Schwerin, September 16, 2024 - INEOS Styrolution's NAS® 30 will be processed on a BOY machine at the booth of HNP Mikrosysteme during the Fakuma International Trade Fair in Friedrichshafen (October 19-24, 2024). HNPM's colorDoS® dosing system applies liquid colour to the granulate flow. Colour change and processing can be seen live at booth A1-1205 in hall A1.

About BOY 25 E:

The 250 kN clamping unit is realised in the proven and space-saving two-platen design, combined with only two piston rods, which significantly improves the accessibility of the mould installation area. The machine allows the possibility of a differential pressure injection, which provides increased injection speeds with minimum oil flow.

The BOY 25 E is characterised by highest precision and reliability. With a footprint of 1,80 m², the extremely compact injection moulding machine is simple, clear and economically designed. The clamping unit features easy access and room for numerous options including automated systems. Six different sizes of injection units combined with seven different screw diameters offer a wide range of individual equipment options.

About INEOS Styrolution's NAS® ECO 30 BC70:

NAS® is a stiff, amorphous styrene methyl methacrylate (SMMA) co-polymer used for demanding applications that require excellent transparency such as water tanks, displays, food containers or boxes. It features an outstanding water-clear appearance, an extreme low haze as well as a good thermal and chemical resistance. The optical properties of NAS® are on a similar level as PMMA. Also, NAS®, has a density and processing advantage compared to acrylic solutions. NAS® 30, an SMMA with enhanced flow and clarity, is available as conventional material based on fossil feedstock and as a drop-in solution based on renewable feedstock (mass balance process certified under ISCC PLUS by a third party).

About HNP Mikrosysteme: At the HNP Mikrosysteme booth at Fakuma in hall 1, delicacy dishes in blue, red, green and yellow will be produced on the BOY injection moulding machine and with granulate from INEOS Styrolution. The colorDoS® dosing system is used to apply liquid colours directly into the granulate flow. The shot weight is 25 g and the colour addition is 0.5 %. The use of colorDoS® and liquid colours offers a real alternative to masterbatch for frequent colour changes. It significantly reduces waste during colour changes, protects the environment, ensures optimum machine utilisation and saves material and time. During Fakuma, the fast and clean colour change will be presented live several times a day.

Dr.-Ing. Patrick Messer, Director Process Engineering and Service at BOY says: "The combination of BOY injection moulding solutions together with INEOS Styrolution's styrenics polymer

solutions is a very appealing value proposition for customers who require high performance for the most demanding applications."

Christian Dietlein, Technical Service Manager EMEA at INEOS Styrolution, adds: "We are very happy about the long-term cooperation with BOY. We encourage customers to explore BOY's moulding machines at Fakuma and we invite them to contact us for more information on our styrenics solutions and roadmaps towards circularity and sustainable solutions. Sustainable NAS ECO drop-in solutions, for example, offer an investment protection for existing NAS solutions."

Olaf Lang, Senior Application Engineer at HNP Mikrosysteme, summarises "At our booth, we are showing exactly what the customer needs: a great machine, the right granules, the correct colour and a suitable dosing system. That's why we are excited about this collaboration at Fakuma."

Source : Press Release

Wanhua Chemical Pioneering Sustainable Excellence in Coatings: Shaping the Future of Outdoor Protection

Wanhua Chemical introduces Lacper® 4572, a premium solution for outdoor wood coatings designed to offer unmatched durability and long-term performance. Specifically formulated for outdoor environments, Lacper® 4572 meets the highest industry standards, delivering superior protection while maintaining the natural beauty of wood.

Exceptional Weather & UV Resistance

Lacper® 4572 offers outstanding resistance to the elements, ensuring minimal gloss loss and color retention, even under prolonged exposure to harsh weather conditions. Its advanced formulation prevents common issues like foaming or peeling, providing a uniform, professional finish that endures.

Unrivaled Water Resistance & Flexibility

Outdoor environments demand coatings that can withstand fluctuations in moisture and temperature. Lacper® 4572 has passed the water absorption-freeze-thaw cycle test 6 times, showing no signs of cracking, bubbling, or whitening. Additionally, after prolonged immersion in water, Lacper® 4572 achieved the highest wet adhesion rating of 0. Its superior wet adhesion ensures that the coating remains intact, delivering long-lasting protection in challenging conditions.

Superior Anti-blocking Performance

Formulated for industrial applications, Lacper® 4572 ensures smooth production processes without sacrificing flexibility. Its multi-layer core-shell structure enables excellent film formation while reducing the need for film-forming additives. This balance enables fast production in factory settings while maintaining strong anti-blocking performance early in the process.

Outstanding performance in QUV testing

In QUV accelerated weathering tests, Lacper® 4572 demonstrated outstanding long-term stability. With Delta E values as low as 0.44 after 2,000 hours and 0.78 after 3,000 hours, it is the ideal choice for wood surfaces exposed to intense UV radiation, providing reliable protection and maintaining aesthetic quality over time.

Environmentally Responsible Innovation

Lacper® 4572 is fully compliant with EU REACH regulations and free from SVHC and CMR substances, reflecting Wanhua Chemical's commitment to both performance and sustainability. Its environmentally friendly design makes it a responsible choice for projects requiring high-performance coatings that meet strict environmental standards.

Wanhua Chemical remains committed to sustainable development, working closely with upstream and downstream partners to continue innovating across specialized fields. We aim to deliver solutions that strike a balance between performance and environmental responsibility.

Source : Wanhua