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DYES & CHEMICAL MARKET

Connecting the Chemical Industry Together !

A MONTHLY MAGAZINE DEVOTED TO

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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	TBD	Fira Barcelona Gran Via, Spain
3	CPhI Middle East & Africa	Dec 8-10, 2025	Riyadh, Saudi Arabia
4	CPhI China- Virtual CPhI	June 24-26, 2025	Shanghai New International Expo Center
5	CPhI Japan	Apr 09-11, 2025	Tokyo, Japan
6	CPhI Korea	Aug 26 - 28, 2025	COEX, Seoul, Korea
7	CPhI India	Nov 25-27, 2025	Noida, India
MECS (Coating Show)			
1	Asia Pacific Coatings Show	Sept 3-5, 2025	Indonesia
2	Saudi Arabia Coatings Show	May 13-15, 2025	Dammam Saudi Arabia
3	Middle East Coatings Show	Apr 14-16, 2026	Dubai World Trade Centre
4	Coatings For Africa	June 24-26, 2026	Johannesburg, South Africa
DYE+CHEM			
1	Dye+Chem Morocco International Expo	Nov 5-7, 2025	Morocco
2	48rd Dye+Chem Sri Lanka International Expo	March 13-15, 2025	Colombo Sri Lanka
3	Dye+Chem Bangladesh International Expo	Sept 3-6,2025	Bangladesh, Dhaka
4	50th Dye+Chem Brazil International Expo	Nov 2025	Brazil
Red Carpet Events			
1	Bangladesh Int'l Dyes, Pigments and Chemicals Expo	TBD	Dhaka, Bangladesh
Turkey (Arkim Group)			
1	InterDye Textile Printing Eurasia	TBD	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	Jan 21-23, 2025	Dhaka, Bangladesh
3	CIPI	TBD	Mumbai, India
4	Chemspec Europe	June 4-5, 2025	Koelnmesse, Germany
5	ChemUK Expo	May 21-22, 2025	NEC, Birmingham, UK
6	American Coatings Show	May 5-7, 2026	Indianapolis
7	China Coat China	Nov 25-27, 2025	China Import & Export Complex, Guangzhou
8	Interdye China	Apr 14-18, 2025	Shanghai, China
9	Paint Expo Germany	Apr 14-17, 2026	Messe Karlsruhe Germany
10	India Chem	Oct 2026	Mumbai Exibition Centre, India
11	Water Expo 2025	Feb 26-28 2025	New Delhi
12	Inacoating 2025	July 29-31, 2025	JlExpo Kemayoran, Jakarta - Indonesia

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2	Alumina Oxide /Basic/ Acidic/ Neutral	1344-28-1
3	Benzoyl Chloride	98-88-4
4	Hcl Gas In Methanol	7647-01- 0
5	Methyl Chloroformate	79-22-1
6	Methylamine Hydrochloride	593-51-1
7	Monomethylamine In Methanol	74-89-5
8	Pyrophosphoryl Chloride	13498-14-1
9	4m Hcl Acid In 1,4-Dioxane	7647-01-0
10	Methylamine Solution 40%	74-89-5

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EDITORIAL

CHEMICAL MARKET

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

Charting New Horizons in 2025

As we step into 2025, the chemical industry stands on the brink of transformative change. The past year has seen rapid advancements, unexpected challenges, and unprecedented opportunities, all of which have laid the groundwork for a year of innovation and resilience. At Chemical Market Magazine, we remain committed to being your trusted companion in navigating this dynamic landscape.

Sustainability Takes Center Stage

The push for sustainable practices has evolved from being a trend to an industry imperative. Governments, corporations, and consumers are all advocating for greener solutions, and the chemical industry is responding with groundbreaking initiatives. From the development of biodegradable polymers to advances in green chemistry, sustainability is no longer an option—it's the way forward. Companies are introducing circular economy models to minimize waste and reduce environmental impact. This year, we will explore stories of companies leading the charge and technologies enabling this vital transition.

Digital Transformation in Full Swing

2025 is poised to be the year where digital transformation truly reshapes the chemical sector. With tools like artificial intelligence, blockchain, and IoT gaining traction, businesses are unlocking efficiencies and insights that were once unimaginable. Platforms like the Chemical Market Leads Platform are enabling businesses to connect, collaborate, and innovate like never before. By facilitating seamless interaction between buyers and suppliers, the platform empowers organizations to create value and build enduring partnerships.On the Chemical Market Leads Platform, users can:

1. Add surplus items, including products with MSDS, COA, and images, in the Chemical Products section.
2. List tools, technologies, or unused/ surplus items in the Chemical Technology section.
3. Create a detailed company profile with information such as company details, established date, and logo. This creates "View All My Products" and "Company Profile" pages.
4. Use the auto-suggest feature on the search page to quickly auto-spell product names.
5. Access reports to track product views and receive inquiries.
6. Leverage our marketing team's efforts to connect with potential buyers.
7. Post job requirements in the Industry Jobs section.
8. Sign up as a Press Release Partner to post or have us share your company press releases on the news/articles section

Digital solutions are redefining how the industry operates.

Navigating Global Challenges

Globalization has brought immense opportunities but also significant challenges. Geopolitical tensions, fluctuating raw material prices, and supply chain disruptions have become common hurdles. Yet, as history has shown, the chemical industry's resilience and adaptability are unmatched. Companies are increasingly adopting strategies such as diversifying supply chains and leveraging digital monitoring tools. This year, we'll highlight strategies to overcome these challenges, showcasing examples of agility and foresight to inspire industry leaders.

A Community Built on Collaboration

At the heart of our mission is the belief that collaboration drives success. Chemical Market Magazine is not just a publication; it's a community of innovators, entrepreneurs, and thought leaders who share a common vision for progress. Platforms like the Chemical Market Leads Platform are central to this vision, fostering connections and providing a space for businesses to exchange ideas and opportunities. Additionally, we are proud to be media partners with several events across the globe. From trade fairs to high-profile conferences, these events offer unparalleled opportunities to network, learn, and showcase innovations. Explore our magazine's dedicated section for events and conferences, as well as our online events page, which features a comprehensive events calendar to keep you informed and engaged.

By connecting our readers to the latest trends, research, and expert insights, we aim to empower you to make informed decisions and seize opportunities. As a trusted partner, Chemical Market Magazine will continue to bring you in-depth coverage of emerging trends, breakthrough technologies, and success stories from around the globe.

As we embark on this journey into 2025, let us reaffirm our commitment to innovation, sustainability, and collaboration. Together, we can address challenges, seize opportunities, and shape the future of our industry.

Here's to a transformative year ahead!

- Rajiv Parikh

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Alum- Ferric	50Kgs	24.00
Ammonium Bicarbonate	25Kgs	28.00
Ammonium Bi fluoride	50Kgs	178.00
[sugar-grade]	50Kgs	178.00
Ammonium Carbonate	50Kgs	92.00
Ammonium Chloride	50Kgs	22.00
Ammonium Nitrate	50Kgs	30.00
Ammonium Phosphate (Mono)	50Kgs	135.00
Ammonium Sulphate	50Kgs	22.00
Antimony Trioxide	50Kgs	2,500.00
Barium Chloride	50Kgs	58.00
Bleaching Powder (33% Cl)	25Kgs	14.00
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Boric Acid (Tech.)	50Kgs	120.00
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Calcium Carbonate (Precipitated)	50Kgs	19.00
Calcium Chloride Lump 70%	50Kgs	12.00
Calcium Chloride-Anhydrous	50Kgs	28.00
Camphor Oil	200Litrs	135.00
Caustic Potash (Flakes)	50Kgs	82.00
Caustic Soda (Flakes)	50Kgs	51.00
Caustic Soda (Prills)	50Kgs	92.00
Chromic Acid Flakes	50Kgs	280.00
Chlorinated Xylene	25kgs	85.00
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Di ammonium Phosphate	50Kgs	34.00
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Hydrochloric Acid	Naked	6.00
Hydrogen Peroxide 50%	50Kgs	33.00
Hyflosupercell	22.7Kgs	138.00
Litharge	50Kgs	220.00
Lithopone B301(China)	25 Kgs	124.00
Magnesium Carbonate (Indian)	50Kgs	125.00
Magnesium Sulphate	50Kgs	16.00
Mercury	34.5Kgs	7,200.00
Napthaline Balls	50Kgs	130.00
Nickel Chloride	25Kgs	620.00
Phosphoric Acid (85% Tech)	50Kgs	100.00
Potassium Carbonate (Powder)	25Kgs	108 .00
Potassium Carbonate (Granules)	25Kgs	85.00
Potassium Nitrate	50Kgs	115.00
Potassium Permanganate [Tech]	50Kgs	174.00
Potassium Permanganate [Pure]	50kgs.	190.00
Potassium Phosphate (Di)	50Kgs	158.00
S.L.E.S	50kgs	65.00
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Sodium Bicarbonate	50Kgs	33.00
Sodium Bichromate	50Kgs	165.00
Sodium Bisulphite	50Kgs	52.00
Sodium Chlorite 50% (India)	50Kgs	240.00
Sodium Chlorite 80% (India)	50Kgs	280.00
Sodium Cyanide	50Kgs	650.00
Sodium Fluoride	50Kgs	150.00
Sodium Formate	50Kgs	53.00
Sodium Hexameta Phosphate 68%	50Kgs	128.00
Sodium Hydrosulphite [China]	50Kgs	180.00
Sodium Metabisulphite	50Kgs	35.00
Sodium Nitrate	50Kgs	52.00
Sodium Nitrite (China)	50Kgs	68.00
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Sodium Sulphite 92%	50Kgs	56.00
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BUY INQUIRIES

Product	Quantity	Grade

Sodium Hypochlorite

1 Tonnes **Chemical**

Details : Chemical; Type: Sodium Hypochlorite(Bleach), Composition: Chlorine: Min 110 Gpl, Alkalinity(Measured by Hcl): Min 14gpl Ok, Physical Form: Liquid, Container Type: Tanker, Color: Transparent; Fft: Specific Gravity: 1.1 - 1.2 Sodium Hypochlorite, 110gpl, Tanker

CLICK HERE TO VIEW

Powai, Mumbai, Maharashtra, India

2,4-Dichlorophenylacetonitrile

500 Kgs **Chemical**

Details : 2,4-Dichlorophenylacetonitrile 6306-60-1 100 kg & 500 kg

CLICK HERE TO VIEW

Hyderabad, Telangana, India

Cold Plastic Paint 2k

200 Kgs **Industrial**

Details : Product cold plastic (2k) paint Quantity:200 kg Location:Riyadh, Kingdom of Saudi Arabia Used: Industrial paint And i need hardner for Methyl Acrylate

CLICK HERE TO VIEW

Riyadh Saudi Arabia

Soda Ash Light

400 Tonnes **Chemical**

Details : Appearance: Snow white, free-flowing powder; free from lumps, grits, and other visible impurities. Moisture: Maximum of 1%. pH: Ranges between 10-11. Density: Ranges from 0.5-0.7 g/cm^3. Sodium oxide (Na_2O%): Minimum of 57.25%. Na_2CO_3 (%): Minimum of 99%. Water insoluble (%): Maximum of 0.1%.

CLICK HERE TO VIEW

Ankleshwar, Gujarat, India

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.

CLICK HERE TO VIEW

Indiranagar, Bangalore, Karnataka, India

BUY INQUIRIES

Product	Quantity	Grade
Toluene Details : Looking to establish a recurring supply arrangement for high-quality Toluene in bulk. Quantity: 21,000 kg , For trading purposes Ankleshwar, Gujarat, India	21000 Kgs	VirginPure CLICK HERE TO VIEW
Toluene Details : 25mt toluene industrial grade,in tanker loadex kandla 60 days credit Mumbai, India	25 Tonnes	Industrial CLICK HERE TO VIEW
Acetone Details : 30 mt acetone in tanker load exkandla, 60 days credit ,delivered ghaziabad uttar pardesh India	30 Tonnes	Industrial CLICK HERE TO VIEW
Lithium Borohydride Details : Lithium Borohydride CAS No:- 16949-15-8 Qty:- 500 gm Shipping location:- Sonipat, Haryana Description/Use/Application:- R&D use Gaziabad, Uttar Pradesh, India	500 Grams	Any CLICK HERE TO VIEW
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 CLICK HERE TO VIEW

BUY INQUIRIES

Product	Quantity	Grade

Xanthan Gum

200 Kgs **None**

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

CLICK HERE TO VIEW

Ghaziabad, Uttar Pradesh, India

Cyanuric Acid CAS#: 108-80-5

1 Tonnes **Industrial**

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

CLICK HERE TO VIEW

Chennai, Tamil Nadu, India

Epibromohydrin CAS No:- 3132-64-7

100 Kgs **Industrial**

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

CLICK HERE TO VIEW

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.

CLICK HERE TO VIEW

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

CLICK HERE TO VIEW

Melbourne

CAS and PetroChina Shanghai Advanced Materials Research Institute announce a collaboration to accelerate new materials discovery and innovation

SHANGHAI and COLUMBUS, Ohio, Dec. 23, 2024 /PRNewswire/ -- CAS, a division of the American Chemical Society specializing in scientific knowledge management, and PetroChina Shanghai Advanced Materials Research Institute Co., Ltd, a subsidiary of the world's third largest oil company, China National Petroleum Corporation (CNPC), are collaborating for use of the CAS SciFinder Discovery Platform™ to accelerate research and discovery of new chemical materials.

PetroChina Shanghai Advanced Materials Research Institute Co., Ltd. was founded in 2021 to address key technological challenges in advanced chemical materials and drive a transformation of CNPC from a traditional refinery and petrochemical product provider to a more advanced and sustainable material provider. Its research focus includes high-performance engineering materials, high-performance polyolefin and elastomers, special catalysts, advanced membranes, fibers and composites, etc.
CAS, the creator of the world's most comprehensive and authoritative curated scientific information resource, the CAS Content Collection™, which covers over 150 years of discoveries, provides content and knowledge management solutions and services that accelerate innovation. The CAS SciFinder Discovery Platform, an authoritative scientific technology solution, will enable the institute research scientists to discover more relevant information faster, identify and optimize synthetic routes through a full retrosynthetic analysis of known and undisclosed substances, and locate, compare, and understand scientific methods via the CAS Content Collection.

"We're excited that PetroChina Shanghai Advanced Materials Research Institute will harness the CAS SciFinder Discovery Platform to accelerate their research and discovery initiatives. Combining the capabilities of this industry-leading CAS solution with the Research Institute's expertise in material research will result in breakthroughs that bring advanced sustainable materials to the marketplace," said Manuel Guzman, President of CAS.

PetroChina Shanghai Advanced Materials Research Institute, as a newly established innovation hub, aims to grow into a world-leading, multi-capabilities research institute that drives cutting-edge innovations, pilots industrial-scale technologies, provides technical services, and facilitates academic and value chain collaborations.

"We are very pleased to cooperate with CAS, who will be a strong partner in bringing their sophisticated scientific information solutions to facilitate and speed up our approach to advanced sciences and technologies in novel materials. We are looking forward to exploring more innovative ideas through our engagement with CAS," said Xudong Huang, Vice President of PetroChina Shanghai Advanced Materials Research Institute.

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

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Sigma Lithium Exceeds 4q2024 Targets With 75,000t Of Quintuple Zero Green Lithium Produced; Positioned To Surpass 270,000t In 2025

SÃO PAULO, Dec. 30, 2024 / PRNewswire/ -- Sigma Lithium Corporation (TSXV/NASDAQ: SGML, BVMF: S2GM34) ("Sigma Lithium" or the "Company"), a leading global lithium producer dedicated to

powering the next generation of electric vehicles with carbon-neutral, socially and environmentally sustainable lithium concentrate ("Quintuple Zero Green Lithium"), is pleased to announce the successful completion of the 2024 business year, significantly exceeding fourth-quarter production target with approximately 75,000 tonnes produced, and achieving a total of approximately 240,000 tonnes in production and sales volumes for the year. With its strong operational performance and commitment to sustainable growth, Sigma Lithium is well-positioned to exceed its 2025 production target of 270,000 tonnes.

Ana Cabral, CEO and Co-Chairman of Sigma Lithium, said, "With the successful completion of the fourth quarter, we are demonstrating mastery of our innovative green industrialization technologies for lithium processing and dense media separation. Our Greentech Industrial Plant is delivering lithium materials that are aligned with the ethos of the consumers of the electric vehicles, and this gives our team a tremendous sense of purpose and accomplishment. Exceeding production and commercial targets in the fourth quarter has reinforced our confidence in our ability to surpass our 2025 production targets. This remarkable year is a testament to the relentless pursuit of excellence by a highly dedicated team, showing that innovation thrives in diverse work environments".

She added: "We are also deeply honored by the embrace and support we have received throughout this year from all of our stakeholders: our neighbors at Vale do Jequitinhonha, our Federal Government of Brazil, our State Government of Minas Gerais, our customers, BNDES, our shareholders. Sigma Lithium's accomplishments this year would not have been possible without you. In 2025, we are well-positioned to exceed expectations and bring continued growth and shared prosperity to our region".

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

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

BASF Releases Colour Report For Automotive OEM Coatings

BASF Coatings has released its report titled 'Colour Report For Automotive OEM Coatings' to provide a detailed exploration of the recent colour trends in the automotive industry.

BASF Coatings computed the colour distribution mentioned in the report using the information that was available about the manufacture of automobiles worldwide and the application of paint to passenger cars. According to the report, as buyers stray from conventional favourites like white and silver, the worldwide automobile colour landscape continues to change in 2024. According to the report, this change is opening the door for a more varied palette, warm neutrals and vivid colours to become more popular throughout the business. In particular, customers still prefer white, but warm hues like yellow and beige are becoming more and more desirable, and green is becoming more and more popular everywhere. Additionally, achromatic hues like grey and black are becoming more popular.

The report also highlights the region-wise trend in automotive coating based on consumer preference. As per the report, beige is gaining popularity in the EMEA region as achromatic colours continue steady growth in the region, increasing from 72 percent in 2021 to almost 80 percent in 2024. White remains the most preferred colour, while grey comes second.

In the Americas, grey is shining as one of the most versatile and captivating colours with almost 20 percent of the total market share. Compared to 2023, black colour has decreased by two percentage points, while white has had a five percentage point loss, which is even more notable.

The Asia Pacific market, on the other hand, is dominated by black colour. With achromatic colours remaining the top choice for 83 percent of consumers, black colour secured a gain of two percentage points in popularity, while white saw a decline of over two points. Chromatic colours with soft tones, particularly yellow, are also on the rise in this region, the report says.

Read the full report : https://motoring-trends.com/cover-story/basf-releases-colour-report-for-automotive-oem-coatings

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

Clariant begins construction of second high performance additives production line in Cangzhou, China

- Commencement ceremony held for expansion of original production line for high-end stabilizer additives jointly operated by Clariant and Beijing Tiangang Auxiliary Co., Ltd.
- High quality, excellent reputation and full capacity achieved by first production line since launching in 2021
- New facility manufacturing unique multifunctional Nylostab™ S-EED™ additive will enhance quality and features of nylon products with surging demand from the local nylon application markets

SHANGHAI, December 16, 2024 - Clariant is expanding its Cangzhou production site for the manufacture of the multifunctional additive Nylostab S-EED. The new, second production line in the Hebei Province of China, will jointly be owned and operated by Clariant and its local partner Beijing Tiangang Auxiliary Co., Ltd. A commencement ceremony for the site was today hosted by the leadership teams of the two companies.

"We are excited to take our partnership with Beijing Tiangang to the next level by breaking ground on a second production line in Cangzhou today. The continued investment from Clariant demonstrates our commitment to the Chinese market and reaffirms our strong belief in the prospects of local industries such as textiles and fibers, automotive and packaging," said Zhigang Miao, Clariant's Global Head of Polymer Solutions, Additives Polymer Solutions.

For three years, since the launch of the first joint-venture site in 2021, the production site has achieved full capacity, earning it an excellent reputation as a strong local facility with established international background and expertise. With construction of the new production line now commencing, success is expected to reach new highs.

"We feel privileged to deepen our partnership with Clariant further through the expansion of this already very successful production site. Since the beginning of our joint venture we have enjoyed wonderful cooperation with Clariant and among our staff. We hope the new production line will offer local industries and our customers in China even more advanced additives solutions," says Mr. Gang Liu, Executive Director of Tiangang.

The new production line beginning construction today will specialize in the manufacturing of Clariant's unique multifunctional Nylostab S-EED additive that is highly compatible with nylons by molecular recognition. Its excellent process stability at high temperatures results in less filament breakage during spinning processes and enhances productivity by reducing cycle time for injection molding processes.

"The success of our first joint-venture production site in Cangzhou has undoubtedly paved the way for our new facility today. We're confident that our new multifunctional additive Nylostab S-EED, produced at the new site, will have a good number of application areas across the core nylon value chain, which is seeing a surge in capacity expansion and demand particularly from the textile and engineering plastics industry here in China," says Sandra Schneider, Clariant's Head of Operations & Supply Chain Additives.

The upstream Chinese nylon industry is expanding rapidly, driving an increase in demand for high-end additives such as Nylostab S-EED. This multifunctional additive is capable of upgrading the quality of nylon products through enhanced colour stability, heat resistance and composite compatibility during the manufacturing process, resulting in overall higher productivity.

Source : Clariant

SK CHEMICALS AND HYUNDAI COLLABORATE ON SUSTAINABLE AUTOMOTIVE DEVELOPMENT

SEOUL, South Korea, Dec. 11, 2024 /PRNewswire/ -- SK chemicals (CEO & President Ahn Jae-hyun) announced that it applied six automotive components made from circular recycling and bio-based materials to Kia's EV3 Study Car in collaboration with Hyundai•Kia's AVP Division and Basic Materials Research Center (hereafter referred to as Hyundai•Kia).

The EV3 Study Car model tested the potential for applying eco-friendly materials by recycling discarded resources and using bio-based materials. It was unveiled at the HMC Study Car Exhibition on November 13. Various materials and component companies, including SK chemicals, participated in this project.

SK chemicals recycled PET-based automotive components using circular recycling technology. Five components made with recycled PET were applied: headliner, seats, crash pads, door panels, and door armrests. In addition, SK chemicals' new soft material, FLEXIA, was applied to the floor mat to provide a single polyester composition for easier recycling.

Circular recycling utilizes SK Chemicals' proprietary chemical recycling technology, employing depolymerization to break down waste plastic into molecular units. Depolymerization is a technology capable of producing products of nearly identical quality to those made from petroleum-based materials. SK chemicals was the first in the world to commercialize it successfully.

The recycled materials applied by SK chemicals in this prototype car fall under the fiber category. Fibers face challenges in utilizing waste resources through physical recycling methods due to limitations in spinning, difficulty in achieving desired colors, and insufficient durability for other fiber properties.

SK chemicals and Hyundai•Kia collaborated for 14 months to achieve commercial-grade quality by utilizing circular recycling technology to meet each component's required material properties.

Both companies regard this project as laying the foundation for a new model to establish a circular economy system in the automotive industry. The companies plan to strengthen further collaboration to apply eco-friendly materials to automobiles.

Kang Seokho, Head of Recycle M&BD/Operations, SK chemicals, stated, "Achieving the ultimate goal of sustainable automobiles, the Car-to-Car Closed Loop, requires comprehensive collaboration not only with automakers but also with materials and component companies." He added, "SK Chemicals will continue to strengthen partnerships with automakers, component manufacturers, and material suppliers while also expanding into industries such as fashion and electronics."

Source : SK chemicals

LG ENERGY SOLUTION AND GM TO JOINTLY DEVELOP PRISMATIC BATTERY CELL TECHNOLOGY

- **Under this definitive agreement, the companies will develop prismatic battery cell technology and affiliated chemistries for GM's future EVs**
- **The agreement marks an extension of the two companies' successful 14-year battery technology partnership**
- **LG Energy Solution to become the first global battery manufacturer to offer all three form factors (pouch-type, cylindrical, prismatic)**

SEOUL, December 3, 2024 – LG Energy Solution (KRX: 373220) today announced a new partnership agreement with General Motors (GM) for prismatic battery cell technology, marking an extension of the two companies' solid 14-year battery technology partnership.

Under this new definitive agreement, the companies will jointly develop prismatic battery cell technology and affiliated chemistries, and once the partnership comes to fruition, the prismatic cell technology developed under the agreement will power future GM electric vehicles (EV).

The achievement will be a significant milestone for LG Energy Solution, as it becomes the first global battery manufacturer to offer all three form

factors (pouch-type, cylindrical, prismatic). It also highlights the companies' robust partnership and the success of their Ultium Cells joint venture, which has created thousands of jobs in the U.S. through its plants in Ohio and Tennessee.

Prismatic battery cells feature a flat, rectangular shape with a rigid enclosure, which allows for space-efficient packaging within battery modules and packs. LG Energy Solution has already secured competitiveness in prismatic cells, with the experience of actual prismatic cell production and extensive patent portfolio on battery design and manufacturing technologies, including packaging. The company also aims to leverage its world-best stacking technology, as manufacturing best practices are shifting from winding to stacking in prismatic cell structures. As such, capitalizing on its proven capabilities in materials and manufacturing technologies, LG Energy Solution will deliver differentiated prismatic solution to address the diversifying needs of its customers.

Once the prismatic cell comes onboard, the company will further reinforce its market leadership, along with its pouch-type cells and cylindrical cells. With its expanded product portfolio, LG Energy Solution aims to offer efficient and safe power solutions that address different needs in each EV segment, thereby supporting global mass EV adoption.

"LG Energy Solution is proud to be expanding its relationship with one of its strongest partners, GM. Together with GM, we've made tremendous progress already and look forward to deepening our collaboration to drive the right chemistry and battery combinations for continued growth in the EV market," said Wonjoon Suh, Executive Vice President and head of the company's Advanced Automotive Battery division.

"Together with LG Energy Solution, we've built Ultium Cells into one of the largest battery cell manufacturers in North America, creating thousands of advanced technology jobs in the U.S. and powering our diverse EV portfolio," said Kurt Kelty, GM vice president of battery cell and pack. "We're focused on optimizing our battery technology by developing the right battery chemistries and form factors to improve EV performance, enhance safety, and reduce costs. By extending our partnership with LG Energy Solution, we're taking an important step towards these goals," said Kurt Kelty, GM vice president of battery cell and pack.

Source : LG

TMA AUTOMOTIVE SOFTWARE CENTER LAUNCHED SOLUTIONS FOR SOFTWARE-DEFINED VEHICLES

After several years of intensive investment on R&D, TMA Automotive Software Center has completed a set of new solutions to support development of Software-Defined Vehicles. The solutions include R&D prototyping, embedded software, model-based development, application development, porting & optimization, MiL/SiL test and testing in specialized hardware.

As a development partner of AUTOSAR, TMA is sharing its extensive experience and knowledge of software development standards, processes and methodologies with the AUTOSAR community. The future of vehicles is undoubtedly software-defined, with visionary carmakers increasingly recognizing the importance of software as the cornerstone of next-generation automotive innovation.

To remain competitive in this rapidly evolving landscape, automakers are making substantial investments in partnerships, research, and advanced technologies. These efforts are geared toward developing the complex and interconnected software systems that will drive the vehicles of tomorrow, from autonomous driving capabilities to personalized in-car experiences and seamless connectivity.

The rise of electric and autonomous vehicles further accelerates this trend, as these vehicles rely heavily on sophisticated software for energy management, real-time decision-making, and integration with smart infrastructure. Additionally, advancements in artificial intelligence, machine learning, and over-the-air (OTA) updates are reshaping how vehicles operate and interact with their environment.

TMA Solutions, with nearly 4,000 engineers, has invested heavily on solutions to support transition to software-defined vehicles (SDVs). TMA Automotive Software Center offers various solutions for automotive, including In-Vehicle System, Door and Window Power System, Car Controller System,

CarPilot Diagnostic, Navigation for Android Automotive OS, Car Mobile Remote, Traffic Image Processing, Automotive NAD and V2X Stack.

TMA Solutions also provides a comprehensive suite of engineering services encompassing in-vehicle infotainment, Electronic Control Units (ECU), functional safety, security, automotive UI/UX design, wireless connectivity, and digital engineering. Leveraging its strength in software development, the company aims to empower global tier-1 suppliers, OEMs, and chipmakers to enhance market competitiveness and deliver more connected, intelligent, sustainable, and future-ready vehicles.

With many years of experience in the automotive industry, TMA has cultivated a deep understanding of the unique challenges and opportunities in this dynamic sector. TMA's success is built on a skilled engineering team with automotive software development best practices and processes.

TMA leverages cutting-edge technologies such as artificial intelligence (AI), cloud computing, computer vision, and advanced analytics to stay at the forefront of innovation. These tools enable TMA to develop sophisticated software solutions that meet the evolving needs of modern vehicles, from intelligent driver-assistance systems to seamless in-vehicle connectivity. By harnessing the power of these technologies, TMA is not only optimizing performance but also redefining the possibilities within the automotive landscape.

TMA's vision is to accelerate the rapid development of the automotive industry, a sector increasingly defined by software and innovation. As vehicles evolve into sophisticated platforms that combine hardware and software in seamless harmony, TMA aim to contribute to this transformation by delivering solutions that are robust, scalable, and future-ready. Whether it's enabling autonomous driving, enhancing user experiences, or ensuring sustainability, TMA is dedicated to shaping a smarter, more connected, and software-driven future for mobility.

Software business innovations such as AUTOSAR, middleware, and development tools are increasingly important for the evolution of new electrical and electronic architectures. With the cooperation with AUTOSAR, TMA is investing in developing software-defined vehicles and innovative automotive solutions based on TMA's experiences in software and hardware integration and latest technologies.

TMA's Automotive Software Center, fueled by years of intensive R&D investment, has developed a comprehensive suite of solutions to support the transition to Software-Defined Vehicles. These include R&D prototyping, embedded software, model-based development and testing.

With more than 27 years of experience in software R&D, TMA Solutions has established itself as an innovative and trusted partner in the automotive industry. Leveraging a large engineering team with latest technologies, TMA can accelerate your innovation in automotive software solutions.

Source : PRNewswire

HARMAN AUTOMOTIVE INTRODUCES NEW SOFTWARE PRODUCTS THAT DRIVE THE FUTURE OF AUTOMOTIVE DEVELOPMENT AND THE IN-VEHICLE DRIVING EXPERIENCE

To meet the significant growth expected in the automotive software and electronics market over the next decade, HARMAN Automotive has introduced two new software products: Ready CQuence Loop and Ready Link Marketplace. Both products are designed to help automakers, Tier 1 suppliers and developers accelerate automotive software development cycles, improve in-vehicle offerings and generate new revenue streams.

"Today's automotive software development and testing tools are not aligned with modern software development practices," said Daniel Lueddecke, senior director and Ready CQuence Loop product lead at HARMAN.

"With Ready CQuence Loop, we are changing the way automotive software is built and validated by prioritizing developers, optimizing their productivity, and providing tools they love to use."

The Ready Link Marketplace is a unified digital commerce platform for in-vehicle and beyond experiences that connects automakers, developers and users. It enables automakers to offer consumers tailored, value-based apps, services and vehicle features, turning every drive into a personalized and enjoyable journey.

"Software is changing the way vehicles are built and experienced," said Heiko Huettel, Vice President

of Software Products at HARMAN. "With Ready CQuence Loop and Ready Link Marketplace, we want to make this change meaningful for developers, automakers and consumers by focusing on what matters most - making it easier for everyone to deliver and receive better in-vehicle experiences."

HARMAN designs and engineers connected products and solutions for automakers, consumers and businesses worldwide, including connected car systems, audio and video products, enterprise automation solutions and services to support the Internet of Things. With leading brands such as AKG®, Harman Kardon®, Infinity®, JBL®, Lexicon®, Mark Levinson® and Revel®, HARMAN is trusted by audiophiles, musicians and the venues where they perform around the world.

More than 50 million cars are now equipped with HARMAN audio and connected car systems. Our software services support billions of mobile devices and systems that are connected, integrated and secure across all platforms, from work and home to car and mobile phone.

HARMAN employs approximately 30,000 people in the Americas, Europe and Asia. In 2017, HARMAN became a wholly owned subsidiary of Samsung Electronics Co., Ltd.

The source language in which the original text is published is the official and authorized version. Translations are provided for ease of understanding. Only the language version that was originally published is legally binding. Therefore, compare translations with the original language version of the publication.

Source: businesswire.com

HONEYWELL SELECTED BY EXIDE ENERGY TO POWER BUILDING AUTOMATION AT LITHIUM-ION GIGAFACTORY IN INDIA

BENGALURU, India, 19th December 2024: Honeywell (NASDAQ: HON) today announced that it has been awarded a contract to provide building automation solutions to Exide Energy Solutions Limited (EESL), a fully owned subsidiary of Exide Industries Ltd, India's largest battery maker. This technology deployment underscores Honeywell's commitment to the Make in India initiative and also supports Honeywell's alignment of its portfolio to three compelling megatrends, including automation and the energy transition.

Honeywell will equip EESL with digital solutions to help improve operational efficiency and deliver faster incident response, energy savings and increased security for the phase one of its new 80-acre lithium-ion gigafactory campus in Bengaluru. Key to this will be Honeywell's Enterprise Buildings Integrator (EBI) platform, which will provide an integrated view, centralized monitoring and control of building management across the gigafactory campus.

The gigafactory is expected to be completed in 2025 and will be Bengaluru's first multi-gigawatt-hour lithium-ion cell manufacturing facility. It will produce lithium-ion batteries to help address the growing global demand for electric vehicles.

Atul Pai, Vice President and General Manager, Building Automation, Honeywell India said, "By helping Exide Energy make their new lithium-ion battery manufacturing facility more safe, secure and automated, we are supporting the efficient production of batteries that power the future of electric vehicles. Our integrated solutions not only help advance the safety and efficiency of Exide Energy's gigafactory, but they also align with our goals of developing sustainable energy solutions and helping India build its self-reliance in critical industries including electric mobility."

Dr. Mandar Deo, CEO of Exide Energy Solutions Ltd. said: "Honeywell's automation and safety solutions align with our vision to create the most technologically advanced and sustainable unit for manufacturing Li-ion cells. We are confident that Honeywell's expertise makes them an ideal partner to help us meet these requirements."

Source : Honeywell

MINISTRY OF HEALTH AND SABIC ESTABLISH MEDICAL TECHNOLOGIES ROOM AT HOME OF INNOVATION™ IN SUPPORT OF LOCAL CONTENT

In a strategic move aimed at supporting local content and promoting innovation across the Saudi healthcare sector, the Ministry of Health (MOH), represented by the Innovation Center, has partnered with SABIC to establish a dedicated room for showcasing innovative medical technologies at the Home of Innovation™.

The Medical Technologies Room is set to be a leading platform for promoting innovative technologies in the healthcare sector, and supporting the development, localization, and adoption of cutting-edge medical technologies within the Kingdom. This will contribute to better access to locally developed solutions and enhance the quality of Saudi healthcare systems.

A number of distinguished partners of the Home of Innovation™ showcased their technologies for the project, from smart lighting and medical furniture that enhance the quality of healthcare facilities, to specialized technologies such as prosthetics and 3D-printed splints.

This project is part of the partnership between the MOH and SABIC to support and localize innovative technologies in the healthcare sector, contributing to the achievement of Saudi Vision 2030.

Source : Sabic

OREXO ENTERS INTO COLLABORATION WITH ABERA TO DEVELOP NASAL POWDER VACCINES BASED ON THE AMORPHOX TECHNOLOGY

- The collaboration is in line with Orexo's strategy to broaden the use of its powder-based drug delivery technology AmorphOX®.
- Abera is a developer of mucosal vaccines and has several preclinical vaccine candidates based on Abera's innovative vaccine platform.
- The AmorphOX technology has the potential to improve the stability and efficacy of Abera's vaccine candidates.

UPPSALA, Sweden, Dec. 17, 2024 / PRNewswire/ -- Orexo AB (publ.), (STO: ORX) (OTCQX: ORXOY), continues to develop its innovative powder-based drug delivery technology AmorphOX to improve the properties of new or existing drugs. The aim is to develop formulations that help to significantly stabilize the active ingredient and enable alternative and more effective routes of administration. AmorphOX-based formulations can be used for a wide range of active ingredients, from small molecules and peptides to larger biomolecules such as vaccines.

As a next strategic step to leverage the scalability of AmorphOX, Orexo has entered into a collaboration with Abera Bioscience ('Abera'), a platform and vaccine developer with over 30 years of research in the medical, molecular and microbiological fields. The aim of the collaboration is to develop mucosal vaccines based on Abera's innovative and patented vaccine platform.

As a first step, the aim is to develop powder-based intranasal vaccine candidates, focusing on Abera's influenza vaccine candidate. An intranasal influenza vaccine has the potential to easily and effectively help reduce the spread of infections and prevent disease, which could play an important role in a potential future pandemic.

"Influenza is a family of viruses that could mutate and cause the next pandemic, but seasonal influenza is already a major problem where vaccines are often not effective enough. Orexo has an impressive knowledge and technology for powder formulations of medicines that perfectly complements our expertise in vaccine development. Their innovative technology, AmorphOX, has shown to improve the properties of a wide range of different active ingredients. There is therefore great potential in this area, and we will be able to take many important development steps in the coming year," says Maria Alriksson, CEO of Abera Bioscience.

The collaboration is funded by Abera

through various previously received grants, mainly from CEPI (the Coalition for Epidemic Preparedness Innovation).

Robert Rönn, SVP and Head of R&D at Orexo, says: "Abera has an innovative and promising vaccine platform for the development of mucosal vaccines, as confirmed by their recent funding from CEPI. The collaboration is fully in line with our strategic development of the AmorphOX® platform and through collaborations we can showcase the potential and value of our technology. We look forward to working with Abera, where our experience and technologies are highly complementary."

Source : PRNewswire

HIMALAYA WELLNESS LAUNCHES NEW PEPPERMINT HIMALAYA BOTANIQUE WHITENING+ HYDROXYAPATITE TOOTHPASTE

SUGAR LAND, Texas, Dec. 19, 2024 /PRNewswire/ -- Himalaya Wellness, a leading herbal and plant-based supplements and personal care brand, is excited to introduce its latest innovation: Himalaya Botanique Whitening+ Hydroxyapatite Peppermint Toothpaste. This new offering pairs a refreshing peppermint flavor with the trusted whitening and enamel-supportive benefits consumers love.

Formulated with hydroxyapatite—a mineral naturally found in bones, dentin, and enamel—this toothpaste supports enamel health while gently whitening teeth. Enzymes from Papaya and Pineapple lift surface stains, while Neem, a traditional trusted cleanser, promotes a clean, healthy mouth. The invigorating peppermint flavor adds a burst of freshness to every brush and complements the brand's existing mint offering.

"Our goal has always been to blend the best of nature and science to create products that enhance wellness without compromise," said Tanya Das, Director of Marketing. "With the launch of our latest peppermint flavor, we're providing consumers with another refreshing option for healthier-looking, brighter smiles."

Himalaya's Botanique Whitening+ Hydroxyapatite Peppermint Toothpaste is available at himalayausa.com and Amazon.

Vegan and cruelty-free, Himalaya Botanique Whitening+ Hydroxyapatite Peppermint Toothpaste is also free from fluoride, sodium lauryl sulfate (SLS), artificial colors, flavors, preservatives, sweeteners, and gluten. It's a thoughtful choice for those seeking a more plant-based approach to oral care.

All Himalaya products are produced in a cGMP (Good Manufacturing Practices) certified facility and are tested for identity, strength, and safety.

Source : Himalaya Wellness

WATERLESS, PRESERVATIVE FREE & PLASTIC FREE GLOBAL DISRUPTION IN THE $600 BILLION COSMETIC INDUSTRY

CHELMSFORD, Mass., Dec. 18, 2024 /PRNewswire/ -- Ellixi is excited to announce its official launch as a woman owned disruptor in the beauty industry, offering a groundbreaking line of completely waterless, preservative-free, & plastic-free beauty products. As consumers become more eco-conscious and seek out sustainable beauty solutions, Ellixi is leading the way by redefining luxury beauty with high-performance formulations that deliver results without harming the planet.

Ellixi is revolutionizing beauty by eliminating water from its formulations, ensuring that each of its 100+ products contains only 5 or fewer potent, active ingredients without dilution. By forgoing water, the brand enhances the efficacy of its products while significantly reducing its environmental footprint. Additionally, by removing the need for preservatives, Ellixi offers purer products that are gentle on the skin yet highly effective.

"We saw a gap in the beauty market for products that truly deliver on sustainability and efficacy," said Lila Bergen, Co-Founder of Ellixi. "Our vision was to create products that not only provide exceptional results but do so in a way that minimizes our impact on the planet and we believe we've achieved that."

Ellixi's product line includes a range of luxurious skincare and body care products, including rich body butters, invigorating cleansers, rejuvenating face serums, and soothing bath salts. Each product is crafted to provide superior hydration, nourishment, and care without the use of water, fillers, or harmful chemicals. The brand's focus on minimalism and high-performance skincare ensures that consumers get the best results with fewer ingredients. Ellixi invites consumers to be part of the waterless beauty revolution, and is positioned to become a leader in the sustainable beauty space.

Source : Ellixi Beauty

HANWHA QCELLS ACHIEVES WORLD RECORD EFFICIENCY FOR COMMERCIALLY SCALABLE PEROVSKITE-SILICON TANDEM SOLAR CELL

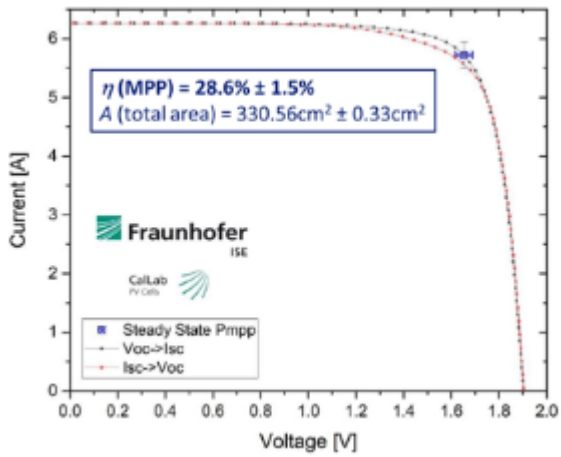
Hanwha Qcells brings the industry closer to commercializing powerful, affordable solar technology, achieving a world record in tandem solar cell efficiency

Hanwha Solutions Qcells Division (Hanwha Qcells), a global leader in complete clean energy solutions, has achieved a new world record, reaching 28.6% for tandem solar cell efficiency on a full-area M10-sized cell that can be scaled for mass manufacturing. This incredible result was achieved despite having only begun large-area tandem development in 2023, as major solar manufacturers across the world attempt to reach this level of efficiency with perovskite technology.

"The tandem cell technology developed at Hanwha Qcells will accelerate the commercialization process of this technology and, ultimately, deliver a great leap forward in photovoltaic performance," said Danielle Merfeld, Global CTO at Hanwha Qcells. "We are committed to advancing the next generation of solar energy efficiency and will keep investing significantly in research and development to drive progress in this field, as every kilowatt counts on the path to building a more sustainable future."

Hanwha Qcells' 28.6% certified record efficiency, independently verified by the CalLab at the Fraunhofer Institute for Solar Energy Systems (ISE), brings the industry one step closer to commercializing solar technology that is more powerful and affordable. Hanwha Qcells' new record for tandem solar efficiency is based on perovskite technology of the top cell and proprietary Q.ANTUM technology of the bottom cell. The value is a total-area measurement on a full-area M10-sized (roughly 0.36 square feet or 330.56 cm2) cell using a standard industrial silicon wafer that can be interconnected into an industrial module. This approach to tandem development focuses on commercial processes and tools that readily scale to mass manufacturing, rather than attempting to show a proof of concept in a lab-scale environment. Hanwha Qcells' stacking of a perovskite top and silicon bottom solar cell to form a tandem cell improves performance by capturing high energy light more efficiently through the top cell while low energy light is transmitted and captured by the bottom cell. This improves the power per area, meaning that fewer modules are needed to achieve the same solar system power output. This breakthrough has the potential to further reduce the cost of solar energy and the land footprint needed for solar projects, making solar even more affordable, accessible, and sustainable.

Hanwha Qcells' R&D teams have been working since 2016 to develop a commercially viable tandem solar cell based on perovskite top-cell technology and the company's proprietary silicon bottom-cell technology. Hanwha Qcells significantly boosted its efforts to realize this next-generation solar product with the launch of a dedicated research center in Pangyo, Korea, in 2019, building on the company's well-established R&D foothold in Bitterfeld-Wolfen, Germany. Following a series of R&D feats in developing highly efficient small-area tandem solar cells, Hanwha Qcells has pivoted its focus to large-area tandem development, which led to this new world record efficiency for a tandem solar cell.



Hanwha Qcells' Pangyo R&D center, appointed as a research institute for national projects, has received ongoing support from the Korean government to develop commercially viable tandem cell technology. The Bitterfeld-Wolfen R&D center in Germany is embedded within the company's global R&D partner network, which is supported by funding from the German government, the state of Saxony-Anhalt, the EU Commission, including the lighthouse project PEPPERONI, and the Dutch and Swiss governments. The work leading to this record efficiency tandem cell achievement was partially funded by the German Federal Ministry for Economic Affairs and Climate Action (BMWK), the state of Saxony-Anhalt, and the EU Commission.

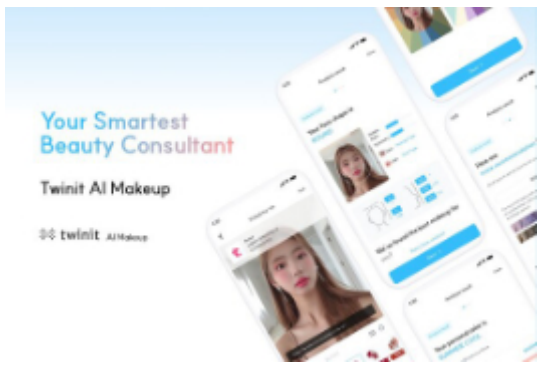
"We are fortunate to have outstanding global R&D teams and to have received invaluable support from our partners in Korea and Europe, leveraging their resources and expertise. We deeply appreciate everyone dedicated to driving innovations that bring us closer to achieving our climate goals," said Danielle Merfeld, Global CTO at Hanwha Qcells.

"Hanwha Qcells is excited to announce this new world record in tandem cell efficiency based on our in-house developed perovskite technology as a top cell, and cost-efficient Q.ANTUM silicon technology as a bottom cell. The champion cell is a typical cell from our R&D pilot line in Germany and has been fabricated exclusively using processes that are feasible for mass production. This result is laying the groundwork for future commercialization of this exciting technology," said Robert Bauer, Head of Hanwha Qcells R&D in Germany.

Source : Hanwha

EXPERIENCE BEAUTY WITH DIGITAL HUMAN TECHNOLOGY: 'TWINIT' VENTURES INTO GLOBAL BEAUTY TECH MARKET WITH AI MAKEUP SOLUTION

SEOUL, South Korea, Dec. 13, 2024 / PRNewswire/ -- EntreReality, a digital human startup headquartered in South Korea, has launched Twinit AI Makeup to establish its footprint in the global beauty tech market. With cutting-edge technology that combines AI and 3D vision, Twinit aims to redefine the cosmetics experience for users worldwide.



Twinit, developed by EntreReality, analyzes individual skin characteristics using Vision AI, providing a comprehensive solution to enhance cosmetic sales for brands. This technology examines skin tone, shape, and aging through 3D vision capabilities. As a key advantage, Twinit has partnered with major beauty brands, including South Korea's largest cosmetics company, Amorepacific. Additionally, the solution is deployed in large retail venues such as Incheon International Airport and Hyundai Department Store, where standalone devices deliver innovative skin analysis services.

Twinit's 360-degree AI Skin Analysis, powered by its advanced data, recently earned the CES 2024 Innovation Award. Following the beta launch of its AI makeup service in South Korea, the company formed partnerships with over 200 domestic and international brands within just one month, showcasing its rapid growth trajectory. Recognizing the $200 billion global beauty tech market—with an estimated annual growth rate of 20%—EntreReality is ramping up its U.S. market entry by establishing a U.S. subsidiary and recruiting McKinsey alumni as strategic leaders.

Twinit has also participated as an exhibitor at prominent global events, including CES 2024 in Las Vegas and 'The Oulim' exhibition at London's renowned Saatchi Gallery, where it showcased its 3D face scanning technology. The company is working with global beauty brands and clinical research institutions to develop anti-aging solutions leveraging its AI-powered 3D skin analysis. These efforts solidify Twinit's position as an emerging leader in beauty tech innovation.

Dongyun Lee, CEO and Product Owner of Twinit, shared his vision: "The diverse skin characteristics of individuals in the U.S. present an excellent opportunity for our AI skincare solutions to demonstrate exceptional results. By integrating our accumulated expertise in digital human technology and data, we aim to create a revolutionary service model that will lead the global AI beauty tech market."

Source : EntreReality

SABIC DEBUTS LNP™ ELCRES™ CXL PC COPOLYMERS TO ADDRESS HIGH CHEMICAL EXPOSURE IN MOBILITY, ELECTRONICS, INDUSTRIAL AND INFRASTRUCTURE

- SABIC is introducing advanced polycarbonate copolymer resins offering exceptional chemical resistance targeted at mobility, electronics, industrial and infrastructure applications.
- New LNP™ ELCRES™ CXL copolymer resins can help extend the lifespan of components to support sustainability, protect OEM brand reputation and preserve product value.
- Also available are ISCC PLUS certified bio-renewable versions of these new materials, supplied under the LNP™ ELCRIN™ CXL brand and part of SABIC's TRUCIRCLE™ program.

Bergen op Zoom, The Netherlands, December 12, 2024 - SABIC, a global leader in the chemical industry, introduced today its new LNP™ ELCRES™ CXL polycarbonate (PC) copolymer resins featuring exceptional chemical resistance. These specialty materials are well suited to help customers in the mobility, electronics, industrial and infrastructure markets address increased exposure to harsh chemicals that can cause environmental stress cracking and premature failure. In addition to providing higher chemical resistance than incumbent materials, LNP ELCRES CXL copolymer resins can enhance part durability and reliability with excellent low-temperature impact resistance and weatherability.

"Several trends are contributing to greater chemical exposure for plastic parts," said Maureen MacDonald-Stein, Director, Portfolio Strategy and Marketing, SABIC Polymers, Specialties business. "Heightened concerns about cleanliness have persisted after the pandemic, prompting consumers to frequently disinfect surfaces from smartphone displays to EV charger handles. The growing popularity of wearables and the constant use of smartphones bring electronics into ongoing contact with skin oils, lotions and other personal care products. Our new LNP ELCRES CXL materials help maintain part performance and aesthetics, even as chemicals become more aggressive and exposure intensifies."

Chemically Resistant PC Copolymers for Multiple Industries

The new LNP ELCRES CXL copolymer resins can deliver remarkable chemical resistance, exceeding the performance of traditional amorphous materials like polycarbonate (PC) resins and acrylonitrile-butadiene-styrene (ABS) blends. SABIC's internal testing revealed that LNP ELCRES CXL copolymer resins are highly resistant to diverse chemicals found in the mobility, industrial, infrastructure and electronics sectors. Representative mobility and infrastructure chemicals were tested. They include gasoline, antifreeze, caustic soda (5% solution) and a number of related chemicals. For industrial applications, testing against typical chemical exposures included tar remover, brake fluid and many other substances. In cases where consumers interact with mobility, industrial and infrastructure devices, LNP ELCRES CXL copolymer resins can offer improved chemical resistance to the components found in hand creams, sunscreens, insect repellents, cleaning solutions and hand sanitizers.

The new SABIC CXL portfolio offers a wide range of products, including opaque and transparent non-flame retardant (FR) grades, opaque, thin-wall FR grades and glass-reinforced options. These materials also deliver value-added features such as non-brominated/non-chlorinated FR at thin gauges, low-temperature ductility (down to -60°C), high flow for easy processing and good colorability to meet aesthetic requirements. They can meet both ultraviolet (UV) and water immersion requirements (f1 rating) for outdoor suitability under UL746C.

To help provide a path toward carbon neutrality, SABIC offers ISCC PLUS certified bio-renewable versions of the new materials, supplied under the LNP™ ELCRIN™ CXL brand. They use bio-based alternative feedstocks with a lower carbon footprint compared to traditional feedstocks. These bio-based grades can reduce carbon dioxide (CO2) emissions compared to traditional counterparts, while delivering the same performance. These grades are new additions to the company's TRUCIRCLE™ program, which are products and services that aim to help companies around the world meet their sustainability goals.

"Our LNP ELCRES CXL copolymer resins can help manufacturers and brands keep pace with the increasing risks of performance and aesthetic

degradation posed by more-widespread use of chemicals," said Scott Fisher, General Manager, Technology, SABIC Polymers, Specialties business. "Our proprietary copolymer technology rises to the challenge of protecting applications from damage and loss of value caused by these substances. By helping to extend the useful life of components, LNP ELCRES CXL materials contribute to sustainability, brand reputation and customer satisfaction."

Source : Press Release

LUCAS MEYER COSMETICS BY CLARIANT UNVEILS NEW BEAUTY COLLABORATION HOUSE, MARKING A NEW ERA IN COSMETIC INNOVATION

- Lucas Meyer Cosmetics by Clariant announces successful launch of Beauty ColLABoration House near Los Angeles, opened on December 10th, dedicated to co-creating innovative cosmetic formulations with customers
- The new facility showcases Lucas Meyer Cosmetics by Clariant's ingredients, fostering collaborative product development in the high-value cosmetic ingredients market
- This customer-centric innovation hub emphasizes hands-on collaboration and setting new standards in the beauty and personal care sector

QUEBEC, December 11, 2024 - Lucas Meyer Cosmetics by Clariant announces the opening of its new Beauty ColLABoration House near Los Angeles, California. This state-of-the-art facility is designed to revolutionize the way cosmetic formulations and concepts are developed, emphasizing direct collaboration with the specific needs from customers in this region.

The Beauty ColLABoration House embodies the company's commitment to customer-centric innovation in the beauty and personal care sector. The facility's name emphasizes the 'LAB' component, highlighting its role as a collaborative space where customers work hand-in-hand with inhouse experts to develop new cosmetic formulations using active and functional ingredients as well as exotic oils, butters and clays offered by Lucas Meyer Cosmetics by Clariant.

Christian Vang, President of Clariant's Business Unit Care Chemicals and the Americas region, stated, "The opening of this new facility on December 10th marked a significant shift in how we approach cosmetic innovation. It's not just about showcasing our ingredients; it's about working alongside our customers to create the next generation of beauty products. We're thrilled with the positive response and collaborative energy we've seen in just the first few weeks of operation."

The opening of the Beauty ColLABoration House follows the recent integration of Lucas Meyer Cosmetics into Clariant, a move that significantly strengthens Clariant's position in the specialty chemical industry and expands its footprint in North America. This strategic step aligns with Clariant's purpose-led growth strategy and its goal to accelerate customer-driven innovation.

"By combining our personal care ingredients portfolio with Lucas Meyer Cosmetics, we've created a unique opportunity for collaborative formulation development," Vang added. "In this fast-paced world of beauty and personal care, we're not just keeping pace with the market; we're setting a new standard for customer collaboration."

The Beauty ColLABoration House is expected to drive remarkable growth. The company aims to increase annual sales from around $100 million currently to $180 million by 2028, leveraging this new collaborative approach to product development. Vang also highlighted the value of the experienced team from Lucas Meyer Cosmetics, noting their excellent track record and the invaluable expertise they bring to this new collaborative venture.

The Beauty ColLABoration House is set to become a crucible for creativity and a launchpad for breakthroughs in the cosmetics industry. It will serve as a space where boundaries are pushed, conventions are challenged, and the next generation of cosmetic formulations are created in close collaboration with valued customers.

"At Lucas Meyer Cosmetics by Clariant, it is imperative that we align our strategy with local industry trends. The indie brand landscape also involves key players such as consultants and contract manufacturers. One of our objectives is to establish direct connections with them and with the emerging brands," comments Jackie Kim, Sales Director North America at Lucas Meyer Cosmetics.

As Lucas Meyer Cosmetics by Clariant opens the doors to this new facility, it invites customers to experience a new level of partnership in cosmetic formulation, blending innovative ingredients with the creative vision of beauty brands.

Source : Press Release

REVOLUTION SUSTAINABLE SOLUTIONS, LLC ANNOUNCES ACQUISITION OF ISLAND PLASTICS, LLC TO EXPAND SUSTAINABLE MATERIALS OFFERING

LITTLE ROCK, Ark., Dec. 12, 2024 /PRNewswire/ -- Revolution Sustainable Solutions, LLC ("Revolution"), a leader in sustainable materials and recycling solutions, is pleased to announce the acquisition of Island Plastics, LLC ("Island Plastics"), a premier producer of 100% post-consumer recycled ("PCR") linear low-density and low-density polyethylene ("LLDPE/LDPE") film grade resin. This strategic move aims to bolster Revolution's commitment to sustainable loop solutions and expand its recycling capabilities, particularly in the production of clear food-grade PCR for flexible food packaging and other applications.

Island Plastics, based in Flint, Michigan, operates a state-of-the-art mechanical recycling facility dedicated to producing high-quality LLDPE/LDPE PCR. As the largest film recycling plant in Michigan, Island Plastics has been instrumental in advancing plastic recycling technologies while maintaining stringent quality standards. Their expertise aligns seamlessly with Revolution's mission to create and champion sustainable loop solutions that preserve the environment.

In October 2023, Revolution received a Letter of No Objection ("LNO") from the U.S. Food and Drug Administration (FDA) for its proprietary mechanical recycling method to produce clear food-grade PCR-LLDPE resin from stretch film. This approval allows the use of up to 100% recycled content in food contact applications across a broad range of food types and conditions.

Scott Coleman, President and CEO of Revolution, stated, "The partnership represents a significant step forward in our mission to redefine possible for sustainable plastic solutions. By integrating Island Plastics' recycling capabilities and high-quality PCR products, we are poised to enhance our sustainable ecosystem and further contribute to a circular economy. We plan to leverage our recent FDA No Objection Letter to expand Island Plastics' PCR offerings to include clear food-grade PCR."

This acquisition is also expected to enhance Revolution's capacity to deliver sustainable products across various markets, including agriculture, facilities maintenance, and consumer goods. By incorporating Island Plastics' capabilities, Revolution aims to increase the use of certified recycled content in its products, thereby reducing reliance on virgin materials and minimizing environmental impact.

Revolution remains dedicated to its unique, circular approach to plastics, which involves not only manufacturing high-quality products but also collecting and recycling them to create a continuous cycle of sustainability. The integration of Island Plastics is anticipated to strengthen this approach, enabling Revolution to recover, process, and clean more than 300 million pounds of material annually.

Source : Revolution

DOVE AND CRUMBL LAUNCH THE SWEETEST DROP OF THE YEAR WITH LIMITED-EDITION COLLECTION, AVAILABLE NOW AT WALMART

ENGLEWOOD CLIFFS, N.J., Dec. 26, 2024 /PRNewswire/ -- Dove and Crumbl have teamed up for the most craveable collab of the year: the NEW limited-edition Dove x Crumbl collection, available exclusively at Walmart.com and in Walmart stores nationwide for a limited time only.

The collection delivers the fan-favorite flavors of Crumbl desserts, paired with the superior care that Dove is known for,

to indulge your senses while nourishing your skin. From the shower to the sink, Dove x Crumbl offers something sweet for each step of your routine. The product lineup includes a Body Wash, Body Scrub, Deodorant, and Liquid Hand Wash, each available in three expertly crafted gourmand scents, and inspired by Crumbl classics:

The Dove x Crumbl collection is now available exclusively at Walmart.com and in Walmart stores nationwide for a limited time. Show us how you indulge your skin's cravings and tag @dove and @crumbl in your routine featuring your favorites from the Dove x Crumbl collection. #DovexCrumbl

Source : Dove

- Confetti Cake – with notes of a warm sugar cookie topped with pink buttercream frosting.
- Lemon Glaze – with notes of a lemon sugar cookie topped with a sweet buttery glaze.
- Strawberry Crumb Cake – with notes of a rich strawberry cookie topped with vanilla glaze & buttery crumbs.

"Dove and Crumbl both have passionate, loyal fanbases that revel in the feel-good moments our brands offer," said Gaurav Raisinghani, Head of Innovation, Equity and Brand Design for Dove Skin Cleansing. "Pairing Dove's commitment to superior care with the irresistible scents of Crumbl felt like a natural fit. By listening to our communities, we identified the Crumbl flavors that would resonate most for this collaboration. The result is a collection that challenges what you thought was possible from your body care routine, allowing anyone to cookie all day, every day."

For the first time ever, Dove will change the color of its packaging. Dove x Crumbl products will show up on shelves with pink packaging across the entire collection – a nod to the signature Crumbl pink box.

"The excitement of unboxing a Crumbl dessert isn't just about a sweet treat – it's about taking a break from the everyday hustle and savoring something special," said Sawyer Hemsley, co-founder of Crumbl. "Because Dove shares our passion for delighting customers and helping them embrace life's little indulgences, we knew they would be the perfect partner."

In celebration of the launch, Dove and Crumbl will also be partnering with two of the most iconic superfans of all time – The Turn Up Twins. Taking their viral Crumbl jingle from "lookie lookie" to "knock knock," The Turn Up Twins will surprise and delight fans and skincare lovers with a sweet tooth everywhere.

"We are thrilled to bring our personal passion for two of our favorite brands, Dove and Crumbl, into this launch," said The Turn Up Twins. "Sharing our jingles on social media started out as our own way to connect with others and make life a little sweeter. This collab is all about that, and we're excited to play a part."

AMCOR AND KOLON INDUSTRIES PARTNER TO PIONEER MORE SUSTAINABLE POLYESTER MATERIALS FOR PACKAGING

ZURICH, November 27, 2024– Amcor (NYSE: AMCR, ASX: AMC), a global leader in responsible packaging solutions, has signed a strategic collaboration agreement with Kolon Industries Inc., a leading South Korean chemical materials manufacturer, to co-develop and commercialize more sustainable polyester materials for selected applications in Amcor's flexible packaging business. This partnership represents a step forward in advancing packaging sustainability, combining Amcor's expertise in innovative packaging with Kolon's high-polymer manufacturing technology.

The collaboration focuses on technological exploration of chemically

recycled PET (crPET) and polyethylene furanoate (PEF) materials. Kolon is pioneering an advanced recycling process to produce new PET from post-consumer bottles, fibers and flexible packaging. Using crPET supports Amcor's commitment to integrating 30% post-consumer recycled (PCR) materials by 2030.

Kolon's PEF material, a polyester structure similar to PET, will be sourced from 100% sustainable biomass and offers improved product protection. With a lower product carbon footprint*, PEF will also contribute to Amcor's net-zero ambitions by 2050.

"This partnership enhances our efforts to offer customers innovative, more sustainable packaging solutions that include PCR content and reduce their carbon footprint," said William Jackson, Amcor's chief technology officer for flexible packaging solutions.

Sung Han, chief technology officer at Kolon Industries, added, "Our collaboration with Amcor will help accelerate the commercialization of more sustainable products and drive the circular economy in global packaging. We will continue expanding the development of more sustainable polymer technologies in support of carbon neutrality."

Source : Amcor

INTERNATIONAL NEWS

ASCEND PRODUCES BIO-CIRCULAR PERFORMANCE CHEMICALS, PA66

HOUSTON, Dec. 17, 2024 / PRNewswire/ -- Ascend Performance Materials announced today the successful production of acrylonitrile, hexamethylene diamine, adipic acid and nylon 6,6 from feedstocks derived from used cooking oil, expanding its Bioserve portfolio. The resulting nylon 6,6 has a 25% lower product carbon footprint than nylon 6,6 made from fossil-fuel derived feedstock.

Using an ISCC Plus-certified mass-balance approach allows for industrial-scale production of sustainable materials without sacrificing performance. Ascend's production facilities in the United States are all ISCC Plus certified to handle bio-based, circular and bio-circular materials.

"We are focused on finding technical solutions for our customers' challenges," said Alex Mihut, Ascend's vice president for performance chemicals. "Using the mass-balance approach allows us to meet the growing need for sustainable materials at scale while continuing to offer reliable performance and quality."

Combined with Ascend's efforts to lower its scope 1 and 2 emissions, the company's Bioserve products offer among the lowest product carbon footprints for industrial-scale nylon 6,6 and its precursors available in the market today.

"Part of our sustainability strategy is a pillar we call 'Operating Without Compromise'," said Chris Johnson, Ascend's senior director for sustainability. "It is based on a commitment to find well-rounded solutions that meet the needs of our customers and help them achieve their goals."

Source : Ascend Performance Materials

INDORAMA VENTURES LAUNCHES RECO COLLECTIVE 2025: EMPOWERING SMES TO CREATE DIVERSE PRODUCTS FROM RECYCLED PET FOR A SUSTAINABLE FUTURE

Bangkok, 26 November 2024 - Indorama Ventures Public Company Limited, a global sustainable chemical company, announced the launch of its RECO Collective 2025 initiative. This innovative platform aims to educate on recycling and upcycling practices while encouraging SMEs in sectors like fashion and furniture to adopt recycled materials. The program highlights the use of rPET fibers from recycled PET bottles to create sustainable products. Additionally, Indorama Ventures is collaborating with leading partners along the value chain who share this vision for sustainable business.

Originally launched in 2011 as the RECO Young Designer Competition, the RECO Collective has grown from its fashion-focused beginnings into a collaborative platform for designers in furniture, home décor, and lifestyle products. By integrating recycled PET into a wider array of products, the RECO Collective emphasizes innovative design concepts that harness recycled materials to deliver business value and long-term sustainability. It reflects Indorama Ventures' vision of raising awareness about the value of recycled materials and promoting the circular economy as a new industry standard, creating a better future through transformative collaboration.

Now in its second year, RECO Collective has broadened its scope to engage new audiences, including new-generation SMEs interested in using recycled materials in their design and production processes. Building on its successful first year, which involved collaborations with eco-conscious fashion brands to bring products to retail spaces such as Ecotopia and Dapper, the second year introduces key activities including:

RECO Incubation Lab: A knowledge-sharing platform offering in-depth expertise from industry professionals. Designers and SMEs will learn strategies for sustainable branding, from sourcing eco-friendly materials to sales and marketing techniques.

Partnership Building: Collaborations with retailers and industry experts, including Thai Taffeta, supplier of recycled PET fabrics for use in products, together with Jaspal Group, a regional leader in lifestyle fashion who is joining RECO Collective as a partner for the first time, as well as Ecotopia and Dapper who will provide guidance on sustainability-focused business practices and support eco-friendly product distribution to consumers. Such collaborations amplify the impact of the RECO Collective, extending its reach across diverse industries.

Product Readiness: The project offers expert advice and guidance on launching sustainable collections to six SME entrepreneurs. This year's highlights include collections from fashion design brands such as tISI, Endless Holiday, and KH Editions, to product design brands such as Mobella, Anew.Craft, and Daybreak.

Mrs. Aradhana Lohia Sharma, Vice President at Indorama Ventures, said, "The impact of RECO Collective goes beyond the products. It is about creating an ecosystem that connects designers, businesses, and consumers who share a commitment to sustainability. Together, we are not just changing the way we create products; we are reimagining the way we do business—more responsibly, more collaboratively, and more sustainably throughout the value chain – from material sourcing to product design and consumer engagement. RECO Collective embodies Indorama Ventures' commitment to driving the circular economy and reinforces the importance of recycling as one of the most impactful and responsible solutions for sustainability."

Miss Kamonnart Ongwandee, RECO Incubation Lab Course Director, added, "RECO Collective imparts knowledge on sustainable design and production and focuses on recycling, reuse, and innovation to reduce overproduction and environmental impact. Through the Incubation Lab, we provide the tools, knowledge, and networks that support designers and their brands, ensuring their products reach wider markets and their businesses incorporate sustainable practices."

By collaborating with SMEs and industry leaders, RECO Collective plays a crucial role in making sustainable products more accessible to consumers in Thailand and abroad. It also supports the development of sustainable supply chains, proving to the world that eco-friendly products can be aesthetically appealing and highly functional.

Source : Indorama

Innovating Coating, Inspiring Sustainability, Wanhua Chemical presented at CHINACOAT2024

During December 3rd - 5th, CHINACOAT2024 was successfully held in Guangzhou. As one of the leading suppliers of raw materials and solutions in the coating industry, Wanhua Chemical shared how to coat a better life for humanity with sustainability.

Coating the Origin of the Future

Superior raw materials empower downstream coating products. We possess a complete special amine - special isocyanate industrial chain, including aromatic amines, aliphatic amines, polyether amines, and multiple isocyanate monomers and derivatives like HDI, IPDI, HMDI, and the high-end isocyanate monomer XDI. Our applications span across construction, home furnishings, engineering machinery, rail transit, new energy, etc. Meanwhile, we focus on our customers' green and environmental demands, developing several low-VOC, low-free coating raw materials to support the green transformation of downstream industries.

Coating the Dream Building Space

The high-performance waterborne epoxy coating curing agent based on WANAMINE®H12MDA provides better water resistance and corrosion resistance for container transport and engineering machinery. It also has excellent film-forming properties and a short surface drying time, meeting customers' demands for higher efficiency and diverse products.

Waterborne polyurethane waterproofing solutions that combine performance and environmental protection offer buildings a green guarantee against moisture. Waterborne multi-color coating solutions and 0SVOC solutions, making building exteriors colorful and durable while creating a safer and healthier home environment.

Coating the Model of Livable Quality

Chemicals are hidden everywhere in a cozy home. The waterborne wood 2K solution offers furniture a more beautiful appearance and performance. For cartons and packaging boxes, our waterborne printing and packaging solutions provide excellent performance for diverse printing inks, along with outstanding color expression. Moreover, our new product—WANNAT®XDI has excellent weather and heat resistance, good adhesion, suitable reactivity, and excellent optical properties after curing, which is widely used in high-end optical lenses, 3C inks, flexible packaging PU adhesives, embracing you with a wonderful home life.Coating a

Sustainable Future

Sustainability is our original intention. We have bio-based PDI and IPDI, minimizing the environmental impact throughout the product's lifecycle from production to use. At the same time, we launch aliphatic isocyanate curing agent solutions and epoxy coating solutions based on H12MDA, applicable to coating application fields such as PV, wind power, new energy vehicles, nuclear power stations, hydropower stations, etc., supporting the development of new energy.

We paint the future with vibrant colors through coatings and empower the world with various possibilities through chemistry!

Source : Wanhua

GOJO Recognized at BizNGO's 19th Annual Conference as a Disclosure Leader of the Chemical Footprint Project

AKRON, Ohio, Dec. 17, 2024 / PRNewswire/ -- GOJO, a global leader in hand hygiene and healthy skin and the maker of PURELL™, was recognized at BizNGO's Annual Conference on December 8 as a

Disclosure Leader for this year's Chemical Footprint Project. Nine years ago, at the 10th Annual BizNGO Chemical Footprint Conference, GOJO announced its bold commitment to reduce its chemical footprint by 50% by the end of 2020. This made GOJO the first company to publicly announce a specific chemical footprint reduction target.

"In 2015, GOJO signed on as one of the first participants in the pilot for the Chemical Footprint Project, an initiative focused on the use of safe chemicals," said Antonio Quiñones-Rivera, Ph.D., Product Safety and Sustainability Senior Manager at GOJO. "I am proud to report that with a deeply committed team at GOJO, we exceeded that goal, reducing our chemical footprint by 64% per product use. We did it by leading with a vision of improved safety and sustainability for our products, by challenging our formulation teams to develop products with improved sustainability profiles that deliver the performance expected by our customers, and by learning from and partnering with our suppliers."

"This year, we are proud to recognize GOJO as one of 13 Disclosure Leaders in this year's Chemical Footprint Project," said Angela Pinilla, Ph.D., Program Director, Chemical Footprint Project. "Disclosure leaders have

agreed to share their CFP Survey scores and responses publicly. This transparency sets a new industry standard, demonstrating GOJO's commitment to safer chemicals. By openly sharing its journey, GOJO is fostering accountability and progress in chemical management. Their willingness to engage stakeholders shows true leadership. We applaud their efforts and hope they inspire others towards greater transparency."

The declaration by GOJO in 2015 was the next step in a journey that started nearly 75 years earlier. When Goldie and Jerry Lippman founded GOJO in 1946, they built the company on the premise of creating a safer way for workers to clean their hands. So much of what Goldie and Jerry did was inherently sustainable – from using old car window cranks for the first-ever portion-controlled dispenser to using recycled pickle jars for the product.

Since its founding, GOJO launched its first-to-market green hand cleaner in 2006. In 2010, the company introduced its first Sustainability Goals, and in 2015, it announced its next set of goals – many of which were accomplished before its end goal of 2020. Most recently, in 2023, GOJO introduced its third set of Sustainable Value Goals, which are designed to transform its business to deliver its GOJO Purpose, of Saving Lives and Making Life Better through Well-Being Solutions.

Source : GOJO Industries

Redefining the Chlor-Alkali Landscape Strategies for Managing Chlorine Surplus and Boosting Caustic Soda Output

Vinodhini Harish

VinoIntroduction:

The Chlor-Alkali industry plays a pivotal role in the Indian economy by producing key chemicals such as caustic soda, chlorine and soda ash, which are vital elements in several industries. However, there are a few significant challenges, especially concerning the surplus chlorine produced as a by-product during caustic soda manufacturing. As demand for caustic soda grows, there is an imbalance between chlorine and caustic soda production, which is leading to operational inefficiencies and storage concerns. This article delves into the current crisis in the Indian chlor-alkali industry and explores how the crisis shifted towards expanding caustic soda production as a solution to the surplus chlorine problem.

The Chlor-Alkali sector is getting sufficient attention even though not as

much as the petrochemical and pharmaceutical sectors. The Chlor-Alkali sector plays a huge role in supporting the growth of chemical and related industries as it produces important products such as caustic soda, chlorine, soda ash and so on. These products are utilized in making a wide range of industrial and consumer goods. Considerably, the industry fulfils the country's domestic needs thereby making it an example of self-reliance.

Presently, the Chlor-Alkali sector is growing rapidly which is due to rising demand from the industries that use its products.

The three major segments govern the industries linked with these products. The three segments are:

1. Chlorine is a by-product of caustic soda production which is primarily used in the production of PVC, disinfecting drinking water, and production of pharmaceuticals.

2. Soda Ash is used in making glass, soap detergents and silicates.

3. Caustic soda is utilized for industries such as soap and detergent manufacturing, pulp and paper and textile processing.

Therefore the growth of these end-user industries is interfering with the Chlo-alkali market in India and it is projected to grow over the next five years even amidst some challenging periods.

For instance, the industry is facing a downturn after the first half of FY20, which has worsened in FY21 due to the pandemic and thereby reduced demand from the key industries. The electrochemical unit (ECU) realization – a measure of the average price of caustic soda, chlorine and hydrogen – hit a decade low of about INR 23,000/MT in FY21 compared to INR38,000/MT in FY19 and INR30,000/MT in FY20.

What is the crisis going on in India's chlor-alkali industry?

The challenge that comes with effectively utilizing the chlorine produced as a by-product during caustic soda production. The issue arises because the demand for caustic soda often outpaces the demand for chlorine which leads to a surplus of chlorine. This imbalance creates operational and economic inefficiencies for the industry.

Production dependency because of the chlorine as a co-product. The manufacturers whether they like it or not, must deal with the excess chlorine they get as a co-product during the production of caustic-soda production in a fixed ratio. Therefore the industry has to deal with this excess chlorine even when the demand is low.

Chlorine is used in sectors like PVC manufacturing, water treatment and pharmaceuticals. These industries have grown rapidly as those using caustic soda, such as textiles, paper and soaps. This discrepancy has led to surplus chlorine.

Furthermore, the storage and handling challenges are critical as chlorine is highly reactive and hazardous making it difficult and expensive to store and transport it safely. This has limited its flexibility in finding alternative uses or markets.

Likewise, surplus chlorine creates disposal challenges due to stringent environmental regulations, which makes the process expensive. Producers are on their way to exploring solutions to these challenges which include exploring vertical integration to include chlorine-utilizing industries. This could balance production and reduce surplus issues.

The major shift to caustic soda:
The chlorine utilization crisis in India has compelled the Chlor-alkali industry to focus more on expanding caustic soda production and their applications for better profitability and stability. The shift is driven by the following factors such as:

Caustic soda demand growth:

Unlike chlorine, caustic soda has a broad and steadily growing demand across industries such as textiles, paper, soaps and detergents, alumina and chemicals.

The manufacturers of caustic soda are also optimizing their production and marketing strategies to cater to the demand.

Some leading players are investing in chlorine derivative units to balance chlorine utilization indirectly.

Grasim industries – Aditya Birla Group:

Grasim has invested heavily in backward and forward integration thereby expanding its capacities in caustic soda while increasing chlorine derivative production such as aluminum chloride, polyaluminum chloride and stable bleaching powder.

Role of AMAI in addressing the common industry challenges and opportunities:

The Alkali Manufacturers Association of India represents a homogenous industry that focuses on the production of caustic soda, Chlorine soda ash and related chemicals. This homogeneity helps AMAI to address the common challenges and opportunities effectively.

The homogenous nature of the industry: The chlor-alkali industry is well-defined and interconnected, thereby producing key products such as caustic soda, chlorine and soda ash. These products share:

- Similar production processes: caustic soda and chlorine are co-products that are produced through the electrolysis of brine.
- Interdependent applications: several downstream industries use the chemicals together such as in PVC production(chlorine) or detergents such as caustic soda.

Key functions of AMAI:

AMAI works with the government to influence the policies that benefit the industry while also including import regulations, energy costs and environmental compliances. AMAI also promotes green technologies such as the adoption of membrane cell technology that is energy-efficient and environmentally friendly as well.

AMAI provides reliable market insights and provides data, trends and forecasts to its members to help them make informed business-related decisions.

On the other hand, they also represent industry interests in discussions on trade agreements, import duties and global competitiveness. Through the detailed industry reports, analysis, the trends related to caustic soda, chlorine demand and ECU realizations, the advises members on strategies that can navigate cyclical downturns such as expanding the caustic soda exports or investing in chlorine derivative plants.

AMAI also encourages R&D investments to discover novel uses for chlorine and derivatives such as hydrochloric acid, chlorinated solvents and disinfectants. Thereby it promotes best practices and innovations which balance chlorine production with growing market demand.

They have also been instrumental in encouraging the transition to membrane cell technology, which is considered the most energy-efficient and reduces overall production costs. The adoption of advanced technologies has aligned Indian manufacturers with global standards helping them to improve their competitiveness while mitigating the chlorine surplus challenge and by focusing on caustic soda efficiency.

Take away:

The Indian Chlor-alkali industry is navigating a crucial turning point as it grapples with the challenge of surplus chlorine production. The demand for caustic soda grows and the manufacturers are focusing on optimizing production strategies and exploring new applications for chlorine to balance the market. Industry players like Grasim Industries and the Alkali Manufacturers Association of India are investing in forward-thinking solutions that include vertical integration and innovative technologies to enhance profitability and sustainability. The transition towards expanding caustic soda production not only addresses the surplus of chlorine but also positions the industry for long-term growth that contributes to the country's self-reliance in the chemical sector.

Green Science Alliance Produced MOF (Metal Organic Framework), PCP (Porous Coordination Polymer) from Waste PET Bottle

KAWANISHI-CITY, Japan, Dec. 20, 2024 /PRNewswire/ -- Metal organic framework (MOF), also known as porous coordination polymer (PCP), are materials composed of metal cations and organic ligands that bridge component metals. MOFs are synthesized as super-porous materials by modifying their metal and organic ligand, as well as the shape and size of pores. Pore size can be controlled in less than nm order and MOF possess extremely large specific surface area (1000 – 9000 m2/g) and their chemical group can be tailored at the molecular level. With conventional porous materials such as activated carbon and mesoporous silica, it was difficult to create such exact porous structure with desired shape, pore size. Although with MOF, one can artificially design the structure, surface area, shape and size of the pores at the molecular level. Because MOFs are completely new ultimate inorganic–organic hybrid porous materials, chemical industry and academic researchers have recently been highly focused on them.

Various type of applications are under development with MOF researchers in the world including gas adsorption, gas storage, gas separation, metal adsorption, water treatment, sensors and bio-medical use. In this regard, Green Science Alliance also has been synthesizing various type of MOF and have been applying MOF to rechargeable battery, fuel cell, water collection, gas adsorption, metal adsorption, deodorizing, photo-

catalysis, solid acid catalysis and CO2 capture and conversion (artificial photosynthesis) etc…

However, tedious and low efficiency of MOF synthesis procedure always have been a problematic issue and preventing from real application of MOF based device.

In this regard, Dr. Ryohei Mori and Mr. Tetsuro Kajino have initially prepared terephthalic acid from waste PET bottle, and thereafter, produced MOF with obtained terephthalic acid. They have also applied solid state synthesis procedure for MOF so that production process cost will cheap too. With this development, all kinds of terephthalic acid based MOF can be produced from waste PET bottle with cheap cost. Since they are using recycle materials, it can be said that they have developed sustainable MOF.

Green Science Alliance will use this sustainable and economically friendly MOF to be apply to their rechargeable battery, fuel cell, solid catalyst, water harvesting, artificial photosynthesis (CO2 capture and conversion) etc…for their internal business and also, looking for opportunity to cooperate with MOF customers for various types of industrial application.

Source : Green Science Alliance Co., Ltd.

Green Tech Accelerator: Driving Industrial Carbon Reduction and Sustainability with Textiles, Circular Packaging, and Smart Driving

Green Tech Accelerator partners with startups to focus on textile waste recycling, circular packaging, and smart driving solutions selected from Taiwan. Leveraging technology innovations and international markets, Green Tech Accelerator helps industries achieve carbon reduction goals and move toward a more sustainable future.

Textile Recycling Innovation: Circulating Waste into Treasure

Strongwises: Turning Textile Waste into Sustainable Building Materials

Strongwises transforms old clothes into eco-friendly building materials called " E F Wood " that can be used for roofs and flooring. The company has successfully entered the international market and partnered with McDonald's to recycle old clothes and plastic containers to create circular wooden walkways. With the support of Green Tech Accelerator, the team has secured grants, technical certifications, and market expansion opportunities, including plans to establish a demonstration site in Singapore to promote applications of the circular economy further.

Pade: Optical Technology for Precision Textile Sorting

Pade applies optical technology to solve the challenge of sorting used clothes, significantly improving recycling rates. After joining Green Tech Accelerator, the team gained knowledge of carbon reduction and international exhibition opportunities. They have extended their technology to smart recycling bins and handheld sorting devices, aiming to accelerate the development of a textile circular economy from the upstream recycling process.

New Circular Packaging Solutions: Reducing Waste and Expanding International Markets

PackAge+: Circular Packaging Supply Chain

PackAge+ specializes in circular packaging technology, assisting corporations like TSMC in reducing carbon emissions and integrating results into ESG reports. With Green Tech Accelerator's support, the team successfully entered the Middle Eastern market and launched Series A funding. They plan to enhance B2B applications and implement the circular economy solution in practical scenarios.

Renouvo: Agricultural Waste Transformed into Eco-Friendly Products

Renouvo converts agricultural waste like sugarcane bagasse and coffee grounds into biodegradable straws and utensils, using green energy to minimize their carbon footprint. With exports to Europe accounting for 80% of their sales, Green Tech Accelerator helped the team access the Middle Eastern market and refine their "negative carbon" concept. They plan to introduce waterproof sugarcane bags to replace plastic bags in the food industry.

Smart Driving Solution: Autonomous Services with Reduced Labor and Carbon Emission

Turing Drive: Automation for Energy Efficiency and Carbon Reduction

Turing Drive provides autonomous driving and operations management systems, applicable in ports, scenic areas, and more. These systems enhance efficiency and reduce carbon emissions. Working with Green Tech Accelerator, the team quantified carbon reduction impacts with data, successfully entered the Japanese market, and partnered with local transportation companies, showcasing the global competitiveness of their technology.

Looking ahead, Green Tech Accelerator will continue to drive the adoption of carbon reduction solutions across key industries, connecting with global net-zero trends and resources, and integrating diverse green technologies for maximum impact. In alignment with policies promoting industry transformation, greenhouse gas reduction, and sustainable production, our collaborative efforts will not only deploy energy-saving and carbon-reducing technologies at practical demonstration sites but also empower supply-side startups to optimize their business models and value propositions, and enhance their marketing and R&D capabilities. For demand-side clients, we will provide robust carbon management strategies, comprehensive ESG resources, green supply chain certification, and a strong foundation for future carbon credit development.

Green Tech Accelerator aims to establish an industry co-creation platform to reshape the value proposition of startups, providing economic solutions for clients and assisting SMEs in reducing carbon emission. This initiative connects with the global green technology ecosystem and extends carbon reduction benefits to the supply chain. Green Tech Accelerator will continue to promote co-creation between startups and industries to achieve green and sustainable development.

Source : Business Next Media Group

Maypharm Unveils Revolutionary Hybrid Dermal Filler, Hyalmass Aqua-Exosome: The Future of Skin Hydration and Regeneration

Introducing Hyaluronic Acid, Exosomes, and PDRN

SEOUL, South Korea , Dec. 30, 2024 /PRNewswire/ -- Maypharm Co., Ltd., a leading innovator in medical and dermo-cosmetic products, proudly introduces Hyalmass Aqua-Exosome to the global market. It is a revolutionary hybrid mesotherapy filler designed to redefine skin hydration and revitalization.

Maypharm Co. is set to revolutionize the aesthetics industry with the launch of Hyalmass Aqua-Exosome. This cutting-edge hybrid filler combines the power of hyaluronic acid, exosomes and PDRN to maximize skin hydration, elasticity and regeneration.

Hyalmass Aqua-Exosome represents a true aesthetic innovation, offering unparalleled benefits for skin health and rejuvenation. Unlike traditional fillers that focus solely on hydration, Hyalmass Aqua-Exosome elevates the standards of skin health by leveraging the regenerative potential of exosomes and PDRN.

"At Maypharm, we are committed to pushing the boundaries of aesthetic technology to deliver transformative results to our clients," said KWON JONGWOOK, CEO of Maypharm Co. "With Hyalmass Aqua-Exosome, we aim to provide a comprehensive solution that not only hydrates the skin, but also promotes its long-term elasticity and regeneration."

Main features of Hyalmass Aqua-Exosome:

- **Advanced Formulation:** Hyalmass Aqua-Exosome contains a unique blend of hyaluronic acid, exosomes derived from conditioned media of human stem cells and plant sources,

and PDRN (polydeoxyribonucleotide). This innovative combination maximizes skin regeneration and elasticity, resulting in visibly smoother and more radiant skin.

- **Pre-filled syringes:** Hyalmass Aqua-Exosome is packaged in pre-filled syringes, ensuring optimum hygiene and safety for patients and practitioners.

- **Long-lasting effectiveness:** Thanks to the use of high purity and high molecular weight raw materials, Hyalmass Aqua-Exosome provides long-lasting benefits to the skin, improving its viscoelasticity and general vitality.

- **Stimulates Fibroblasts:** The main ingredient of Hyalmass Aqua-Exosome stimulates fibroblasts to promote the production of collagen and elastin, thereby improving skin elasticity, anti-aging effects and skin regeneration.

Compared to traditional fillers, Hyalmass Aqua-Exosome appears to be the best choice. Although conventional moisturizing fillers provide rapid hydration, their benefits are often limited to hydration, with minimal regenerative effects. Hyalmass Aqua-Exosome, on the other hand, not only provides immediate hydration thanks to hyaluronic acid, but also promotes long-term skin elasticity and regeneration thanks to the inclusion of exosomes and PDRN. This innovative formulation results in a significant overall improvement in the condition of the skin, making Hyalmass Aqua-Exosome a revolutionary product in the field of aesthetics.

With the launch of Hyalmass Aqua-Exosome, Maypharm Co. Ltd. continues its commitment to innovation, excellence and customer satisfaction in the field of cosmetic medicine and dermo-cosmetic products. Discover the future of medicine and aesthetics with Hyalmass Aqua-Exosome and unlock the secret to radiant and youthful-looking skin.

Partnership with Beauty Factory:

Hyalmass Aqua-Exosome is produced by Beauty Factory, a leading Korean manufacturer in the field of medical aesthetics, renowned for its commitment to innovation and quality. While Maypharm is responsible for the global distribution and marketing of

Hyalmass Aqua-Exosome, Beauty Factory's advanced manufacturing capabilities ensure that this product meets the highest industry standards.

Beauty Factory has state-of-the-art facilities that comply with international Good Manufacturing Practice (GMP) guidelines. With its proprietary HALO manufacturing technology, developed through partnerships with prestigious academic institutions such as Seoul National University's KINS Lab and Sookmyung University's Biomaterials Synthesis Lab, Beauty Factory maintains its leading position in the field of medical aesthetics. Collaborations with renowned global R&D partners in Poland and Germany further support the scientific and technological advances underlying the creation of Hyalmass Aqua-Exosome.

Quality control in a beauty product factory:

Beauty Factory's rigorous quality control process ensures that every product, including Hyalmass Aqua-Exosome, meets the highest standards for safety and efficacy. With a 7-step quality control system, Beauty Factory ensures that all products undergo rigorous testing to maintain consistent and reliable performance in all applications. Maypharm, in collaboration with Beauty Factory, is pleased to present a product that combines cutting-edge technology and advanced formulation to not only provide immediate hydration, but also contribute to long-term skin health and rejuvenation, setting a new standard in the aesthetic industry.

Source : PRNewswire

Yara starts production of renewable-based ammonia in Brazil

The first in Brazil, Yara now produces ammonia made from renewable biomethane and has already delivered the first tonnes of lower carbon product to its customers.

A purified biogas made from sugarcane waste, biomethane can seamlessly replace fossil natural gas, reducing greenhouse gas emissions by up to 75%.

Decarbonizing food and industrial value chains

This achievement demonstrates Yara's commitment to decarbonizing the food and industrial value chains as the company progresses toward carbon neutrality by 2050.

"This is a significant step in building renewable-based value chains across sectors and industries, from food and mining to on-and off-shore transport," says Marcelo Altieri, President of Yara Brazil. "For agribusiness the impact is huge. By integrating this new generation of lower carbon fertilizers into our agronomic expertise, we offer farmers greater value while unlocking new markets and revenue streams. In coffee farming alone, we anticipate a reduction of up to 40% in the carbon footprint of harvested beans," he adds.

Cubatão, Sao Paolo: Leading Brazil's energy transition

Yara's Industrial Complex in Cubatão, the largest consumer of natural gas in São Paulo and Brazil's leading ammonia producer, is now fully equipped to operate with biomethane.

"Cubatão is now positioned to lead Brazil's energy transition," says Daniel Hubner, Senior Vice President at Yara Industrial Solutions. "By leveraging biomethane, Brazil can transform its vast organic waste into a valuable resource, accelerating the transition to a fair, efficient, and sustainable energy model."

Hubner also highlights the importance of collaboration: "Brazil has the potential to be a global leader. To realize this, we must scale renewable solutions, create incentives, and foster public-private partnership to make these innovations accessible and impactful."

Looking ahead, Yara plans to expand its portfolio to include products utilizing carbon capture and storage (CCS). This initiative underscores Yara's leadership in driving industrial decarbonization and supporting sustainable growth in Brazil and on the global stage.

As the company approaches its 120th anniversary next year, its enduring mission to feed the world and protect the planet continues to guide its strategy and innovations.

Source : Yara

Arkema Achieves a Milestone in Its Coating Products Portfolio Carbon Footprint Reduction with the Launch of Global Mass Balance Solutions for All Coatings Technologies

PARIS, Dec. 19, 2024 (GLOBE NEWSWIRE) -- Arkema, a leader in Specialty Materials, set the groundwork for carbon footprint reduction across its Coating Solutions value chain in 2024, with a unique global approach as it achieves multiple Mass Balance* ISCC PLUS certifications in the US, Europe and Asia; covering major coating technologies. This allows Coating Solutions to reduce up to 100% the carbon footprint of its mass balance products, supporting the development of more sustainable solutions for coating applications in fast-growing markets such as green energies, e-mobility, living comfort, building efficiency and advanced electronics.

"Replacing virgin fossil feedstocks with biobased or recycled sources is essential to circular economy. The mass balance approach allows to accelerate this transition by integrating renewable and recycled feedstocks into supply chains while keeping the same level of performance," said Richard JENKINS - SVP Coating Solutions, Member of Executive Committee. "More ISCC+ manufacturing sites certifications are expected in 2025 to further reduce product carbon footprint to support our customers and partners across the value chain to meet their sustainable development objectives."

Nine Arkema sites have been certified over the past 12 months, covering a complete range of bio-attributed solutions from upstream acrylic monomers to downstream specialty resins and additives for high solids, waterborne, UV/LED/EB, and powder coating technologies.

Source : Arkema

GC, Econic, and allnex Sign MOU to Explore Advanced Polymer Systems Made from CO_2

Macclesfield, England, UK - November 12, 2024 - PTT Global Chemical Public Company Limited (GC), a leading global chemical company has signed a Memorandum of Understanding (MOU) with Econic Technologies, a deep-tech company specializing in renewable carbon solutions, and allnex, a leading global manufacturer of industrial coating resins and additives. The MOU marks the beginning of a collaborative effort to explore business and research opportunities to develop advanced polymer systems and processes for coatings made from captured carbon.

By integrating Econic's technologies, GC and allnex aim to reduce the environmental footprint of their businesses and promote the development of eco-friendly polymer products. Econic's

technologies can reduce the carbon footprint of some products by 30 percent or more. The technologies also have the potential to improve the performance of coatings by enhancing durability, corrosion resistance, and aesthetic properties.

"GC is committed to fostering sustainability and innovation in our business portfolio," said Dr. Kamel Ramdani, Executive Vice President - Innovation, GC. "We look forward to working with Econic to develop advanced, eco-friendly systems to serve our customers and GC's sustainability goals. It is part of GC's strategy to invest in startups and leverage emerging technologies to achieve our corporate ambitions. Through our corporate venture capital (CVC) arm, GC can offer expertise, experience, and business connections to support successful go-to-market."

"This MOU with GC and allnex is a pivotal step in our mission to create sustainable and high-performance polymer solutions. By combining our renewable carbon technology with their extensive expertise in coatings, we are poised to drive significant advancements in polymer science that align with global sustainability goals," said Keith Wiggins, CEO of Econic.

"We are excited to partner with Econic to explore cutting-edge technologies that support our commitment to sustainability," said Dr. Benoit DeBecker, Senior VP Corporate Development & Innovation, allnex. "This MOU will enable us to develop innovative solutions that not only meet the evolving needs of our customers but also contribute to a more sustainable future."

Source : GC

Mallinda Launches Groundbreaking Vitrimax™ Vhm Resin, Enabling Economic Full Recyclability For Composites

DENVER, Jan. 3, 2025 /PRNewswire/ -- Mallinda Inc., a pioneer in advanced polymer technology, today announced the commercial launch of Vitrimax™ Versatile Hot Melt (VHM) Resin, a revolutionary vitrimer-based composite resin system that transforms how manufacturers process and recycle high-performance composites. This breakthrough technology combines the superior mechanical properties of thermosets with the processing flexibility of thermoplastics, marking a significant advancement in sustainable manufacturing and, for the first time, enabling economic recyclability and reuse for high-performance composites. Mallinda targets 100% recycling and re-use of production scrap with Vitrimax™ VHM customers, and targets end-of-life circularity programs as well. Due to molecular-level design for circularity, Vitrimax™ resins and their composites can always be profitably recycled at lower cost than their virgin inputs. Vitrimax™ VHM Resin and carbon fiber composite samples are available for immediate purchase at mallinda.com/shop. For more information about Vitrimax™ VHM and how it can transform your manufacturing processes, visit mallinda.com or contact info@mallinda.com.

"Vitrimax VHM represents a paradigm shift in composite materials," said Philip Taynton, CEO at Mallinda. "We've successfully bridged the gap between performance and sustainability, offering manufacturers unprecedented flexibility in scalable manufacturing and processing while maintaining the structural integrity demanded by modern applications."

The launch follows successful commercial-scale production validation, with demonstrated batch consistency at 200L reactor scale and qualification for 2.1 tons per batch manufacturing. One day's batch could produce 10,000 square meters of composite materials. Recognizing the transformative nature of this technology, multiple Fortune Global 500 companies already collaborate with Mallinda to commercialize VHM resins to their particular requirements.

Source : Mallinda Inc.

Mitsubishi Chemical Group and the Future of Anode Materials A Commitment to Sustainability

Vinodhini Harish

Introduction:

Our Earth has seen a lot of damage and the modern era is accelerating towards a greener, electrified future, thus the demand for efficiency, and sustainability has never been greater. Anode materials for lithium-ion batteries are a critical component of this revolution. Right from powering electric vehicles to the storage of renewable energy, the materials are driving transformative change across industries. Some of the leading market players have realized the superior performance and reduced environmental impact of natural graphite and their role in battery technology. In this article, we will explore how these advancements are restructuring the global supply chains and unlocking opportunities for countries like India as the world is witnessing booming growth in EV and energy sectors. Let's begin.

Mitsubishi Chemical Group decided to expand their production capacity of anode material:

Considering the demand for Lithium-ion batteries and opportunities that are lying ahead, Mitsubishi Chemical Group has recently decided to expand their production capacity of anode material at its Kagawa plant highlighting its commitment to the growing demand for lithium-ion batteries, especially in the EV market.

The intention of this expansion is to increase the production capacity and supply of anode materials, which are critical for lithium-ion batteries. The company has also announced that the expansion of the operations at the Kagawa plant is slated to commence in October 2026.

Natural graphite is considered a more sustainable option for anode materials in lithium-ion batteries due to lower environmental impact and resource efficiency. Natural graphite is mined and requires much less energy-intensive processing compared to synthetic graphite which is manufactured from petroleum-derived precursors through high-temperature treatments. Likewise, the production of synthetic graphite emits significantly higher amounts of CO2 and other GHGs whereas natural graphite involves fewer emissions thereby contributing to a smaller carbon footprint.

Considering the LCA Life Cycle Assessments of natural graphite, across its life span, they score better as they involve fewer energy-intensive steps and less dependency on fossil fuels. Thereby making it more environmentally friendly over its entire lifecycle.

Companies like Mitsubishi Chemical Group have developed proprietary technologies to improve the performance of natural graphite. By addressing challenges such as swelling, that can affect the battery life, these innovations enable natural graphite to perform on par with or better than synthetic graphite which makes it a more viable and sustainable alternative. This technological advancement strengthens the position of the Mitsubishi group of companies as a

leader in high-performance and sustainable anode materials.

The expansion aligns with efforts to strengthen supply chains and support the carbon neutrality goals of the mobility sector.

Also, the innovative approach ties directly to broader industry trends where automakers and battery manufacturers are increasingly prioritizing sustainability and low-emission technologies.

This initiative has also reflected the attitude of supporting the growing shift of green technologies in battery production, catering to automakers aiming to meet global emission standards.

Therefore companies like Mitsubishi Chemical Group are focusing on natural graphite and are producing high-performance anode materials with a lower environmental impact thereby contributing to a more sustainable lithium-ion battery industry. This initiative supports decarbonization efforts but also strengthens the adaptation of EVs and renewable energy storage solutions.

Impact of growing demand for lithium-ion batteries over anode material production:

The demand for anode material used in lithium-ion batteries is highly dependent on the surging demand of electric vehicles and the renewable energy sector. These are the two game-changing factors in the battery market. The global transition to electric vehicles and the ongoing expansion of renewable energy infrastructure is expected to shape the future of the battery industry.

Companies are investing billions to meet this demand and they are focusing on the production of lithium-ion batteries as well as the development of next-gen alternatives. Thus the rise of gigafactories, advancements in battery technologies and growing demand for EVs are driving this transformation and let's explore how.

Electric vehicles market:

In recent years, the electric vehicles market has been pushing its boundaries and global car manufacturers are committing to phasing out conventional fossil fuel-powered cars. On the other hand, the governments pushing for stricter emission standards, which is making the automakers ramp up their EV production to meet the future demand. Now these efficient and sustainable vehicles require the right kind of battery technology, particularly Lithium-ion batteries. Therefore these lithium-ion batteries are dominating the current market due to their high energy density and longer lifespan. In parallel with this automotive spirit, investments in renewable energy sources such as solar and wind are surging. As these sources grow, the need for efficient energy storage systems is also growing. Overall, Li-ion batteries have become the cornerstone for this storage, helping to balance energy supply and demand.

Expansion of gigafactories:

The massive demand for Li-ion batteries has triggered massive investments in gigafactories and their expansion. Gigafactories are specialized plants that are designed for large-scale battery production. Some of the leading companies such as CATL, Tesla, LG Energy Solution and Panasonic are at the forefront of these developments and with their huge investments they are ramping up their production capacities. For instance, Tesla announced in 2024, that they would establish Seven new gigafactories across Europe, the US, and Asia-Pacific signalling their commitment to meet the growing EV demand.

Reliance Industries is also setting up 5 gigafactories in the country, ensuring a local supply chain for battery production.

Likewise, in India, Reliance Industries, Amara Raja, Tata Group, and Exide industries are all investing heavily in gigafactories each aiming to tap into the surging demand for batteries in the electric vehicle and energy storage sectors.

Indonesia has made strides by launching Southeast Asia's first EV battery plant in JAVA, with an estimated annual capacity of about 10 GWh. These developments have only reinforced the region's role in the global battery supply chain.

We can witness their promising attitude to meet the growing demand for Electric vehicles and energy storage while they create a strategic shift toward localized battery production, reducing the dependency on imports, and fostering the regional supply chains.

Emerging battery technologies – A future beyond Li-ion

The Li-ion batteries are regarded as the gold standard, while there are also other alternative battery technologies emerging with the potential to disrupt the global market. For instance, sodium-ion batteries are explored for their ability to replace lithium as they potentially offer cheaper and more abundant raw materials. Flow batteries are also gaining traction due to their scalability and their ability to store large amounts of energy for long durations making them ideal for renewable energy storage.

Overall in the quest for enhanced energy storage solutions, industry leaders such as BYD, and CATL are investing heavily in the development of sodium-ion batteries and companies like Amprius Technologies, Enovix, group 14 technologies and Li-S energy are working on advanced Li-ion battery

chemistries. They are also working on the development of lithium-silicon and lithium-sulphur batteries that promise greater energy densities and faster charging times.

Overall these developments indicate that the future of energy storage could see a diversified mix of battery technologies Li-ion batteries continue to dominate the automotive sector and other alternatives such as sodium batteries and flow batteries are allocated for serving the niche applications in energy storage.

Industry automation and their reliance on battery-powered solutions:

In recent times, industry automation has creating a huge impact and is often an over-looked aspect while considering the battery market. Many industries are adopting automated material handling systems such as automated guided vehicles(AGVs), elevating equipment, robotic systems, and so on. These are all battery-powered solutions and they are on the rise.

Lithium batteries are now increasingly adopted in material-handling equipment such as forklifts, industrial trucks and ground support systems. These are considered advanced battery-powered systems that are increasingly adopted for their efficiency and ability to cut down operational costs.

With the continuous growth of Industry 4.0 and the integration of automation in logistics, lithium-ion batteries are playing a significant role in this next phase of industrial innovation.

Final thoughts:

Anode materials play a significant role in the relentless pursuit of sustainability and efficiency in the lithium-ion battery industry, particularly those derived from natural graphite. Since the demand for EVs and renewable energy storage and industry automation is accelerating, the adoption of environmentally friendly materials is not just a choice, but a necessity. Therefore leveraging natural graphite that offers lower GHG emissions and enhanced life cycle performance, the big heads in the chemical industries are redefining what it means to innovate responsibly. Overall this shift is beyond technological advancement and it represents the commitment to building a future where progression harmonizes with planetary stewardship.

Renue by Science Launches Innovative Liposomal NAD+ Skincare Line, Renue Blue, Emphasizing Skin Wellness and Longevity

JACKSONVILLE, Fla., Jan. 7, 2025 / PRNewswire/ -- Renue by Science™, a global leader in NAD+ precursor supplements, is excited to announce the official launch of its highly anticipated skincare range, Renue Blue™. With a focus on skin longevity and holistic wellness, this revolutionary line features cutting-edge ingredients and advanced nanoliposome technology designed to deliver powerful regenerative benefits deep into the skin.

Renue Blue's skincare range has been developed using the latest research in skincare science. Each formulation includes NAD+ boosters known to promote skin rejuvenation. These include NMN (Nicotinamide Mononucleotide) and NR (Nicotinamide Riboside), alongside a novel antioxidant, Methylene Blue. These and other medical-grade ingredients have been scientifically validated to support cellular health and enhance skin vitality.

What sets the Renue Blue skincare line apart is its superior mode of delivery. Liposomes safely carry the active ingredients, which include an NAD+ Complex (NAD+, NMN & NR), Resveratrol, and Apocynin, past the outer skin barrier and deep into your cells. The formulation allows for these potent ingredients to reach the target site before releasing them to offer a targeted skin treatment. As a result, Renue Blue offers an innovative approach to skincare, combining the latest breakthroughs in scientific research with the pursuit of achieving the appearance of healthier, more radiant skin.

"We have seen tremendous success with NAD+ Boosters with Renue by Science over the past 7 years and felt that the market and demand for topical skincare applications

of NAD+ was expanding, so creating Renue Blue has allowed us to focus research and development on skincare along with the introduction of other novel ingredients such as Methylene Blue, the hero ingredient and inspiration for the brand," said Bryan Nettles/CEO & Founder of Renue by Science. "With Renue Blue, we're not just offering skincare products; we're providing a comprehensive, research-driven solution for forward-thinking individuals who want to optimize their skincare routine while promoting overall wellness and skin longevity."

The launch coincides with the unveiling of a new website, renueblue.com, where you can explore the complete Renue Blue collection, learn about the science behind the ingredients, and discover tips for integrating the products into your skincare routine. The user-friendly site will serve as the go-to destination for those committed to looking and feeling their best.

Renue Blue is designed for anyone who values health, wellness, and longevity. As the brand enters the skincare market, it aims to empower the longevity community with research, knowledge, and tools to enhance their skin health—increasing not only their skin's resilience but also their confidence.

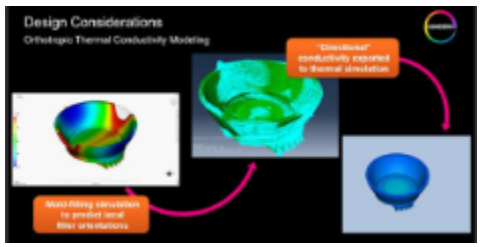
Source : PRNewswire

Digital technologies help optimize heat management of thermally conductive polycarbonates

- **High-fidelity simulation approach increases accuracy of predicting thermal performance of injection-molded heatsinks**
- **Web-based tool enables customers to virtually test their heatsink designs**

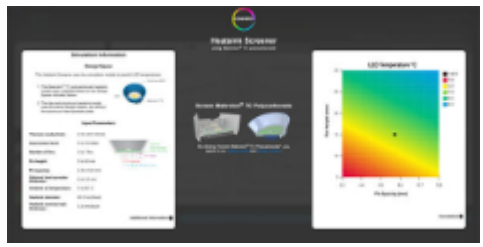
As the latest electronics developments take center stage at CES 2025, Covestro announces it has developed a top tier digital design and simulation suite of tools for optimizing heat management with its Makrolon® TC thermally conductive products (patent pending).

The high-fidelity simulation approach will improve the accuracy of predicting the thermal performance of injection-molded heatsinks made using Makrolon® TC thermally conductive products. Using micromechanics, the new ability to account for the directional, or anisotropic, thermal conductivity from fiber filler particle orientations in a molded heatsink increases the accuracy in the downstream heat transfer simulation using computational fluid dynamics (CFD).



Another Covestro development, a Makrolon® TC Heatsink Screener, is a web-based tool based on AI technology that offers customers the ability to virtually test their own heatsink designs using various Makrolon® TC polycarbonates and compare them with traditional metal materials, namely die-cast aluminum. The Heatsink Screener tool also offers, for consideration, optimized design configurations that balance heat management with weight and cost advantages.

"We are excited to provide our customers with the highest level of design and



material solutions to meet the rigorous technical demands of automotive lighting, where we see significant weight and cost saving opportunities enabled by Makrolon® TC," said Karen Guzman,

Industrial Marketing for Mobility at Covestro.

"These digital developments are great examples of our commitment to our customers to be innovators of more sustainable polycarbonate-based solutions, not only in mobility, but across many markets—such as electronics—where heatsinks are used in a broad range of applications," adds Eric Saks, Industrial Marketing for Electronics at Covestro.

Covestro's Makrolon® polycarbonate is known for its outstanding properties, such as high impact resistance, transparency and heat resistance, as well as heat management, making it suitable for a wide range of applications.

Source : Covestro

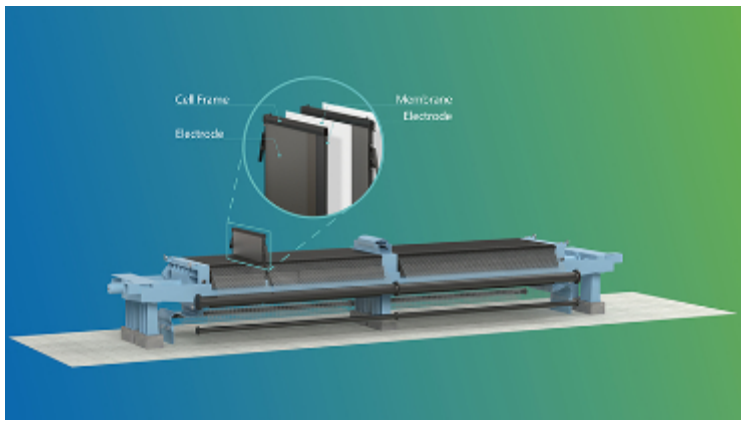
Asahi Kasei receives governmental support to expand manufacturing capacity for green hydrogen production equipment in Japan

Asahi Kasei has received governmental support for the expansion of its manufacturing capacity for cell frames and membranes of alkaline water electrolyzers for the production of green hydrogen at its plant site in Kawasaki, Japan. The purpose is to establish a stable domestic manufacturing supply chain for technologies that contribute to achieving the country's goal of carbon neutrality by 2050.

Driven by expectations for green hydrogen as a clean energy alternative to fossil fuels, the annual installed capacity of water electrolyzers globally is forecasted to reach 31 GW by 2030. As such, the manufacturing capacity for electrolyzers and related components needs to be scaled up in order to keep pace with the expanding demand for the production of hydrogen.

For decades, Japan has been a leader in the field of technology for hydrogen production and utilization. Green hydrogen is one important cornerstone of the country's "Green Transformation (GX)" strategy to achieve carbon neutrality by 2050. As one part of this strategy, the "GX Supply Chain Construction Support Project" aims at establishing a world's first domestic manufacturing supply chain for cutting-edge technologies that will contribute to achieving Japan's climate goals, while nurturing economic growth.

Increasing annual production capacity to 2 GW



Asahi Kasei is a comprehensive manufacturer and provider of alkaline water electrolyzers for the production of hydrogen. Within the abovementioned governmental program, Asahi Kasei proposed to build new plants for both cell frames and membranes for electrolysis having manufacturing capacity of at least 2 GW each at the company's plant site in Kawasaki, Kanagawa Prefecture, Japan, by 2028. On December 18, the Japanese Government adopted this proposal for financial support. The total capital investment for this project is estimated to be approximately ¥35 billion, and Asahi Kasei expects to receive a subsidy of up to ¥11.4 billion through this initiative.

Including the current manufacturing capacity for Asahi Kasei's ion-exchange membrane chlor-alkali electrolysis process, this expansion will raise the company's total annual capacity for cell frames and membranes to more than 3 GW.

Asahi Kasei aims to create synergies between its two electrolysis businesses by establishing a system that can respond to both the uncertain expansion of the hydrogen market and the growing demand in the chlor-alkali electrolysis business, which has earned a high level of trust and market share from customers around the world.

"Even as it remains unclear when a hydrogen society will become a reality, we need to swiftly establish and expand a production system

to seize the opportunity of market expansion and earn our share of the water electrolysis equipment market," comments Masami Takenaka, Lead Executive Officer of Asahi Kasei and Senior General Manager of its Green Solution Project. "Looking ahead to the huge market that will emerge from a new hydrogen ecosystem while anticipating market expansion toward 2030, we aim to build the world's largest water electrolysis equipment manufacturing capacity and supply system through further capital investment and alliances with partners built through existing businesses, including overseas. Through these efforts, we aim for a 20% share of the world's major water electrolysis equipment markets, primarily in Europe, North America, and India, by around 2030, which will contribute to strengthening the green hydrogen supply base worldwide while raising the industrial competitiveness of Japan in the field of hydrogen."

"The lack of inexpensive electricity from renewable energy sources, as well as unstable supply, pose serious challenges to the further expansion of the green energy market," comments Kenji Takeda, Executive Officer of Asahi Kasei responsible for Ion Exchange Membranes, Microza & Water Processing, and Green Solution Project Business Development. "Establishing a stable manufacturing supply chain for green hydrogen is another major step towards realizing a hydrogen society. We will work with the Ministry of Economy, Trade and Industry (METI), which is promoting GX to the fullest extent, to become a leading global supplier in the field of water electrolysis, while leveraging our strong network in the ion-exchange membrane industry."

Source : Asahi Kasei

OQ Introduces Luban LL-8446.21: Advancing Water Security

OQ, Oman's global integrated energy group, has unveiled Luban LL-8446.21, an advanced rotomoulding-grade polymer designed to tackle critical water scarcity challenges. Launched at Arabplast 2025, this solution is tailored to meet the water and food storage needs of communities worldwide, particularly in regions facing severe resource shortages.

Providing Practical Solutions to a Global Challenge

Water scarcity is an escalating global crisis, with billions of people already impacted and the situation expected to worsen due to population growth and climate change. Luban LL-8446.21 offers a practical solution, enabling the production of durable water tanks. Designed for long-term use, this LLDPE grade provides long-term reliability in water-stressed regions.

"Water scarcity remains one of the most pressing challenges of our time, and Luban LL-8446.21 reflects our commitment to addressing this issue with solutions that benefit communities and industries," said Abdul Rahman Al Tamtami, Vice President of Global Marketing at OQ.

Key Features supporting water security:

Rotomoulded articles produced from OQ Luban LL-8446.21 offer excellent environmental stress crack resistance (ESCR) and weatherability, making them a sustainable alternative to other materials. Key sustainability features include:

Durability: Designed for extended use in harsh environments, Luban LL-8446.21 ensures consistent performance, making it suitable for water tanks, agricultural storage, and other critical applications.
Lower Carbon Footprint: Advanced processing features, such as reduced cooking times, enable significant energy savings for manufacturers, translating into reduced carbon emissions.

Energy Efficiency: Lightweight and resource-efficient, it reduces energy consumption during production, transport, and installation.

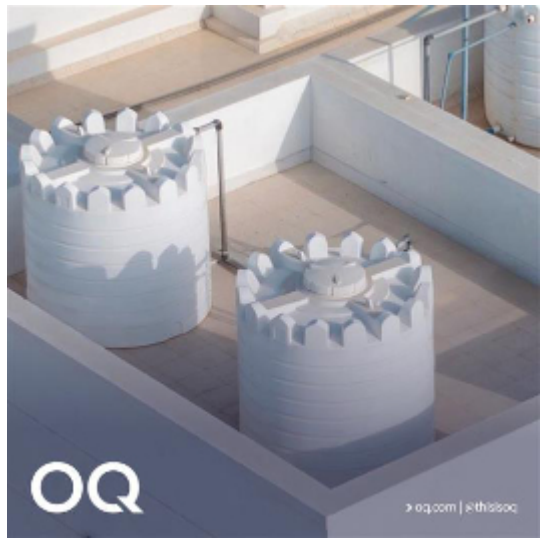
Food-Safe Applications: Meeting food contact safety standards, Luban LL-8446.21 supports secure storage of water, agricultural and food products essential for daily life.

Recyclability: Designed for ease of recovery and recycling, the product supports circular economy principles, minimizing its environmental footprint.

Recognized for Excellence: Oman Energy Association (OPAL) Best Practices Nomination

The combination of Luban LL-8446.21's exceptional qualities and applications have earned OQ a nomination for the prestigious 2024 OPAL Best Practices Award. With over 100 customer approvals worldwide, the rotomoulding solution is quickly gaining recognition for its ability to address water and food security needs effectively. OPAL is a non-profit organisation dedicated to enhancing Oman's energy sector by promoting industry standards, safety, and human resource development.
"This OPAL nomination showcases the strong impact of Luban LL-8446.21 on both our business and the industries it serves," said Sadiq Al Lawati, Managing Director of Polymer Marketing at OQ. "It is a testament to our dedication to providing sustainable and high value solutions to our customers."

Broad Applications Beyond Water Storage
In addition to water tanks, Luban LL-8446.21 offers exceptional versatility, supporting applications such as traffic barriers and road cones, as well as durable consumer goods like cool boxes and children's slides.



Innovation is part of OQ's DNA and this includes driving product development projects from inception to launch. Already future cutting-edge rotomoulding solutions incorporating advanced materials such as 1-hexene are in development. These aim to further enhance the mechanical properties and environment stress-cracking resistance, ensuring broader application reach.

Driving Global Progress Through Sustainability

Luban LL-8446.21 reflects OQ's commitment to sustainable development . Engineered using advanced Unipol PE technology, this product represents a leap forward in high value polymer solutions, providing both mechanical performance and environmental benefits.

OQ's proactive approach to regulatory compliance and customer feedback ensures the continued development of cutting-edge products that drive progress in the polymer industry. As the company expands its rotomoulding portfolio, it remains steadfast in its mission to deliver impactful solutions that align with global sustainability goals.

Source : Press Release

OxReduce L7-NPG from OQ Chemicals: New Biobalanced Low Viscosity Lubricant Ester with Reduced Carbon Footprint

Monheim am Rhein, Germany, Nov. 7, 2024 – The global chemical company OQ Chemicals has launched OxReduce L7-NPG. This new bio-circular synthetic lubricant base oil serves as an alternative to the fossil-based Oxlube L7-NPG. Produced under the mass balance approach according to the International Sustainability & Carbon Certification (ISCC) PLUS standard, OxReduce L7-NPG is made from sustainably sourced, palm oil-free, bio-circular feedstocks. All components of the product are fully traceable, from the raw material bionaphtha to production at OQ Chemicals. As an alternative to its synthetic equivalent, OxReduce L7-NPG contains up to 84% renewable carbon, enabling manufacturers to lower the product carbon footprint (PCF) of their lubricant formulations without compromising performance.

OxReduce L7-NPG is a non-toxic ester

EVENTS AND CONFERENCES

PAINT INDIA

Date : Jan. 30-31, 2025

City : IICC (Yashobhoomi), Dwarka, New Delhi

Country : India

Website : https://paintindia.in/

Description : PaintIndia is the premier trade fair for the paints, coatings and allied industries in this part of the world, and the third largest show of its kind the world over. It has been in existence for over 25 years now, and has been the fastest growing event globally in this space. It comes from the same lineage as the magazine of the same name, which has been serving the Industry for over 70 years now. More recently, it has been fortified and strengthened globally with the joint ownership between the erstwhile owners and the owners of the European Coatings Show.

WATER EXPO

Date : Feb. 26-28, 2025

City : Chennai Trade Centre

Country : India

Website :https://www.waterexpo.biz/

Description : The 18th Edition of Water Today's WATER EXPO 2025 in Chennai will introduce yet another avenue for many organisations in the water and wastewater industry. In 2025, many start-ups are looking to do a promising business, while those established can use this platform as a stage to reaffirm their position among industry buyers and end users. In Chennai, the Water Expo will work as an effective business hub to connect manufacturers & distributors with buyers, professionals, dealers, municipalities, contractors, and potential decision-makers from several industrial sectors. The upcoming event will also feature developments and opportunities for startups, emerging companies, and distributorship networks across India.

The event is a platform for manufacturers of equipment, technologies, products, and processes in the different water and wastewater sectors like sewer infrastructure, industrial water & effluent, sanitation, environmental services, water quality, drinking water supply, effluent treatment plants, sewage treatment plants, and industries.

48TH DYE+CHEM SRI LANKA INTERNATIONAL EXPO

Date : Mar. 13-15, 2025

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

Country :Sri Lanka

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

Description : 1. The garment industry provided 52% of Sri Lanka's total export earnings in recent years, and the final products of the apparel sector are heavily dependent on the dye chemicals sector, making the dyestuff sector one of the key components of the country's chemical industry
2. The majority of Sri Lanka's textile dye chemical imports come from Singapore, India, and Pakistan; according to current

reports, the country ranks third in the world for textile dye chemical imports!
3. Sri Lanka is largely dependent on imported chemicals and dyes. Compared to its local production, Sri Lanka imports a substantial amount of chemicals and dyestuffs annually, which makes them a major draw for exporting nations
4. Major investments in Sri Lanka are happening in the textile & garment sector. The dye chemical industry is a key sector that needs continuous upgrading and acquisition of new technology and equipment
Th5. e largest and oldest Exhibition of its kind, Dye+Chem Sri Lanka provides Fine & Specialty Chemicals and Dyes to the Sri Lankan industry, and it is surely becoming even more relevant
6. The 48th Dye+Chem Sri Lanka 2025 is a significant International Exhibition with worldwide Dyestuffs and Fine and Specialty Chemical Manufacturers. It highlights Sri Lanka's complete Textile and Apparel Industry as well as the other significant manufacturing sectors of the nation
7. Participate in the one-of-a-kind Exhibition. Meet and connect with potential buyers through the Expo

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CPHI JAPAN

Date : Apr. 9-11, 2025

City : East Halls 4, 5 & 6, Tokyo Big Sight, Tokyo, Japan

Country : Japan

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

Description : The event successfully concluded with 720 exhibiting companies and 21,159 unique attendees from 60 countries around the world. We invited the global pharma community to convene under one roof for three days of networking, forging important alliances and propelling the Japanese pharma sector forward.

EXPO PAINT AND COATING

Date : Jan. 21-23, 2025

City : Dhaka, Bangladesh

Country : Bangladesh

Website : https://expopaintcoating.in/about.html

Description : Expo Paint & Coatings - 2025 is a comprehensive Paint & Coatings Exhibition providing platform to the needs of every facade of the coating industry right from raw materials, formulation, application, technology, finishing, quality assurance, recycling and disposal. The Exhibition will feature a wide range display of products, Raw Materials, Application systems, Machines, Tools, current trends, development & innovations shaping future of coating industry.

Expo Paint & Coatings - 2025 will bring together leading local and international manufacturers, formulators, buyers, industry professionals, consultants, enthusiasts and prospective entrants from the Paint & Coatings, surface finishing & allied industry presenting unrivaled opportunities to network, exchange best practices, do business, unveil new products and source cutting-edge products, technologies and solutions.

base oil that combines a low pour point and low viscosity with a high flash point. Its treatment rates are not limited by biological degradation or aquatic toxicity. OxReduce L7-NPG is used as a lubricant base oil or additive in the automotive industry. It is also suitable for applications such as metalworking and energy-efficient cooling systems, where original equipment manufacturers (OEMs) strive to meet CO2 reduction targets. For marine environments, the product complies with the Vessel General Permit (VGP), ensuring reduced ecological impact.

"At OQ Chemicals, we support our customers in their transition to more sustainable solutions by providing access to commercial quantities with a reduced PCF while maintaining high product quality. With our certified biobalanced products like OxReduce L7-NPG, customers can enhance their sustainability profiles, meet increasing regulatory requirements and consumer demand for environmentally friendly products," explained Dr. Claudia Fischer, Director Global Business Development at OQ Chemicals.

OxReduce L7-NPG complements the company's product range, including the conventional OxLube L7-NPG, which is already listed under the Lubricant Substance Classification (LuSC) list. The biobalanced version is also expected to be considered for LuSC listing, providing a potential path for customers to achieve their EU Ecolabel certification for environmentally acceptable lubricants (EALs).

Source : OQ Chemicals

Ace Green Recycling expands LFP battery recycling capacity, lays vision for India's largest LFP battery recycling facility

HOUSTON, Jan. 8, 2025 / PRNewswire/ -- Ace Green Recycling, Inc. ("Ace" or the "Company"), a leading provider of sustainable battery recycling technology solutions, today announced it has finalized a lease agreement for a site to build India's largest battery recycling facility. To be located in Mundra, Gujarat, the facility will build on Ace's existing Indian commercial operations, which have been recycling lithium-ion batteries since 2023 including lithium iron phosphate ("LFP") chemistries. As a part of this expansion, Ace announced plans to establish 10,000 metric tons of LFP battery recycling capacity per year in India by 2026, to meet the growing demand for LFP battery recycling. This strategic deployment of LithiumFirst™ LFP battery recycling technology in India will be phased in along with the planned deployment of the Company's technology in Texas.

Ace's strategic location in Mundra, near major ports handling over 10% of India's maritime cargo, significantly streamlines the transportation of battery recycling feedstock and off-take products. The new facility will utilize Ace's innovative and modular LithiumFirst™ technology to recycle LFP batteries at room temperature in a fully electrified hydrometallurgical process producing no Scope 1 carbon emissions, and with zero liquid and solid waste. Throughout this process, the proprietary Ace technology has maintained commercial lithium recoveries from LFP batteries at levels of around 75%, producing lithium carbonate of purities exceeding 99%, which is fed back into the battery materials value chain.

In addition to recycling LFP batteries, Ace plans to use its GreenLead® recovery technology to recycle lead batteries at its Mundra recycling park. This technology is a far more environmentally-friendly alternative to legacy smelting operations, with its fully electric process producing zero Scope 1 carbon emissions.

"LFP is expected to dominate the lithium battery market by 2030, and Ace is strategically scaling our LFP battery recycling

capacity to meet demand and support our growing customer base," said Nishchay Chadha, CEO of Ace. "We believe that Ace is unique in its ability to sustainably recycle LFP batteries, and we plan to continue our focus on this market to build on our first-mover advantage. Our team recently visited battery recycling facilities in China, and we believe our LFP battery recycling technology to be more advanced despite a more mature and larger scale lithium-ion recycling ecosystem there."

"Ace's innovative technology enables profitable recycling of LFP batteries, even with the current low lithium price, by recovering significant amounts of these critical minerals. We believe that our successful operational demonstration positions us for future partnerships and collaborations that will unlock the full potential of our LithiumFirst™ technology in this market," said Vipin Tyagi, Chief Technology Officer of Ace.

When fully operational, Ace expects the Mundra LFP battery recycling facility to create up to 50 high value jobs in the local economy, bringing the company's employment in India to over 100.

Source : ACE Green Recycling

Univar Solutions and DSM-firmenich Unveil Exclusive Distribution Partnership for Innovative Actives Portfolio in Beauty and Personal Care

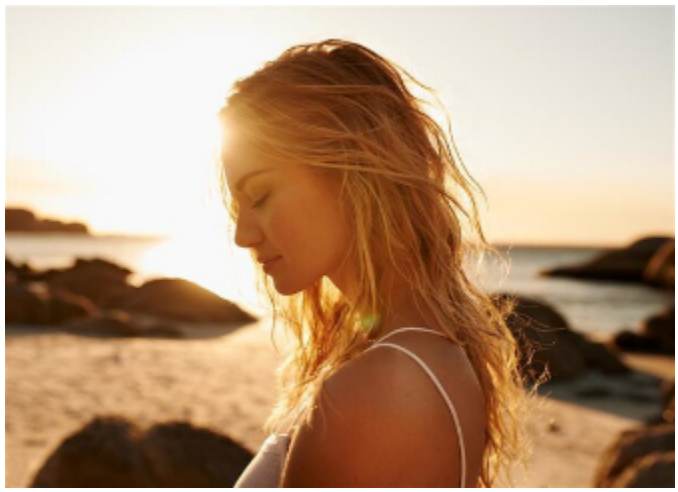
DOWNERS GROVE, Ill., Jan. 8, 2025 /PRNewswire/ -- Univar Solutions LLC ("Univar Solutions" or "the Company"), a leading global solutions provider to users of specialty ingredients and chemicals, today announced an exclusive distribution agreement for the United States, Canada, and Puerto Rico with dsm-firmenich ("dsm-firmenich"), a renowned global innovator in nutrition, health, and beauty. This expanded partnership strengthens and diversifies Univar Solutions' beauty and personal care portfolio by adding dsm-firmenich's industry leading breakthrough skin actives and bioactive skin care ingredients including synthetic peptides, organically grown plant extracts and other natural ingredients.

Julie Carnes, global senior supplier director for Univar Solutions, shared, "Univar Solutions proudly serves as the exclusive distributor for dsm-firmenich's beauty care portfolio, empowering customers to craft advanced and scientifically-backed personal care solutions that resonate with the latest market trends and key consumer needs. We are excited to showcase this expansive range of beauty Bioactives, Peptides, and Naturals to our diverse customer base, firmly believing in the efficacious ingredients that dsm-firmenich brings to the market."

The collaboration between Univar Solutions and dsm-firmenich leverages both market leaders' unique strengths and deep expertise, providing customers with a simplified, centralized point of contact for all their ingredient requirements. Combining dsm-firmenich's vast knowledge, state-of-the-art science, and expansive product selection with Univar Solutions' unparalleled market insights, distribution capabilities, and technical know-how, this alliance is well-positioned for significant growth and achievement.

"We're thrilled to further expand our partnership with Univar Solutions in North America," said Vicki Barboiu, senior director, dsm-firmenich Beauty &

Care N.A. "Their broad customer network, comprehensive service offerings, and strong operational capabilities bring exceptional value to our customers in the personal care industry. We look forward to continuing our collaboration with Univar Solutions to deliver even greater benefits to our customers."



As Univar Solutions and dsm-firmenich embark on this exclusive partnership, the future of the beauty and personal care industry is poised for a transformative shift. Together, these industry pioneers are committed to pushing the boundaries of innovation, leveraging their collective expertise, and delivering unparalleled products and services to customers across North America. With a shared dedication to scientific development and an unwavering focus on customer satisfaction, Univar Solutions and dsm-firmenich are primed to reshape the beauty landscape and redefine industry standards for years to come.

Univar Solutions' specialized beauty and personal care business caters to skin care, hair care, body care, sun care, and color cosmetics customers, offering a full suite of customized products and services. Backed by its robust transportation network, global distribution footprint, and supply chain proficiency, Univar Solutions provides a holistic customer experience, from product development to ongoing brand support. This commitment to excellence is further bolstered by Solution Centers research and development laboratories strategically located in Houston, Texas, Mexico City, Mexico, and Paris, France, driving innovation and advancement in the beauty industry. For more information about Univar Solutions' beauty and personal care expertise, visit univarsolutions.com/beauty-personal-care.

Source : Univar Solutions LLC

i2Cool Powers Green Event Management at Hong Kong Coliseum with Electricity-free Cooling Technology

HONG KONG, Jan. 6, 2025 / PRNewswire/ -- i2Cool, a trailblazer in passive radiative cooling technology, has successfully applied its green and energy-efficient paint to the rooftop and side walls of the Hong Kong Coliseum. Supported by the Environment and Ecology Bureau and Architectural Services Department of Hong Kong, i2Cool strengthens the Coliseum's green event management efforts, contributing to Hong Kong's 2050 carbon neutrality goals and showcasing its commitment to promoting eco-friendly practices globally.

The Hong Kong Coliseum, a landmark of Asia's entertainment landscape and a key venue for the 2025 National Games of China, has applied i2Cool's cooling paint across 9,700 square meters for sustainable operations. This application

is expected to lower surface temperatures by an average of 24°C in summer, enhancing indoor comfort and saving approximately 300,000 kWh of electricity annually—equivalent to reducing 150 tons of carbon emissions.

Inspired by the Saharan Silver Ant's unique hair structure, i2Cool's R&D team, led by Co-founder Professor Edwin TSO from the School of Energy and Environment at City University of Hong Kong, developed multi-scale nanoparticle materials achieving 95% solar reflectivity and mid-infrared emissivity. The electricity-free cooling paint, iCool's flagship product, reduces air conditioning costs by 10% to 40% and enhances electricity generation by 3% to 8%, ideal for building exteriors and outdoor facilities. It sets a new industry benchmark, surpassing a 90% reflectivity limit. i2Cool's product ecosystem also includes cooling film, ceramic and textile solutions.

"This project showcases how i2Cool's technology can cut air-conditioning demand and transform urban spaces," said Professor Martin ZHU, co-founder and CEO of i2Cool. Mr. Tse Chin-wan, Secretary for Environment and Ecology of Hong Kong, visited the site and highlighted the energy-saving impact of this project.

Building on the success of i2Cool's cooling solutions in enduring the extreme heat of the Middle East at Dubai Mall, the world's largest mall by total area, the Hong Kong Coliseum project marks another milestone in i2Cool's global expansion, paving the way for future applications in the Middle East, Southeast Asia, North America and Europe.

Source : i2Cool Limited

Vatrer Power Debuts Latest LiFePO4 Sustainable Energy Technology Solutions at CES 2025

LAS VEGAS, Jan. 8, 2025 /PRNewswire/ -- Vatrer Power, the leading Lithium Iron Phosphate (LiFePO4) product and technology solution provider, is currently showcasing its latest sustainable energy solutions and products for consumer electronics, home energy storage, and electric vehicles at Booth #35906 during CES 2025, held from January 7 to 10 in Las Vegas.

"The CES exhibition is not only a platform to highlight our latest products but also an opportunity for us to communicate with global innovators, industry leaders, consumer users, and more. The brand mission of Vatrer Power is 'to make green energy at your fingertips,' and we hope to welcome you

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 on 06/01/2025

Name of Chemical	Current Price	Location
Acetic Acid-Imported Repack	46	Mumbai
Acetic Acid-Domestic Intact	56	Mumbai
Styrene Monomer-Imported Repack	46	Mumbai
Acetone-Imported Repack	77	Mumbai
Acetone-Domestic Intact		Mumbai
Acetone-Domestic Intact	77	Mumbai
Acetonitrile-Imported Intact	30	Mumbai

Acetonitrile-Domestic Intact	155	Mumbai
Acetonitrile-Domestic Repack	130	Mumbai
Acrylonitrile-Imported Intact	160	Mumbai
Acrylonitrile-Imported Repack	150	Mumbai
Aniline-Imported Intact	158	Mumbai
Aniline-Domestic Intact	162	Mumbai
Benzene-Domestic Repack	90	Mumbai
Cyclohexane-Imported Intact	120	Mumbai
Cyclohexane-Domestic Intact	107	Mumbai
Cyclohexane-Domestic Repack	105	Mumbai
Cyclohexanone-Imported Intact	146	Mumbai
Cyclohexanone-Imported Repack	127	Mumbai
Cyclohexanone-Domestic Intact	150	Mumbai
Cyclohexanone-Domestic Repack	137	Mumbai
C9 Solvent (99.99% purity)-Imported Repack	83	Mumbai
C9 Solvent (Arham Petrochem)-Imported Repack	82.75	Mumbai
Dibutyl Phthalate-Domestic Intact	119	Mumbai
Dioctyl Phthalate-Domestic Intact	125	Mumbai
Ethyl Acetate-Domestic Intact	77	Mumbai
Ethyl Acetate-Domestic Repack	73	Mumbai
Formaldehyde(37%)-Domestic Repack	21.5	Mumbai
Methanol-Imported Repack	40.5	Mumbai
Methyl Ethyl Ketone-Imported Intact	120	Mumbai
Methyl Ethyl Ketone-Imported Repack	112	Mumbai
Methyl Isobutyl Ketone-Imported Intact	159	Mumbai
Methyl Isobutyl Ketone-Imported Repack	143	Mumbai
Methyl Methacrylate-Imported Intact	146	Mumbai
Mixed Xylene-Imported Repack	77	Mumbai
Mixed Xylene-Domestic Repack	77	Mumbai
Monoethylene Glycol-Imported Repack	59	Mumbai
Monoethylene Glycol-Domestic Intact	65	Mumbai
Monoethylene Glycol-Domestic Repack	60	Mumbai
Iso propyl Alcohol-Imported Repack	104	Mumbai
Iso propyl Alcohol-Domestic Intact	115	Mumbai
Iso propyl Alcohol-Domestic Repack	104	Mumbai

nButanol-Imported Repack	92	Mumbai
nButanol-Domestic Intact	104	Mumbai
nButanol-Domestic Repack	92	Mumbai
Ortho Xylene-Imported Repack	110	Mumbai
Phenol-Imported Repack	103	Mumbai
Phenol-Domestic Intact	108	Mumbai
Phenol-Domestic Repack	103	Mumbai
Phthalic Anhydride-Imported Intact	101	Mumbai
Phthalic Anhydride-Domestic Intact	101	Mumbai
Styrene Monomer-Imported Repack	112	Mumbai
Toluene-Imported Repack	88	Mumbai
Toluene-Domestic Repack	88	Mumbai
Vinyl Acetate Monomer-Imported Repack	80	Mumbai

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

International market prices as on 09/01/2025

Product	Regions	Current prices
Feedstock Prices $/unit		
Crude Oil ($/barrel)	WTI CRUDE	73.38
	BRENT CRUDE	76.23
	MARS US	73.93
	OPEC BASKET	76.07
Natural Gas	New York	3.63
Gasoline	RBOB	2.01
Heating Oil	US	2.35
Ethanol	US	1.65
Naphtha	FOB Singapore	645
	European	635
	CFR Far East Asia	669
Propane	New York	0.87
Aromatics prices $/MT		
Benzene	FOB Korea	855
	CFR Japan	875
Styrene	CFR Japan	995

	CFR South East Asia	1060
	CFR China	995
	FOB Korea	985
Toluene	CFR China	755
	CFR South East Asia	795
	FOB Korea	755
	CFR Japan	755
Iso-Mix Xylene	CFR South East Asia	780
	CFR Taiwan	775
	FOB Korea	765
MEG	CFR China	540
	CFR South East Asia	550
Methanol	CFR China	307
	CFR Korea	346
	CFR South East Asia	353
	CFR Taiwan	342
Solvent-MX	CFR South East Asia	810
	FOB Korea	725
	CFR China	735
Ortho Xylene	CFR South East Asia	850
	FOB Korea	830
	CFR China	840
Para Xylene	CFR South East Asia	825
	FOB Korea	810
	CFR Taiwan	830
Propylene	FOB Japan	785
	FOB Korea	825
	CFR China	865
	CFR South East Asia	825
Propylene Glycol	FOB Korea	820
	CFR China	850
Ethylene	CFR North East Asia	870
	CFR South East Asia	915
	FOB Japan	825
	FOB Korea	830

EDC	CFR Far East Asia	275
	CFR South East Asia	275
Butadiene	CFR China	1305
	CFR South East Asia	1175
	FOB Korea	1255
Benzene	FOB Rotterdam	870
Methanol	FOB Rotterdam	443
Ortho Xylene	FOB Rotterdam	1085
Para Xylene	FOB Rotterdam	845
Solvent-MX	FOB Rotterdam	750
Styrene	FOB Rotterdam	1080
Toluene	FOB Rotterdam	840
Benzene C/G	FOB US Gulf	297
Toluene C/G	FOB US Gulf	296
Styrene C/LB	FOB US Gulf	47.6
Para Xylene $/MT	FOB US Gulf	895
Mix Xylene C/G	FOB US Gulf	286
Methanol C/G	FOB US Gulf	122
Intermediates prices $/MT		
Acrylonitrile	CFR Far East Asia	1230
	CFR South East Asia	1240
	CFR South Asia	1235
VCM	CFR Far East Asia	515
	CFR South East Asia	595
MTBE	FOB Singapore	730
	FOB US Gulf	715
Phenol	CFR China	880
	CFR South East Asia	1010
	FOB US Gulf	1093
	FOB Rotterdam	950
Acetone	CFR China	780
	CFR South East Asia	755
	CFR Far East Asia	655
	FOB US Gulf	1036
	FOB Rotterdam	883

Caprolactum	CFR Far East Asia	1505
	CFR South East Asia	1530
Caustic Soda	FOB North East Asia	420
	CFR South East Asia	490
Ethyl Acetate	FOB US Gulf	1499
	FOB Rotterdam	946
	FD North West Europe(Euro/mt)	1000
Butyl Acetate	FOB US Gulf	1758
	FOB Rotterdam	1229
	FD North West Europe(Euro/mt)	1270
MEK	FOB Rotterdam	1329
	FD North West Europe(Euro/mt)	1365
IPA	FOB US Gulf	1278
	FOB Rotterdam	1124
	FD North West Europe(Euro/mt)	1170
NBA	CFR China	975
	CFR South East Asia	975
	CFR Far East Asia	970
Octanol	CFR China	1045
	CFR South East Asia	1080
	CFR Far East Asia	1040
DOP	CFR China	1160
	CFR South East Asia	1175
	CFR Far East Asia	1155
Phthalic Anhydride	CFR China	935
	CFR South East Asia	945
	CFR Far East Asia	930
PTA	CFR Far East Asia	640
	CFR South East Asia	655
Acetic Acid	CFR Far East Asia	405
	CFR South East Asia	405
	CFR South Asia	390
	FOB China	315
VAM	CFR China	845
	CFR South East Asia	745

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

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

Opening Ports Price (Rs/kg) of Chemicals as on 09/01/2025

USD Exchange Rate: 83.98 INR

Products	Current Prices (INR/kg)	Prices in USD/mt Equivalent to INR/kg	Location
Acetic Acid	39.5	460.16	Ex-Mumbai
Acetic Acid	39	454.33	Ex-Kandla
Acetonitrile-imported intact	135	1572.69	Ex-Bhiwandi
Acetone	68	792.17	Ex-Mumbai
Acrylic Acid	87.5	1019.34	Ex-Mumbai
Acrylonitrile	119	1386.30	Ex-Kandla
Adipic Acid	109	1269.80	Ex-Bhiwandi
Aniline Oil	126.5	1473.67	Ex-Kandla
Benzene	86	1001.86	Ex-Vizaz
Butyl Acetate	87	1013.51	Ex-Kandla
Butyl Acrylate Monomer	117	1363.00	Ex-Kandla
Butyl Glycol	102	1188.26	Ex-Kandla
C10	95	1106.71	Ex-Kandla
C9	69	803.82	Ex-Kandla
Carbon Black-regular grade	60	698.97	Ex-Mumbai
Caustic Soda Lye	44.5	518.41	Ex-Dahej
Chloroform	17	198.04	Ex-Dahej
Citric Acid-ANHYD	74	862.07	Ex-Bhiwandi
Citric Acid-Mono	66	768.87	Ex-Bhiwandi
Cyclohexane	91.5	1065.94	Ex-Hazira
Cyclohexanone	115	1339.70	Ex-Kandla
DMF Drum	79	920.32	Ex-Bhiwandi
DEG	56	652.38	Ex-Hazira
EDC	28.5	332.01	Ex-Kandla
Epoxy Resin	190	2213.42	Ex-Nhava Sheva
Ethyl Acrylate	122	1421.25	Ex-Kandla
Formic Acid	65	757.22	Ex-Bhiwandi
Glycerine	81	943.62	CIF Nhava Sheva
N-Heptane	205	2388.16	Ex-Bhiwandi
Hexane	82	955.27	Ex-Kandla
Hydrogen Peroxide-50%	27	314.54	Ex-Bhiwandi
Isobutanol	82	955.27	Ex-Kandla

IPA	93.5	1089.24	Ex-Kandla
IPA	94.5	1100.89	Ex-Mumbai
LAB	132	1537.74	Imported
Maleic Anhydride-Drum	93	1083.41	Ex-Mumbai
MDC	32	372.79	Ex-Dahej
MEG	54	629.08	Ex-Mumbai
MEK	99	1153.31	Ex-Kandla
Melamine	80	931.97	Imported
Methanol	32.75	381.52	Ex-Kandla
Methanol	32.75	381.52	Ex-Mumbai
MIBK	129	1502.80	Ex-Hazira
Mix Xylene-Solvent Grade	70	815.47	Ex-Kandla
Mix Xylene-Solvent Grade	71	827.12	Ex-Mumbai
MMA	140	1630.94	Ex-Hazira
N-Butanol	86	1001.86	Ex-Kandla
N-Propanol	92	1071.76	Ex-Kandla
NPAC	97	1130.01	Ex-Kandla
Octanol	100	1164.96	Ex-Kandla
Ortho Xylene	97	1130.01	Ex-Kandla
Phenol	87	1013.51	Ex-Kandla
Phenolic Resin	150	1747.44	Ex-Indore
Phthalic Anhydride	99	1153.31	Ex-Mumbai
Propylene Glycol	82	955.27	Ex-Kandla
Sodium Nitrate (50Kg Bag)	61	710.62	Ex-Make-Lasons
Soda Ash Light	35	407.74	Ex-Bhiwandi
Styrene Monomer	97.5	1135.83	Ex-Kandla
Styrene Monomer	101	1176.61	Ex-Mumbai
Sulphuric Acid	10	116.50	Ex-Vapi
Tio2 (Anatase Grade)	192	2236.72	Ex-Bhiwandi
Tio2 (Rutile Grade)	210	2446.41	Ex-Bhiwandi
Toluene	78.5	914.49	Ex-Kandla
Toluene	80	931.97	Ex-Mumbai
VAM	72.5	844.59	Ex-Kandla
VAM	74	862.07	Ex-Hazira

Producer Prices (Rs/kg) of Chemicals as on 09/01/2025

Producers	Current Price (Rs/kg)	Import parity Price in USD/MT	Location
Accord-Ethyl Acetate	64.75	754.31	Ex-Maharashtra
Arham Petrochem-C9	67.75	789.26	Ex-Kandla
Arham Petrochem-C9	68.75	800.91	Ex-Ahmedabad
Arham Petrochem-C10	94.5	1100.89	Ex-Kandla
Arham Petrochem-C10	94	1095.06	Ex-Ahmedabad
Arham Petrochem-C10 (Imported Repack)	100.75	1173.70	Ex-Bhiwandi
Arham Petrochem-MTO/White Spirit (KL)	59.65	694.90	Ex-Kandla
Arham Petrochem-MTO/White Spirit (KL)	60.65	706.55	Ex-Ahmedabad
Arham Petrochem-De-Aromatised D40	130	1514.45	Ex-Kandla
Arham Petrochem-De-Aromatised D40	131	1526.10	Ex-Ahmedabad
Arham Petrochem-De-Aromatised D60	139	1619.29	Ex-Kandla
Arham Petrochem-De-Aromatised D60	140	1630.94	Ex-Ahmedabad
Andhra Petrochemicals-Iso-Butanol	101.5	1182.43	Ex-Vishakhapatnam
Andhra Petrochemicals-N-Butanol	83	966.92	Ex-Vishakhapatnam
Andhra Petrochemicals-Octanol	109	1269.80	Ex-Vishakhapatnam
BASF-Adipic Acid	128	1491.15	Imported
BPCL-2-Ethyl Hexanol (B)	93.44	1088.54	Ex-Kochi
BPCL-2-Ethyl Hexanol (P)	107.35	1250.58	Ex-Kochi
BPCL-2-Ethyl Hexyl Acrylate (B)	132.35	1541.82	Ex-Kochi
BPCL-2-Ethyl Hexyl Acrylate (P)	142.35	1658.32	Ex-Kochi
BPCL-Acrylic Acid (B)	81	943.62	Ex-Kochi
BPCL-Acrylic Acid (P)	90	1048.46	Ex-Kochi
BPCL-Benzene	79.4	924.98	Ex-Mumbai
BPCL-Butyl Acrylate (B)	117.45	1368.24	Ex-Kochi
BPCL-Butyl Acrylate (B)	119.95	1397.37	Ex-Kandla
BPCL-Butyl Acrylate (P)	127.45	1484.74	Ex-Kochi
BPCL-Hexane (KL)	97.9	1140.49	Ex-Mumbai
BPCL-Hexane (MT)	147.44	1717.61	Ex-Mumbai

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BPCL-Hexane (KL)	97.9	1140.49	Ex-Mumbai
BPCL-Hexane (MT)	147.44	1717.61	Ex-Mumbai

BPCL-Iso-Butanol (B)	80.19	934.18	Ex-Kochi
BPCL-Iso-Butanol (P)	100.02	1165.19	Ex-Kochi
BPCL-MTO (KL)	86.25	1004.78	Ex-Mumbai
BPCL-N-Butanol (B)	80.48	937.56	Ex-Kochi
BPCL-N-Butanol (B)	86.61	1008.97	Ex-Kandla
BPCL-N-Butanol (P)	91.48	1065.70	Ex-Kochi
BPCL-Paraffin Wax	110	1281.45	Ex-Delhi
BPCL-Sulphur (Molten)	17.06	198.74	Ex-Mumbai
BPCL-Toluene	77.25	899.93	Ex-Mumbai
Deepak Phenolics-Acetone	66	768.87	Ex-Dahej Gujarat
Deepak Phenolics-IPA	92.5	1077.59	Ex-Dahej Gujarat
Deepak Phenolics-Phenol	84.75	987.30	Ex-Dahej Gujarat
GACL-Caustic Soda Lye	44	512.58	Ex-Dahej Gujarat

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to visit us at the exhibition or follow us online," said Henry Ma, CEO of Vatrer Power.

The Vatrer 48V 105AH Lithium Golf Cart Battery, to be highlighted at CES 2025, adopts EVE's Grade A Prismatic LiFePO4 cells and offers 5.37kWh of energy. It delivers 10.24kW of power with low self-discharge and stable performance that's 50 percent more powerful than similar-sized lithium batteries, and provides strong acceleration to handle tough terrains with ease. Engineered for 48V golf carts, this battery offers powerful energy and compatibility with major golf cart controllers, includes a 58.4V 20A LiFePO4 charger for fast charging, and features a 2.8-inch touchscreen for real-time monitoring.

The Vatrer 48V (51.2V) 100Ah LiFePO4 Lithium Solar Battery is a compact and high-efficiency home energy storage solution that seamlessly integrates with renewable energy. Its user-friendly design features a touchable smart interface for monitoring and controlling the battery anytime, anywhere, providing great convenience. With no acid in the lithium-ion battery, it can be mounted in any position, making Li-ion batteries perfect for marine, RV, campers, travel trailers, and off-grid applications.

In addition, the Vatrer 12V 460AH RV Lithium Battery is specifically designed for RVs and a perfect replacement for lead-acid batteries. It boasts a capacity of 5,888Wh and an impressive maximum load power of 3,200W. It fits the most unobstructed lead-acid battery trays with a compact size that takes up only half the space of four 12V 100Ah batteries. When used in conjunction with MPPT and an inverter, it seamlessly integrates into solar power systems, providing uninterrupted power supply for the RV.

At CES 2025, Vatrer Power's exhibition will also feature simulations to demonstrate the products' performance under extreme conditions. Visitors will have the opportunity to try the products firsthand and experience their functionality and efficiency.

Looking ahead, Vatrer Power will continue to innovate powerful, long-lasting and affordable LiFePO4 batteries for broader applications and accentuate on its commitment to green energy accessibility, supporting sustainable practices to build a green future for all.

Source : Vatrer Power Inc.

Empowering Mining with Green Innovation: SANY Unveils Africa's Largest Solar-Storage-Diesel Microgrid

SHANGHAI, Jan. 8, 2025 /PRNewswire/ -- On December 29th, SANY Silicon Energy reached a significant milestone in the international "Solar + Storage + Diesel" microgrid power generation sector by launching the Zambia Ruida Mining Microgrid Power Project. This initiative is recognized as Africa's largest single-unit hybrid microgrid designed for mining operations, highlighting SANY's commitment to promoting green energy transformation and sustainable development throughout the region.

Distinguished as Africa's largest microgrid project designed for mining activities, the venture encompasses a 13 MWp solar photovoltaic (PV) system in conjunction with a 39 MWh battery energy storage system and a diesel generator as a backup power source. These components synergize to form a cutting-edge integrated microgrid system seamlessly harmonizing solar, storage, and diesel technologies. The project's primary objective is to ensure a steadfast and dependable electricity supply for mining operations, consequently achieving energy self-sufficiency, diminishing reliance on conventional energy sources, and bolstering energy efficiency and sustainability.

Exhibiting the hallmark "SANY Speed," the project swiftly progressed from the signing of the Power Purchase Agreement (PPA) to its commissioning within a mere four months. Despite navigating challenges posed by Zambia's intricate topography, severe climate conditions, and logistical impediments stemming from underdeveloped infrastructure, our team demonstrated remarkable adaptability and operational efficiency.

The successful inauguration of this project signifies a pivotal juncture in SANY's eco-conscious mining endeavors across Africa. It lays a robust groundwork for the continent's green energy trajectory and reinforces our unwavering dedication to advancing sustainable energy solutions on a global scale.

Drawing on the expertise

and technological capabilities developed through this initiative, SANY is dedicated to "Illuminating Africa" at "SANY Speed." By actively driving the implementation of additional green energy projects, SANY seeks to lead global renewable energy trends and contribute Chinese innovation to the worldwide energy transition.

Source : PRNewswire

Ashcor and Consumers Energy Announce Coal Ash Remediation at J.H. Campbell Power Plant

CALGARY, AB and WEST OLIVE, Mich., Jan. 6, 2025 /PRNewswire/ -- Ashcor USA Inc., a subsidiary of Ashcor Technologies Ltd. and a division of ATCO Ltd. (TSX: ACO.X) (TSX: ACO.Y), and Michigan-based Consumers Energy are excited to announce an agreement to extract and repurpose millions of tons of impounded coal ash from the soon to be retired J.H. Campbell Generating Complex.

"We're doing the right thing as we make a just transition away from coal as a fuel source for electricity and that includes fulfilling our environmental responsibilities at the Campbell Generating Complex," said Norm Kapala, vice president of generation operations for Consumers Energy. "While our focus today is on meeting power needs in a more environmentally sustainable way, we are also committed to removing 60 years of ash deposits that will be beneficially repurposed."

Ashcor's patented Reclaimed Ash Management (RAM™) technology will transform stored coal ash at the power facility into a high-grade cement replacement material for use in concrete manufacturing. Since global cement manufacturing is responsible for about 8 percent of the world's total CO2 emissions, the repurposing of coal ash has environmental benefits.

"We're very pleased that we will be able to reclaim ash from the Campbell Generating Complex, transforming it into a high-quality supplementary cement replacement material," said John Tiberi, President, Ashcor. "Ultimately, this manufactured ash can substitute up to 30 percent of traditional, carbon-intensive portland cement, making it a more sustainable solution for countless construction projects and concrete applications. This will be our third RAM facility, and we are eager to incorporate our operational expertise into a state-of-the-art design, tailored to J.H. Campbell's site and the market demands of the Great Lakes area."

Capable of generating nearly 1,500 megawatts of electricity, the Campbell complex — located on a 2,000-acre site in Port Sheldon Township near Holland, Mich. — began serving Consumers Energy customers in the 1960s. Retiring the complex's three units in May 2025 is part of the company's Clean Energy Plan to meet Michigan's energy needs in the coming decades.

Once Ashcor completes construction of the RAM™ facility, removal and processing of the ash will begin. Operations are planned to begin on or before Jan. 1, 2027, and the operational life of the project is expected to be about two decades. The RAM™ technology is capable of processing harvested comingled bottom ash and fly ash and transforming it into a product that meets technical specifications. There is a significant level of interest in the project, and both companies are keen to provide a high-quality product for customers.

This project represents Ashcor's first foray into coal ash harvesting and beneficiation in the United States. The inaugural U.S. venture underscores the company's ambitious growth strategy and commitment to expanding its presence in this key market. By leveraging its proven expertise and innovative technologies, Ashcor is setting the stage to deliver high-quality, sustainable solutions to a broader audience of utility companies and meet the growing demand for reclaimed, high-performance materials across the construction and industrial sectors. Ashcor aims to build a strong presence in the U.S., replicating its success in Canada while tailoring its approach to meet the unique needs and priorities of its American partners.

Source : Consumers Energy

Ambercycle and Benma Form Strategic Partnership to Scale Development of Circular Polyester Fiber

LOS ANGELES, Jan. 8, 2025 / PRNewswire/ -- Ambercycle and Benma have joined forces to scale circularity in textiles through the production of cycora® fibers. This collaboration expands cycora®'s product offerings to global brands through the production of high quality staple fiber. By unlocking new opportunities for circular materials within the Chinese value chain, the partnership addresses the growing global demand for sustainable fibers while reducing reliance on virgin resources and tackling the challenge of textile waste.

"Ambercycle has proven to be a leader in advancing circular solutions, and we are proud to collaborate with them to scale this groundbreaking innovation," said Mr. Xu, Chairman at Benma. "Decarbonized polyester is essential for driving the sustainability of our industry. This partnership enhances our ability to deliver a broader range of high-quality, circular fibers, empowering our global brand partners to meet their sustainability goals."

Ambercycle and Benma are combining their expertise to scale cycora® fibers, advancing the availability of regenerated staple fibers for the global market. The partnership establishes a solid foundation for innovation and growth with Benma's state-of-the-art manufacturing infrastructure and Ambercycle's pioneering circular material technology. Benma's direct investment in Ambercycle's scale-up efforts further reinforces their shared commitment to accelerating the transition to circular textile solutions.

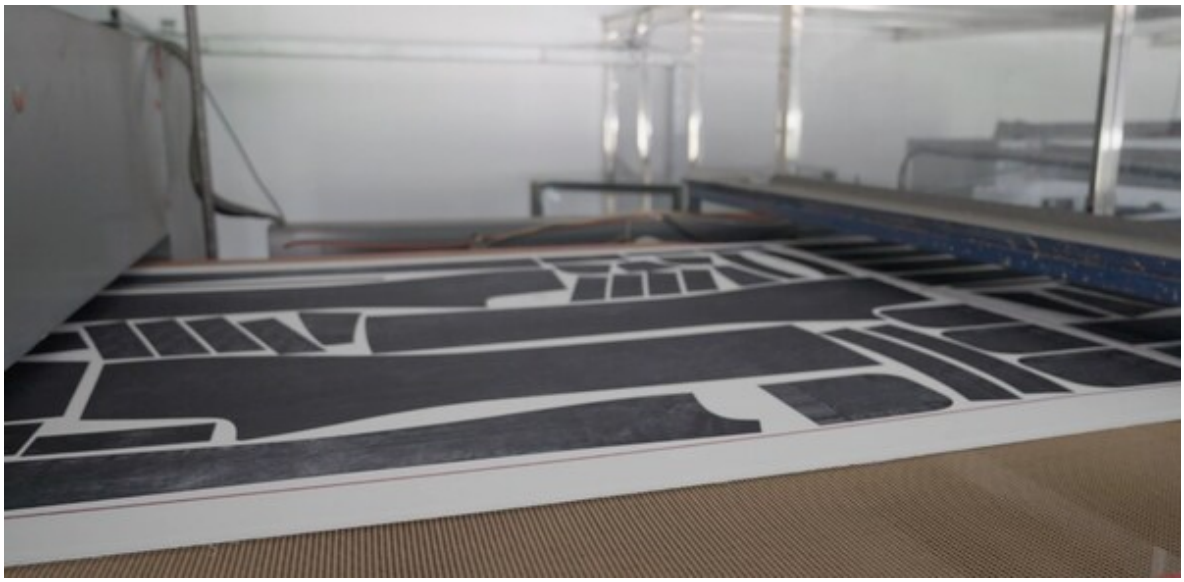
"Partnering with Benma allows us to expand cycora®'s potential by diversifying its applications into staple fibers," said Shay Sethi, co-founder and CEO at Ambercycle. "Their investment in our scale-up efforts underscores a shared commitment to innovation and sustainability. This collaboration not only supports our ability to scale but also creates new pathways for brands to integrate circular materials into their supply chains and products."

With demand for decarbonized polyester expected to reach 7 million metric tons annually by 2026, the need for innovative and scalable solutions has never been greater. This partnership between Ambercycle and Benma introduces cycora® fibers into wider applications, offering brands new opportunities to integrate circular materials into their supply chains. The collaboration addresses industry challenges head-on by aligning advanced manufacturing with cutting-edge regeneration technology, paving the way for a more circular future in textiles.

Source : Ambercycle

SHEIN Ramps Up Denim Production Using Cool Transfer Denim Printing by 90% in 2024

SINGAPORE, Jan. 6, 2025 / PRNewswire/ -- SHEIN is transforming the way its denim is being produced by increasing its adoption of Cool Transfer Denim Printing, a technology that consumes less water and energy compared to traditional denim manufacturing methods, while at the same time creating a more streamlined



production process.

Approximately 380,000 pieces of SHEIN's denim apparel produced in 2024 were made using the Cool Transfer Denim Printing process, saving over 10,000 metric tons of water compared to traditional denim production techniques. This marks a 90% increase from 2023, when 200,000 denim pieces were made using this innovative method. Since introducing Cool Transfer Denim Printing in 2022, SHEIN has saved nearly 19,500 metric tons of water. These milestones illustrate the company's ability to scale innovation within its supply chain, integrating advanced manufacturing practices, while promoting resource efficiency.

Traditional denim manufacturing is known for being resource-intensive, requiring vast amounts of water and energy for processes such as dyeing, bleaching, and washing. Recognizing these challenges, SHEIN partnered with NTX® in 2021 to introduce Cool Transfer Denim Printing, an innovative process that not only minimizes the use of water and energy but also simplifies the production cycle, ensuring precision and efficiency at every step.

This method of printing involves a digital printer using reactive ink to print denim textures, artwork or patterns onto a transfer film. The designs on the transfer film are then imprinted onto white denim fabric using cold transfer equipment, replicating the effects of washing denim to produce features like faded finishes, whiskering, and retro-worn effects. Verified by Bureau Veritas in October 2023, the process reduces water usage by 70.5% compared to conventional denim washing methods.

In addition to the savings in water and energy, the Cool Transfer Denim Printing process eliminates the need for workers to be in contact with harmful chemicals, such as chlorine and caustic soda, which may be used in traditional denim production. By reducing exposure to these substances, SHEIN aims to foster safer working conditions for workers providing support on denim production.

Innovative On-demand Denim Production Process Aimed at Reducing Water

The integration of Cool Transfer Denim Printing complements SHEIN's on-demand business model, which leverages a digitalized supply chain to match customer demand with merchandise supply. SHEIN's process involves launching new products in small initial batches of 100-200 items, assessing customer feedback in real-time, and restocking items based on demand. This approach ensures that suppliers produce what customers want, while helping to reduce overproduction and excess inventory.

Cool Transfer Denim Printing's streamlined and efficient production process aligns perfectly with this methodology. By simplifying denim manufacturing and enabling precise replication of intricate designs and effects, the technology supports smaller production runs that can be quickly scaled based on customer interest. This synergy allows SHEIN to produce denim pieces to meet demand, while at the same time working towards reducing any additional waste.

Unlocking New Creative Opportunities

Cool Transfer Denim Printing is also a catalyst for creativity and innovation. This technology provides designers with unprecedented flexibility to produce vibrant, intricate, and highly detailed prints that were once challenging to achieve with traditional methods.

The process enables precise replication of denim textures and effects. These capabilities open up limitless possibilities for SHEIN's design teams, allowing them to craft unique and standout denim pieces that resonate with diverse customer preferences and push the boundaries of modern fashion.

This initiative is part of SHEIN's broader strategy to accelerate change in manufacturing processes, become more resource-efficient and promote innovation in the future of fashion.

Source : PRNewswire

Q ENERGY and GazelEnergie commission 35 MW energy storage system in France

Hanwha Solutions' Q ENERGY Division (Q ENERGY) and GazelEnergie announced the inauguration of their flagship energy storage project on the Emile Huchet site in Saint-Avold, Moselle.

The battery project, with 35 megawatts (MW) of power and 44-megawatt-hour (MWh) of storage capacity, will provide services to the electricity grid via RTE, France´s transmission system operator. It will facilitate the integration of renewable energies, stabilize the grid, and help to reduce the volatility of electricity prices. With a capacity equivalent to the daily consumption of 10,000 people, the storage system will strengthen the security of the electricity supply, particularly during the winter period. Comprising 24 latest generation containers, the facility is being built on a site with two advantages: a large area of developed land and existing grid access infrastructure.

"This power plant is fully in line with a development model that we strongly support: the installation of large energy storage systems on industrial sites," said Corentin Sivy, Development Director of Q ENERGY France. "This type of conversion, initiated by GazelEnergie at the Emile Huchet plant, perfectly embodies our vision of an energy transition that is both efficient and respectful of the environment."

"This energy storage project embodies our ambition to transform the Emile Huchet site into a genuine eco-platform dedicated to the production of electricity and green energy services," said Frédéric Faroche, Chairman of GazelEnergie. "It highlights our commitment to investing in France. Our partnership with Q ENERGY demonstrates the expertise and complementary nature of our two companies."

This project, the first of its kind for the two companies, reflects their shared desire to accelerate the development of energy storage solutions. It also marks a strong commitment by Q ENERGY and GazelEnergie to support the energy transition.

Q ENERGY

Q ENERGY is Europe's provider of holistic solutions for green power plants. The company is active along the entire value chain of renewable energy projects - from solar parks, onshore and offshore wind projects to energy storage solutions and hybrid power plants. More than 450 employees in the Berlin headquarters and further international offices are currently driving a development pipeline of 16 GW across Europe. Building on 25 years of experience and +2.5 GW completed renewable energy assets, Q ENERGY is currently active in Spain, Portugal, France, and Germany as well as in Italy. Together with its independent sister company Hanwha Qcells, Q ENERGY forms the energy division of its mother company and top-tier Korean enterprise Hanwha Solutions Corporation.

Source : Hanwha

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Bangkok, Thailand – PTT Global Chemical Public Company Limited (GC), a global leader in chemical products for improving quality of life, and Honeywell, a global leader in carbon capture technology, signed a memorandum of understanding to study and develop carbon capture and utilization technologies to maximize the value of the carbon. The focus is on studying the feasibility of using Honeywell's technology in the process of carbon capture and storage using Carbon Capture and Storage (CCS) technology in GC Group plants and carbon utilization or Carbon Capture Utilization (CCU) to achieve the goal of reducing net zero greenhouse gas emissions by 2050.

Mr. Pornsak Mongkoltrirat, Chief Operating Officer, Excellence Business Group, PTT Global Chemical Public Company Limited (GC), said, "GC is committed to conducting business sustainably. This collaboration between GC and Honeywell is to leverage Honeywell's efficient and advanced technologies to enhance competitiveness, create sustainable business growth, and create environmental balance. The goal is to reduce net greenhouse gas emissions to zero by 2050 to become a low-carbon organization for GC. Furthermore, the exchange of knowledge and innovation will help promote understanding of the industry's needs and better meet sustainability demands."

"Honeywell, a global leader in carbon capture technology, is able to capture and store up to 15 million tons of carbon dioxide per year. This collaboration with GC will support Thailand's carbon neutrality goal and we look forward to working with other projects in the region in the future," said Tsui Tsui Young, General Manager of Asia Pacific, Honeywell UOP.

This collaboration supports GC's strategy to drive sustainable business growth towards the goal of net zero greenhouse gas emissions by 2050.

Source : GC

From Slow to Fast The Transformation of Lithium-Sulfur Batteries with Advanced Porous Carbon

Vinodhini Harish

Introduction:

The demand for faster, more efficient and sustainable energy storage solutions is growing as eco-friendly technologies such as electric vehicles are becoming increasingly vital—the lithium-ion batteries despite their popularity, face challenges like limited energy density and high costs. Lithium-sulphur batteries have emerged as a promising alternative due to their high energy density and the low price of sulphur—electric vehicles, aerospace, aviation, portable electronics and whatnot. Lithium-sulfur batteries are most widely used due to their lightweight nature, enhanced endurance and lower fuel consumption. However, there are a few drawbacks too, such as slow charging speeds, capacity loss, and performance degradation due to lithium polysulfide migration. Hence in this article, we have discussed a groundbreaking development where the researchers have introduced a nitrogen-doped porous carbon material that addresses these challenges effectively. Let's begin.

What's the news: Groundbreaking development – nitrogen-doped porous carbon material:

Unlike conventional materials, this nitrogen-doped porous carbon material addresses challenges such as slow charging speeds, capacity loss and performance degradation. The innovative material enables rapid charging, and achieving a full charge in just 12 minutes while ensuring excellent capacity retention and stability.The research team behind the development of this advanced lithium-sulfur(Li-s) battery technology consisted of scientists from DGIST(Daegu Gyeongbuk Institute of Science and Technology) in South Korea and collaborators from Argonne National Laboratory in the United States.

Listing out its advantages over conventional materials:

1. Enhanced electrical conductivity: Graphitic carbon structure – the high graphite nature of the carbon material increases its electrical conductivity which accelerates the electrochemical reactions involving sulphur. The graphitic structure involves carbon atoms arranged in highly ordered layers. This arrangement facilitates efficient electron transport within the cathode material. Therefore the enhanced conductivity ensures that electrons move freely during the charge and discharge processes thereby accelerating the electrochemical reactions that involve sulfur.

   In conventional materials, the limited conductivity of sulphur or slow electron movement hinders the battery's ability to accept or deliver the charge quickly, leading to slower charging speeds.

   By overcoming this challenge, the highly conductive graphitic carbon allows the batteries to charge significantly faster. The Li-S battery in this study achieved full charging in just 12 minutes, a remarkable improvement over conventional batteries.

   Synergy with porous structure: the porous design complements the graphitic carbon by increasing the surface area for sulphur and electrolyte interaction. This ensures that the high conductivity is efficiently utilized across the cathode, leading to uniform and efficient charge distribution.

2. **Improved sulfur utilization:**

   The porous structure or the multi-porous design allows for higher sulphur loading and a more uniform distribution of sulphur within the cathode. This ensures more active material is available for reactions, which improves the charging efficiency.

   Whereas in conventional materials, the non-uniform sulphur distribution often results in underutilization of sulphur, especially during rapid charging.

3. **Accelerated reaction kinetics:**

   Nitrogen doping: The nitrogen-doped carbon matrix enhances the catalytic activity thereby speeding up the sulfur redox reactions. Faster reactions help in a significant reduction in charging time and improve energy efficiency. Meanwhile, in the undoped carbon materials, the interaction between sulphur and electrolyte is weak which leads to poor reaction kinetics and limited charge acceptance. This introduction of nitrogen doping creates a better chemical affinity between the sulphur species and the electrolyte.

4. **Mitigation of lithium polysulfide migration:**

   Migration of lithium polysulfides is the most common issue in lithium-sulphur batteries, which can be effectively suppressed by nitrogen doping. This reduces the side reactions that can potentially slow down the charging process and degrade the performance over time. In the conventional materials, there is no way to adequately control the polysulfide migration which results in performance loss and slower charging.

5. **Thermal stability and robustness:**

   Stable carbon feedback: The magnesium-assisted thermal reduction method creates a more stable and robust carbon structure. This enhances the material's resilience to stress during rapid discharge cycles, which helps in maintaining performance even at high charging speeds.

   Conventional carbon materials due to their lesser stability, lead to structural degradation and poor performance during rapid charging.

Overall the nitrogen-doped porous carbon materials cancel out the challenges and bring out a dramatic improvement over the conventional lithium-ion batteries.

Some of their key advancements include:

- **Rapid charging:** The new lithium-sulfur battery is capable of charging fully in just 12 minutes, which is a dramatic improvement over conventional lithium-ion batteries.
- Capacity retention: the battery is capable of retaining about 82% even after 1000 charge-discharge cycles, which indicates excellent longevity.
- High energy density: the batteries are capable of achieving a capacity of 705mAh g^{-1}, which is about 1.6 fold

improvement compared to the existing technologies.

- Suppression of lithium polysulfide migration: Due to the nitrogen doping, it effectively minimizes the performance degradation caused by lithium polysulfides.

How this advancement is expected to impact?

- Electric vehicles (EV): faster-charging batteries which also possess higher capacities could significantly enhance the practicality of EVs, thereby addressing one of the biggest drawbacks- longer charging times.
- Cost reduction: the usage of sulfur in the construction of the batteries makes these batteries economically viable.
- Eco-friendly transition: The lithium-sulfur batteries could potentially replace the conventional lithium-ion batteries in varied applications thereby supporting several sustainable energy technologies.

Final thoughts:

The development of nitrogen-doped porous carbon materials marks a significant leap forward in lithium-sulfur battery technology. The advancement has efficiently addressed critical issues such as slow charging speeds, sulphur utilization and polysulfide migration. Therefore this innovative material achieves rapid charging, long-term stability and enhanced energy density. The simplicity and scalability of the magnesium-assisted synthesis method highlight the potential for large-scale adoption. This breakthrough invention brings lithium-sulfur batteries closer to the commercial viability, and promising future of faster and efficient energy storage systems as the world is driving towards sustainable energy solutions.

K-water Pavilion Opens at CES 2025 Eureka Park: Showcasing Innovations in Korea's Water Industry to the World

SEOUL, South Korea, Jan. 8, 2025 / PRNewswire/ -- Korea Water Resources Corporation (K-water) announced on January 7 (local time) the opening of its "K-water Pavilion" at CES 2025 in Las Vegas.

CES 2025, which runs from January 7 to 10, is expected to attract more than 4,400 companies and more than 130,000 visitors worldwide. At Eureka Park within the Venetian Expo, K-water has set up a 277.7-square-meter (2,989-square-foot) pavilion to showcase Korea's innovative water technologies in collaboration with Korean water-related companies.

Marking its third CES appearance, K-water focuses on artificial intelligence (AI) and deep-tech-based advanced water management technologies to align with this year's CES theme. The pavilion highlights innovative solutions and practical approaches to water management.

Additionally, the pavilion features groundbreaking technologies from 19 Korean water industry startups collaborating with K-water. These companies work together in areas such as water treatment processes to enhance Korea's water industry competitiveness. INOSEP, Fawoo Nanotech, and FUST Lab. have received CES Innovation Awards, showcasing their global technological prowess.

The second "Future Vision Forum for the Water Industry" will also be held during CES. The forum will feature Professor Sajjad Ahmad from the University of Nevada, Las Vegas (UNLV), an expert in urban water management systems and long-term river flow analysis using ocean-atmosphere indices. Experts from the industrial, government, and academic sectors in Korea and the U.S. will gather to discuss global water industry trends and Korea's advanced technologies.
In addition, K-water will introduce cutting-edge and globally leading technologies, including the "Global Lighthouse" AI water purification plant, which the International Organization for Standardization (ISO) has recognized as a standard design alternative. The pavilion will also host buyer meetings and open pitching sessions to support the export of innovative technologies from the 19 participating companies.

The Korean startups featured in the K-water Pavilion include The Spatial Party XR (TSPXR), Stellarvision, sim2real, ENICT, DATS, Murepa Korea, PurifiedU (brand name WATERKOREA), Quantum Matrix, BLUELABS, INOSEP, FUST Lab., OZ SEPA, MDS Intelligence, Fawoo Nanotech, SC SOLUTION, TheEN, Blue Device, H2, Inc., and R&S Science.

Source : Korea Water Resources Corporation