

Innovation in focus: tangible progress in meeting customer needs



“We are seeing great examples of our teams turning analysis into practical action across Synthomer.”

Robin Harrison
Vice President, Innovation

Innovation is key to adding value for customers and differentiating our specialised portfolio, and this year we have continued to transform our project pipeline.

Everything we do in innovation – developing new or enhanced products, more efficient processes or new applications – is designed to bring us closer to our customers’ needs and to support our growth strategy.

Those needs are increasingly driven by demand for products with sustainable benefits, which is why we are pleased that, once again, we exceeded our Vision 2030 sustainable products goal. In all, we launched 38 new products with enhanced sustainability benefits this year, representing 69% of all products launched (2023: 64%).

» See page 41 for more details on our Vision 2030 sustainable products performance.

New products this year include a hydrophobic dispersion technology platform (HDT) allowing direct-to-metal application of a water-borne coating delivering good adhesion and anti-corrosion properties. This will allow many of our customers to move away from solvent-borne coatings for metal applications in outdoor environments.

Much of this success is a result of our work to ensure we have the right tools and resources to meet that growing demand. For example, our product sustainability scorecard as part of our strategic scorecard continues to provide a clear framework for discussing product development and shaping portfolio decisions. As a result, we no longer have any projects with a negative sustainability score.

Meanwhile, our comprehensive assessment of GHG emissions inside our value chain in 2023 is having a significant impact on our innovation choices. In CCS for instance, we have sourced low-carbon impact butyl acrylate (BA) and butadiene (BD) (two key raw materials), which we will pilot at scale in 2025. This is a direct result of our carbon assessment, which identified fossil-based BA and BD as significant contributors to our Group-level upstream Scope 3 emissions. Our models suggest that switching could reduce those emissions by 2%.

Building strong relationships across the whole value chain

As Chris Brown also discusses on page 28, while data is important, meaningful change in a complex global value chain will only be possible if we work together – with our customers, their customers, our suppliers and other relevant stakeholders.

Here, too, we are seeing examples of this in action. In AS, we have developed Plastvance™ T, which helps food packaging customers to switch from polystyrene to polypropylene for some applications without major changes to their production processes. See more in our case study on page 32.

We are also looking beyond our traditional value chain relationships to help create meaningful change. In HPPM, we are developing a styrene-butadiene rubber polymer for use in carpet backing that allows the fibres from the carpet to be recycled at end of life. But while

Highlights from 2024

- Opened innovation centre of excellence in Shanghai, China.
- Exceeded our Vision 2030 sustainable products target for the second consecutive year.
- Winner of the Chemical Industries Association Sustainability Award for our product sustainability scorecard – marking the third year in a row it has received external recognition.
- First sales of FSC-certified resin to a tyre customer.
- Launched a new polymer that will help reduce the weight of latex gloves, lowering their overall carbon footprint.

customers can see the potential benefit of the product, it will not add value for them until there are recycling facilities that can process it. So we are talking to recycling firms, to create an end-to-end journey for a specialised product that has clear environmental benefits.

Creating a more valuable, efficient innovation pipeline

As well as exceeding our Vision 2030 target, we exceeded our aim to ensure that NPPs make up at least 20% of our sales volume – the NPP metric – over the long term. This year we reached 24% (2023: 22%).

New product innovation often requires collaboration between our global technology platform innovation team and divisional innovation teams to tailor solutions for customers and respond to changing consumer and market trends.

This year, for example, our central team worked with CCS to review customer evaluations of pilot-scale batches from our new bio-based emulsions polymer platform. Early feedback from our customers has been positive and we have begun new product development activities within the CCS innovation team. The team is now working with AS to look at developing bio-based and hybrid binder systems for paints and coatings applications, and the next generation of emulsion polymers for pressure-sensitive adhesives using bio-based monomers in the same platform.

Digitalisation and machine learning can dramatically accelerate our innovation. The emulsions polymer system is a great example. It is one of the first projects in Synthomer to use advanced experimental design and data analytics to help identify and predict the precise compositions we need to deliver specific performance requirements in new polymers. Meanwhile, we have launched a high-throughput polymerisation project, spun out of a collaboration with the University of Leeds, that could also significantly increase the speed of new product delivery.

Speed matters if we are to maintain competitive advantage. We know, for example, that interest in sustainability in markets like China is accelerating rapidly. We are well placed to meet that growing interest thanks to our newest innovation centre in Shanghai, China. Its state-of-the-art laboratories are designed to specifically support local product development in the local market.

Our new Innovation Taskforce

We want to keep this momentum going, which is why we have set up a new Innovation Taskforce. The taskforce is chaired by our non-executive director Roberto Gualdoni, and includes other non-executive directors, members of our Executive Committee, some of our Group and divisional innovation leaders and our VP of ESG. Following a deep-dive review with four Board members in September 2024, the taskforce has set up three work programmes. The first is looking at ways to improve the value of our innovation pipeline, and includes a new exploratory innovation team, which is already reviewing options in markets closely adjacent to our current portfolio. The second aims to redesign the innovation operating model to drive improved innovation delivery and value creation. The third looks to pilot AI/machine learning to drive greater speed to market. Combined, the changes delivered by these work programmes will create a new culture of innovation for the long-term delivery of our market and sustainability needs.

Working in partnership to accelerate innovation

One of the best ways in which we can accelerate innovation is by working in partnership with academia.

This year, we worked with the University of Montpellier and University of York to develop a new monomer system and formulation additives with high bio-based carbon content. We then evaluated their performance in real-world systems with positive results, and in November 2024 we filed a patent based on the additive technology. We are now looking to evaluate the new additive with our customers.

Meanwhile, we extended our programme with the University of York, thanks to a prestigious 'Prosperity Partnership' grant from the UK Government, which will enable us to evaluate the next generation of bio-based monomers, aiming to drive decarbonisation and defossilisation in the speciality polymer industry.

Looking ahead

Designing with sustainability in mind has become 'business as usual' for our innovation teams. But the way we do it is evolving, thanks to new data and digital tools and the work of our Innovation Taskforce to drive greater efficiency and speed to market. These will continue to be important areas of focus in the coming year, ensuring our innovation pipeline continues to do what matters most – serving the needs of our customers.

Our innovation centres

Our centres of innovation excellence, which provide products and process innovation across all our divisions:

Akron, USA

Harlow, UK

Marl, Germany

Shanghai, China

Kulai, Malaysia

Our market-specific technical centres:

Chester, Jefferson, Longview, USA

St Albano, Italy

Sintra, Portugal

Accrington, UK

Middelburg, the Netherlands