LyondellBasell at K 2025

Showcasing everyday sustainable solutions

At K 2025, LyondellBasell is bringing sustainable solutions to life through real-world applications. Visitors to our booth will experience how our high-quality polymer technologies are enabling circularity, performance, and functionality across five key product islands: mobility, packaging, modern living, healthcare, and sustainability.

Across our islands you will find compelling stories of how sustainability and functionality go hand in hand. From automotive interior components made with recycled maritime gear to detergent bottles that withstand chemicals while incorporating post-consumer recyclate, our materials are powering everyday sustainable solutions.

Sample parts reflecting a full portfolio approach

The sample parts on display reflect the LyondellBasell full portfolio approach, combining high-performance virgin polymers and compounds with high-quality recycled and renewable solutions. For example, the BMW/MINI cup holder made with *Circulen*Recover PPC TRC 2179N demonstrates how recycled content can meet stringent automotive standards for UV resistance, low odor, and mechanical strength. In personal care and household packaging, our materials deliver the purity, barrier properties, and durability required for consumer-facing products while keeping the design for recycling top of mind.

Three recycling technologies, three polymer offers, one circular vision

Mechanical recycling

The shortest path from plastic waste to recycled polymers. Post-consumer and post-industrial plastic undergo sorting, washing, color sorting, mixing and compounding at LYB facilities in China, Belgium, Netherlands, Germany, Italy, Poland and the United States. The output includes high-performance HDPE and PP grades with up to 100% recycled content, used in personal care bottles, detergent containers, automotive components and consumer goods. Impact: reduces product carbon footprints compared to virgin resins.

Chemical recycling - *MoReTec* technology

Our proprietary catalytic chemical recycling technology processes pre-sorted mixed plastic waste. An industrial-scale unit is under construction in Germany, achieving 80%+ plastic-to-plastic yield[1] depending on the quality of the feedstock with 50% lower carbon footprint than fossil-based processes[2]. Its unique process design enables electrical heating of the process, offering the potential to be powered by renewable energy. This technology is ideal for contact-sensitive applications including food packaging.

Solvent-based recycling - *Newcycling* technology

Innovation in progress for flexible plastics. This technology will transform flexible plastic waste, primarily LDPE, using a proprietary solvent that dissolves plastics, enabling the removal of impurities and color pigments. In the future target applications will include high-quality flexible packaging for personal care, hygiene products, and flexible tubes.

Circulen polymer portfolio

- ***Circulen*Recover** - Mechanical recycling delivering immediate market solutions
- ***Circulen*Revive** - Chemical recycling for complex waste streams
- ***Circulen*Renew** - Bio-circular feedstock for renewable solutions

Sustainability impact

Our solutions meet EU Packaging and Packaging Waste Regulation requirements for recycled content, particularly in food-safe applications. Dedicated sourcing teams ensure reliable supply chains with verified suppliers and comprehensive carbon footprint data.

Solutions for a better tomorrow, today

By integrating mechanical, chemical, and solvent-based recycling technologies into a single ecosystem, along with virgin-based polymers and compounds, LyondellBasell empowers customers to choose the right solution for their goals. The sample parts at K 2025 illustrate how this diverse portfolio supports many industries—from lightweight automotive components to premium consumer goods—while reducing carbon footprints and aligning with evolving regulatory standards. Through these innovations, we're helping customers bring sustainable products to market today, shaping a better tomorrow for people and the planet.

[1] Yield depending on the quality of the waste plastic feedstock. We define yield as the percentage of by weight of the pre-treated waste plastic fed to the process that is converted into liquid and gaseous products (pyrolysis oil and pyrolysis gas) that can be used as feedstock to produce new polyolefins.

[2] Feedstocks produced via the *MoReTec* process (pyrolysis oil and gas) displace fossil-based feedstocks in the olefins cracking process; the stated carbon footprint reduction is based on a comparison of Life Cycle Assessment (LCA) results for (1) pyrolysis oil and gas produced by the *MoReTec* technology, and (2) fossil-based naphtha feedstock. LCA for pyrolysis oil and gas based on *MoReTec* pilot plant data. LCA for fossil-based naphtha includes carbon emissions associated with the production of fossil-based naphtha feedstock, plus incineration of the equivalent amount of mixed plastic waste required to produce pyrolysis oil and gas via the *MoReTec* process.