

# FACT SHEET

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## OVERVIEW

SABIC, a global leader in diversified chemicals, is demonstrating its commitment to address challenges within the global megatrends of food & water, urbanization, energy efficiency and sustainability by introducing a series of innovative products during Chinaplas 2019.

Our future depends upon sustainability. Without sustainable solutions, the problems we are already facing today will continue to escalate. The existing issues, such as the growing population and amount of global waste, have raised concerns about the future of humankind. As a result, finding ways to reduce food waste, produce cleaner energy and develop sustainable solutions for our cities have become top priorities.

The plastic industry is under ever-increasing pressure to develop sustainable and efficient solutions for today's challenges. SABIC is helping to relieve some of this pressure by introducing innovative solutions tailored to support the industry chain while enabling sustainable growth and meeting the needs of the Asian market by helping customers contribute to the circular economy.

## SABIC'S SOLUTIONS TO ADDRESS GLOBAL TRENDS

### FOOD AND WATER

The world population is expected to grow to 9.7 billion by 2050, raising concerns over how to feed all the people. The food packaging industry is working hard to address this problem by developing solutions that improve food safety, increase shelf-time and reduce food damage during transportation.

SABIC's solutions to support the food industry in meeting these demands include:

- **One-stop-solution for stand-up pouch packaging:** SABIC offers differentiated solutions for flexible food packaging that are resource and energy-efficient. The multi-layer laminate pouches reduce weight, greenhouse gas emissions and energy requirements across a product's lifecycle compared to glass or metal-based packaging. SABIC's integrated solution in flexible packaging helps our customers/brand owners/consumers meet challenges and demands in performance, economics and sustainability as well as challenges from industry with the use of:
    - **COHERE™ POP (Polyolefin Plastomer)** has extraordinary heat-sealing properties, clarity, toughness and elasticity to provide better packaging integrity during transportation and
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storage. **COHERE™ S Series**, produced using NEXLENE™ technology, was developed in response to the market's demand for solutions with enhanced properties that sealed better to protect its contents and increased production efficiency in the flexible packaging industry. The new COHERE™ S is an improved series with improved sealing performance and overall product properties than the original range. It meets the markets' stringent requirements and will potentially reduce waste and costs.

- **SUPEER™ mLLDPE** provides superior processability, heat sealing and mechanical properties. It gives customers the best balance in economics and performance.
- **Broad SABIC® LLDPE, LDPE, HDPE, PP portfolio** provides consistent quality and performance levels that meet our customers' requirements on quality and reliability.
- **Certified renewable SABIC® PE/PP polymers** are 2<sup>nd</sup> generation renewable materials and sustainable solutions for FMCG (fast moving consumer goods) and food packaging brand owners.
- **Non-fall-off design for water caps with SABIC® HDPE CC453 and carbonated soft drink caps with SABIC® HDPE CC027C polymers** have excellent environmental stress cracking resistance (ESCR) and flow for very lightweight closures, and can help cap manufacturers meet the industry's design for suitability requirements. The new multimodal SABIC® HDPE CC027C grade's flow characteristic is similar to those of a unimodal HDPE with a melt flow index that is three times higher. With its stiffness and impact strength, it enables extra light weighting, reductions in processing temperatures and helps processors save energy and cut cycle times. Plus, with high organoleptic properties, the caps provide the highest purity without effecting the taste or smell of the contents – especially important for bottled water.
- **Water purifier made of NORYL™ GFN30F-873S resin** is a new innovative water filter from SABIC that comes with a long service life. It enables cleaner and safer water while using less material than current filters.

## URBANIZATION

As the population increases and smart cities become a reality, the problem of rapid urbanization has intensified. It is coupled with advanced safety standards and an increased awareness of the overall carbon footprint of materials. Today's materials need to be lightweight, durable and sustainable. SABIC has several solutions to meet these challenges, including:

- **LNP THERMOCOMP™ compounds and LEXAN™ EXL copolymers for 5G application.** These compounds offer tailored dielectric performance, weatherability, weight-out and increased design freedom, and can be used in several applications where light-weight and high performance are necessary.
  - **STADECK™ heavy duty panels** made from glass fiber reinforced polymer (PP compound) resin for use in building & construction offer high durability to enhance safety. The lighter weight enables easier handling, shipping and installation. The panels' long-term weather and chemical resistance make them a sustainable solution for the industry. When compared to standard wooden planks, commonly used in the building industry, STADECK™ panels are a more sustainable option, due to their excellent recyclability and weight savings, which can be as much as 60 percent. Plus, with an overall cost savings of up to 32 percent, the panels deliver significant handling advantages along with financial benefits— in addition to reducing overall construction weight.
  - **Semi-conductor refrigeration with ULTEM™ 1000-7101** is a new reliable and accurate temperature control refrigeration technology that weighs 40% less than compression refrigeration to boost energy efficiency. ULTEM™ resin provides inherent FR, high modulus and stiffness, excellent low warpage with FDA certification to meet semi-conductor refrigerator housing requirements.
  - **Drone housing and battery pack made of LEXAN™ 945 and EXL 9330** results in the creation of lighter weight and flame-retardant housing for longer drone operating time. The drone
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housing meets the UL94 V0 requirement for battery packs and provides a stable and safe solution for the emerging UVA market.

- **FORTIFY™ POE for shoes** result in lighter weight as well as improved comfort and protection for the end user. FORTIFY™ uses 5-10% less energy due to the lower processing temperature. The fibers are recyclable and because of the lighter weight, there is less material consumption.
- **Anti-abrasion pipe with SABIC® HDPE PE100** is constructed using HDPE in the outer layer and an anti-abrasion PO compound in the inner layer. The result is increased safety and a longer service life than pipes made of conventional materials.

## ENERGY EFFICIENCY

With the growing demand for more energy, cleaner energy and renewable energy, the need for sustainable solutions that enhance energy efficiency is also increasing. While exploring alternative energies, new innovations are also needed to make existing energy sources more efficient and safer. SABIC's innovative solutions that support this megatrend include:

- **PV inverter housing with LEXAN™ 503R** provides high impact strength and meets UL94 V0 requirements. It's good color matching and surface quality properties make it an excellent choice for customers looking for a strong adhesive performance. The PV inverter housing made with LEXAN™ 503R can be used in renewable energy applications as a substitute for metal – especially when looking for a lighter weight material that is resistant to corrosion. It is also easy to install and can integrate with EMI shielding.
- **Rear quarter windows with LEXAN™ GLX143 resin** can reduce window weight by up to 40% or more, depending on the design. The one featured by SABIC at Chinaplas is the largest rear quarter window in polycarbonate in the world, which has design elements that cannot be achieved with glass. The solution contributed to the innovative exterior of the new-generation Buick GL8 luxury minivan.
- **Inner tailgate structure molded with STAMAX™ 40YM243 resin** can reduce weight by up to 30%, has good dimensional stability and delivers a class-A interior surface. The design is easily integrated to improve assembly efficiency and save energy. In addition to the material of the inner tailgate, SABIC provides developmental support, including computer-aided engineering analysis to predict and optimize the part's performance.
- **EV charger housing with VALOX™ V3900WX and LEXAN™ EXL9330 resin** support the electric vehicle charging infrastructure by delivering a robust and safe performance. Made from VALOX™ V3900WX resin, a thermoplastic alloy blend of polybutylene terephthalate (PBT) and polycarbonate (PC), this unfilled impact modified PBT/PC blend offers good heat and chemical resistance with excellent impact resistance even at low temperatures. It also has outstanding aesthetics and is available in multiple colors. It meets the UL94 V0 requirement and has UL746C f1, making it suitable for outdoor use certification.
- **PV floating barrels with SABIC® HDPE B1054** have excellent ESCR and are a long-service life solution for the renewable energy industry. In collaboration with alternative energy companies, solar fields are being built on lakes using these innovative structures to make solar energy viable without using valuable land resources.

## SUSTAINABILITY

With limited resources and growing demands for recyclable solutions, the need to use resources more efficiently and develop better packaging options puts amplifying pressure on the industry. To help with the challenge of reducing packaging and reducing single-use plastics, SABIC offers the following solutions:

- **Plastic corrugated box with SABIC® HDPE** is recyclable, durable and replaces paper cardboard currently used to pack online merchandise. The increased durability results in
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fewer damaged goods during transport. The box also significantly lowers the carbon footprint as used corrugated boxes currently must be recycled by the box maker.

- **Delivery box with SABIC® PP-UMS HEX17112** is designed to meet the needs of the booming e-commerce market in China, light weight, durable and recyclable, the innovative box is made of foam grade PP-UMS (ultra-melt strength), which is a unique grade in market.
  - **SABIC® PP 514M12 melt-blown resin for nonwoven products used in personal hygiene** are based on phthalate-free and odor-free technology. The new material offers excellent processability for melt-blown fibers for nonwovens with high levels of spinnability and uniformity. It combines high barrier properties and absorption with breathability by producing thin and lightweight webs, which translates into enhanced comfort for the end user and reduced material consumption. In addition, SABIC's internal LCA analysis has shown that every 1 kg of SABIC® PP spunbond fiber used in a baby diaper application saves 0.56 kg of CO<sub>2</sub> emissions. It also generates 20% less waste compared to a typical spunbond non-woven sheet at the end of life.
  - **Certified Circular Polymer** produced by SABIC's 1<sup>st</sup> demo plant in Europe, from a recycled plastic waste feedstock developed by PLASTIC ENERGY. SABIC and customers Unilever, Vinventions and Walki Group will introduce ISCC certified circular polymers during a market foundation stage, and explore its application in various fields, such as food packaging.
  - **Post-Consumer-Recycle resins**, circular polymers developed in the SABIC Nansha Plant reduce production costs, minimize waste and environmental impact, and comply with industry regulations. The process recycles scrap polycarbonate waste found in common consumer items such as CDs and bottles and converts them into a high-performance plastic resin that could be used for the housing of consumer electronic products.
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