FACT SHEET

CHINAPLAS 2021, Shenzhen, China, April 13, 2021

TRANSPORTATION

OVERVIEW

The automotive sector and the larger transportation industry continue to take steps towards building a lower-carbon future. As vehicle manufacturers strive to continuously decrease CO_2 emissions generated by their products, they are also challenged with meeting consumer expectations, enhancing performance and adhering to newly evolving safety requirements and standards.

SABIC has a dedicated team of specialists in place to help manufacturers and their suppliers address these challenges. The company offers one of the industry's broadest portfolios of thermoplastic materials for vehicle applications, backed up by expert engineering design and technical support.

INDUSTRY LANDSCAPE

In 2020, China produced 25 million vehicles. Of that number, 1.36 million were new energy vehicles (NEVs), representing a 7.5% increase year-over-year. The domestic NEV industry has gradually transformed from a policy-driven market to a consumption-driven market. This reflects the growing maturity of NEV technology. At the same time, the industry is also becoming more competitive.

Government authorities and regulators are consistently emphasizing the importance of safety. New standards were introduced at the start of 2021, including collision protection for improvements in battery system safety. Meanwhile, vehicle manufacturers continue to face other pressing challenges, such as design boundaries associated with conventional materials. Plastics that are at once sustainable and engineered for lightweighting are beginning to play a more prominent role in the future of the industry.

SABIC SOLUTIONS FOR TRANSPORTATION

Advanced thermoplastics from SABIC can help optimize EV and plug-in hybrid EV (PHEV) batteries by removing weight, boosting performance and expanding design freedom. SABIC's plastic materials can also help address key industry requirements around crash protection and fire safety while allowing manufacturers to manage costs and increase productivity.

- SABIC® PP compound (PPc) FR H1030 is a flame retardant short glass fiber-filled PP material with a number of beneficial properties. This material is one of several from SABIC's portfolio that can support battery components such as enclosures, modules and other structural parts. With a UL94 V0 rating, the material delivers excellent non-halogenated FR performance – which can help address EV safety regulations and standards. Although the FR performance of metals can help battery systems pass regulatory fire exposure tests, their weight can limit the range provided by a single charge. This can cause anxiety over battery range in consumers. SABIC PPc

can deliver on weight saving, while also providing greater design freedom, excellent warpage control and faster throughput by avoiding costly secondary operation.

- SABIC's high heat XENOY™ HTX resin family is a set of polyester alloys that offer excellent impact properties at a wide temperature range. Glass-filled grades of this material are particularly suitable for demanding body-in-white structures that must be capable of enduring e-coating cycles of 30 minutes at temperatures between 180°C and 220°C. One notable application space that can benefit from the use of this material is the side frame of an EV battery pack system. Use of this resin within a structural hybrid design can be 40-60% lighter (up to 20kg) and can absorb up to 10% more impact energy than a conventional application constructed out of steel or aluminum. The need for effective crash countermeasures is particularly relevant in China. The country introduced new standards, which went into effect at the start of this year, for the safety of electric vehicles. Those standards insisted on a number of improvements in battery system safety, including collision protection.
- SABIC PPc CX02 and CX03 are high crystalline PP materials that are in use today in vehicle interiors. Chosen by some of the world's leading automakers, these materials provide advanced properties with low density, low VOC emissions and high impact with an excellent surface appearance. Our CX02 grade is suited for interior applications requiring high stiffness (e.g., claddings not subject to crash requirements), while CX03 can meet high impact requirements for applications such as door panels, pillar trim, etc. Both grades are also available as emission-optimized materials.
- SABIC's PPc can serve as a customized solution for lead-acid battery cases in collaboration with local manufacturers. For this application, the material delivers excellent stress whitening resistance and good impact strength at low temperatures, which can effectively improve the application's service life and overall cost efficiency.