

PRESS RELEASE

PARIS, FRANCE, March 8, 2018

SABIC RELEASES AT JEC WORLD 2018 RESULTS OF LIFECYCLE ASSESSMENT OF CAR DOORS MADE WITH UDMAX™ THERMOPLASTIC COMPOSITE TAPE

SABIC, a global leader in the chemical industry, is releasing here at JEC World 2018 in stand L84, hall 5, the results of a recent lifecycle assessment of passenger car side doors using hybrid material solutions including laminates made with its continuous fiber-reinforced thermoplastic composite (CFRTC), the UDMAX™ GPP 45-70 tape. The material system aims to help improve compliance with stringent energy and emissions regulations. The externally certified, cradle-to-grave life cycle assessment (LCA) found that doors made with the glass fiber polypropylene-reinforced composites outperformed metal car doors in two key environmental categories: global warming potential and cumulative energy demand. In addition to weighing significantly less than steel, aluminum and magnesium, the CFRTC parts deliver exceptional strength, corrosion resistance and the ability to be produced in high volumes using injection molding.

“Many countries, including China, Japan and several across the European Union, have announced they will tighten vehicle emissions regulations in the near future,” said Scott Fallon, global automotive leader, SABIC. “These impending changes add urgency to the need for advanced new material solutions that can reduce part weight without sacrificing performance.”

Nikhil Verghese, research fellow, Technology & Innovation at SABIC, added, “This lifecycle assessment demonstrates the effectiveness of SABIC’s industry-leading thermoplastic composites-based solution offering in reducing carbon and energy footprints compared to metal. We encourage customers to consider this data when selecting materials for automotive parts.”

In the European Union, 95 percent of all passenger cars must achieve 95 g/km of carbon dioxide (CO₂) by 2020 with 100 percent compliance by 2021¹. In China and Japan the requirements are 117 g/km of CO₂ and 122 g/km of CO₂, respectively, by 2020.

Assessment Parameters and Results

The lifecycle assessment, performed in compliance with ISO 14040/44, compared a side door of a passenger car (a typical sedan) made with thermoplastic matrix composites comprising of UDMAX™ GPP 45-70 tape combined with an injection-molded grade of glass-filled thermoplastic resin, to identical doors made of steel, aluminum and magnesium. Based on the design specifications, the UDMAX™ tapes were converted into a laminate and then overmolded onto both sides of a substrate using SABIC's STAMAX™ glass reinforced polypropylene product, creating a hybrid material system. Parameters for vehicle operation were based on three powertrains – internal combustion (no adaptation), plug-in hybrid and electric – operating over a lifetime of 200,000 km using the New European Driving Cycle.

The results for the internal combustion powertrain showed that the thermoplastic composite doors achieved lower global warming potential than any of the three metal doors: 26 percent lower than steel, 21 percent lower than aluminum and 37 percent lower than magnesium. These numbers were slightly different for the hybrid and electric powertrains.

For cumulative energy demand, the thermoplastic composite doors also achieved lower numbers than the metal doors: 10 percent less than steel, 13 percent less than aluminum and 26 percent less than magnesium for the internal combustion powertrain. Again, the results were slightly different for the hybrid and electric powertrains.

Key reasons for these results begin with the lighter weight of the UDMAX™ GPP based laminate as part of the application:

- 40 percent lighter vs. steel
- 15 percent lighter vs. aluminum
- 7 percent lighter vs. magnesium

Click here to learn more: [video LCA Car Doors](#).

¹ EU CO2 standards for passenger cars and light-commercial vehicles.

<https://www.theicct.org/publications/eu-co2-standards-passenger-cars-and-light-commercial-vehicles>.

END

NOTES TO EDITORS

- SABIC and brands marked with ™ are trademarks of SABIC or its subsidiaries or affiliates.
- High-resolution photos are available upon request.
- SABIC should be written in every instance in all uppercase.
- © 2018 Saudi Basic Industries Corporation (SABIC). All Rights Reserved.
- Any brands, products or services of other companies referenced in this document are the trademarks, service marks and/or trade names of their respective holders.

ABOUT SABIC

SABIC is a global leader in diversified chemicals headquartered in Riyadh, Saudi Arabia. We manufacture on a global scale in the Americas, Europe, Middle East and Asia Pacific, making distinctly different kinds of products: chemicals, commodity and high performance plastics, agri-nutrients and metals.

We support our customers by identifying and developing opportunities in key end markets such as construction, medical devices, packaging, agri-nutrients, electrical and electronics, transportation and clean energy.

SABIC recorded a net profit of SR 17.8 billion (US\$ 4.8 billion) in 2016. Sales revenues for 2016 totalled SR 132.8 billion (US\$ 35.4 billion). Total assets stood at SR 316.9 billion (US\$ 84.5 billion) at the end of 2016. Production in 2016 stood at 72.7 million metric tons.

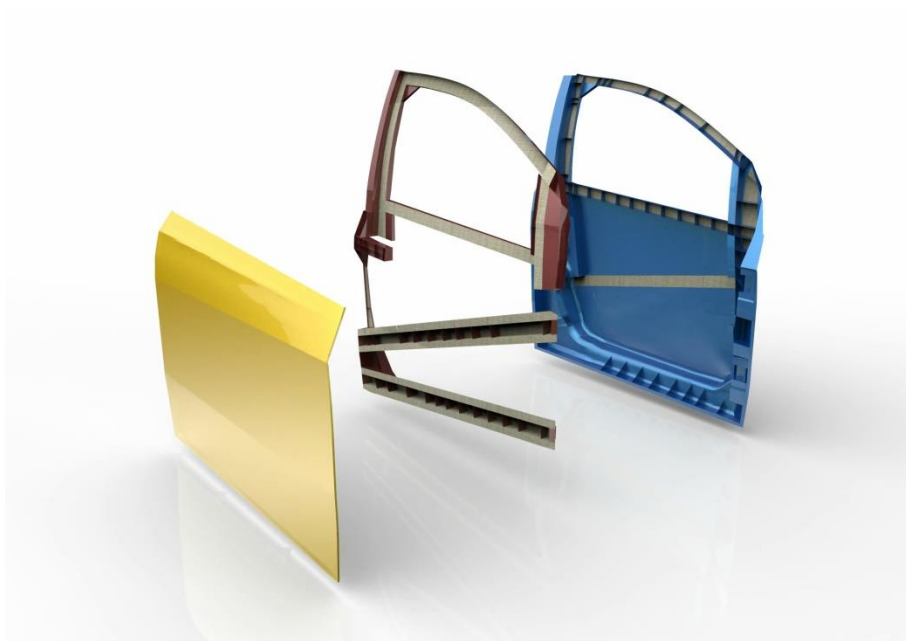
SABIC has more than 35,000 employees worldwide and operates in more than 50 countries. Fostering innovation and a spirit of ingenuity, we have 12,191 global patent filings, and have significant research resources with innovation hubs in five key geographies – USA, Europe, Middle East, South Asia and North Asia.

The Saudi Arabian government owns 70 percent of SABIC shares with the remaining 30 percent publicly traded on the Saudi stock exchange.

NOTE TO EDITORS ABOUT SABIC AT CHINAPLAS AND NPE 2018

SABIC will exhibit at Chinaplas 2018 (booth #6.2G51) in Shanghai, China, from April 24-27, 2018, and at NPE 2018 (booth #S19001) in Orlando, Fla., USA, from May 7 – 11, 2018. At both events, the company will share new developments and showcase a range of innovative solutions from both its petrochemicals and specialty plastics portfolios for end-use applications across multiple industries, including transportation, building & construction, healthcare, consumer, electronics & electrical, and packaging.

PHOTOS AND CAPTIONS



An externally certified LCA study revealed that doors made with SABIC's thermoplastic composites revealed a lower global warming potential and cumulative energy demand than metal doors.

SABIC Media Contacts

Aline Stanworth

E: aline.stanworth@sabic.com

T: +31 164 29 2217

AH&M Marketing Communications

Amy Godfrey

E: agodfrey@ahminc.com

T: +1 413 448 2260, Ext. 370

For high resolution pictures please contact: Amy Godfrey (agodfrey@ahminc.com, +1 413 448 2260, Ext. 370).