

CHEMISTRY THAT MATTERS™



CERTIFIED RENEWABLE POLYCARBONATE

FROM SABIC'S TRUCIRCLE™ PORTFOLIO OF CIRCULAR SOLUTIONS



TRUCIRCLE™ PORTFOLIO AND SERVICES

Our TRUCIRCLE solutions are aiming to help companies around the world to drive the change needed to become a circular global society.

SABIC's TRUCIRCLE™ portfolio and services for circular solutions span; design for recyclability, mechanically recycled products, certified circular products from feedstock recycling of used plastics and certified renewables products from bio based feedstock.

POLYCARBONATE BASED ON CERTIFIED RENEWABLE FEEDSTOCK

Part of our growing engineering thermoplastics' (ETP) sustainability portfolio, SABIC offers LEXAN™ polycarbonate resin and its blends, produced from certified renewable feedstock, that is not in direct competition with the human food chain.

The material has a lower carbon footprint in comparison to fossil-based alternatives.

NO COMPROMISE ON QUALITY

SABIC's certified renewable materials are made to the same high specifications and properties as virgin products, and are an easy drop-in solution to current production processes. A broad range of polycarbonate grades are available as certified renewable grades.

61% CO₂ FOOTPRINT REDUCTION
FOR EACH KG OF POLYCARBONATE
BASED ON CERTIFIED RENEWABLE
FEEDSTOCK*

WITH FOSSIL DEPLETION REDUCTION
POTENTIAL OF UP TO 35%

REPLACING FOSSIL BASED FEEDSTOCK

SECOND GENERATION RENEWABLE

ANIMAL - FREE FEEDSTOCK

PALM OIL - FREE FEEDSTOCK

NO COMPROMISE ON QUALITY

BY-PRODUCT OF THE WOOD
AND PAPER INDUSTRY



INDUSTRY LEADER

To make it easier for our customers to access more sustainable materials and drive the change needed to create a circular economy, SABIC was the first in the industry to launch a polycarbonate based on certified renewable feedstock.

Part of our TRUCIRCLE™ portfolio and services, the new LEXAN™ polycarbonate resin and its blends are based on the mass balance concept.

To make it, we use an alternative, renewable feedstock called tall oil, a by-product of the wood and paper industry.

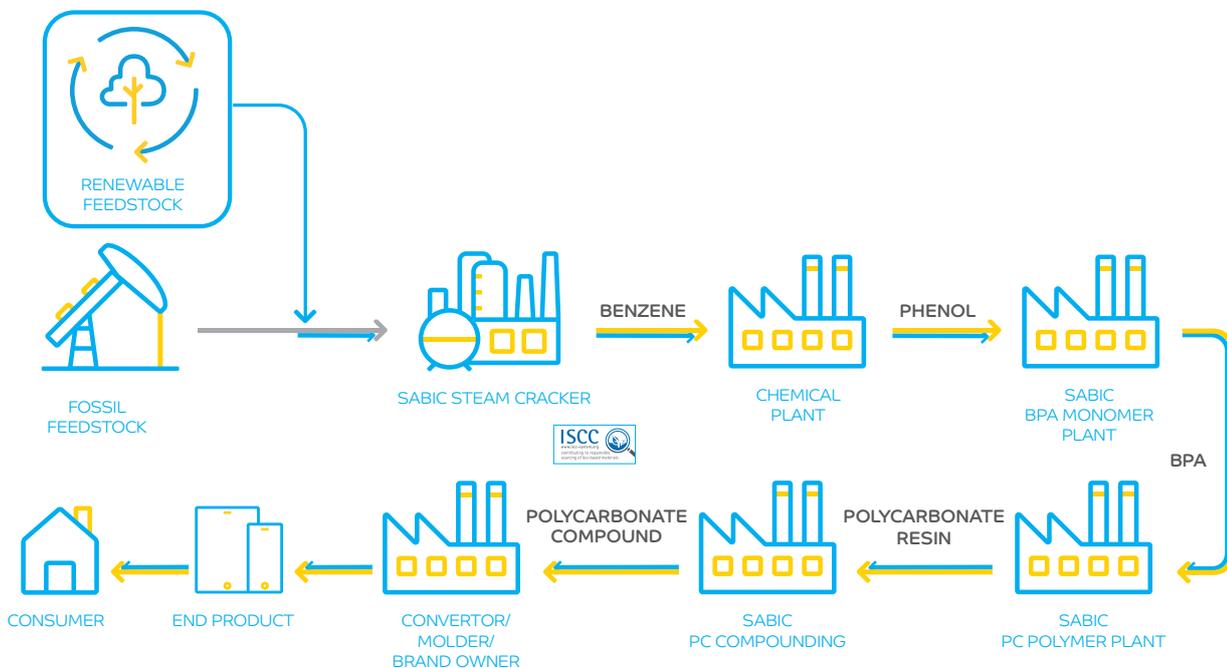
In line with SABIC’s continuous efforts to strive for innovation and sustainability, polycarbonate based on other, alternative renewable feedstocks will become available soon.

SIGNIFICANT SUSTAINABILITY ADVANTAGES

The feedstock used does not directly compete or interact with the human food chain, meaning we help our customers address their sustainability goals and help lower carbon emissions.

SABIC’s cradle-to-gate peer-reviewed LCA study* for our polycarbonate (PC) based on certified renewable feedstock solution reveals **potentially significant reductions in carbon footprint (up to 61%), primarily enabled by the removal of carbon by biomass, and fossil depletion impacts (up to 35%)** for the production of polycarbonate resin based on the incorporation of renewable feedstock, in comparison to fossil-based polycarbonate production.

THE CONCEPT POLYCARBONATE BASED ON CERTIFIED RENEWABLE FEEDSTOCK



* SABIC has completed a detailed LCA study that is currently in the process of third party ISO Critical Review. However, the study has passed SABIC Internal review that relies on SABIC protocols for LCA quality control. As is typically the case with the use of bio-based feedstock, the LCA study results show environmental trade-offs with respect to eutrophication and water consumption. These environmental impacts may be mitigated through sustainable management practices in the upstream value chain. Only a part of the feedstock used in polycarbonate production is from renewable feedstock. The LCA study has assessed the environmental performance of the renewable route in comparison to the fossil-based route at “Cradle to Gate” as well as “Cradle to Gate + End of Life” scope levels and relies on PAS 2050 methodology for biogenic carbon accounting.

RENEWABLE FEEDSTOCKS

The use of renewable feedstock can reduce the need for fossil resources, potentially reducing the depletion of fossil resources by up to 61%. The sources of the feedstock are selected to avoid direct competition with human food chain and feed production, so-called second generation sources. SABIC uses feedstock coming from plant sources and excludes animal sources.

The sustainability characteristics of the renewable feedstock as well as the routing of the feedstock through the supply chain to end products are aspects of the ISCC PLUS certification scheme.

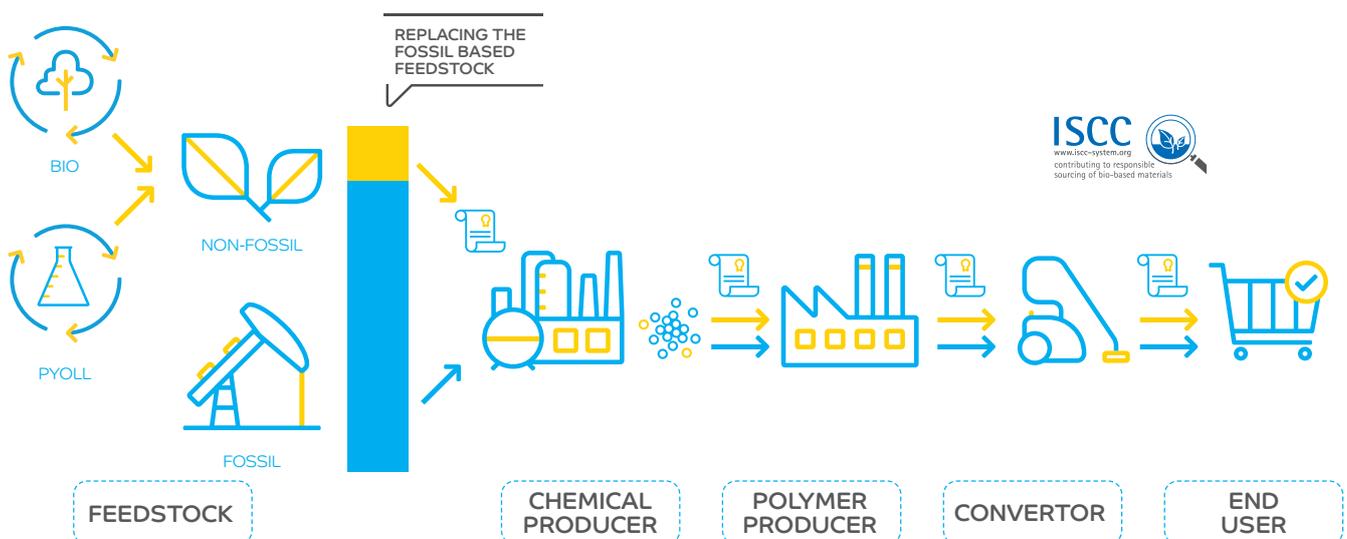
ISCC PLUS CERTIFICATION

The entire value chain with a physical link is certified by the ISCC (International Sustainability and Carbon Certification) to provide proof of the incorporation of renewable feedstock from cracker feedstock to the production of polycarbonate and, ultimately, for our customers' products.

The polycarbonate-based material is identical to that made using only fossil-based feedstock.

MASS BALANCE CHAIN OF CUSTODY

SABIC's certified renewable polymers are based on a mass balance approach. To secure the chain of custody the value chain parties require an International Sustainability & Carbon Certification (ISCC PLUS) certification. This widely recognized international sustainability certification scheme verifies that the mass balance accounting follows predefined and transparent rules. In addition, it provides traceability along the supply chain, from the feedstock to the final product.



Alternative feedstock might not be physically traceable throughout the production processes when used together with non-renewable feedstock. Application of mass balance to attribute the alternative feedstock to an end-product in a fully transparent and auditable way.

VALUE OFFER OF CERTIFIED RENEWABLE POLYCARBONATE PRODUCTS

- 2nd generation renewable feedstock, not in direct competition with the human food chain
- Available globally for Automotive, Consumer Goods & Home Appliances, Electrical & Electronics and Building & Construction industries
- Feedstock source has a lower carbon footprint compared to fossil alternative
- Identical product specifications to our current PC portfolios
- No modifications to production processes down-stream, hence no investments are required anywhere in the value chain
- Recyclable
- Replacing fossil-based feedstock



FOSSIL DEPLETION
REDUCTION POTENTIAL
OF UP TO 35%

61% CO2 FOOTPRINT
REDUCTION
FOR EACH KG OF
POLYCARBONATE
BASED ON CERTIFIED
RENEWABLE FEEDSTOCK



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