

CHEMISTRY THAT MATTERS™



SHRINK CARBON FOOTPRINT WITH  
SUSTAINABLE NORYL™ RESINS  
BIO-CIRCULAR AND PCR-BASED SPECIALTY POLYMERS



Advance your sustainability goals with NORYL™, NORYL GTX™, NORYL PPX™ and Flexible NORYL resins based on ISCC+ certified renewable sources or post-consumer recycled (PCR) content.

**SUSTAINABILITY WITHOUT SACRIFICE**

Organizations worldwide face increasing pressure to reduce their carbon footprint and advance circularity. Whether the driver is complying with regulations, meeting industry expectations or pursuing internal environmental, social and governance (ESG) initiatives, your business can benefit from transitioning to sustainable thermoplastic materials.

The key is finding sustainable alternatives that do not require compromising on quality, performance or manufacturability.

The majority of SABIC’s extensive NORYL resin portfolio is now available in both bio-circular and PCR-based versions – with properties and processing similar to those of equivalent fossil-based grades. In fact, SABIC’s bio-circular NORYL resins can be used as drop-in replacements for traditional NORYL resins.

GRADE	FEATURES
<b>NORYL™ resin</b>	NORYL resins feature a low specific gravity, a good balance of mechanical and chemical properties, and strong electrical and flame retardant properties for applications requiring stability in varying environments.
<b>NORYL GTX™ resin</b>	This blend of PA and modified PPE delivers the high chemical resistance, stiffness, impact resistance and heat performance required for on-line painting.
<b>NORYL PPX™ resin</b>	This alloy combines the flowability and chemical resistance of PP with PPE’s high-temperature performance, surface hardness and rigidity.
<b>Flexible NORYL resin</b>	Developed for wire & cable insulation and jacketing, Flexible NORYL resin has a smaller carbon footprint than PVC, while retaining its flexibility and processing performance.



## BIO-CIRCULAR NORYL RESIN TECHNOLOGY

These materials are formulated with polyphenylene ether (PPE) resin feedstocks certified under International Sustainability & Carbon Certification (ISCC) PLUS. More than 300 NORYL resin grades are available in certified renewable, bio-circular versions. Plus, you can choose from multiple levels of bio-circular content for your NORYL product – up to nearly 100 percent.



To help you get started, we commercialized bio-circular versions of three popular NORYL materials:

- **NORYL NH5120BIO4 resin** is a non-brominated/non-chlorinated flame-retardant (FR) grade with a UL94 rating of V1 at 1.5mm. It contains no intentionally added PFAS.
- **NORYL GFN2BIO3 resin** features high strength, hydrolytic and dimensional stability, low warpage and low specific gravity. It carries a UL746C F1 outdoor suitability rating.
- **NORYL GTX902BIO3 resin** is a PPE alloy that provides excellent chemical resistance and paintability.

ISCC+ certified bio-circular NORYL resins in general offer lower greenhouse gas emission potential (GWP) up to 70%\* CO2 reductions, depending on specific product grades and production sites around the world.

## PCR-BASED NORYL RESIN TECHNOLOGY

SABIC also offers more than 200 existing NORYL resin grades – and unlimited new grades – which can be formulated with 25 percent or more PCR content. Like our bio-circular products, PCR-based NORYL materials help customers meet sustainability requirements and support circularity.

Our PPE-based technology is among the first to incorporate such a significant level of recycled content. SABIC has validated this technology by commercializing several grades, including:

- **NORYL NH5120RC3 resin** contains 30 percent PCR content, which helps to lower its global warming potential (GWP) by 10 percent compared to the incumbent, fossil-based grade. It features non-brominated/non-chlorinated FR meeting the UL94 V1 standard at 1.5mm.

To help you succeed with our sustainable NORYL materials, SABIC offers resin customization services to meet specific application requirements, as well as a full array of technical support services.



SOLAR/ENERGY STORAGE



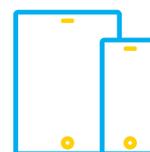
ELECTRIC VEHICLES



WATER MANAGEMENT



CONSUMER ELECTRONICS



## WE'RE ALWAYS HERE FOR YOU

Reach out to us for one-on-one support to ensure you have all the information and insights you need to choose the best-fit materials for your applications. Did you know that SABIC's Specialties Business offers all these services and more?

- Material suggestions and samples
- Design and predictive engineering services
- COLORXPRESS™ color matching services
- Teardowns and prototyping
- Processing technical support
- Application testing guidance
- Industry-specific regulatory information

\*Product carbon footprints were calculated following the ISO 14040/14044 guidelines, using SABIC specific and industry average estimates for the ingredients and processes utilized in the cradle-to-gate supply chain. These estimates are subject to change as new updated data and improved methods become available from life cycle databases and improvements in manufacturing process.

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**SABIC MATERIAL FINDER**  
Find the right Specialties material for your application ▶



NORYL RESINS

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