

# Green Plastics for Electronic Components

The time has come. Plant-based plastics are a top engineering topic at SCHURTER. After undergoing numerous tests and acquiring extensive expertise through the development process, the Green Line appliance connectors are now going into series production as the first in a growing family of components. But what are green plastics exactly?



*Green Line IEC appliance connectors with housings made of 100 % recyclable plant-based plastics*

It is widely recognized that humanity must rapidly reduce its ecological footprint. Scientific findings demonstrate that our climate is changing faster than predicted.

## Green Plastics

At the SCHURTER headquarters in Lucerne, the most brilliant and inventive engineers are extensively engaged in innovative plastics. These are technical polymers based on renewable, plant-based resources. These plastics replace and complement the crude oil-based materials in the housings of various appliance connectors.

## Crude oil-based plastics

So far, electronic components are predominantly made of technical plastics, whose raw materials are derived from crude oil. The entire plastic production relies on non-renewable resources, which, given the rapidly increasing scientific, social, and normative demand for sustainability in the broader context, needs to be changed.

## Ecological alternatives

One possible alternative is plastics made from plant-based raw materials. These

plastics have a neutral CO<sub>2</sub> footprint throughout their entire product lifespan. In the laboratory, SCHURTER engineers have thoroughly tested various of these plastics. The most suitable plastic is derived from castor beans. The castor plant grows as a fallow plant in semi-arid zones, thereby not competing with food production.

It is essential to ensure a significant CO<sub>2</sub> reduction in the entire product life cycle (Cradle-to-Grave). An independent company has conducted a corresponding analysis for selected representative products from the SCHURTER portfolio. The new plastic

exhibits a CO<sub>2</sub> footprint reduction of up to two-thirds compared to crude oil-based plastics.

## Sustainable supply chain

The cultivation of castor beans for the production of these plastics offers opportunities for a sustainable supply chain. Castor beans can be grown in a variety of regions worldwide and require relatively little water and fertilizers compared to other crops.

## Tests, prototypes, series

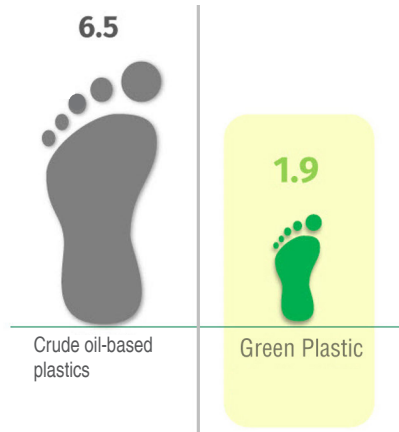
From an ecological perspective, using plant-based raw materials makes sense. Therefore, we have conducted numerous experiments to ensure that components made with this material meet the high visual and mechanical quality standards set by SCHURTER.

The practical behavior of a plastic cannot always be deduced from a datasheet. Hence, numerous tests had to be performed, such as flow behavior in injection molding, mechanical strength, thermal resistance, and many others, had to be performed. These test series demonstrated that the products fully meet quality and safety regulations. Ultimately, the products had to comply with the safety requirements of the IEC 60320 standard.

In summary: The new bio-based housing material of the Green Line is on par with its crude oil-based counterpart in every aspect.

## Perspective

The Green Line appliance connector series is just the beginning of a sustainable evolution in the electronics industry. SCHURTER is firmly committed



CO<sub>2</sub> footprint of various plastics  
unit: kg CO<sub>2</sub> eq./kg

to continuing its innovative efforts in developing environmentally friendly solutions. The Green Line sets a pioneering example of how sustainability, performance, and innovation can be successfully combined.

## Part of the corporate strategy

SCHURTER is fully aware of its responsibility, and special attention has been given to sustainability in the defined and revised corporate strategy, which is updated every 5 years.

In recent years, various company locations and production facilities in Europe (Switzerland, Czech Republic, Romania, Hungary) and Asia (India, China, and Singapore) have undergone modernization and been brought up to the latest technological standards. The renovation of the headquarters in Lucerne alone amounted to CHF 30 million. As a result, the new or renovated buildings now expel significantly improved thermal insulation values, and the lighting consumes only a fraction

of the energy compared to before. Additionally, the employees have been made more aware of the importance of minimizing energy consumption.

## About SCHURTER

The SCHURTER Group is a globally successful Swiss technology business. With our components ensuring the clean and safe supply of power, input systems for ease of use and sophisticated overall solutions, we impress our customers with agility and excellent product and service quality.

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## References / Downloads

[SCHURTER Green Line](#)

[SCHURTER Sustainability Report](#)