

# PE103 - Impact-Resistant Bioplastic for Profile Extrusion



PE103 is a bioplastic based on PLA, suitable for use in a variety of profile extrusion applications. The formulation is based on a very high proportion of renewable raw materials, which allows for a reduction in carbon footprint by up to 75% compared to conventional fossil-based plastics.

## Environmental Benefits

PE103 has been developed to be a sustainable alternative to fossil-based plastic for profile extrusion. A very high proportion of the raw material comes from renewable sources.

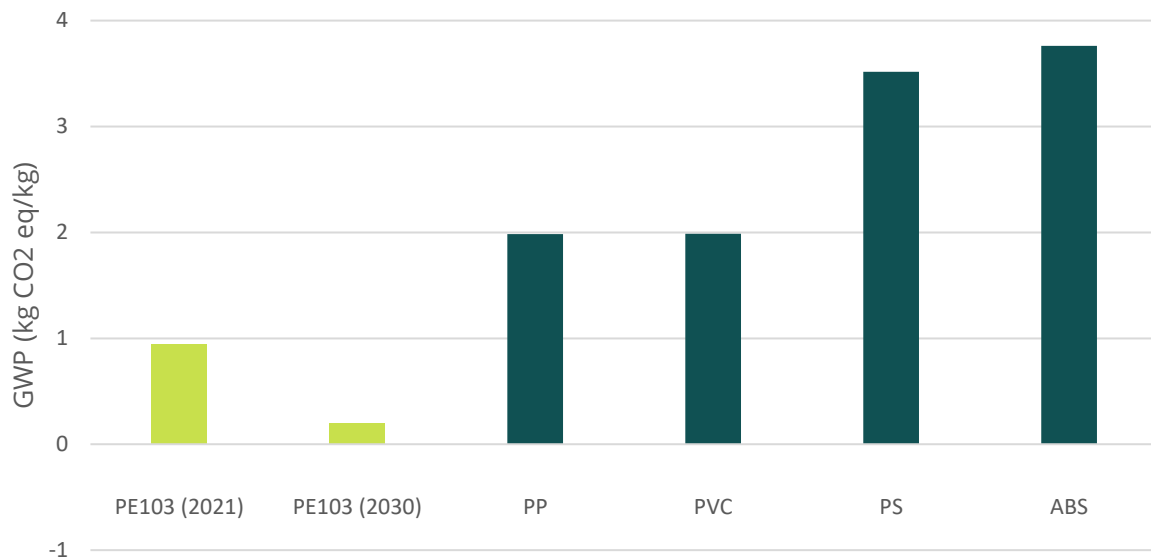
According to life cycle assessment calculations (LCA), PE103 has a global warming potential (GWP) of 0.94 kg CO<sub>2</sub> eq./kg of manufactured material (cradle-to-gate)\*. This is significantly lower than conventional plastic (see diagram below) and shows how switching to BIQ Materials PE103 noticeably reduces the CO<sub>2</sub> footprint of your company's products. Our ambition is to continuously reduce the environmental footprint of our materials, with the goal of reducing GWP to 0.20 kg CO<sub>2</sub> eq./kg of manufactured material by 2030.

Please contact us to discuss how you can improve the environmental profile of your products.

\* The CCaLC2 software, version 1.7, and its database were used to perform this life cycle analysis.

- + Up to 75% lower CO<sub>2</sub> footprint
- + High proportion of renewable content
- + Recyclable
- + Free from permanent microplastics
- + Food safe
- + Very high impact resistance

**Global Warming Potential for PE103 Compared to Conventional Plastic**



**Recyclable and Biodegradable**

PE103 is biodegradable but can also be recycled or incinerated, thus having many ways to complete the carbon cycle when its usage period is over. Through recycling, the carbon footprint can be further reduced. In this way, it is a good material choice for companies that want to mark their transition towards a circular economy with a reduced environmental footprint.

Compared to conventional plastics, PLA breaks down as carbon dioxide and water over time in the environment. If it ends up in nature, it does not leave any permanent microplastics behind.



**An Easy Transition**

PE103 stands out with very high impact resistance combined with good processability. It can replace fossil-based plastic in many different profile tools and applications, which both simplify and reduce the cost of transitioning to bioplastic. Please contact us, and we will help your company make the switch.

**Food Safety**

All raw materials used in the formulation are approved for contact with food according to EU Regulation 10/2011. For more information, please contact BIQ Materials, and we will gladly provide a declaration of compliance.

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### Technical Data

The table below shows a selection of properties for PE103

| Parameter                            | Value           | Unit               | Method   |
|--------------------------------------|-----------------|--------------------|----------|
| Color                                | Easy to color   | -                  | -        |
| Density                              | 1,38            | Kg/dm <sup>3</sup> | ISO 1183 |
| Melt Flow Index (190 °C; 2,16 kg)    | 2               | g/10               | ISO 1133 |
| Melting Temperature                  | 155             | °C                 | Internal |
| E-modulus                            | 1800            | MPa                | ISO 527  |
| Charpy Impact Test (utan märke)      | 210 (non break) | kJ/m <sup>2</sup>  | ISO 179  |
| Proportion of Renewable Raw Material | 70*             | %                  | Internal |

\*The remaining content consists of non-bio-based but biodegradable polymers and processing aids.