

IM221 - Heat-Resistant Bioplastic for Injection Molding



IM221 is a bioplastic based on PLA, suitable for use in a variety of injection molding applications where a heat-resistant material is required. The formulation is based on a very high proportion of renewable raw materials, which allows for a reduction in carbon footprint by up to 105% compared to conventional fossil-based plastics.

Environmental Benefits

IM221 has been developed to be a sustainable alternative to fossil-based plastic for injection molding. A very high proportion of the raw material comes from renewable sources.

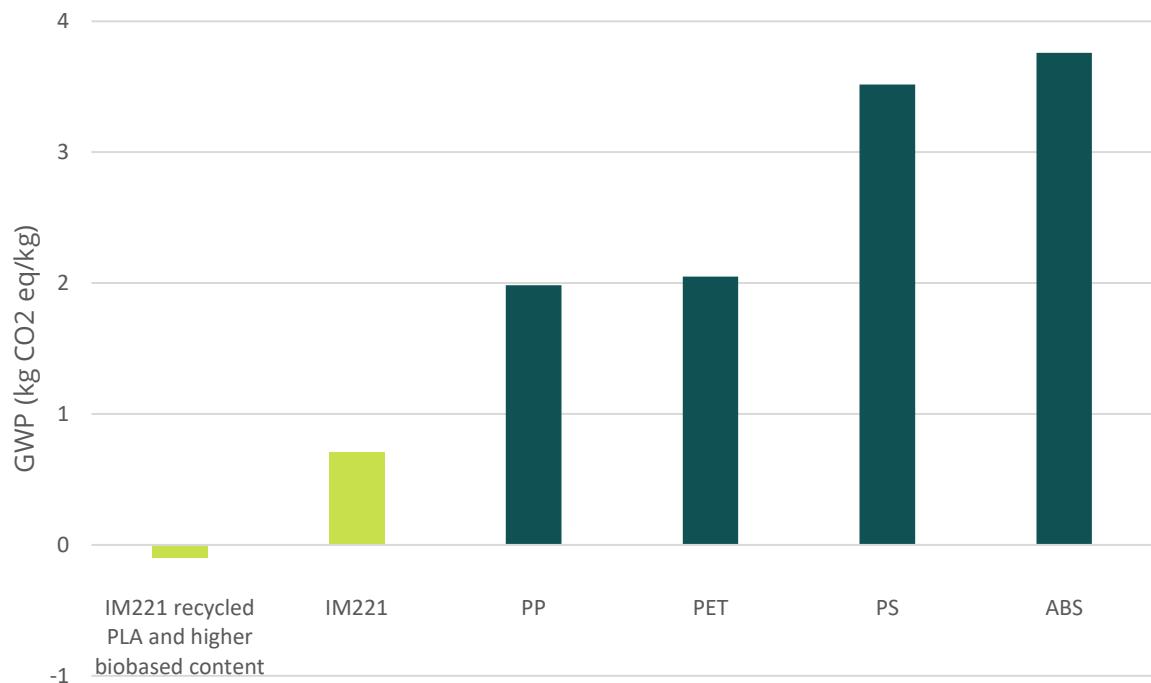
According to life cycle assessment (LCA) calculations, IM221 has a global warming potential (GWP) of -0.10 kg CO₂ eq./kg of manufactured material (including biogenic carbon, cradle-to-gate)* when chemically recycled PLA and a higher proportion of bio-based raw materials are used. This is significantly lower than for conventional plastics (see diagram below) and demonstrates how switching to BIQ Materials IM221 noticeably reduces the CO₂ footprint of your company's products. The GWP for IM221 without recycled PLA and with a slightly lower proportion of renewable content is 0.71 kg CO₂ eq./kg of manufactured material (including biogenic carbon).

Feel free to contact us so we can 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 105% lower CO₂ footprint
- + Very high proportion of renewable content
- + Heat-resistant
- + Recyclable
- + Free from permanent microplastics
- + Food safe

Global Warming Potential for IM221 Compared to Conventional Plastic



Recyclable and Biodegradable

IM221 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

IM221 stands out with its high heat resistance and can thus replace conventional plastics in applications where this is required. 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.

Technical Data

The table below shows a selection of properties for IM221

| Parameter | Value | Unit | Method |
|--------------------------------------|---------------|--------------------|----------------|
| Color | Easy to color | - | - |
| Density | 1,35 | Kg/dm ³ | ISO 1183 |
| Melt Flow Index (190 °C; 2,16 kg) | 8 | g/10 | ISO 1133 |
| Melting Temperature | 175 | °C | Internal |
| E-modulus | 2400 | MPa | ISO 527 |
| Ball Pressure Test | 125 | °C | IEC 60695-10-2 |
| Proportion of Renewable Raw Material | 89-99* | % | Internal |

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