

# IM121 - Versatile Bioplastic for Injection Molding



IM121 is a bioplastic based on PLA, suitable for use in a variety of injection molding 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 105% compared to conventional fossil-based plastics.

## Environmental Benefits

IM121 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.

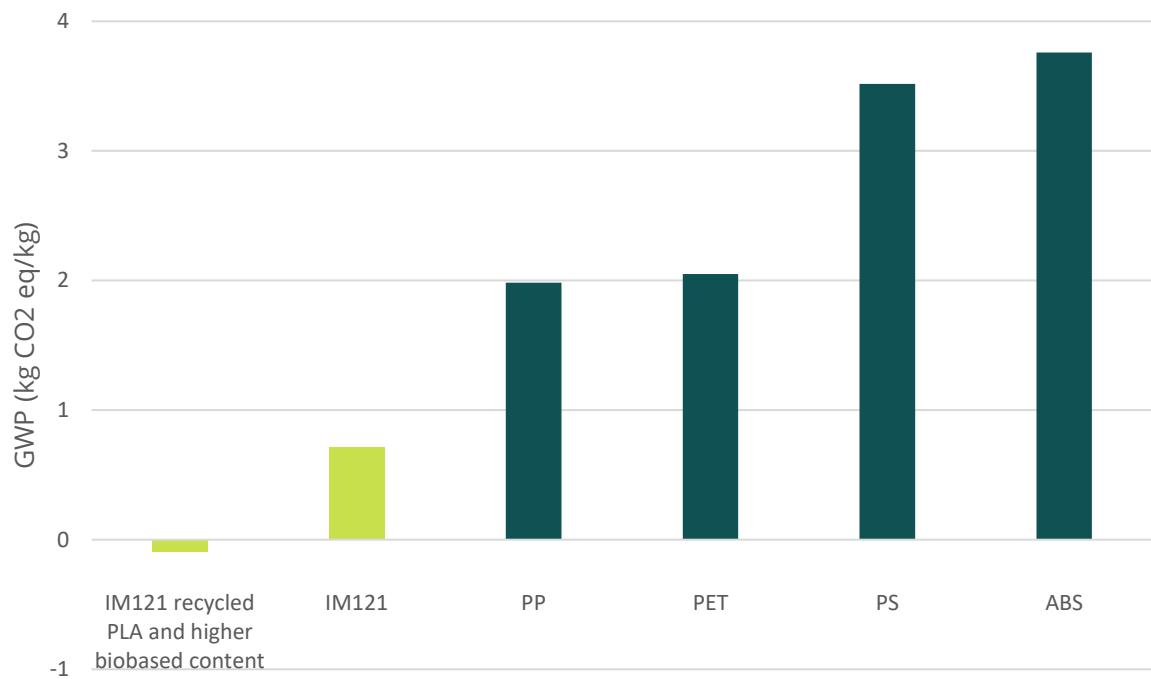
According to life cycle assessment (LCA) calculations, IM121 has a global warming potential (GWP) of -0.10 kg CO<sub>2</sub> eq./kg of manufactured material (including biogenic carbon, cradle-to-gate)\* when chemically recycled PLA and a higher proportion of bio-based ingredients are used. This is significantly lower than conventional plastic (see diagram below) and demonstrates how switching to BIQ Materials IM121 can noticeably reduce the CO<sub>2</sub> footprint of your company's products. The GWP for IM121 without recycled PLA and with a slightly lower share of renewable content is 0.71 kg CO<sub>2</sub> eq./kg of manufactured material (including biogenic carbon).

Please 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 CO<sub>2</sub> footprint
- + Very high proportion of renewable content
- + Recyclable
- + Free from permanent microplastics
- + Food safe

## Global Warming Potential for IM121 Compared to Conventional Plastic



### Recyclable and Biodegradable

IM121 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

IM121 stands out with well-balanced mechanical properties combined with good processability. It can replace fossil-based plastic in many different injection molding tools and applications, which both simplifies and reduces 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.

### Technical Data

The table below shows a selection of properties for IM121

Parameter	Value	Unit	Method
Color	Easy to color	-	-
Density	1,29	Kg/dm <sup>3</sup>	ISO 1183
Melt Flow Index (190 °C; 2,16 kg)	22	g/10	ISO 1133
Melting Temperature	175	°C	Internal
E-modulus	3300	MPa	ISO 527
Charpy Impact Test (utan märke)	40 (complete break)	kJ/m <sup>2</sup>	ISO 179
Proportion of Renewable Raw Material	89-99*	%	Internal

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