

# The Tallest & Thin Wall Biodegradable Plastic (PLA) Glass

Bio7 Hepta & 4Tiers



Nissin Precision Machines Co., Ltd.

"What is **Polylactic Acid (PLA)** plastic?"

"Plant based **Biodegradable Resin** made from ***lactobacillus*** and ***starch***"

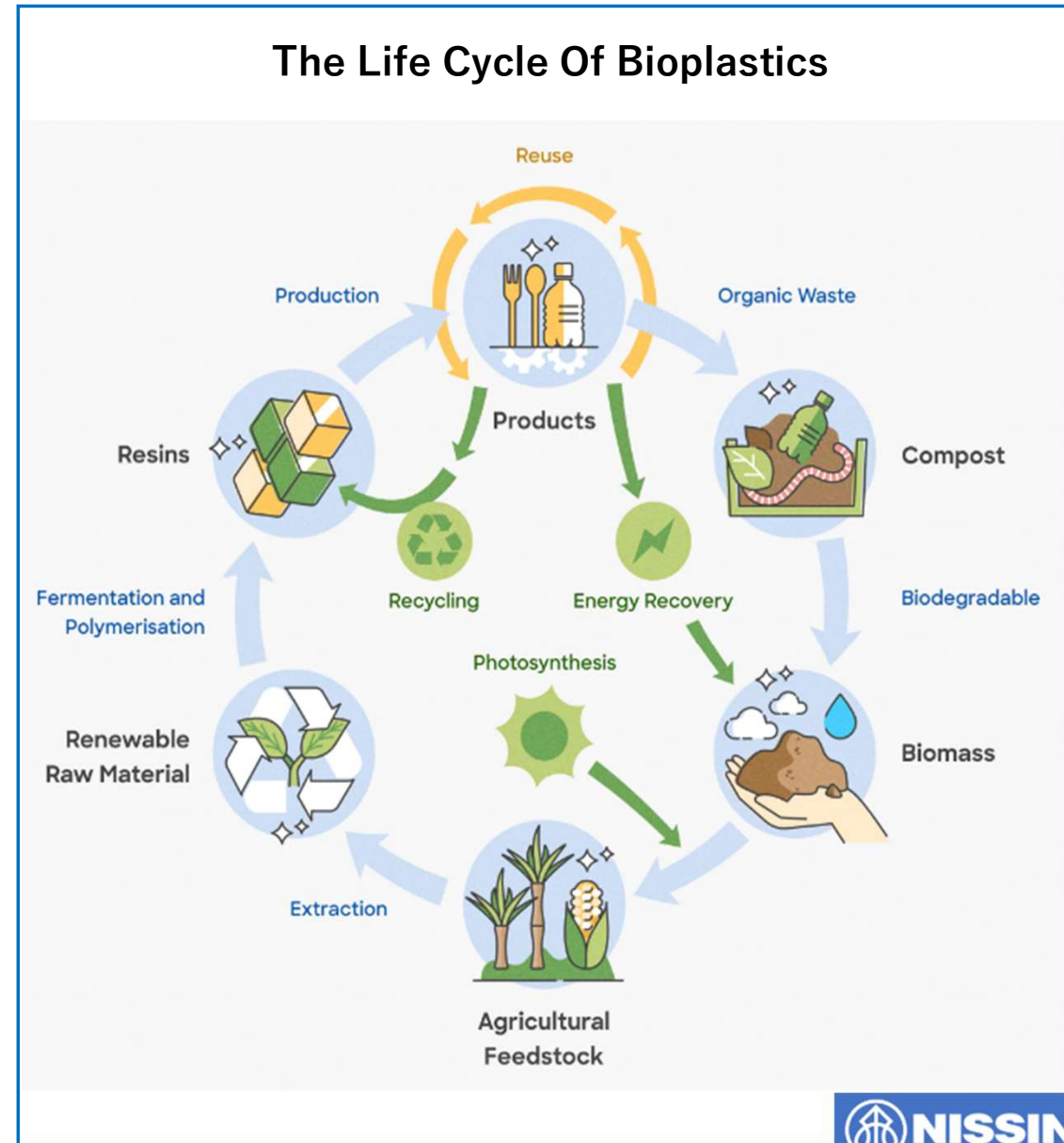
"Eco-friendly materials driving the Circular Economy into action."

#### Advantages:

- ✓ **CO2 emission reduction** (carbon neutral)
- ✓ **Biodegradable with no waste** (organic waste → biomass → agricultural material)
- ✓ **Derived from plants:** Renewable crop resources instead of exhaustible fossil fuels

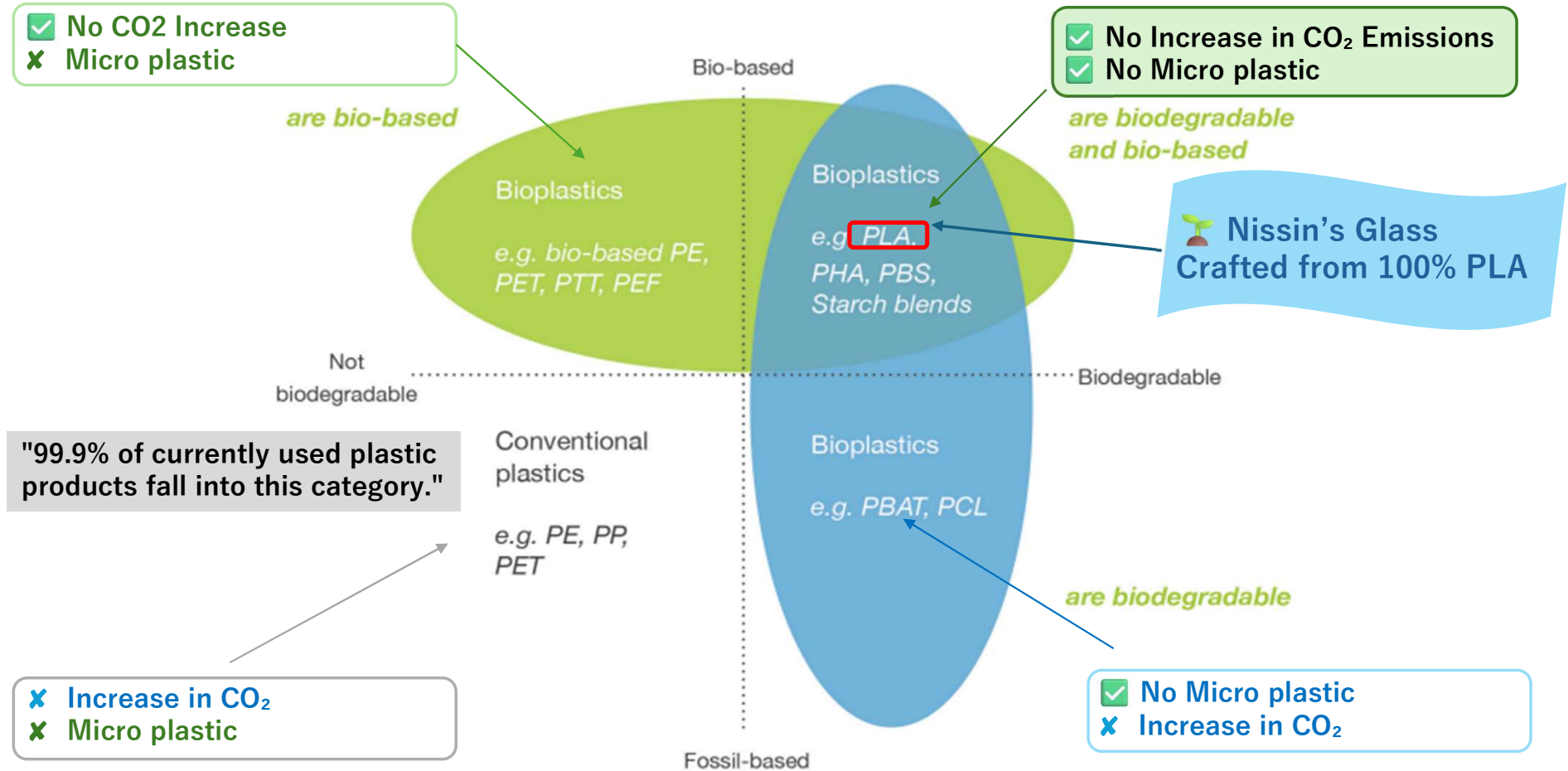
#### Challenges:

1. High material costs: Increase supply volume to drive down prices.
2. Low heat resistance (currently 55°C/131°F): Focus on material development to enhance heat resistance.



# “The Solution to Environmental Challenges of Plastics ~ Biodegradable Plastics”

☆ *Optimal Materials for Environmental Conservation* ☆



Graph: Material coordinate system of bioplastics Source: European-bioplastics.org

# The features of Nissin's Bioplastic Glass

## 1. Environmental Aspects

-1 kg of biodegradable plastic cups can reduce CO2 emissions by 2.5 kg compared to petroleum-derived glass.

-The material is biodegradable into water and CO2 in about 3 months in compost, about 5 years in soil, and about 10 years in the ocean.

## 2. Technology

-The length from the bottom to the lip (known as the 'flow length' in molding) measures approximately 135mm, making it the longest in the world at the time of development (based on our research).

-We overcame the difficulty of shaping PLA (Polylactic Acid) resin with advanced manufacturing technology, achieving a thin-wall level of 0.65 mm, surpassing the 1 mm thickness limit.

## 3 Applications

-The thin mouthpiece, with a thickness of 0.65mm, enhances the sensation of cold beverages.

-Heat resistance up to 55°C/131°F, perfect for cold beverages.

-Ideal for environmentally conscious events such as eco-friendly events and outdoors.

-Can be used for educational purposes on environmental issues, such as compost demonstrations and observation of degradation processes.

## 4 Design

**Bio7<sub>Hepta</sub>:** A unique blend of "prime number" and PLA resin creates an "unbreakable," auspicious concept. The ultra-thin mouth (0.65mm) enhances transparency, while the heptagonal bottom ensures unmatched stability. The thin, smooth glass edge offers both practicality and design.

**4-Tiers:** Exceptional stability, perfect for desserts like ice cream; holds about 50 ml per tier and can be used as a 200 ml measuring cup. It can also be used as a mold.

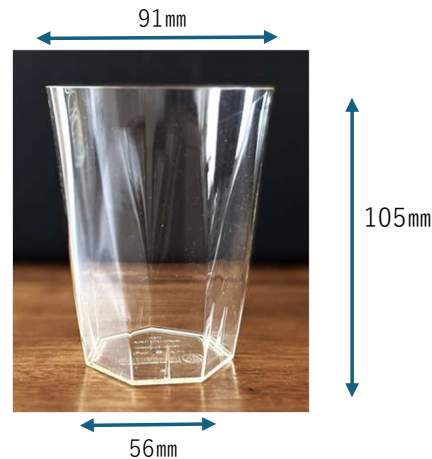


# Our Products

## Bio7 *Hepta*

- “Prime number” and PLA resin creates an “unbreakable,” auspicious concept. It is thin like fine glass, but it doesn’t break!
- The ultra-thin mouth (0.65mm) enhances transparency, while the heptagonal bottom ensures unmatched stability.
- **Heat resistance temperature: 55°C/131°F**
- The glass **biodegrades** into **Water or CO<sub>2</sub>** within approximately 3 months in compost, 5 years in soil, and 10 years in the ocean

*“The thin, smooth glass edge provides both functionality and aesthetic appeal.”*



Capacity: 350ml/11.83Floz.

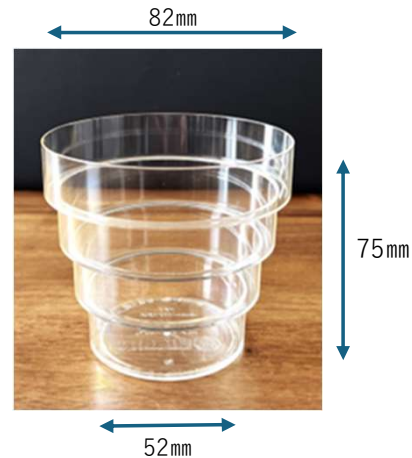


# Our Products

## 4Tiers

- Each compartment holds around 50cc, doubling as a 1cup/200cc measuring cup. Also great as a rice or fried rice mold, with endless possibilities beyond!“
- **Heat resistance temperature: 55°C/131°F**
- The glass **biodegrades** into **Water or CO<sub>2</sub>** within approximately 3 months in compost, 5 years in soil, and 10 years in the ocean
- 1 kg of biodegradable plastic glasses can reduce CO<sub>2</sub> emissions by 2.5 kg compared to petroleum-derived glass.

*“Excellent stability. Ideal for indulgent desserts such as ice cream and jelly, as well as refreshing small beverage servings.”*



Capacity: 200ml/6.76Floz.



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## Examples of Using Bio Plastic Glass

- Serving beverages at eco-friendly events and parties.
- Offering sustainable drinkware options in cafes, restaurants, and hotels.
- As an alternative to fine glassware with a good mouthfeel.
- Catering for outdoor events and picnics, reducing plastic waste.
- Supporting composting initiatives by using biodegradable cups at composting facilities.
- For educational purposes and environmental awareness campaigns.
- Further raise awareness at environmentally conscious festivals, parties, and events.
- As a novelty item with an environmental protection message.





## Benefits of bioplastics

In search of new material solutions and keeping an eye on the goal of sustainable sourcing, production and consumption, bioplastics have several advantages. The use of renewable biomass to produce bioplastics is the key for:

- Increasing resource efficiency by the means of:
  - The resources (crops) being cultivated on an at least annual basis;
  - The principle of cascade use, as biomass can first be used for materials that can in some cases be reused and recovered, and eventually for energy recovery
- Reducing the carbon footprint and greenhouse gas (GHG) emissions of materials and products
- Saving fossil resources by substituting them step by step
- Getting independent from fossil resources such as crude oil and therefore become independent from related exports

Source: European bioplastics

<https://www.european-bioplastics.org/news/publications/>





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*Contact us  
to act for the better future*

Please click the link below for more information and questions.

<https://www.nissin-precision.com/en/contact/>

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*"Beginning with Bio7 & 4 Tiers, we persist in actively developing eco-friendly products and contribute to the realization of a sustainable future."*



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