

NO WASTE

NO TRACE

# Loopha

# Making 3D printing more sustainable

Loopha



Keywords

Nature

Life

Material Aesthetics

## Brand Story

In an era where technology and nature intertwine, we embrace the importance of environmental protection and the urgent need for material innovation. Loopha was born from scientists and designers united and driven by their passion and responsibility for nature, biotechnology, and material aesthetics.

Our story unfolds in the fascinating world of microorganisms. By delving into these tiny yet vibrant beings, we uncovered a substance that has the power to transform the material world—  
Polyhydroxyalkanoates (PHA). This material, crafted by microbial lipids, not only delivers the functionality of traditional plastics, but also returns naturally to the Earth at the end of its life cycle. This discovery unlocked limitless possibilities for creating a positive impact on the planet.

At Loopha, our mission goes beyond blending function and beauty. We aim to embody the harmony between humanity and nature. Through our products, we hope to offer users not only convenience, but also a deep resonance with sustainability and respect for life itself.

# Key Advantages of Loopha Filament



## Sustainability Advantages:

Marine Degradable

Home Compostable

Microplastic-Free

Zero-Waste Printing

Safe and Non-Toxic

## Performance Advantage:

Excellent heat resistance

Low moisture absorption

Resistant to dampness

High resistance to brittleness

Superior toughness

## Performance Disadvantages:

Susceptible to warpage

Poor creep resistance

## Additional Advantages:

Loopha incorporates natural biomass residues (such as coffee grounds, tea leaves, and orange peels), giving printed products a unique sensory experience in scent, texture, and appearance, and creating a clear differentiation from conventional materials on the market.

Loopha features a distinctive matte gel-like finish, with a soft and refined luster that provides a premium, non-plastic look, moving away from the cheap visual impression often associated with traditional plastics.

Loopha elevates products beyond touch and aesthetics by conveying environmental responsibility and brand value, transforming an ordinary item into a symbol of a sustainable and forward-looking lifestyle.

Loopha stands out as the only bio-based filament that can naturally degrade in all environments, setting a new benchmark for eco-friendly 3D printing materials.



100% PHA Series  
Pure PHA Collection

Loopha

Coffee Grounds PHA Filament  
(Brown)

Giving discarded coffee grounds  
a second life



Tea Powder PHA Filament  
(Green)

Infused with the unique breath  
of Eastern culture



Orange Peel PHA Filament  
(Orange)

Endows products with warmth  
and vitality



Grape Peel PHA Filament  
(Purple)

Strong antibacterial properties  
with a sweet fruity aroma



100% PHA Series  
Pure PHA Collection

Loopha

Cherry Blossom Powder PHA  
Filament (Pink)

Gentle healing, emotionally  
sustainable



Butterfly Pea Flower PHA  
Filament (Blue)

Pure and natural origin,  
stress-relieving and soothing



Shell Powder PHA Filament  
(White)

Delicate matte texture in pure  
white



Activated Carbon PHA  
Filament (Black)

Antibacterial, deodorizing,  
and air-purifying



100% PHA Series  
Pure PHA Collection

Loopha

Spirulina PHA Filament  
(Seaweed Green)

Unique color layering,  
enhances soil quality



PHA Filament (Natural)

Extracted from microbial lipids



# Printing Guide

PHA filament is prone to warping, with noticeable bridging and overhang challenges. Its printability falls between PLA and TPU, requiring careful calibration and tuning. Please contact us if you encounter any issues during the printing process.

Due to its relatively soft nature, PHA filament is not compatible with AMS (Automatic Material System) feeding.

Enclosed printing is not recommended, as it may cause nozzle clogging. Use with the glass front door or top cover open.

While PHA is naturally hydrophobic and resistant to moisture-induced brittleness, the embedded biomass particles may absorb moisture in high-humidity environments. If print quality decreases or bubbling sounds occur during printing, it is recommended to dry the filament before use (65 °C, 4 h).

Recommended printing temperature: 220 °C. If layer adhesion is weak, a higher temperature and printing speed may be applied.

Recommended nozzle size: 0.4 mm or larger.

This filament is compatible with most common FDM 3D printers such as Bambu Lab and Creality.

About Aroma: Loopha filaments contain no added fragrance; all scents are naturally derived from the raw materials. Among them, tea-powder filaments exhibit the most noticeable tea aroma, while spirulina-based filaments may release a seaweed-like scent when in contact with hot water. Please take this into consideration before purchasing.

As PHA is a bio-fermented material and is sensitive to processing temperature, we cannot guarantee identical printing parameters for every batch. Precise settings depend on the specific batch and ambient conditions. We recommend calibration before use, in the sequence: Temperature Tower → Flow Rate Adjustment → Dynamic Flow Calibration.

# Loopha A Truly Zero-Waste Printing Filament

Filament Net Weight: 750 g

Filament Diameter: 1.75 mm

Length: 240 m

## Build Plate Settings

- Recommended Build Plate: Bambu Cool Plate SuperTack
- Suggested Build Plate Temperature for Cool Plate SuperTack: 20 °C - 45 °C (Brim/Raft:Recommended)
- Suggested Build Plate Temperature for Textured PEI Plate: 45 °C - 60 °C (Brim/Adhesive/Raft:Recommended)

## Printing Settings

- Printing temperature: 205-230 °C (recommended: 220 °C)
- Printing speed: ≤ 300 mm/s

Flow rate adjustment: PHA is sensitive to processing temperature; optimal parameters may vary depending on regional environmental conditions; calibration testing required.

## Cooling Fan Settings

- Part Cooling Fan Speed: 100%
- Auxiliary Part Cooling Fan Speed: 0%

## Brim & Support Settings

- Brim Width: 10 mm
- Brim to Model Gap: 0 mm
- Elephant Foot Compensation: 0 mm
- Top Z-Distance: 0.25 mm
- Support/Model XY Distance: 0.5 mm
- Recommended Practice: Print one raft layer with PLA first, then switch to PHA for minimal warping.

## Physical Properties

(Injection-Molded Specimen Data)

- Tensile Strength: 16-19 MPa
- Tensile Modulus: 950-1200 MPa
- Elongation at Break: >50%
- Notched Izod Impact Strength: 5-15 kJ/m²
- Flexural Strength: 16-23 MPa
- Flexural Modulus: 700-1100 MPa
- Heat Deflection Temperature (HDT, under load): ≥85 °C

# Collaboration Cases

YU Design Lab ( Xing Fengqian )

Inventor ED

Likao

Serene Echoes

Like Amber

YiYang

...

Welcome to cooperate

# Cooperation Cases

Media Partners  
Regenesis Media  
Materials × Design



YU Design Lab ( Xing Fengqian )



Inventor ED



Like Amber



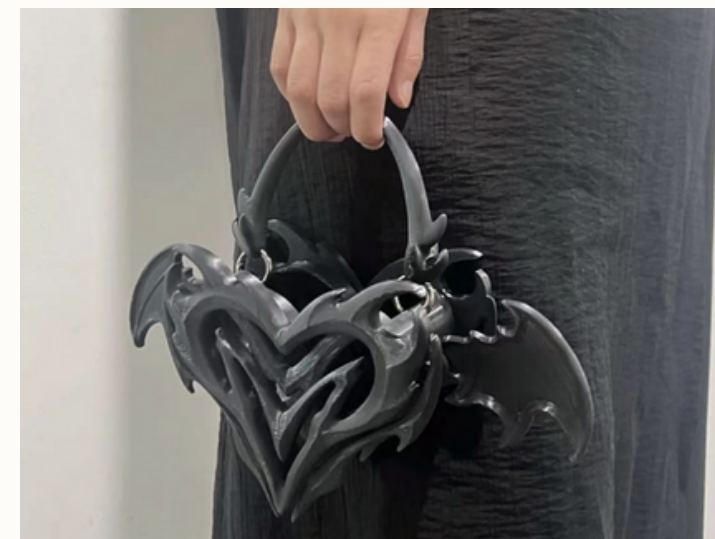
Regenesis Media



Likao



Serene Echoes



Yiyang



Materials × Design

## Authoritative Certification



### TÜV Austria Biodegradation Certification

A globally recognized certification system for biodegradation in natural environments, including marine, soil, and freshwater. Certification issued by TÜV Austria (formerly Vinçotte), Belgium



### USDA Certified 100% Biobased

Indicates that the material's biobased carbon content and origin are verified. Certification issued by the U.S. Department of Agriculture



EU Import & Export License for Chemical Manufacturing Products  
Demonstrates compliance with European Union regulations for the import and export of chemical manufacturing products



### European Home Compostability Certification (DIN CERTCO)

Verifies that the material or product is suitable for home composting  
Certification issued by DIN, the German Institute for Standardization



### European Industrial Compostability Certification

Verifies that the material or product is compostable under controlled industrial composting conditions in accordance with EU standards



### BPI Industrial Compostability Certification

Certified by the Biodegradable Products Institute (BPI), the sole U.S. certification system for industrial compostability, verifying that products fully degrade under controlled industrial composting conditions



### China - Guideline for the Classification and Labelling of Degradable Plastic Products

Requires enterprises to voluntarily comply with the national standard and to use the "jj" mark only after meeting the prescribed test conditions. Issued under Chinese regulatory guidelines.

Nature's microbes give rise to PHA through fermentation

produced via a low-carbon process

The raw PHA is then refined and transformed into sustainable 3D printing filament

At the end of its lifecycle

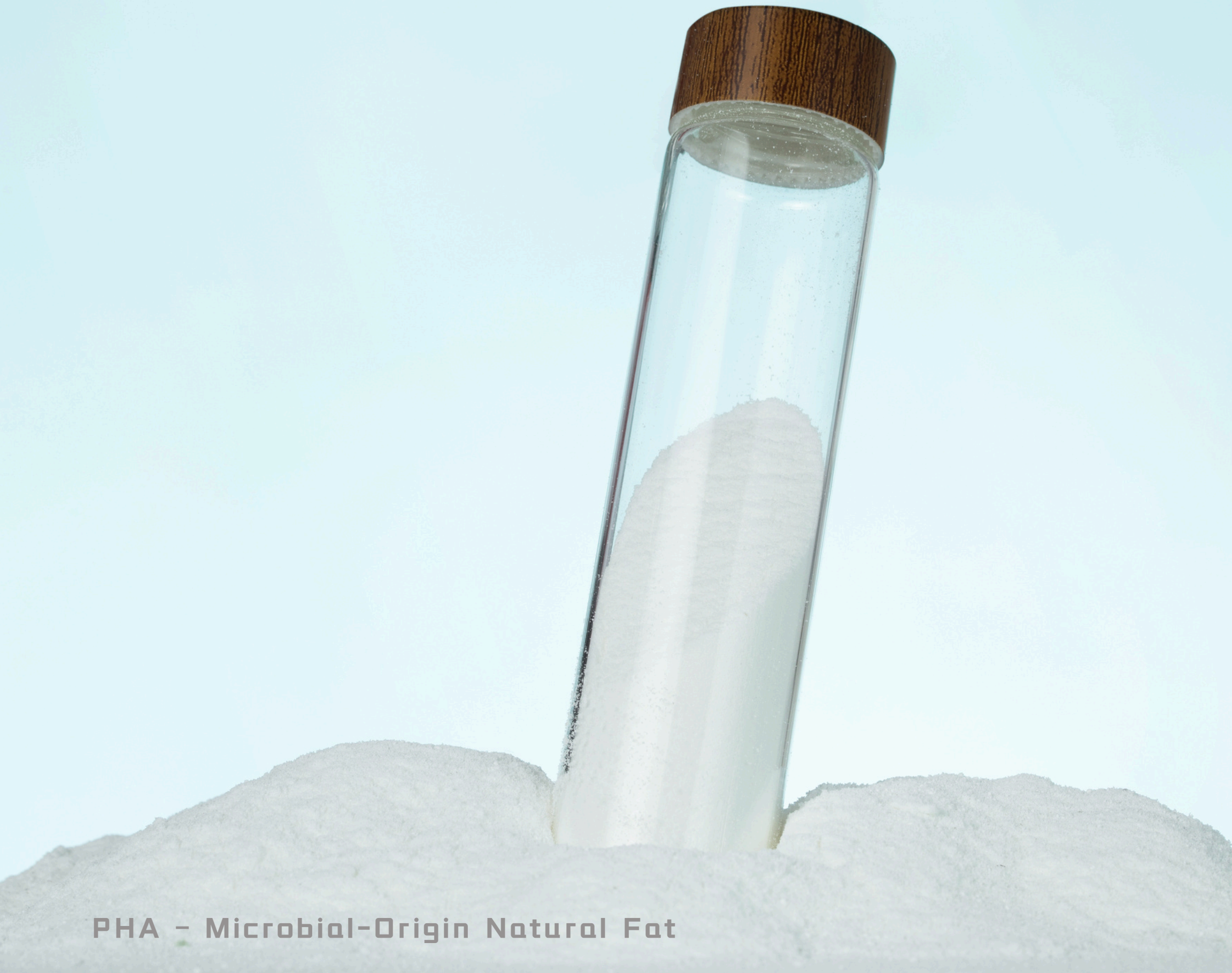
PHA filament can biodegrade in diverse natural environments

— soil, freshwater, marine ecosystems, industrial composting, and even home composting

It ultimately returns to water and carbon dioxide

completing the cycle back to nature's microbes...

# Loopha



PHA – Microbial-Origin Natural Fat

## About Us

Nature at heart, life as the source.  
We craft materials through the wisdom of microorganisms,  
and empower 3D printing to bring creativity into being.

Born of nature, returning to nature,  
every product is a heartfelt dialogue with the Earth.

We pursue the purity of materials,  
resonating in harmony with the natural world,  
so that every inspiration may flow back  
into nature's eternal cycle.

# Loopha

Making 3D printing more sustainable  
**THANKS FOR WATCHING.**