



**AD·Bio**  
plastics



## **Advanced compostable additives and bioplastics**

With our additives and premium  
bioplastics, we make the world  
**a better place to live.**

# Additive ADBio PLA+

Our **ADBio PLA+ additive is a biobased and biodegradable impact modifier**, which allows us to improve the mechanical properties of neat PLA.

**This is added in a percentage range between 5% and 20%**, depending on the needs required by each client. We make a **personalized and consultative sale** to ensure the success of each process, accompanying our clients in their industrial tests, if they so require. This technical support is carried out from the R&D department, led by doctors in chemistry and bioplastics.

ADBio PLA+ **comes from raw materials obtained from natural and environmentally friendly products**. In addition, this additive is the basis for improving virgin PLA, converting it into a PLA-Premium, biobased and compostable, **following the European standard EN 13432**.



## What is the main competitive advantage of ADBio PLA?

Our patented impact modifier **enhances the mechanical properties of the PLA, improving resistance up to 7 times**. This additive PLA becomes less brittle, while at the same time being more processable, maintains a transparency similar to that of PET.

Our additive **is suitable to be used in conventional dosing units of extrusion and injection machines**.

- ✔ It improves mechanical properties, toughness and impact resistance, up to 7 times (PLA is only 3%).
- ✔ It improves the oxygen barrier (OTR) and water vapor barrier (WVTR) properties up to 25-30% compared to PLA.
- ✔ It improves processability (MFI). The fluidity increases from 30% of the neat PLA to 100%.
- ✔ It maintains the transparency of traditional plastics used in packaging such as PET, PP, etc.



We currently have PLA-Premium grades, aimed at different industrial extrusion and injection applications.

## PLA-Premium bioplastic

Our **PLA-Premium product is a biobased and compostable bioplastic** with improved properties compared to neat PLA grades.

**Our bioplastic is biobased** because it comes from natural products such as corn, sugar cane and/or beets, **and it is industrial compostable according to EN 1342**. In addition, PLA-Premium grades take only 3 months to reach the disintegration step.

**PLA-Premium is composed of neat PLA and our ADBio PLA+ additive**, a patented impact modifier manufactured in our chemical plant.

Each client is unique. That is why at ADBioplastics **we offer “tailor-made” PLA-Premium grades**. In addition, we offer a **consultative sale**, with personalized advice and we accompany each client during the industrial tests they carry out with our material.

For us, the success of companies is our own success and it represents one more step towards the sustainability of the planet with our bioplastics.

### Technology



Injection blow moulding



Mould injection



Sheet extrusion for thermoforming



3D filament extrusion and profile



Cast extrusion and blown film extrusion



Hollow body extrusion blow moulding



**PLA-Premium complies with European legislation on food contact materials (FCM) and cosmetics products. In addition, these Premium bioplastics are compostable with the OK Compost certificate by TÜV Austria.**

# Which sectors do we target?

## Packaging



### Food industry

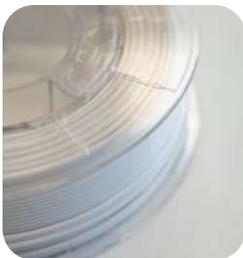
Trays (blisters), chocolate cells, bottles, blown film (flow packs) and cast film (sliced)

### Cosmetic

Cosmetic jars, bottles for masks or hair products



## Non-Packaging



### 3D Printing

Protective screens, 3D monofilament



### Textile

Anti-tamper hang tag string (labels), hangers, monofilament, multifilament



### Construction

Price holders



### Biomedic

Orthotic line products, scaffolds, etc.

## Success Cases



Case\_01

**PLA-Premium** 

Technology: blow injection

Sectors: cosmetic and food

"The PLA-Premium bottle competes in quality with the PET bottle without additional processing costs"

### **OUTCOME**

- It can be processed in the same machine as PET.
- The cycle time is very competitive.
- Each bottle requires 10% less material than PET.
- Allows better highlighting of the shoulders and the engravings on the base.
- The thread works well.
- Transparency is similar to PET.
- Good resistance to impact in free fall.
- Good resistance to vertical compression, similar to PET.



Case\_02

**PLA-Premium** 

Technology: injection moulding

Sectors: cosmetic

"The PLA-Premium jar improves PLA, works like the original, maintaining the life of the cosmetic"

### **OUTCOME**

- The jar can be processed on the same industrial equipment.
- The container shape is similar. The thread and closure work well.
- Transparency is good with respect to pure PLA.
- The bottle is more shock resistant than pure PLA.
- Barrier properties to oxygen and water vapor are somewhat better than with pure PLA.



Case\_03

PLA-Premium 

Technology: thermoforming

Sectors: food

"The quality of the PLA-Premium packaging is similar to that of PET without additional processing costs"

#### OUTCOME

- The container can be thermoformed on conventional equipment.
- Process time is very competitive, like PET.
- The finishing and closing by click of the container works like that of PET.
- Good transparency.
- Resistance to free fall up to 1 m in height like PET.
- Resistance to compression better than PET.



Case\_04

PLA-Premium 

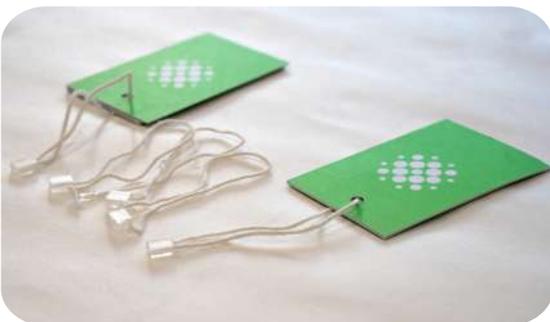
Technology: blow extrusion

Sector: food

"PLA-Premium film can be easily processed"

#### OUTCOME

- Processable in a conventional extrusion equipment, including cast and blown extrusion.
- Good quality and transparency.
- Without wrinkles.
- Better tenacity compared to virgin PLA.
- Tear resistance comparable to other additivated PLA films.
- Coefficient of friction similar to other additivated PLA films.



Case\_05

PLA-Premium 

Technology: injection moulding

Sector: textile

#### OUTCOME

- Processable in the same equipment as PS.
- Piece shape like PS version.
- The fit between the two injected parts is good and allows the product function to be achieved correctly.
- Cycle-time improvement: PLA-Premium grade improves the cycle time (or cooling) (about 18 seconds vs. 35 secs with pure PLA reference).

## New biobased and compostable grades

AdBioplastics continues leading the change to sustainable materials. Based in our expertise, new biobased and industrial and home compostable grades have been developed.



Technology: injection moulding

### Reclosable cap/closure for food contact applications

- Industrial compostable material.
- Processable in standard injection moulding equipment.
- Excellent mechanical properties.
- Very good compression and fatigue resistance (more than 5.000 open/close cycles).
- Improvement of 70% of barrier properties compared with base material.



Technology: cast film extrusion

### Flexible packaging for food and non-food applications

- Home compostable material.
- Processable in standard cast extrusion equipment.
- Excellent mechanical properties, similar to polypropylene.
- Improvement of barrier properties (80% improvement compared to base material)



Technology: blow film extrusion

### Flexible packaging

- Home compostable material.
- Processable in standard blown extrusion equipment.
- Excellent flexibility.
- Weight resistance up to 30kg.



**Because together we can make  
new successes come true.**

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