



# Biodegradable Plastic–PBAT







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# 01/ PBAT Resin

PBAT is a flexible, biodegradable, and compostable polymer known for its excellent mechanical properties, including durability and flexibility. It is widely used in packaging, agriculture, and various other applications due to its superior performance.

PBAT has been recognized as one of the most promising biodegradable plastics in the global market due to its superior mechanical properties and processability. It is often blended with starch-based or PLA-based materials to enhance its biodegradability and physical strength, creating a balance between performance and sustainability.







# O1/ PBAT Resin

## PRODUCT DATA SHEET

**PRODUCT** : Polybutylene Adipate Terephthalate (PBAT)

### Product Description

Fully biodegradable material is an alloy product composed of PLA bio-based fully degradable material, PBAT petrochemical-based fully degradable material, and calcite powder. It complies with the national standard GB/T 20197-2006 requirements.

### Basic Information

Application	Shopping bag/Courier bag/Garbage bag/Agricultural Film /Industrial Applications
Form	Pellet
Processing Method	Blown Film Forming
Degradation Method	Composting

Physical Properties	Value	Unit	Test Method
Specific Gravity	1.25—1.5	g/cm3	GB/T1033—2008
Melt Flow Rate	5—15	g/10min	GB/T3682—2000
Moisture Content	≤ 1.0	%	GB/T6284—2004

Mechanical Properties	Value	Unit	Test Method
Tensile Strength	≥15	MPa	GB/T 1040 . 2—2004
Elongation (Breakage)		%	ISO 527—2/50

Chemical Properties	Value	Unit	Test Method
Biodegradation Rate	≥90	%	EN13432

Molding Parameters	Value	Unit	Test Method
Molding Temperature	130~150	℃	







# 01/ PBAT Resin

PRODUCT	APPLICATION	APPEARANCE	PACKING
PBAT RESIN	SHOPPING BAG	Pellet	25Kg Bag, 1MT/Pallet, 18MT/20'GP
	CURRIER BAG	Pellet	25Kg Bag, 1MT/Pallet, 18MT/20'GP







# 02/ PBAT Advantage



## **Higher Flexibility and Strength:**

Compared to PLA, PBAT has superior flexibility and impact resistance.



## **Faster Biodegradation:**

PBAT decomposes more quickly than PBS and PLA in industrial composting conditions.



## **Better Processing Capabilities:**

PBAT can be processed using conventional plastic processing methods, making it an ideal alternative to traditional plastics.



## **Excellent Thermal Stability:**

With a high melting point, PBAT offers better heat resistance during processing and application.



## **High Compatibility with Other Biodegradable Polymers:**

PBAT can be blended with starch, PLA, or PHA to improve specific properties such as rigidity or biodegradation speed





## 02/ PBAT Advantages

- **Mechanical Performance:**  
High impact strength, excellent elongation, and good toughness.
- **Processability:**  
Suitable for extrusion, injection molding, and blow molding.
- **Formability:**  
Easy to shape into films and sheets.
- **Printability:**  
Supports high-quality printing for branding and packaging applications.
- **Chemical Resistance:**  
Resistant to oils and greases, making it ideal for food packaging applications.



### Environmental Impact of PBAT

PBAT significantly reduces plastic waste and pollution, decomposing into water and CO<sub>2</sub> under industrial composting conditions. It is a key material in the transition to more sustainable plastic alternatives. Unlike traditional petroleum-based plastics, PBAT does not leave harmful microplastics behind after decomposition. Additionally, it reduces carbon emissions compared to conventional plastics due to its degradability and compatibility with organic waste recycling systems.





# 03/ PBAT Packaging

Shopping bags, food packaging bags, courier bags,cling films, single-use packaging.  
Biodegradable trash bags.







# 03/ PBAT Packaging

## Comparison with Traditional PE Packaging Bags

Feature	PBAT Packaging Bag	PE Packaging Bag
Material Properties	Biodegradable, high flexibility	Non-biodegradable, durable
Degradability	Fully decomposable	Not degradable
Production Compatibility	Compatible with existing equipment	Mature production process
Environmental Impact	Reduces plastic pollution	Causes long-term environmental pollution
Cost	Already close to PE, highly competitive	Slightly lower but lacks sustainability







## 03/ PBAT Packaging

PRODUCT	APPLICATION	SIZE (MM)	PACKING
PBAT PACKAGING	SHOPPING BAG	300×400	250 bags/Roll, 2kg/Roll, 15 Rolls/Carton, 30kg/Carton, 18MT/20'GP
		400×500	250 bags/Roll, 2kg/Roll, 15 Rolls/Carton, 30kg/Carton, 18MT/20'GP
	CURRIER BAG	600×(600+70)×0.07	69.3g/bag, 500 bags/Carton, 35kg/Carton, 18MT/20'GP
		305×(415+50)×0.06	21g/bag, 1000 bags/Carton, 22kg/Carton, 18MT/20'GP
		255×(330+45)×0.06	14g/bag, 2000 bags/Carton, 29kg/Carton, 18MT/20'GP







# 04/ PBAT Agricultural Film

Agricultural mulch films (black, transparent, biodegradable films).  
Greenhouse covering films, Plant protection films.

Decomposed by microorganisms in the soil into CO<sub>2</sub> and water. The degradation rate varies depending on soil temperature, humidity, and pH levels.

Rice cultivation using PBAT agricultural film begins to degrade after 60 days of coverage, and can reach complete degradation within 120-180 days. This is different from the degradation materials commonly available on the market.

Faster degradation in warm, humid environments; slower in dry, cold conditions.







## 04/ PBAT Agricultural Film

### Comparison with Traditional PE Film

Feature	PBAT Agricultural Film	PE Agricultural Film
Degradability	Fully biodegradable	Requires collection; otherwise, causes long-term pollution
Environmental Impact	Leaves no microplastic residues	Plastic residue affects soil and water quality
Cost	Slightly higher but increasingly competitive	Lower cost but contributes to pollution
Application	Suitable for sustainable agriculture	Widely used but contributes to pollution

