

Guide for ECOIST Eco-friendly Products



GREEN *whale*[®] GLOBAL

Why Choose ECOIST®?

ECOIST® is an eco-friendly material that combines biomass sources such as cassava starch, rice husk, bamboo, and wood powder with PCR/PIR or biodegradable materials, reducing virgin plastic consumption by up to 70%.

ECO

Low-Carbon Material utilizing biomass and recycled plastics

PRICE

Price Competitiveness with thermoplastic starch(TPS) derived from affordable cassava starch

CUSTOM

Customized Solutions tailored to meet customer requirements and industry regulations

What is Cassava?

Cassava is a staple root vegetable classified under the potato family, widely cultivated along the global coffee belt. It is the primary ingredient in tapioca, commonly used in bubble tea pearls (boba) and various desserts. In Korea, cassava is primarily used for producing alcohol (ethanol) for soju. As a drought-resistant and sustainable food source, it is gaining attention for its resilience and versatility.

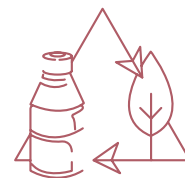


ECOIST® - Advanced Materials with a Green Purpose

ECOIST® is a perfect alternative to conventional plastics.



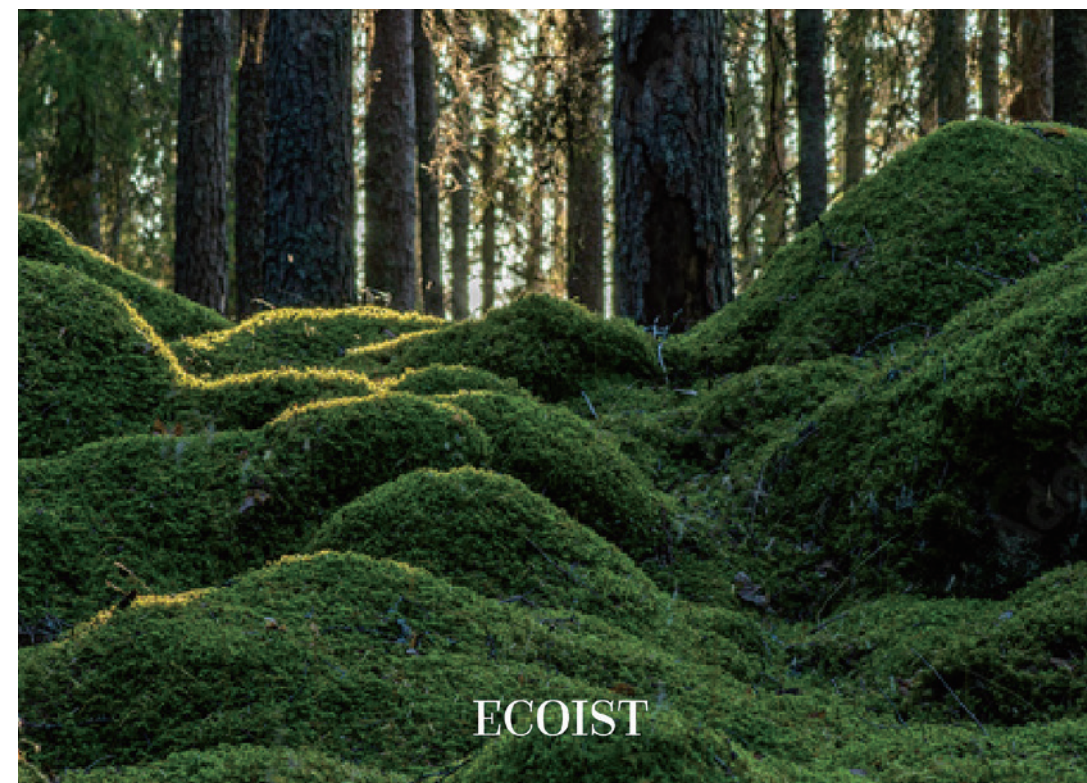
- Reduces virgin plastic consumption by up to 70%
- Reduces greenhouse gas (GHG) emissions by up to 65%



- Compatible with existing production facilities (No additional equipment required)
- Improves specific material properties by more than 150% compared to conventional plastics.



- Passed various hazardous substance tests and obtained domestic & international certifications



ECOIST

ECOIST® in Practice - Materials Making an Impact



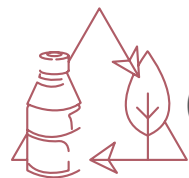
Low carbon material is a raw material that combines recycled plastic and cassava starch (biomass), contributing to reducing plastic usage during production and decreasing carbon emissions upon disposal.

We produce biodegradable and carbon-reducing materials based on cassava starch **TPS**

- Certified by Korean and European institutions for biodegradable materials and eco-friendly carbon-reducing materials.
- Patents registered in 7 countries, including Korea and the United States. Applications submitted in 8 countries for the "manufacturing method of biodegradable plastic materials using cassava starch and recycling."
- Applicable to a wide range of products, from soft items like polybags to products requiring hard physical properties, and currently used in the production and supply of various products.



Upcycling of Waste Resources
(PCR/PIR)



Recyclable
(Closed-loop)

Optimal material for carbon reduction
(Low-carbon material solution)



Reduction in the consumption of virgin plastic



Compliant with industrial regulations

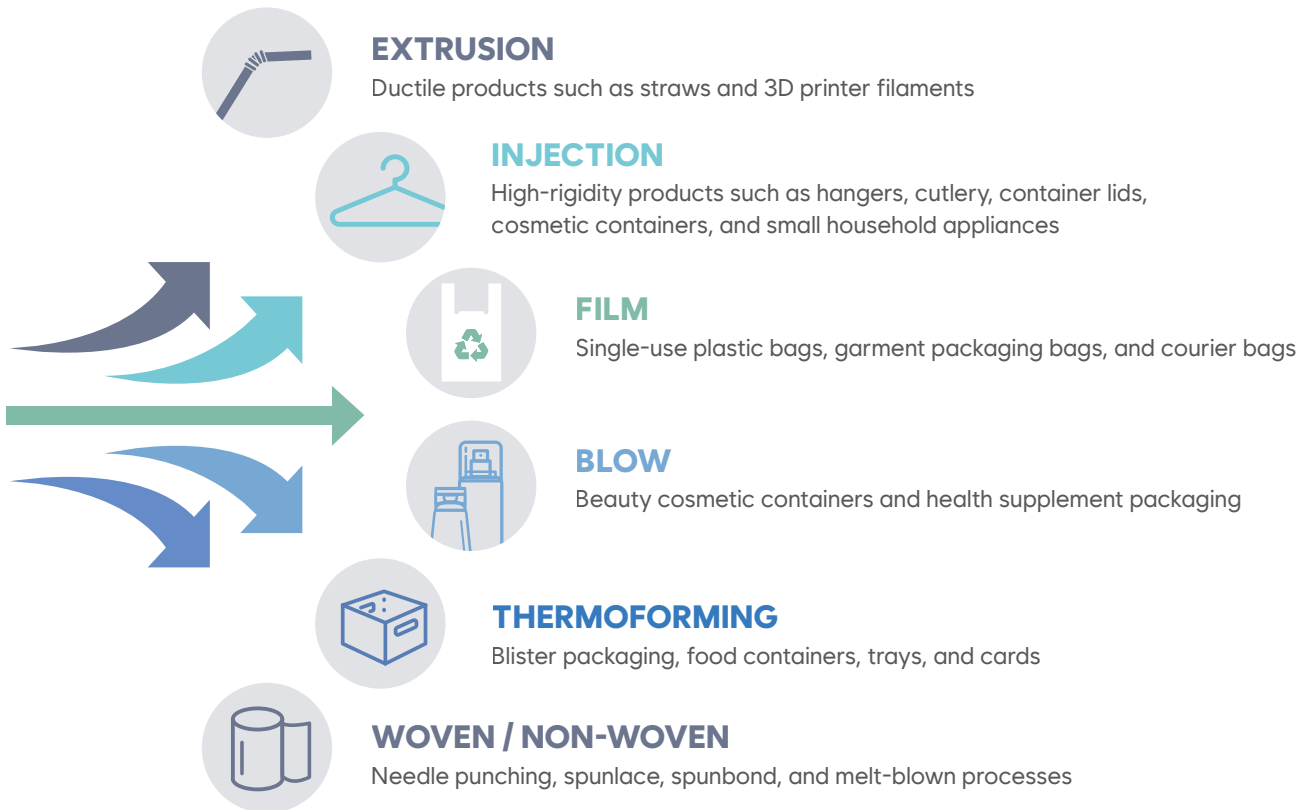


Cost reduction through biomass utilization
(Cassava)



ECOIST® - Proven, Certified, Ready for the World.

ECOIST® has specialized grades that are compatible with various manufacturing processes, including injection molding, extrusion and blow molding.



ECOIST® has been recognized for its eco-friendliness and safety through various tests conducted by domestic and international certification institutions.



Certifications & Verification



Certification submitted

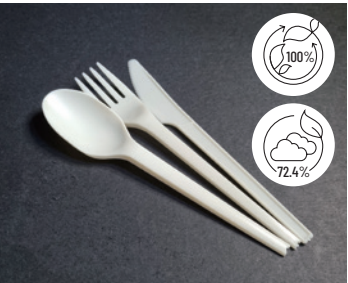
Injection Molding

Eco-friendly & Biodegradable resin

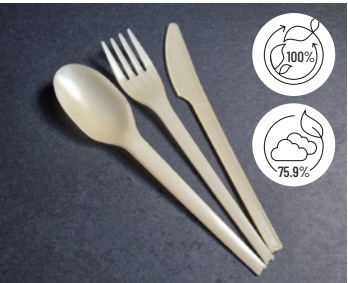
Our Injection Molding products range from simple home appliances such as stationery, cutlery and hangers to complicated products such as exterior of small electronics and cosmetic containers.

Depending on the usage, we customize different grades with adequate features such as antiseptic, high MFI flow, or sturdiness.

- * The material properties can be customized to meet specific applications
- * Capable of adding visual elements such as bamboo fiber and wood chips



ECOIST IM 1000
Features: Ivory Color
Application: Cutlery, Tray



ECOIST IM 1100
Features: Ivory Color
Application: Cutlery, Tray



ECOIST IM 2000
Features: Ivory Color, Durability
Application: Stationery, Home Appliances



Biodegradability(%)

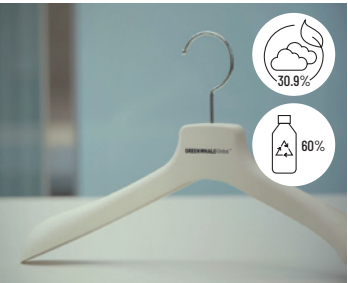
¹⁴C contents(%)

PCR* contents(%)
*PCR(Post-Consumer Recycled)

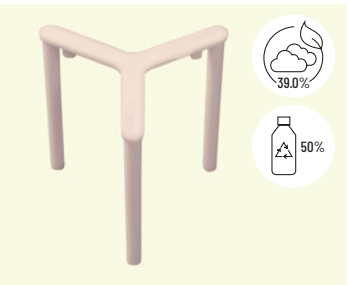
PCR+



ECOIST IM 3000
Features: High MFR
Application: Wet Wipes Cover Lid



ECOIST IM 4000
Features: Durability
Application: Paint Container, Hanger, Cosmetic Container, Icebox



ECOIST IM 5000
Features: Durability
Application: Pizza Saver



Blown Film

Eco-friendly & Biodegradable resin

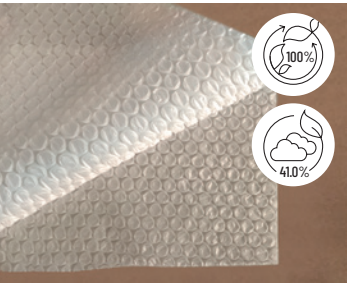
Our Film products range from simple shopping bags to various polybags and even air-cap bubble bags.

Depending on the usage, we customize different grades of products.

* The material properties can be customized to meet specific applications



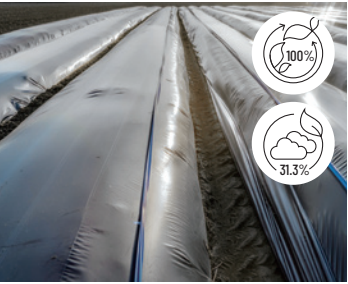
ECOIST BF 1000
Features: Antistatic without Chemicals
Application: Polybag, Parcel Bag



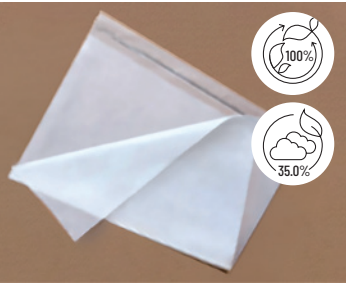
ECOIST BF 4000
Features: Semi-transparent, Milky
Application: Shopping Bag, Polybag, Roll Bag, Zipper Bag



ECOIST BF 2000
Features: White Color
Application: Polybag, Parcel Bag



ECOIST BF 5000
Features: Antistatic without chemicals
Application: Mulching Film



ECOIST BF 3000
Features: Semi-transparent
Application: Shopping Bag, Polybag



Biodegradability(%)

¹⁴C contents(%)

PCR* contents(%)
*PCR(Post-Consumer Recycled)

PCR+



ECOIST BF 6000
Features: Lower Carbon by Starch
Application: Shopping Bag



Blow Molding

Eco-friendly & Biodegradable resin

Our Blow Molding products range from food supplement containers such as protein powder and medications, to cosmetic bottles.

Depending on the usage and processing method such as IBM or EBM, we customize different grades.

※ The material properties can be customized to meet specific applications



ECOIST BM 1000

Features: Ivory Color
Application: Protein Container, Tablet Container

100%
81.3%

DIN BPI OK compost TÜV AUSTRIA INDUSTRIAL

PCR+



ECOIST BM 2000

Features: Chemical Resistance
Application: Cosmetic Bottle Container

55%
21.5%

Global Recycled Standard USDA CERTIFIED BIOMASS PRODUCT OK compost TÜV AUSTRIA INDUSTRIAL

Extrusion

Eco-friendly & Biodegradable resin

Our Extrusion products range from 3D printer filaments to straws.

Depending on the usage, we customize different grades with adequate features such as various colors or biomass textures.

※ The material properties can be customized to meet specific applications

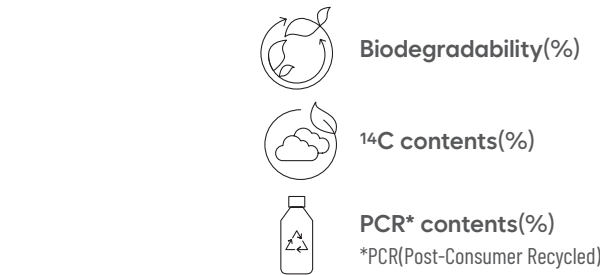


ECOIST EX 1000

Features: Various Color
Application: 3D Printer Filament

100%
96.0%

DIN BPI OK compost TÜV AUSTRIA INDUSTRIAL





ECOIST EX 2000

Features: Biomass Texture
Application: Straw

100%
52.4%

DIN BPI OK compost TÜV AUSTRIA INDUSTRIAL



ECOIST EX 3000

Features: Biomass Texture, Heat Resistance
Application: Straw, Coffee Stick

100%
47.8%

DIN BPI OK compost TÜV AUSTRIA INDUSTRIAL

Thermoforming

Eco-friendly & Biodegradable resin

Our Cast-Thermoforming products range from agricultural goods like seedling trays to F&B products such as mealkit trays, lunch boxes and food containers.

Depending on the usage, we customize different grades with adequate features such as biodegradability and heat resistance.

※ The material properties can be customized to meet specific applications



ECOIST TF 1000

Features: Ivory Color
Application: Seedling Tray

100%
76.3%

DIN BPI OK compost TÜV AUSTRIA INDUSTRIAL



ECOIST TF 2000

Features: Ivory Color, Heat Resistance
Application: Food Container, Food Tray

100%
52.3%

DIN BPI OK compost TÜV AUSTRIA INDUSTRIAL

PCR+



ECOIST TF 3000

Features: Lower carbon by starch, Heat Resistance
Application: Food Container, Food Tray

62%
21.5%

Global Recycled Standard USDA CERTIFIED BIOMASS PRODUCT OK compost TÜV AUSTRIA INDUSTRIAL

Biodegradability(%)

¹⁴C contents(%)

PCR* contents(%)
*PCR(Post-Consumer Recycled)



GWG also produces Basic Raw Materials as well as Compounded Materials. You can carry out broader research through our Masterbatch.

GREEN WHALE GLOBAL
"Eco-Friendly Material Innovations"

Material Technical Property

#	Resin	Density (g/cm³) [ASTM D792]	MFI (190°C, 2.16kg) [ASTM D1238]	Flexural Strength (MPa) [ASTM D790]	Impact Strength (Notched) (ASTM D256]	Tensile Strength (MPa) [ASTM D882]	Tear Strength (N/mm) [ASTM D1004]	HDT [ASTM D648]
Injection Molding								
01	ECOIST IM 1000	1.30	40.00	22.56	24.50			45
02	ECOIST IM 1100	1.33	21.00	18.32	32.11			70
03	ECOIST IM 2000	1.28	23.00	24.54	11.88			58
04	ECOIST IM 3000	1.24	21.00	22.35	42.11			98
05	ECOIST IM 4000	1.24	3.00	26.06	30.36			110
06	ECOIST IM 5000	1.22	12.00	35.95	16.20			83
Blown Film								
07	ECOIST BF 1000	1.26	3.00			≥ 25	≥ 100	
08	ECOIST BF 2000	1.35	3.00			≥ 40	≥ 80	
09	ECOIST BF 3000	1.30	3.00			≥ 35	≥ 80	
10	ECOIST BF 4000	1.25	3.00			≥ 35	≥ 70	
11	ECOIST BF 5000	1.28	14.00			≥ 3.5	≥ 11.27	
12	ECOIST BF 6000	1.25	1.20			≥ 58	≥ 22.54	
Blow Molding								
13	ECOIST BM 1000	1.20	16.00	35.05	12.50			50
14	ECOIST BM 2000	1.20	3.50	25.01	6.50			98
Extrusion								
15	ECOIST EX 1000	1.28	12.00	67.57	11.55			55
16	ECOIST EX 2000	1.30	11.00			8.29		48
17	ECOIST EX 3000	1.28	21.00			12.20		75
Cast-thermo								
18	ECOIST CT 1000	1.30	7.36	33.10	25.27			45
19	ECOIST CT 2000	1.30	12.25	21.60	32.27			65
20	ECOIST CT 3000	1.21	4.50	27.01	35.36			90

Green Whale Global - Trusted Manufacturer, Your Partner in Global Sourcing

GREEN WHALE Global VN factory
Current Production Capacity: 6,000 tons/yr (Total Potential Capacity: 12,000 tons/yr)

2 lines installed
2 more lines
can be installed.



- Capable of producing 3,000 tons per year per production line.
- It is a production facility specifically designed based on our own technology, enabling production only through GWG's proprietary mixing method.
- Thus, it is nearly impossible to replicate, even if the mixing ratio is disclosed.
- 100% in-house factory, allowing stable domestic/overseas raw material supply.

Major Clients and Partners (As of April 2025)



GREEN WHALE GLOBAL

The Practical Solution Provider
“We mix and match your needs”

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