

# ECOPOND® Compostable Polyesters

## KB100

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### Product Introduction

KB100 is a compostable random copolymer produced by polycondensation reaction, consisting of a copolyester of 1,4-butanediol, adipic acid and terephthalate acid. When metabolized in home compost under standard conditions, KB100 will be biodegraded into small monomers. These small monomers will be taken by microorganisms, and eventually biodegraded into carbon dioxide and water.

The compostability of KB100 fulfills the requirements of NFT51-800, AS 5810, DIN V 54900-1, EN 13432 and ASTM D 6400, and the material meets the U.S. FDA food safety standards.

The high molecular weight of KB100 makes it possible to blow or cast films, alone or blended with other materials.

KB100 is a compostable alternative to LDPE, with many similar properties including flexibility and resilience. Particular applications include cling wrap for food packaging, compostable plastic bags for gardening, agricultural usage.

Properties	Features
<ul style="list-style-type: none"><li>● White granulates</li><li>● Melting point 115-125 °C</li><li>● MFR 3.0-5.0 (g/10min, 190 °C, 2.16 kg)</li><li>● MVR 2.8-4.5 (cm<sup>3</sup>/10min, 190 °C, 2.16 kg)</li></ul>	<ul style="list-style-type: none"><li>● Good processability and printability</li><li>● Controllable water vapour transmission rate (WVTR)</li><li>● Excellent sealing property</li><li>● Down gauging to 10 µm</li></ul>

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## Resin Property

KB100 has similar mechanical and processing properties to LDPE. The listed values are measured by test specification and used for referential purpose only.

KB100 Typical Property					
Properties		Test Method	Test Condition	S.I. Units	Typical Values
Mechanical Property	Tensile Strength	ISO 527	50 mm/min	MPa	22
	Elongation	ISO 527	50 mm/min	%	658
	Flexural Strength	ISO 178	2 mm/min	MPa	7.7
	Flexural Modulus	ISO 178	2 mm/min	MPa	127
	Impact Strength, IZOD notched	ISO 180	4 mm, 23 °C	J/m	NB
Thermal Property	Melting Point	DSC	10 °C/min	°C	115-125
Others	Melt Mass-Flow Rate	ISO 1133	190 °C, 2.16 kg	g/10min	3.7
	Melt Volume-Flow Rate	ISO 1133	190 °C, 2.16 kg	cm <sup>3</sup> /10min	3.4
	Moisture Content	ISO 15512	Method C	ppm	360
	Specific Gravity	ISO 1183	23 °C	g/cm <sup>3</sup>	1.22
	Acid Number	DIN EN 12634-1998	-	mg KOH/g	1.25

\*Before MFR test, the product should be dried at 80 °C for 1 hour.

## Film Property

KB100 Blown Film Typical Property(50 μ m)					
Properties		Standard	S.I. Units	Typical Values	
Mechanical Property	Tensile Strength	ISO 527	MPa	TD	38
				MD	38
	Elongation	ISO 527	%	TD	715
				MD	739
	Tear Strength	ISO 6383/2	mN	TD	2932
				MD	2385
Permeation Rate	Oxygen (23 °C, dry)	ASTM D 3985	cm <sup>3</sup> /(m <sup>2</sup> *d*bar)	1381	
	Water vapour (23°C, 85% r.h.)	ASTM F-1249	g/(m <sup>2</sup> *d)	164	

## Processing Information

KB100 has good processing stability. It can be used alone or blended with other material through conventional blowing or casting process.

Well packaged products can be used directly. If package had been damaged before use, the product should be dried prior to processing. When the moisture content exceeds 500 ppm, film-blowing will be affected. Effective drying takes place at 80 °C for 4 hours. The dried product should keep away from moisture.

Setting		Typical Value <sup>[1]</sup>	Range <sup>[1]</sup>
Melt Temp.		135 °C	130-140 °C
Barrel Zone Temp.	Rear	130 °C	125-135 °C
	Center	135 °C	130-140 °C
	Front	130 °C	125-135 °C
Die Head Temp.		135 °C	130-140 °C
Processing Temp. Limit		150 °C	
Pre-Dry Requirements		80 °C, 4 h	

[1] The data sheet is just for reference. In actual process, the parameter should be adjusted.

## Quality Control

KB100 is produced through an optimized continuous polycondensation process, with online melt viscosity and MVR control.

## Packaging and Storage

KB100 is supplied in 800 kg/bigbag or 1200 kg/bigbag. Temperatures during transportation and storage may not exceed 60 °C at any time. Storage time in an unopened bag may not surpass 12 month at room temperature (23 °C). Use as soon as possible if the package had been broken.

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The OK Compost Home certification of KB100 is in process.

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