

Mirel™ P1003/F1005

Polyhydroxyalkanoate

Metabolix

Message:

Mirel™ P1003 is a general purpose injection molding material with high modulus. Mirel™ F1005 is FDA cleared for use in non-alcoholic food contact applications, from frozen food storage and microwave reheating to boiling water up to 212°F. FDA clearance includes products such as house-wares, cosmetics and medical packaging.

Mirel biopolymers are suitable for a wide range of injection molded food service and packaging applications including caps and closures, and disposable items such as forks, spoons, knives, tubs, trays, jars, and consumer product applications.

General Information			
Features	Comstable		
	Updatable resources		
	Good toughness		
	Biodegradable		
	Compliance of Food Exposure		
	General		
Uses	Shield		
	Food packaging		
	Food service sector		
	General		
	Shell		
	Consumer goods application field		
Disposable tableware			
Agency Ratings	FDA Not Rated 2		
Forms	Particle		
Processing Method	Injection molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.40	g/cm³	ASTM D792
Molding Shrinkage - Flow	1.3 - 1.6	%	ASTM D955
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus	3000	MPa	ASTM D638
Tensile Strength (Yield)	25.0	MPa	ASTM D638
Tensile Elongation (Break)	4.0	%	ASTM D638
Flexural Modulus	2000	MPa	ASTM D790A
Flexural Strength	40.0	MPa	ASTM D790A
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact	26	J/m	ASTM D256A
Thermal	Nominal Value	Unit	Test Method

Deflection Temperature Under Load			ASTM D648B
0.45 MPa, not annealed	132	°C	ASTM D648B
1.8 MPa, not annealed	77.0	°C	ASTM D648B
Vicat Softening Temperature	124	°C	ASTM D1525 ¹
Injection	Nominal Value	Unit	
Drying Temperature - Desiccant Dryer	80.0	°C	
Drying Time - Desiccant Dryer	2.0 - 4.0	hr	
Rear Temperature	175 - 180	°C	
Middle Temperature	170 - 175	°C	
Front Temperature	165 - 170	°C	
Nozzle Temperature	165 - 170	°C	
Processing (Melt) Temp	160 - 165	°C	
Mold Temperature	55.0 - 65.0	°C	
Back Pressure	< 3.45	MPa	
Screw Speed	< 200	rpm	
Screw Compression Ratio	2.2:1.0 to 2.6:1.0		
Injection instructions			
2nd Stage Pressure (Low): <30% of 1st Stage Pressure			
NOTE			
1.	标准 B (120°C/h), 压力1 (10N)		

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