

Metabolix Mirelâ„ç F1005 Injection Molding Grade PHA Bioplastic

Category : Polymer , Renewable/Recycled Polymer , Thermoplastic , Polyester, TP

Material Notes:

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 212Â°F. FDA clearance includes products such as house-wares, cosmetics and medical packaging. Mirel is 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. About Mirel Bioplastics Mirel is a family of bioplastic materials that have physical properties comparable to petroleum-based resins, yet are both biobased and biodegradable in natural soil and water environments, home composting systems, and industrial composting facilities, where these facilities are available. The rate and extent of Mirel's biodegradability will depend on the size and shape of the articles made from it. However, like nearly all bioplastics and organic matter, Mirel is not designed to biodegrade in conventional landfills.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Metabolix-Mirel-F1005-Injection-Molding-Grade-PHA-Bioplastic.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.40 g/cc	1.40 g/cc	ASTM D792
Linear Mold Shrinkage	0.0125 - 0.0155 cm/cm	0.0125 - 0.0155 in/in	ASTM D955

Mechanical Properties	Metric	English	Comments
Tensile Strength	25.0 MPa	3630 psi	ASTM D638
Elongation at Break	4.0 %	4.0 %	ASTM D638
Tensile Modulus	3.00 GPa	435 ksi	ASTM D638
Flexural Strength	40.0 MPa	5800 psi	ASTM D790 A
Flexural Modulus	2.00 GPa	290 ksi	ASTM D790 A
Izod Impact, Notched	0.260 J/cm	0.487 ft-lb/in	ASTM D256 A

Thermal Properties	Metric	English	Comments
Deflection Temperature at 0.46 MPa (66 psi)	132 Â°C	270 Â°F	ASTM D648 B
Deflection Temperature at 1.8 MPa (264 psi)	77.0 Â°C	171 Â°F	ASTM D648 B
Vicat Softening Point	124 Â°C	255 Â°F	ASTM 1525 B10

Processing Properties	Metric	English	Comments
Rear Barrel Temperature	175 - 180 Â°C	347 - 356 Â°F	Reverse Temperature Profile

Processing Properties	Metric	English	Comments
Front Barrel Temperature	165 - 170 Â°C	329 - 338 Â°F	
Nozzle Temperature	165 - 170 Â°C	329 - 338 Â°F	
Melt Temperature	160 - 165 Â°C	320 - 329 Â°F	
Mold Temperature	55.0 - 65.0 Â°C	131 - 149 Â°F	(A/B)
Drying Temperature	80.0 Â°C @Time 7200 - 14400 sec	176 Â°F @Time 2.00 - 4.00 hour	Desiccant
Back Pressure	<= 3.45 MPa	<= 500 psi	Low
Screw Speed	<= 200 rpm	<= 200 rpm	Slow

Descriptive Properties	Value	Comments
2nd Stage Pressure	<30%	of 1st Stage Pressure (Low)
Equipment Recommendation: Non-Return Valve	Standard Check Ring	
Equipment recommendation: Screw Profile	2.2:1 to 2.6:1	Low Shear GP

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