

Goodfellow Polyhydroxybutyrate - Biopolymer PHB

Category : Polymer , Renewable/Recycled Polymer , Thermoplastic

Material Notes:

PHB and its copolymers with polyhydroxyvalerate (PHV) are melt-processable semi-crystalline thermoplastics made by biological fermentation from renewable carbohydrate feedstocks. They have been described as "the first example of a true thermoplastic from biotechnology" and are also biodegradable. Although quite stable under everyday conditions they degrade slowly in the body and when composted or in landfill sites. [The HB monomer unit is a normal constituent of human blood.] Their chemical resistance is somewhat limited as they are attacked by acids and alkalis and dissolve in chlorinated solvents. Rather remarkably, they are optically active polymers with a chiral site in each molecular repeat unit, all of which are in the D- (or R) configuration. PHB homopolymer is a stiff and rather brittle polymer of high crystallinity, whose mechanical properties are not unlike those of polystyrene, though it is less brittle and more temperature resistant. Hence, copolymers are preferred for general purposes. It is believed that the most likely area for the application of homopolymer is in the medical/biological fields. Information provided by Goodfellow.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Goodfellow-Polyhydroxybutyrate-Biopolymer-PHB.php

Physical Properties	Metric	English	Comments
Density	1.25 g/cc	0.0452 lb/in ³	

Mechanical Properties	Metric	English	Comments
Tensile Strength, Yield	40.0 MPa	5800 psi	
Tensile Modulus	3.50 GPa	508 ksi	
Izod Impact, Unnotched	0.350 - 0.600 J/cm	0.656 - 1.12 ft-lb/in	Notch Status Unknown

Thermal Properties	Metric	English	Comments
Maximum Service Temperature, Air	95.0 °C	203 °F	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1.00e+16 ohm-cm	1.00e+16 ohm-cm	
Dielectric Constant	3.0	3.0	
	@Frequency 1e+6 Hz	@Frequency 1e+6 Hz	

Descriptive Properties	Value	Comments
Chemical Resistance - Alcohols	Fair	
Chemical Resistance - Alkalis	Poor	
Chemical Resistance - Dilute Acids	Fair	

Descriptive Properties	Value	Comments
Chemical Resistance Greases and Oils		
Resistance to Ultra-Violet	Fair	

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