



Fully biodegradable resin TRIJ01

---Injection molding special material series

Product Advantages:

- * Excellent processing fluidity, rigidity, and aging resistance;
- * Fast crystallization and high crystallinity;
- * In-mold and out-of-mold crystallization processes can be used to produce highly heat-resistant ;
- * Heat resistance can reach over 100°C ;

Applications:

Suitable for disposable knives, forks, spoons and other kitchenware.

Certificates obtained:

U.S. BPI Certificate

European DIN CERTCO Certificate

Product physical and chemical indicators:

	Testing Items	Testing Standards	Testing Environment	Unit	TRIJ01
Material Properties	Density	ISO 1183	24°C	g/cm ³	1.45±0.02
	Melt flow rate	ISO 1133	190°C, 2.16kg	g/10min	10~20
	Glass transition temperature	ISO 11357	-	°C	55~60
Mechanical properties	Tensile strength	ISO 527	24°C	MPa	35.8
	Elongation at break	ISO 527	24°C	%	5
	Bending modulus	ISO 178	24°C	MPa	6000
	Impact strength	ISO 179	24°C	KJ/m ²	2~10

Note: 1、Crystallization process 120°C-4min.

2. The shrinkage is parallel to the melt flow direction.

Processing recommendations:

1, Drying is required before processing, it is recommended that the moisture content is less than 0.1% to prevent the viscosity from decreasing during processing. It is recommended to dry at 80°C (-40°C dew point dry air is better) for 3 hours.

2, PLA material crystallization temperature is high, about 80 ~ 120 °C, below or above the temperature range are prone to injection molding sticky mold problems, to do non-heat-resistant products to ensure the normal stability of the production process, the mold should be through the cooling water, the best use of ice water.

3, the processing process, such as downtime 5 to 20 minutes should be emptying the storage material, such as the time required more than 20 minutes, should be emptying the barrel inside all and wash the machine with PP material, stopping the machine will appear material yellowing discoloration phenomenon, at this time, after emptying the screw inside the material can return to normal.

4, the appropriate increase in injection molding temperature can reduce the injection pressure, the temperature increase guidelines to product performance or color does not change significantly shall prevail.

Settings		典型值	范围
Barrel temperature	Conveying section	170°C	170~185°C
	Compression segment	175°C	175~200°C
	Measurement segment	185°C	180~200°C
Nozzle temperature		185°C	180~200°C
Melt temperature		185°C	180~200°C

5, In order to make the products have better heat resistance, the products need to be heat-treated, and there are two options of in-mold crystallization and out-of-mold crystallization.

- In-mold crystallization: The injection molding machine mold is heated to 90-110°C by the mold temperature machine. After the injection molding, the injection products are heat treated in the mold cavity for about 120 seconds, and then taken out of the mold.

In-mold crystallization process for injection molded products			
Settings	Temperature of mold temperature machine	Actual temperature of cavity	Dwell time
Crystallization temperature	120-135°C	85-95°C	120s

- Out-of-mold crystallization: The normally produced injection molded products are placed in the transfer device with heating, and passed through the preheating section in the front section and the high temperature section in the back section respectively, and the heating device is adjusted according to the product size to make the products fully and evenly heated. The injection molded products can effectively improve the dimensional stability of the products after heat treatment to release the injection stress, and the typical process is as follows:

Out-of-mold crystallization process for injection molded products				
Settings		Typical values	Scope	Dwell time
Crystallization temperature	Front Section	70°C	65-75°C	15s
	Back end	115°C	115-135°C	120s