

# RODRUN LC-5000

Liquid Crystal Polymer

UNITIKA Plastics Division

## Message:

Unitika Rodrun is a thermoplastics for percision injection classified into semi-aromatic liquid crystal polyesters (LCPs). LC-5000 series has a excellent moldability (high flow without flash, using a mold of low temperature) and precision (low warpage).

LC-5000 series are suitable for almost all dipping soldering conditions and partial reflow soldering (low warpage).

LCP has stiff molecular structure to form liquid crystal at molten stage. The archeological properties of low viscosity under shear stress gives high flow without flash problems. Rodrun which use a standard mold temperature of 40°C shows the rheological merit of LCP clearly.

Out shape of a LCP seem to be just like a normal plastics, however, the solid LCP consists of crystal and glasified liquid crystal. Rodrun has a low crystallinity in the mold. This property yields low shrinkage and low warpage. Rodrun is a suitable resin for precision parts.

General Information			
UL YellowCard	E47924-239942		
Features	Gas Barrier		
	Good Chemical Resistance		
	Good Moldability		
	High Flow		
	Low Shrinkage		
	Low Viscosity		
	Low Warpage		
	Semi Crystalline		
Uses	Engineering Parts		
Processing Method	Injection Molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.41	g/cm³	ASTM D792
Water Absorption (23°C, 24 hr)	0.010	%	ASTM D570
Mechanical	Nominal Value	Unit	Test Method
Tensile Strength (Yield, 3.20 mm)	176	MPa	ASTM D638
Tensile Elongation (Break)	4.4	%	ASTM D638
Flexural Modulus			ASTM D790
1.60 mm	13200	MPa	
3.20 mm	9800	MPa	
Flexural Strength			ASTM D790
Yield, 1.60 mm	142	MPa	
Yield, 3.20 mm	137	MPa	
Impact	Nominal Value	Unit	Test Method
Unnotched Izod Impact	230	J/m	ASTM D256
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			ASTM D648
0.45 MPa, Unannealed	210	°C	


1.8 MPa, Unannealed	170	°C
Flammability	Nominal Value	Test Method
Flame Rating		UL 94
0.800 mm	V-2	
3.20 mm	V-0	
Injection	Nominal Value	Unit
Drying Temperature	130	°C
Drying Time	4.0	hr
Hopper Temperature	120	°C
Rear Temperature	270	°C
Middle Temperature	280	°C
Front Temperature	290	°C
Nozzle Temperature	290	°C
Mold Temperature	40.0	°C

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