APEL[™] APL5014CL

Cyclic Olefin Copolymer

Mitsui Chemicals, Inc.

Message:

APEL is a cyclo olefin copolymer (COC) developed by Mitsui Chemicals using Ziegler polymerization technology. Integration of the performance of polyolefin resins and that of amorphous resins enables control of heat resistance and fluidity. With the highest refractive index among amorphous polyolefins, it is low in optical anisotropy and extremely low in birefringence. Proven applications in optical plastic lenses. Excellent moisture-proof properties, chemical resistance and non-attachment characteristics that make it applicable as a medical packaging material. APEL's versatile functions and superior characteristics create new potential for transparent materials.

Features: Optical characteristics Moisture-proofness Chemical resistance Dimensional stability Heat resistant stiffness Superior moldability Applications: Optical

General Information			
Features	Good Heat Resistance		
	Good dimensional stability		
	Moisture resistance		
	Rigid, good		
	Optical		
	Good formability		
	Good chemical resistance		
Uses	Optical applications		
Processing Method	Injection molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.04	g/cm³	ASTM D792
Melt Mass-Flow Rate (MFR) (260°C/2.16			
kg)	36	g/10 min	ASTM D1238
Molding Shrinkage			Internal method
Flow	0.60	%	Internal method
Transverse flow	0.50	%	Internal method
Mechanical	Nominal Value	Unit	Test Method
Tensile Strength (Yield)	60.0	MPa	ASTM D638
Tensile Elongation (Break)	3.0	%	ASTM D638
Flexural Modulus	3200	MPa	ASTM D790
Flexural Strength	100	MPa	ASTM D790
Films	Nominal Value	Unit	Test Method
Water Vapor Transmission Rate	0.090	g·mm/m²/atm/24 hr	ASTM F1249
Impact	Nominal Value	Unit	Test Method

Notched Izod Impact	25	J/m	ASTM D256
Unnotched Izod Impact	10.0	kJ/m²	ASTM D256
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load (1.8			
MPa, Unannealed)	125	°C	ASTM D648
Glass Transition Temperature	135	°C	Internal method
Linear thermal expansion coefficient			ASTM D696
Flow	7.0E-5	cm/cm/°C	ASTM D696
Lateral	6.0E-5	cm/cm/°C	ASTM D696
Optical	Nominal Value	Unit	Test Method
Refractive Index	1.540		ASTM D542
Transmittance	90.0	%	ASTM D1003
Haze	< 0.50	%	ASTM D1003

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