

Topas Advanced Polymers TOPAS® 6015S-04 Cyclic Olefin Copolymer (COC)

Category : Polymer , Thermoplastic , Cyclo Olefin Polymer

Material Notes:

TOPAS® 6015S-04 is a general purpose injection molding grade. It is a glass-clear amorphous polymer with outstanding moisture barrier, chemical resistance, high purity and a non-reactive surface making it an excellent choice for optics, healthcare and other high-tech products. Lower leachables and extractables of TOPAS COC preserve food and drug stability and quality. It is a non-polar substrate that does not promote adsorption, denaturation, aggregation, or precipitation like glass can. This grade has a high (150°C) heat distortion temperature to withstand 121°C and 134°C steam sterilization protocols, as well as gamma and EtO procedures. Key applications and attributes: Drug delivery: Low leachables & extractables, low water transmission Prefilled syringes, vials, cartridges: Non-ionic, does not promote adsorption like glass Bottles: Minimally reactive, EtO/gamma/steam sterilizable Surgical instruments: Chemically resistant to alcohol, acetone, and acrylates IV containers and components: Transparent, withstands EtO/gamma/steam sterilization Labware: Temperature resistance, clarity and purity Optics: Clarity, low birefringence, low moisture sensitivity Electronics: Low dielectric constant, thermoplastic Food packaging: Not manufactured with BPA, phthalates, or halogens Healthcare and food: Broad regulatory approval

Information provided by TOPAS Advanced Polymers

Order this product through the following link:

http://www.lookpolymers.com/polymer_Topas-Advanced-Polymers-TOPAS-6015S-04-Cyclic-Olefin-Copolymer-COC.php

Physical Properties	Metric	English	Comments
Density	1.02 g/cc	0.0368 lb/in ³	ISO 1183
Water Absorption at Saturation	0.010 % @Temperature 23.0 °C	0.010 % @Temperature 73.4 °F	ISO 62
Melt Flow	3.68 g/10 min @Load 2.16 kg, Temperature 260 °C	3.68 g/10 min @Load 4.76 lb, Temperature 500 °F	ISO 1133

Mechanical Properties	Metric	English	Comments
Tensile Strength, Yield	60.0 MPa	8700 psi	5mm/min; ISO 527-2/1A
Elongation at Yield	2.5 %	2.5 %	5mm/min; ISO 527-2/1A
Tensile Modulus	3.00 GPa	435 ksi	1mm/min; ISO 527-2/1A
Charpy Impact Unnotched	1.50 J/cm ² @Temperature 23.0 °C	7.14 ft-lb/in ² @Temperature 73.4 °F	ISO 179/1eU
Charpy Impact, Notched	0.160 J/cm ² @Temperature 23.0 °C	0.761 ft-lb/in ² @Temperature 73.4 °F	ISO 179/1eA

Thermal Properties	Metric	English	Comments
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Thermal Properties	Metric	English	Comments
Vicat Softening Point	156 °C	313 °F	B50 (50°C/h 50N); ISO 306
Glass Transition Temp, Tg	158 °C	316 °F	10°C/min; ISO 11357-1,-2,-3
Flammability, UL94	HB	HB	
	@Thickness 1.60 mm	@Thickness 0.0630 in	

Optical Properties	Metric	English	Comments
Refractive Index	1.53	1.53	ISO 489
Transmission, Visible	91 %	91 %	ISO 13468-2

Electrical Properties	Metric	English	Comments
Volume Resistivity	>= 1.00e+16 ohm-cm	>= 1.00e+16 ohm-cm	IEC 60093
Dielectric Constant	2.3	2.3	IEC 60250
	@Frequency 1.00e+9 Hz	@Frequency 1.00e+9 Hz	
	2.35	2.35	IEC 60250
	@Frequency 1000 - 10000 Hz	@Frequency 1000 - 10000 Hz	
Dissipation Factor	0.000070	0.000070	IEC 60250
	@Frequency 1.00e+9 Hz	@Frequency 1.00e+9 Hz	
Comparative Tracking Index	>= 600 V	>= 600 V	IEC 60112

Processing Properties	Metric	English	Comments
Feed Temperature	<= 110 °C	<= 230 °F	
Nozzle Temperature	250 - 310 °C	482 - 590 °F	
Zone 1	240 - 270 °C	464 - 518 °F	
Zone 2	250 - 290 °C	482 - 554 °F	
Zone 3	260 - 310 °C	500 - 590 °F	
Zone 4	260 - 310 °C	500 - 590 °F	
Mold Temperature	110 - 145 °C	230 - 293 °F	
Injection Velocity	50.0 - 150 mm/sec	1.97 - 5.91 in/sec	Moderate to Fast

Injection Pressure Processing Properties	50.0 - 110 MPa Metric	7250 - 16000 psi English	Specific Comments
Hold Pressure	30.0 - 60.0 MPa	4350 - 8700 psi	Specific
Back Pressure	<= 15.0 MPa	<= 2180 psi	Specific
Screw Speed	50 - 200 rpm	50 - 200 rpm	

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