

Topas Advanced Polymers TOPAS® 5013S-04 Cyclic Olefin Copolymer (COC)

Category : Polymer , Thermoplastic , Cyclo Olefin Polymer

Material Notes:

TOPAS® 5013S-04 is a high flow injection molding grade with a 130°C heat distortion temperature. 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 healthcare and other high-tech products. This product features high flow characteristics for excellent mold detail replication. This grade has a high heat distortion temperature to withstand 121°C steam sterilization protocols, as well as gamma and EtO procedures. Key applications and attributes: Drug delivery: Low leachables & extractables, low water transmission Bottles: Minimally reactive, EtO/gamma/steam sterilizable Surgical instruments: Chemically resistant to alcohol, acetone, and acrylates Labware: Temperature resistance, clarity and purity Optics: Clarity, low birefringence, low moisture sensitivity Electronics: Low dielectric constant, thermoplastic 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-5013S-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	44 g/10 min @Load 2.16 kg, Temperature 260 °C	44 g/10 min @Load 4.76 lb, Temperature 500 °F	ISO 1133

Mechanical Properties	Metric	English	Comments
Tensile Strength, Yield	46.0 MPa	6670 psi	5mm/min; ISO 527-2/1A
Elongation at Yield	1.7 %	1.7 %	5mm/min; ISO 527-2/1A
Tensile Modulus	3.20 GPa	464 ksi	1mm/min; ISO 527-2/1A
Charpy Impact Unnotched	1.30 J/cm ² @Temperature 23.0 °C	6.19 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
Deflection Temperature at 0.46 MPa (66 psi)	127 °C	261 °F	ISO 75-1,-2
Vicat Softening Point	135 °C	275 °F	B50 (50°C/h 50N); ISO 306

Thermal Properties	Metric	English	Comments
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	$\geq 1.00 \times 10^{16}$ ohm-cm	$\geq 1.00 \times 10^{16}$ ohm-cm	IEC 60093
Dielectric Constant	2.35	2.35	
	@Frequency 1000 - 10000 Hz	@Frequency 1000 - 10000 Hz	IEC 60250
Comparative Tracking Index	≥ 600 V	≥ 600 V	IEC 60112

Processing Properties	Metric	English	Comments
Feed Temperature	≤ 100 °C	≤ 212 °F	
Nozzle Temperature	240 - 300 °C	464 - 572 °F	
Zone 1	230 - 260 °C	446 - 500 °F	
Zone 2	240 - 270 °C	464 - 518 °F	
Zone 3	250 - 280 °C	482 - 536 °F	
Zone 4	260 - 290 °C	500 - 554 °F	
Mold Temperature	95.0 - 125 °C	203 - 257 °F	
Injection Velocity	50.0 - 150 mm/sec	1.97 - 5.91 in/sec	Moderate to Fast
Injection Pressure	50.0 - 110 MPa	7250 - 16000 psi	Specific
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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