TOPAS® 8007S-04

Cyclic Olefin Copolymer

Topas Advanced Polymers, Inc.

Message:

Product Description
TOPAS 8007S-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 healthcare and other high-tech products. Lower leachables and extractables of TOPAS COC preserve content stability and quality. It is a non-polar substrate that does not promote adsorption, denaturation, aggregation, or precipitation like glass can. Analytical results are more accurate with TOPAS COC in contact with sensitive chemistries.
Selected Applications
Drug delivery
Prefilled syringes, vials, cartridges
Bottles and tubes
Surgical instruments
IV containers and components
Labware
Optics
Electronics
Food packaging
Healthcare and food contact
Leading Attributes
Low leachables & extractables, low water transmission
Non-ionic, does not promote adsorption like glass
Minimally reactive
Chemically resistant to alcohol, acetone, and acrylates
Transparent, withstands EtO and gamma sterilization
Temperature resistance, clarity and purity
Clarity, low birefringence, low moisture sensitivity
Low dielectric constant, thermoplastic
Not manufactured with BPA, phthalates, or halogens
Broad regulatory compliance
Related Grades for Injection Molding, Healthcare, Optics and Diagnostics
TOPAS 8007D-61 - externally lubricated 8007S-04 for blow molding of bottles, vials, etc.
TOPAS 8007X10 - our highest ultraviolet (UV) transmission grade

General Information	
Features	High purity
	Low extract
	Moisture proof
	Radiation disinfection
	Copolymer
	Ethylene oxide disinfection
	Good chemical resistance
	Alcohol resistance
	Heat resistance, high
	Definition, high
	Compliance of Food Exposure
	General
	BPA-free
	amorphous

	Halogen-free

Uses	Electrical/Electronic Applications
	Pipe fittings
	Optical applications
	Bottle
	Laboratory apparatus
	Food packaging
	General
	Surgical instruments
	Drug packaging
	Medical/nursing supplies

Agency Ratings	DMF 12132
	FDA FCN 405
	ISO 10993
	USP Class VI
	Europe 10/1/2011 12:00:00 AM

Appearance	Clear/transparent
Forms	Particle
Processing Method	Injection molding

Physical	Nominal Value	Unit	Test Method
Density	1.02	g/cm³	ISO 1183
Melt Mass-Flow Rate (MFR) (260°C/2.16 kg)	29	g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR) (260°C/2.16 kg)	32.0	cm³/10min	ISO 1133
Molding Shrinkage [1]	0.10 - 0.30	%	Internal method
Water Absorption (Saturation, 23°C)	0.010	%	ISO 62

Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus	2600	MPa	ISO 527-2/1A/1
Tensile Stress (Yield)	63.0	MPa	ISO 527-2/1A/50
Tensile Strain (Yield)	4.5	%	ISO 527-2/1A/50

Films	Nominal Value	Unit	Test Method
Water Vapor Transmission Rate (23°C, 85% RH)	0.025	g·mm/m²/atm/24 hr	DIN 53122

Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength (23°C)	3.0	kJ/m²	ISO 179/1eA
Charpy Unnotched Impact Strength (23°C)	20	kJ/m²	ISO 179/1eU

Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature (0.45 MPa, Unannealed)	75.0	°C	ISO 75-2/B

Glass Transition Temperature	78.0	°C	ISO 11357-2
Vicat Softening Temperature	80.0	°C	ISO 306/B50
Electrical	**Nominal Value**	**Unit**	**Test Method**
Volume Resistivity	> 1.0E+16	ohms·cm	IEC 60093
Relative Permittivity			IEC 60250
1 kHz	2.35		IEC 60250
10 kHz	2.35		IEC 60250
Comparative Tracking Index	> 600	V	IEC 60112
Flammability	**Nominal Value**	**Unit**	**Test Method**
Flame Rating (1.60 mm)	HB		UL 94
Optical	**Nominal Value**	**Unit**	**Test Method**
Refractive Index	1.530		ISO 489
Transmittance	91.0	%	ISO 13468-2
Injection	**Nominal Value**	**Unit**	
Drying Temperature	50.0	°C	
Drying Time	4.0 - 6.0	hr	
Rear Temperature	190 - 220	°C	
Middle Temperature	200 - 240	°C	
Front Temperature	220 - 250	°C	
Nozzle Temperature	220 - 250	°C	
Processing (Melt) Temp	190 - 250	°C	
Mold Temperature	40.0 - 70.0	°C	
Injection Pressure	50.0 - 110	MPa	
Injection Rate	Moderate-Fast		
Holding Pressure	30.0 - 60.0	MPa	
Back Pressure	< 15.2	MPa	
Screw Speed	50 - 200	rpm	

Injection instructions

Feed temperature: <60°C (<140°F)Max. residence time: <15 minutes; short interruptions to cycle reduce Tx = 170°C (338°F)Injection speed: 50 - 150 mm/sec (2.0 - 6.0 in/sec)Nozzle type: Free flow

NOTE

1.	Dependent on processing conditions and part design.

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