TOPAS® 6015S-04

Cyclic Olefin Copolymer

Topas Advanced Polymers, Inc.

Message:

Product Description
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 and dry heat sterilization protocols, as well as gamma and EtO procedures.
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/gamma/steam 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 6013M-07 - broader processing window, best for blow molding (IBM/ISBM)
TOPAS 6017S-04 - our most heat distortion resistant IM grade (HDT=170°C)
TOPAS IT X1 - impact grade for applications requiring extra toughness

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

	BPA-free
	amorphous
	Halogen-free
	Disinfect with steam

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)	3.7	g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR) (260°C/2.16 kg)	4.00	cm³/10min	ISO 1133
Molding Shrinkage [1]	0.50 - 0.70	%	Internal method
Water Absorption (Saturation, 23°C)	0.010	%	ISO 62
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus	3000	MPa	ISO 527-2/1A/1
Tensile Stress (Yield)	60.0	MPa	ISO 527-2/1A/50
Tensile Strain (Yield)	2.5	%	ISO 527-2/1A/50
Impact	**Nominal Value**	**Unit**	**Test Method**
Charpy Notched Impact Strength (23°C)	1.6	kJ/m²	ISO 179/1eA
Charpy Unnotched Impact Strength (23°C)	15	kJ/m²	ISO 179/1eU
Thermal	**Nominal Value**	**Unit**	**Test Method**
Heat Deflection Temperature (0.45 MPa, Unannealed)	150	°C	ISO 75-2/B

Glass Transition Temperature	158	°C	ISO 11357-2
Vicat Softening Temperature	156	°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
Dissipation Factor (1.00 GHz)	7.0E-5		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	130	°C	
Drying Time	4.0 - 6.0	hr	
Rear Temperature	240 - 270	°C	
Middle Temperature	250 - 310	°C	
Front Temperature	260 - 310	°C	
Nozzle Temperature	250 - 310	°C	
Processing (Melt) Temp	260 - 310	°C	
Mold Temperature	110 - 145	°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: <110°C (<230°F)Max. residence time: 10 minutes, 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.

Recommended distributors for this material

Susheng Import & Export Trading Co.,Ltd.

Tel: +86 21 5895 8519

Phone: +86 13424755533

Email: sales@su-jiao.com

No. 215, Lianhe North Road, Fengxian District, Shanghai, China