

**Topas® 5013S-04**

Injection molding grade with high flowability, high transparency, and high heat distortion temperature. Specially manufactured for optical applications also suited for applications where high flowability is required.

Cyclic Olefin Copolymer (COC)

Property	Value	Unit	Test Standard
<b>Physical Properties</b>			
Density	1020	kg/m <sup>3</sup>	ISO 1183
Melt volume rate (MVR)	48.0	cm <sup>3</sup> /10min	ISO 1133
MVR test temperature	260	°C	ISO 1133
MVR test load	2.16	kg	ISO 1133
Water absorption (23°C-sat)	0.01	%	ISO 62
<b>Mechanical Properties</b>			
Tensile modulus (1mm/min)	3200	MPa	ISO 527-2/1A
Tensile stress at break (5mm/min)	46	MPa	ISO 527-2/1A
Tensile strain at break (5mm/min)	1.7	%	ISO 527-2/1A
Charpy impact strength @ 23C	13	KJ/m <sup>2</sup>	ISO 179/1eU
Charpy notched impact strength @ 23°C	1.6	KJ/m <sup>2</sup>	ISO 179/1eA
<b>Thermal Properties</b>			
Glass transition temperature (10°C/min)	134	°C	ISO 11357-1,-2,-3
DTUL @ 0.45 MPa	127	°C	ISO 75-1, -2
Vicat softening temperature B50 (50°C/h 50N)	135	°C	ISO 306
Flammability @1.6mm nom. thickn.	HB	Class	UL94
thickness tested (1.6)	1.6	mm	UL94
UL recognition (1.6)	UL	-	UL94
<b>Electrical Properties</b>			
Relative permittivity at 1-10 kHz	2.35	-	IEC 60250
Volume resistivity	>1E14	ohm-m	IEC 60093
Comparative tracking index CTI	>600	-	IEC 60112
<b>Optical Properties</b>			
Deg. of light transmission	91	%	ISO 13468-2
Refractive index	1.533	-	ISO 489

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