

**Topas® 6013S-04**

Injection molding grade with high heat distortion temperature.

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)	14.0	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)	2900	MPa	ISO 527-2/1A
Tensile stress at break (5mm/min)	63	MPa	ISO 527-2/1A
Tensile strain at break (5mm/min)	2.7	%	ISO 527-2/1A
Charpy impact strength @ 23C	15	KJ/m <sup>2</sup>	ISO 179/1eU
Charpy notched impact strength @ 23°C	1.8	KJ/m <sup>2</sup>	ISO 179/1eA
<b>Thermal Properties</b>			
Glass transition temperature (10°C/min)	138	°C	ISO 11357-1,-2,-3
DTUL @ 0.45 MPa	130	°C	ISO 75-1, -2
Vicat softening temperature B50 (50°C/h 50N)	137	°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
Relative permittivity at 1 GHz	2.3	-	IEC 60250
Dissipation factor at 1 GHz	7.0E-05	-	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	1.53	-	ISO 489

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