

# ULTEM™ RESIN 4000

REGION ASIA

## DESCRIPTION

Glass fiber, PTFE, and Graphite filled, standard flow Polyetherimide (Tg 217C). ECO Conforming, UL94 V0 listing.

## TYPICAL PROPERTY VALUES

Revision 20180906

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
<b>MECHANICAL</b>			
Tensile Stress, brk, Type I, 5 mm/min	82	MPa	ASTM D 638
Tensile Strain, brk, Type I, 5 mm/min	1.2	%	ASTM D 638
Flexural Stress, yld, 2.6 mm/min, 100 mm span	113	MPa	ASTM D 790
Flexural Stress, brk, 2.6 mm/min, 100 mm span	137	MPa	ASTM D 790
Flexural Modulus, 2.6 mm/min, 100 mm span	8820	MPa	ASTM D 790
Hardness, Rockwell M	85	-	ASTM D 785
Taber Abrasion, CS-17, 1 kg	33	mg/1000cy	ASTM D 1044
PV Limit, 0.51 m/s	2.1	MPa-m/s	SABIC method
K-factor xE-10, PV=2000 psi-fpm vs Steel	50	-	SABIC method
K-factor xE-10, PV=2000 psi-fpm vs Self	1900	-	SABIC method
Coefficient of Friction on steel, Static	0.25	-	ASTM D 1894
Coefficient of Friction on steel, Kinetic	0.24	-	ASTM D 1894
<b>IMPACT</b>			
Izod Impact, unnotched, 23°C	160	J/m	ASTM D 4812
Izod Impact, notched, 23°C	64	J/m	ASTM D 256
Izod Impact, Reverse Notched, 3.2 mm	170	J/m	ASTM D 256
<b>THERMAL</b>			
Vicat Softening Temp, Rate B/50	233	°C	ASTM D 1525
HDT, 1.82 MPa, 6.4 mm, unannealed	212	°C	ASTM D 648
CTE, -40°C to 40°C, flow	1.62E-05	1/°C	ASTM E 831
CTE, -20°C to 150°C, flow	1.62E-05	1/°C	ASTM E 831
Relative Temp Index, Elec	105	°C	UL 746B
Relative Temp Index, Mech w/impact	105	°C	UL 746B
Relative Temp Index, Mech w/o impact	105	°C	UL 746B
<b>PHYSICAL</b>			
Specific Gravity	1.67	-	ASTM D 792
Water Absorption, 24 hours	0.11	%	ASTM D 570
Mold Shrinkage, flow, 3.2 mm	0.2 – 0.3	%	SABIC method
Melt Flow Rate, 337°C/6.6 kgf	3.1	g/10 min	ASTM D 1238
<b>ELECTRICAL</b>			
Comparative Tracking Index (UL) {PLC}	4	PLC Code	UL 746A
<b>FLAME CHARACTERISTICS</b>			
UL Recognized, 94V-0 Flame Class Rating	0.84	mm	UL 94
<b>INJECTION MOLDING</b>			
Drying Temperature	135	°C	

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Drying Time	4 – 6	hrs	
Drying Time (Cumulative)	10	hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	350 – 370	°C	
Nozzle Temperature	350 – 370	°C	
Front - Zone 3 Temperature	350 – 370	°C	
Middle - Zone 2 Temperature	345 – 365	°C	
Rear - Zone 1 Temperature	340 – 360	°C	
Mold Temperature	135 – 165	°C	
Back Pressure	0.3 – 0.7	MPa	
Screw Speed	40 – 70	rpm	
Shot to Cylinder Size	40 – 60	%	
Vent Depth	0.025 – 0.076	mm	

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