

ULTEM™ 4001 resin

Polyether Imide
SABIC Innovative Plastics

Message:
PTFE filled, standard flow Polyetherimide (Tg 217C). Resin is RoHS compliant. UL94 V0 and 5VA listing.

General Information			
Additive	PTFE lubricant		
RoHS Compliance	RoHS compliance		
Processing Method	Injection molding		
Physical	Nominal Value	Unit	Test Method
Density	1.33	g/cm ³	ISO 1183
Melt Volume-Flow Rate (MVR) (360°C/5.0 kg)	13.0	cm ³ /10min	ISO 1133
Molding Shrinkage - Flow ¹	0.60 - 0.80	%	Internal method
Water Absorption			ISO 62
Saturated, 23°C	1.1	%	ISO 62
Equilibrium, 23°C, 50% RH	0.60	%	ISO 62
PV Limit ²	2.8	MPa·m/s	Internal method
Hardness	Nominal Value	Unit	Test Method
Ball Indentation Hardness (H 358/30)	130	MPa	ISO 2039-1
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus	3000	MPa	ISO 527-2/1
Tensile Stress			ISO 527-2/50
Yield	95.0	MPa	ISO 527-2/50
Fracture	75.0	MPa	ISO 527-2/50
Tensile Strain			ISO 527-2/50
Yield	6.0	%	ISO 527-2/50
Fracture	30	%	ISO 527-2/50
Flexural Modulus ³	3000	MPa	ISO 178
Flexural Stress	125	MPa	ISO 178
Taber Abrasion Resistance (1000 Cycles, 1000 g, CS-17 Wheel)	2.00	mg	Internal method
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ⁴			ISO 179/1eA
-30°C	9.0	kJ/m ²	ISO 179/1eA
23°C	11	kJ/m ²	ISO 179/1eA
Notched Izod Impact ⁵			ISO 180/1A
-30°C	8.0	kJ/m ²	ISO 180/1A
23°C	10	kJ/m ²	ISO 180/1A
Thermal	Nominal Value	Unit	Test Method

Heat Deflection Temperature ⁶			
0.45 MPa, unannealed, 100 mm span	200	°C	ISO 75-2/Be
1.8 MPa, unannealed, 100 mm span	190	°C	ISO 75-2/Ae
Vicat Softening Temperature			
--	215	°C	ISO 306/A50
--	208	°C	ISO 306/B50
--	210	°C	ISO 306/B120
Ball Pressure Test (125°C)	Pass		IEC 60695-10-2
Linear thermal expansion coefficient			ISO 11359-2
Flow: 23 to 150°C	3.9E-5	cm/cm/°C	ISO 11359-2
Horizontal: 23 to 150°C	4.0E-5	cm/cm/°C	ISO 11359-2
Thermal Conductivity	0.26	W/m/K	ISO 8302
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	> 1.0E+15	ohms	IEC 60093
Volume Resistivity	1.0E+15	ohms·cm	IEC 60093
Comparative Tracking Index	150	V	IEC 60112
Flammability	Nominal Value	Unit	Test Method
Flame Rating			UL 94
1.60 mm, Testing by SABIC	V-1		UL 94
1.50 mm, Testing by SABIC	5VA		UL 94
Glow Wire Flammability Index (3.20 mm)	960	°C	IEC 60695-2-12
Oxygen Index	48	%	ISO 4589-2
Injection	Nominal Value	Unit	
Drying Temperature	150	°C	
Drying Time	4.0 - 6.0	hr	
Suggested Max Moisture	0.020	%	
Hopper Temperature	80.0 - 120	°C	
Rear Temperature	340 - 395	°C	
Middle Temperature	350 - 405	°C	
Front Temperature	360 - 415	°C	
Nozzle Temperature	350 - 405	°C	
Processing (Melt) Temp	370 - 410	°C	
Mold Temperature	140 - 180	°C	
NOTE			
1.	Tensile Bar		
2.	0.51 m/s		
3.	2.0 mm/min		
4.	80*10*4 sp=62mm		
5.	80*10*4		
6.	120*10*4 mm		

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