

ULTEM™ 4001 resin

Polyether Imide
SABIC Innovative Plastics

Message:
PTFE filled, standard flow Polyetherimide (Tg 217C). ECO Conforming, UL94 V0 and 5VA listing.

General Information	
UL YellowCard	E121562-221110
Additive	PTFE Lubricant
Features	ECO Compliant
Agency Ratings	EU Eco
Processing Method	Injection Molding
Multi-Point Data	Coefficient of Thermal Expansion vs. Temperature (ASTM E831)
	Elastic Modulus vs Temperature (ASTM D4065)
	Flexural DMA (ASTM D4065)
	Specific Heat vs. Temperature (ASTM D3417)
	Tensile Creep (ASTM D2990)
	Tensile Fatigue
	Tensile Stress vs. Strain (ASTM D638)
Thermal Conductivity vs. Temperature (ASTM E1530)	

Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.33	g/cm ³	ASTM D792
Melt Mass-Flow Rate (MFR) (337°C/6.6 kg)	9.5	g/10 min	ASTM D1238
Molding Shrinkage - Flow (3.20 mm)	0.50 to 0.70	%	Internal Method
K (wear) Factor			Internal Method
-- ¹	72.0		
-- ²	27.0		
PV Limit ³	1.9	MPa · m/s	Internal Method
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (M-Scale)	110		ASTM D785
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus ⁴	3360	MPa	ASTM D638
Tensile Strength ⁵ (Yield)	103	MPa	ASTM D638
Tensile Elongation ⁶ (Break)	40	%	ASTM D638
Flexural Modulus ⁷ (100 mm Span)	3410	MPa	ASTM D790
Flexural Strength ⁸ (Yield, 100 mm Span)	152	MPa	ASTM D790
Coefficient of Friction (vs. Steel - Dynamic)	0.25		ASTM D1894
Taber Abrasion Resistance (1000 Cycles, 1000 g, CS-17 Wheel)	2.00	mg	ASTM D1044

Impact	Nominal Value	Unit	Test Method
Notched Izod Impact (23°C)	120	J/m	ASTM D256
Unnotched Izod Impact (23°C)	530	J/m	ASTM D4812
Reverse Notch Izod Impact (3.20 mm)	1300	J/m	ASTM D256
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load (1.8 MPa, Unannealed, 6.40 mm)	200	°C	ASTM D648
RTI Elec	170	°C	UL 746
RTI Imp	170	°C	UL 746
RTI Str	170	°C	UL 746
Electrical	Nominal Value		Test Method
Arc Resistance ⁹	PLC 6		ASTM D495
Comparative Tracking Index (CTI)	PLC 4		UL 746
High Amp Arc Ignition (HAI)	PLC 0		UL 746
High Voltage Arc Tracking Rate (HVTR)	PLC 2		UL 746
Hot-wire Ignition (HWI)	PLC 1		UL 746
Flammability	Nominal Value		Test Method
Flame Rating			UL 94
0.381 mm	V-0		
1.50 mm	5VA		
Injection	Nominal Value	Unit	
Drying Temperature	135	°C	
Drying Time	4.0 to 6.0	hr	
Drying Time, Maximum	10	hr	
Suggested Max Moisture	0.020	%	
Suggested Shot Size	40 to 60	%	
Rear Temperature	338 to 360	°C	
Middle Temperature	343 to 366	°C	
Front Temperature	349 to 371	°C	
Nozzle Temperature	349 to 371	°C	
Processing (Melt) Temp	349 to 371	°C	
Mold Temperature	135 to 163	°C	
Back Pressure	0.345 to 0.689	MPa	
Screw Speed	40 to 70	rpm	
Vent Depth	0.025 to 0.076	mm	
NOTE			
1.	xE-10, PV=2000 psi-fpm vs Steel		
2.	xE-10, PV=2000 psi-fpm vs Self		
3.	0.51 m/s		
4.	5.0 mm/min		
5.	Type I, 5.0 mm/min		
6.	Type I, 5.0 mm/min		

7.	2.6 mm/min
8.	2.6 mm/min
9.	Tungsten Electrode

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