

ULTEM™ 4000 resin

Polyether Imide
SABIC Innovative Plastics

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

General Information	
UL YellowCard	E121562-221109
Filler / Reinforcement	Glass Fiber
Additive	Graphite Powder Lubricant
	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)
	Instrumented Impact (Energy) (ASTM D3763)
	Instrumented Impact (Load) (ASTM D3763)
	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	1.67	g/cm ³	ASTM D792
Melt Mass-Flow Rate (MFR) (337°C/6.6 kg)	3.1	g/10 min	ASTM D1238
Molding Shrinkage - Flow (3.20 mm)	0.20 to 0.30	%	Internal Method
Water Absorption (24 hr)	0.11	%	ASTM D570
K (wear) Factor			Internal Method
-- ¹	62.0		
-- ²	1900		
PV Limit ³	2.1	MPa · m/s	Internal Method
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (M-Scale)	85		ASTM D785
Mechanical	Nominal Value	Unit	Test Method
Tensile Strength ⁴ (Break)	82.7	MPa	ASTM D638
Tensile Elongation ⁵ (Break)	1.2	%	ASTM D638
Flexural Modulus ⁶ (100 mm Span)	8830	MPa	ASTM D790

Flexural Strength ⁷			ASTM D790
Yield, 100 mm Span	114	MPa	
Break, 100 mm Span	138	MPa	
Coefficient of Friction			ASTM D1894
vs. Steel - Dynamic	0.24		
vs. Steel - Static	0.25		
Taber Abrasion Resistance (1000 Cycles, 1000 g, CS-17 Wheel)	33.0	mg	ASTM D1044
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact (23°C)	64	J/m	ASTM D256
Unnotched Izod Impact (23°C)	160	J/m	ASTM D4812
Reverse Notch Izod Impact (3.20 mm)	170	J/m	ASTM D256
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load (1.8 MPa, Unannealed, 6.40 mm)	212	°C	ASTM D648
Vicat Softening Temperature	234	°C	ASTM D1525 ⁸
CLTE - Flow			ASTM E831
-40 to 40°C	1.6E-5	cm/cm/°C	
-20 to 150°C	1.6E-5	cm/cm/°C	
RTI Elec	105	°C	UL 746
RTI Imp	105	°C	UL 746
RTI Str	105	°C	UL 746
Electrical	Nominal Value		Test Method
Comparative Tracking Index (CTI)	PLC 4		UL 746
Flammability	Nominal Value		Test Method
Flame Rating (0.838 mm)	V-0		UL 94
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.	Type I, 5.0 mm/min
5.	Type I, 5.0 mm/min
6.	2.6 mm/min
7.	2.6 mm/min
8.	Rate B (120°C/h), Loading 2 (50 N)

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