

# ULTEM™ RESIN 4001

REGION AMERICAS

## DESCRIPTION

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

INDUSTRY	SUB INDUSTRY
Automotive	Heavy Truck, Automotive Under the Hood, Aerospace, Motorcycle, Recreational/Specialty Vehicles
Building and Construction	Building Component, Water Management
Consumer	Personal and Professional Hygiene, Consumer Goods, Sport/Leisure, Personal Accessory, Home Appliances, Commercial Appliance, Furniture
Electrical and Electronics	Energy Management, Drone Solutions, Mobile Phone - Computer - Tablets, Circuit Boards/Additives, Lighting, Printer Copier, Speaker - Earphone, Wireless Communication
Healthcare	Pharmaceutical Packaging and Drug Delivery, Surgical devices, General Healthcare, Patient Testing
Industrial	Electrical, Material Handling, Textile, Eyewear
Mass Transportation	Rail
Packaging	Industrial Packaging

## TYPICAL PROPERTY VALUES

Revision 20230519

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
<b>MECHANICAL</b>			
Tensile Stress, yld, Type I, 5 mm/min	103	MPa	ASTM D638
Tensile Strain, brk, Type I, 5 mm/min	40	%	ASTM D638
Tensile Modulus, 5 mm/min	3350	MPa	ASTM D638
Flexural Stress, yld, 2.6 mm/min, 100 mm span	151	MPa	ASTM D790
Flexural Modulus, 2.6 mm/min, 100 mm span	3400	MPa	ASTM D790
Hardness, Rockwell M	110	-	ASTM D785
Taber Abrasion, CS-17, 1 kg	2	mg/1000cy	ASTM D1044
PV Limit, 0.51 m/s	1.9	MPa-m/s	SABIC method
K-factor xE-10, PV=2000 psi-fpm vs Steel	72	-	SABIC method
K-factor xE-10, PV=2000 psi-fpm vs Self	27	-	SABIC method
Coefficient of Friction on steel, Kinetic	0.25	-	ASTM D1894
<b>IMPACT</b>			
Izod Impact, unnotched, 23°C	534	J/m	ASTM D4812
Izod Impact, notched, 23°C	117	J/m	ASTM D256
Izod Impact, Reverse Notched, 3.2 mm	1281	J/m	ASTM D256
<b>THERMAL</b>			
HDT, 1.82 MPa, 6.4 mm, unannealed	200	°C	ASTM D648
Relative Temp Index, Elec <sup>(1)</sup>	170	°C	UL 746B
Relative Temp Index, Mech w/impact <sup>(1)</sup>	170	°C	UL 746B
Relative Temp Index, Mech w/o impact <sup>(1)</sup>	170	°C	UL 746B
<b>PHYSICAL</b>			
Specific Gravity	1.33	-	ASTM D792
Mold Shrinkage, flow, 3.2 mm	0.5 – 0.7	%	SABIC method

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Melt Flow Rate, 337°C/6.6 kgf	9.5	g/10 min	ASTM D1238
<b>ELECTRICAL</b>			
Comparative Tracking Index (UL) {PLC}	4	PLC Code	UL 746A
Hot-Wire Ignition (HWI), PLC 1	≥0.38	mm	UL 746A
High Amp Arc Ignition (HAI), PLC 0	≥1.6	mm	UL 746A
High Amp Arc Ignition (HAI), PLC 1	≥0.38	mm	UL 746A
High Voltage Arc Track Rate {PLC}	2	PLC Code	UL 746A
Arc Resistance, Tungsten {PLC}	6	PLC Code	ASTM D495
<b>FLAME CHARACTERISTICS <sup>(1)</sup></b>			
UL Yellow Card Link	<a href="#">E121562-221110</a>	-	-
UL Recognized, 94-5VA Flame Class Rating	≥1.5	mm	UL 94
UL Recognized, 94V-0 Flame Class Rating	≥0.38	mm	UL 94
<b>INJECTION MOLDING</b>			
Drying Temperature	135	°C	
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	

(1) UL Ratings shown on the technical datasheet might not cover the full range of thicknesses and colors. For details, please see the UL Yellow Card.

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