ULTEM™ Resin CRS5001

REGION EUROPE

DESCRIPTION

Transparent, Standard flow Polyetherimide copolymer (Tg 225C) with enhanced chemical resistance to strong acids, bases, aromatics, and ketones. ECO conforming, UL94 V0 listing.

INDUSTRY	SUB INDUSTRY
Automotive	Heavy Truck, Automotive Under the Hood, Aerospace, Motorcycle, Recreational/Specialty Vehicles
Building and Construction	Building Component
Consumer	Personal Accessory, Home Appliances, Commercial Appliance
Electrical and Electronics	Energy Management, Drone Solutions, Mobile Phone - Computer - Tablets, Circuit Boards/Additives, Printer Copier, Speaker - Earphone
Industrial	Electrical, Material Handling
Mass Transportation	Rail
Packaging	Industrial Packaging

TYPICAL PROPERTY VALUES

Revision 20231109

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, yield, 50 mm/min	100	MPa	ISO 527
Tensile Stress, break, 50 mm/min	95	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	8	%	ISO 527
Tensile Strain, break, 50 mm/min	50	%	ISO 527
Tensile Modulus, 1 mm/min	3200	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	110	MPa	ISO 178
Flexural Stress, break, 2 mm/min	105	MPa	ISO 178
Flexural Modulus, 2 mm/min	2500	MPa	ISO 178
Ball Indentation Hardness, H358/30	135	MPa	ISO 2039-1
IMPACT			
Izod Impact, unnotched 80*10*4 +23°C	NB	kJ/m²	ISO 180/1U
Izod Impact, unnotched 80*10*4 -30°C	NB	kJ/m²	ISO 180/1U
Izod Impact, notched 80*10*4 +23°C	8	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	8	kJ/m²	ISO 180/1A
THERMAL			
Thermal Conductivity	0.29	W/m-°C	ISO 8302
CTE, -40°C to 150°C, flow	5.4E-05	1/°C	ISO 11359-2
CTE, -40°C to 150°C, xflow	5.7E-05	1/°C	ISO 11359-2
Ball Pressure Test, 125°C +/- 2°C	PASSES	-	IEC 60695-10-2
Vicat Softening Temp, Rate A/50	225	°C	ISO 306
Vicat Softening Temp, Rate B/50	220	°C	ISO 306
Vicat Softening Temp, Rate B/120	222	°C	ISO 306
HDT/Be, 0.45MPa Edgew 120*10*4 sp=100mm	210	°C	ISO 75/Be
HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm	200	°C	ISO 75/Ae

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Relative Temp Index, Elec [1]	160	°C	UL 746B
Relative Temp Index, Mech w/impact [1]	160	°C	UL 746B
Relative Temp Index, Mech w/o impact [1]	160	°C	UL 746B
PHYSICAL			
Mold Shrinkage on Tensile Bar, flow	0.6 – 0.8	%	SABIC method
Density	1.28	g/cm³	ISO 1183
Water Absorption, (23°C/saturated)	1.2	%	ISO 62-1
Moisture Absorption (23°C / 50% RH)	0.06	%	ISO 62
Melt Volume Rate, MVR at 360°C/5.0 kg	7	cm³/10 min	ISO 1133
ELECTRICAL			
Volume Resistivity	1.E+15	Ω.cm	IEC 60093
Surface Resistivity, ROA	>1.E+15	Ω	IEC 60093
Dielectric Strength, in oil, 1.6 mm	26	kV/mm	IEC 60243-1
Dielectric Strength, in oil, 3.2 mm	16	kV/mm	IEC 60243-1
Relative Permittivity, 1 MHz	3	-	IEC 60250
Dissipation Factor, 50/60 Hz	0.0016	-	IEC 60250
Dissipation Factor, 1 MHz	0.0043	-	IEC 60250
Comparative Tracking Index [2]	175	V	IEC 60112
Comparative Tracking Index, M [2]	125	V	IEC 60112
Relative Permittivity, 50/60 Hz	3.2	-	IEC 60250
Comparative Tracking Index (UL) {PLC}	4	PLC Code	UL 746A
Hot-Wire Ignition (HWI), PLC 0	≥1.5	mm	UL 746A
High Amp Arc Ignition (HAI), PLC 0	≥1.5	mm	UL 746A
High Voltage Arc Track Rate {PLC}	3	PLC Code	UL 746A
Arc Resistance, Tungsten {PLC}	5	PLC Code	ASTM D495
FLAME CHARACTERISTICS [1]			
UL Yellow Card Link	E121562-221114	-	-
UL Recognized, 94V-0 Flame Class Rating	≥1.5	mm	UL 94
Glow Wire Flammability Index 960°C, passes at [2]	3.2	mm	IEC 60695-2-12
Oxygen Index (LOI)	47	%	ISO 4589
INJECTION MOLDING			
Drying Temperature	150	°C	
Drying Time	4 – 6	Hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	360 – 410	°C	
Nozzle Temperature	360 – 400	°C	
Front - Zone 3 Temperature	370 – 410	°C	
Middle - Zone 2 Temperature	350 – 390	°C	
Rear - Zone 1 Temperature	325 – 365	°C	
Hopper Temperature	80 – 120	°C	
Mold Temperature	120 – 170	°C	

(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.

(2) Value shown here is based on internal measurement.

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