

ULTEM™ RESIN CRS5011

REGION AMERICAS

DESCRIPTION

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

MECHANICAL Tensile Stress, yld, Type I, 5 mm/min 99 MPa ASTM D638 Tensile Strain, brk, Type I, 5 mm/min 60 % ASTM D638 Tensile Modulus, 5 mm/min 2890 MPa ASTM D638 Flexural Stress, yld, 2,6 mm/min, 100 mm span 137 MPa ASTM D790 Flexural Modulus, 2,6 mm/min, 100 mm span 3100 MPa ASTM D790 Ibus Action Minima, 100 mm span 137 J/m ASTM D256 Izod Impact, notched, 23°C 58 J/m ASTM D256 Izod Impact, Reverse Notched, 3.2 mm 2082 J/m ASTM D256 Izod Impact, Reverse Notched, 3.2 mm 204 °C ASTM D648 Relative Temp Index, Elect ⁽¹⁾ 160 °C U. 7468 Relative Temp Index, Mech w/impact ⁽¹⁾ 155 °C UL 7468 Relative Temp Index, Mech w/o impact ⁽¹⁾ 1.28 ASTM D792 Mold Shrinkage, flow, 3.2 mm 0.4 – 0.7 % SABIC method Mold Shrinkage, flow, 3.2 mm 0.4 – 0.7 % SABIC method Melt Flow Rate, 337°C/6	PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Tensile Strain, brk, Type I, 5 mm/min 60 % ASTM D638 Tensile Modulus, 5 mm/min 2890 MPa ASTM D638 Flexural Stress, yld, 2.6 mm/min, 100 mm span 137 MPa ASTM D790 IMPACT W ASTM D790 Izod Impact, notched, 23°C 58 J/m ASTM D256 Izod Impact, Reverse Notched, 3.2 mm 2082 J/m ASTM D256 THERMAL ** C ASTM D648 Relative Temp Index, Elec (¹¹) 160 °C M. 7468 Relative Temp Index, Mech w/impact (¹¹) 155 °C U. 7468 Relative Temp Index, Mech w/o impact (¹¹) 128 - ASTM D792 Mold Shrinkage, flow, 3.2 mm 0.4-0.7 % SABIC method Melt Flow Rate, 337°C/6.6 kgf 11 y/m ASTM D1238 ELECTRICAL V/mm ASTM D150 Dielectric Strength, in oil, 3.2 mm 17.9 KV/mm ASTM D150 Dielectric Strength, in oil, 3.2 mm 17.9 KV/mm ASTM D150 Dielectric Strength, in oil, 3.2 mm	MECHANICAL			
Tensile Modulus, 5 mm/min 2890 MPa ASTM D638 Flexural Stress, yld, 2.6 mm/min, 100 mm span 137 MPa ASTM D790 IMPACT ASTM D256 IMPACT IMPACT ASTM D256 IMPACT IMPACT ASTM D256 IMPACT IMPACT ASTM D486 IMPACT IMPACT IMPACT ASTM D486 IMPACT	Tensile Stress, yld, Type I, 5 mm/min	99	MPa	ASTM D638
Flexural Stress, yld, 2.6 mm/min, 100 mm span 137 MPa ASTM D790 Flexural Modulus, 2.6 mm/min, 100 mm span 3100 MPa ASTM D790 IMPACT Impact, notched, 23°C 58 J/m ASTM D256 Izod Impact, Reverse Notched, 3.2 mm 2082 J/m ASTM D256 THERMAL "C ASTM D648 Relative Temp Index, Elec (**) 160 **C M2 M3 Relative Temp Index, Mech w/impact (**) 155 **C UL 7468 Relative Temp Index, Mech w/o impact (**) 160 **C UL 7468 Relative Temp Index, Mech w/o impact (**) 128 **C M3TM D792 Relative Temp Index, Mech w/o impact (**) 128 **C W1 7468 PHYSICAL **C M3TM D792 Mold Shrinkage, flow, 3.2 mm 0.4 - 0.7 %* ASTM D193 Melt Flow Rate, 337°C/6.6 kgf 11 17.9 k//m ASTM D193 ELECTRICAL ** My/m ASTM D194 Belative Permittivity, 50/60 Hz 3.2 ASTM D150 Dissip	Tensile Strain, brk, Type I, 5 mm/min	60	%	ASTM D638
Flexural Modulus, 2.6 mm/min, 100 mm span 3100 MPa ASTM D790 IMPACT Izod Impact, notched, 23°C 58 J/m ASTM D256 Izod Impact, Reverse Notched, 3.2 mm 2082 J/m ASTM D256 THERMAL "C ASTM D648 Relative Temp Index, Elec (¹¹) 160 °C Ut 7468 Relative Temp Index, Mech w/o impact (¹¹) 155 °C Ut 7468 Relative Temp Index, Mech w/o impact (¹¹) 160 °C Ut 7468 PHYSICAL ** S SMIC method Mel SMIC method Mold Shrinkage, flow, 3.2 mm 0.4 − 0.7 % SASIM D192 Melt Flow Rate, 337°C/6.6 kgf 1 1 Mel Mel SMIC method ASTM D1238 ELECTRICAL ELECTRICAL V/mm ASTM D149 Relative Permittivity, 50/60 Hz 3.2 ASTM D150 Disipation Factor, 50/60 Hz 0.0021 - ASTM D150 Comparative Tracking Index (UL) {PLC} 4 PLC Code UL 746A	Tensile Modulus, 5 mm/min	2890	MPa	ASTM D638
IMPACT Izod Impact, notched, 23°C 58 J/m ASTM D256 Izod Impact, Reverse Notched, 3.2 mm 2082 J/m ASTM D256 THERMAL HDT, 1.82 MPa, 6.4 mm, unannealed 204 °C ASTM D648 Relative Temp Index, Elec (¹¹) 160 °C UL 746B Relative Temp Index, Mech w/o impact (¹¹) 155 °C UL 746B Relative Temp Index, Mech w/o impact (¹¹) 160 °C UL 746B PHYSICAL Specific Gravity 1.28 . ASTM D792 Mold Shrinkage, flow, 3.2 mm 0.4 – 0.7 % DASIM D792 Melt Flow Rate, 337°C/6.6 kgf 11 y (¹) min ASTM D1238 ELECTRICAL Electric Strength, in oil, 3.2 mm 17.9 W/mm ASTM D149 Relative Permittivity, 50/60 Hz 3.2 . ASTM D150 Dissipation Factor, 50/60 Hz 0.0021 - ASTM D150 Comparative Tracking Index (UL) {PLC} 4 PLC Code UL 746B	Flexural Stress, yld, 2.6 mm/min, 100 mm span	137	MPa	ASTM D790
Izod Impact, notched, 23°C 58 J/m ASTM D256 Izod Impact, Reverse Notched, 3.2 mm 2082 J/m ASTM D256 THERMAL HDT, 1.82 MPa, 6.4 mm, unannealed 204 °C ASTM D648 Relative Temp Index, Elec (¹) 160 °C UL 746B Relative Temp Index, Mech w/impact (¹) 155 °C UL 746B Relative Temp Index, Mech w/o impact (¹) 160 °C UL 746B PHYSICAL Specific Gravity 1.28 - ASTM D792 Mold Shrinkage, flow, 3.2 mm 0.4 – 0.7 % SABIC method Melt Flow Rate, 337°C/6.6 kgf 11 W//m ASTM D1238 ELECTRICAL XI/m ASTM D149 Relative Permittivity, 50/60 Hz 3.2 XI/m ASTM D150 Dissipation Factor, 50/60 Hz 0.0021 - ASTM D150 Comparative Tracking Index (UL) {PLC} 4 PLC Code UL 746A	Flexural Modulus, 2.6 mm/min, 100 mm span	3100	MPa	ASTM D790
Izod Impact, Reverse Notched, 3.2 mm 2082 J/m ASTM D256 THERMAL THERMAL C ASTM D648 HDT, 1.82 MPa, 6.4 mm, unannealed 204 °C ASTM D648 Relative Temp Index, Elec (¹¹) 160 °C UL 746B Relative Temp Index, Mech w/o impact (¹¹) 160 °C UL 746B PHYSICAL Specific Gravity 1.28 - ASTM D792 Mold Shrinkage, flow, 3.2 mm 0.4 - 0.7 % SABIC method Melt Flow Rate, 337°C/6.6 kgf 11 g/10 min ASTM D1238 ELECTRICAL V/mm ASTM D149 Relative Permittivity, 50/60 Hz 3.2 - ASTM D150 Dissipation Factor, 50/60 Hz 0.0021 - ASTM D150 Comparative Tracking Index (UL) {PLC} 4 PLC Code UL 746A	IMPACT			
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HDT, 1.82 MPa, 6.4 mm, unannealed 204 °C ASTM D648 Relative Temp Index, Elec (1) 160 °C UL 746B Relative Temp Index, Mech w/impact (1) 155 °C UL 746B Relative Temp Index, Mech w/o impact (1) 160 °C UL 746B PHYSICAL Specific Gravity 1.28 - ASTM D792 Mold Shrinkage, flow, 3.2 mm 0.4 - 0.7 % SABIC method Melt Flow Rate, 337°C/6.6 kgf 11 97.9 % MV/mm ASTM D1238 ELECTRICAL Dielectric Strength, in oil, 3.2 mm 17.9	Izod Impact, Reverse Notched, 3.2 mm	2082	J/m	ASTM D256
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Relative Temp Index, Mech w/impact (1)155°CUL 746BRelative Temp Index, Mech w/o impact (1)160°CUL 746BPHYSICALSpecific Gravity1.28-ASTM D792Mold Shrinkage, flow, 3.2 mm0.4 - 0.7%SABIC methodMelt Flow Rate, 337°C/6.6 kgf11g/10 minASTM D1238ELECTRICALDielectric Strength, in oil, 3.2 mm17.9kV/mmASTM D149Relative Permittivity, 50/60 Hz3.2-ASTM D150Dissipation Factor, 50/60 Hz0.0021-ASTM D150Comparative Tracking Index (UL) {PLC}4PLC CodeUL 746A	HDT, 1.82 MPa, 6.4 mm, unannealed	204	°C	ASTM D648
Relative Temp Index, Mech w/o impact (1)160°CUL 746BPHYSICALSpecific Gravity1.28-ASTM D792Mold Shrinkage, flow, 3.2 mm0.4 - 0.7%SABIC methodMelt Flow Rate, 337°C/6.6 kgf11g/10 minASTM D1238ELECTRICALELECTRICALDielectric Strength, in oil, 3.2 mm17.9kV/mmASTM D149Relative Permittivity, 50/60 Hz3.2-ASTM D150Dissipation Factor, 50/60 Hz0.0021-ASTM D150Comparative Tracking Index (UL) {PLC}4PLC CodeUL 746A	Relative Temp Index, Elec ⁽¹⁾	160	°C	UL 746B
PHYSICAL Specific Gravity 1.28 - ASTM D792 Mold Shrinkage, flow, 3.2 mm 0.4 - 0.7 % SABIC method Melt Flow Rate, 337°C/6.6 kgf 11 g/10 min ASTM D1238 ELECTRICAL Toilectric Strength, in oil, 3.2 mm kV/mm ASTM D149 Relative Permittivity, 50/60 Hz 3.2 - ASTM D150 Dissipation Factor, 50/60 Hz 0.0021 - ASTM D150 Comparative Tracking Index (UL) {PLC} 4 PLC Code UL 746A	Relative Temp Index, Mech w/impact (1)	155	°C	UL 746B
Specific Gravity 1.28 - ASTM D792 Mold Shrinkage, flow, 3.2 mm 0.4 – 0.7 % SABIC method Melt Flow Rate, 337°C/6.6 kgf 11 g/10 min ASTM D1238 ELECTRICAL ELECTRICAL Dielectric Strength, in oil, 3.2 mm 17.9 kV/mm ASTM D149 Relative Permittivity, 50/60 Hz 3.2 - ASTM D150 Dissipation Factor, 50/60 Hz 0.0021 - ASTM D150 Comparative Tracking Index (UL) {PLC} 4 PLC Code UL 746A	Relative Temp Index, Mech w/o impact $^{(1)}$	160	°C	UL 746B
Mold Shrinkage, flow, 3.2 mm 0.4 – 0.7 % SABIC method Melt Flow Rate, 337°C/6.6 kgf 11 g/10 min ASTM D1238 ELECTRICAL ELECTRICAL W/mm ASTM D149 Relative Permittivity, 50/60 Hz 3.2 - ASTM D150 Dissipation Factor, 50/60 Hz 0.0021 - ASTM D150 Comparative Tracking Index (UL) {PLC} 4 PLC Code UL 746A	PHYSICAL			
Melt Flow Rate, 337°C/6.6 kgf 11 g/10 min ASTM D1238 ELECTRICAL ELECTRICAL W/mm ASTM D149 Relative Permittivity, 50/60 Hz 3.2 - ASTM D150 Dissipation Factor, 50/60 Hz 0.0021 - ASTM D150 Comparative Tracking Index (UL) {PLC} 4 PLC Code UL 746A	Specific Gravity	1.28	-	ASTM D792
ELECTRICAL Dielectric Strength, in oil, 3.2 mm 17.9 kV/mm ASTM D149 Relative Permittivity, 50/60 Hz 3.2 - ASTM D150 Dissipation Factor, 50/60 Hz 0.0021 - ASTM D150 Comparative Tracking Index (UL) {PLC} 4 PLC Code UL 746A	Mold Shrinkage, flow, 3.2 mm	0.4 – 0.7	%	SABIC method
Dielectric Strength, in oil, 3.2 mm 17.9 kV/mm ASTM D149 Relative Permittivity, 50/60 Hz 3.2 - ASTM D150 Dissipation Factor, 50/60 Hz 0.0021 - ASTM D150 Comparative Tracking Index (UL) {PLC} 4 PLC Code UL 746A	Melt Flow Rate, 337°C/6.6 kgf	11	g/10 min	ASTM D1238
Relative Permittivity, 50/60 Hz 3.2 - ASTM D150 Dissipation Factor, 50/60 Hz 0.0021 - ASTM D150 Comparative Tracking Index (UL) {PLC} 4 PLC Code UL 746A	ELECTRICAL			
Dissipation Factor, 50/60 Hz 0.0021 - ASTM D150 Comparative Tracking Index (UL) {PLC} 4 PLC Code UL 746A	Dielectric Strength, in oil, 3.2 mm	17.9	kV/mm	ASTM D149
Comparative Tracking Index (UL) {PLC} 4 PLC Code UL 746A	Relative Permittivity, 50/60 Hz	3.2	-	ASTM D150
	Dissipation Factor, 50/60 Hz	0.0021	-	ASTM D150
Hot-Wire Ignition (HWI), PLC 0 ≥3 mm UL 746A	Comparative Tracking Index (UL) {PLC}	4	PLC Code	UL 746A
	Hot-Wire Ignition (HWI), PLC 0	≥3	mm	UL 746A
Hot-Wire Ignition (HWI), PLC 1 ≥1.5 mm UL 746A	Hot-Wire Ignition (HWI), PLC 1	≥1.5	mm	UL 746A



PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
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	E121562-221115	-	-
UL Recognized, 94V-0 Flame Class Rating	≥1.5	mm	UL 94
INJECTION MOLDING			
Drying Temperature	150	°C	
Drying Time	4 – 6	Hrs	
Drying Time (Cumulative)	24	Hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	365 – 390	°C	
Nozzle Temperature	360 – 380	°C	
Front - Zone 3 Temperature	365 – 390	°C	
Middle - Zone 2 Temperature	355 – 375	°C	
Rear - Zone 1 Temperature	345 – 365	°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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