

LEXANTM COPOLYMER DMX9455A

DESCRIPTION

LEXAN DMX9455A is a standard flow, flame retardant and transparent polycarbonate copolymer resin with improved scratch resistance and improved dielectric performance (lower Df). It is a good candidate for applications such as 5G related devices and anti-scratch covers.

TYPICAL PROPERTY VALUES

Revision 20200615

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, yld, Type I, 50 mm/min	80	MPa	ASTM D 638
Tensile Stress, brk, Type I, 50 mm/min	65	MPa	ASTM D 638
Tensile Strain, yld, Type I, 50 mm/min	7	%	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	70	%	ASTM D 638
Tensile Modulus, 50 mm/min	2900	MPa	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	120	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	2600	MPa	ASTM D 790
Hardness, Rockwell L	108	-	ASTM D 785
Hardness, Rockwell M	93	-	ASTM D 785
Taber Abrasion, CS-17, 1 kg	10	mg/1000cy	ASTM D 1044
Taber Abrasion, CS-17, 1 kg	10	mg/1000cy	SABIC method
Tensile Stress, yield, 50 mm/min	80	MPa	ISO 527
Tensile Stress, break, 50 mm/min	60	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	7	%	ISO 527
Tensile Strain, break, 50 mm/min	40	%	ISO 527
Tensile Modulus, 1 mm/min	2450	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	108	MPa	ISO 178
Flexural Modulus, 2 mm/min	2450	MPa	ISO 178
Ball Indentation Hardness, H358/30	128	MPa	ISO 2039-1
Pencil Hardness test, 1kgf	H	-	ASTM D 3363
Erichson scratch depth, 6N	14	micrometer	SABIC method
IMPACT			
Izod Impact, unnotched, 23°C	NB	J/m	ASTM D 4812
Izod Impact, notched, 23°C	30	J/m	ASTM D 256
Izod Impact, notched, -30°C	30	J/m	ASTM D 256
Instrumented Impact Total Energy, 23°C	30	J	ASTM D 3763
Izod Impact, unnotched 80*10*3 +23°C	NB	kJ/m ²	ISO 180/1U
Izod Impact, unnotched 80*10*3 -30°C	45	kJ/m ²	ISO 180/1U
Izod Impact, notched 80*10*3 +23°C	5	kJ/m ²	ISO 180/1A
Izod Impact, notched 80*10*3 -30°C	4	kJ/m ²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm	3	kJ/m ²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm	3	kJ/m ²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*3 sp=62mm	NB	kJ/m ²	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*3 sp=62mm	47	kJ/m ²	ISO 179/1eU
THERMAL			

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Vicat Softening Temp, Rate B/50	139	°C	ASTM D 1525
HDT, 0.45 MPa, 3.2 mm, unannealed	133	°C	ASTM D 648
HDT, 1.82 MPa, 3.2mm, unannealed	119	°C	ASTM D 648
CTE, -40°C to 95°C, flow	7.E-05	1/°C	ASTM E 831
CTE, -40°C to 95°C, xflow	7.E-05	1/°C	ASTM E 831
Specific Heat	1.4	J/g·°C	ASTM C 351
Thermal Conductivity	0.2	W/m·°C	ASTM C177
Thermal Conductivity	0.2	W/m·°C	ISO 8302
CTE, 23°C to 80°C, flow	7.E-05	1/°C	ISO 11359-2
CTE, 23°C to 80°C, xflow	7.E-05	1/°C	ISO 11359-2
Ball Pressure Test, 125°C +/- 2°C	Passes	-	IEC 60695-10-2
Ball Pressure Test, approximate maximum	140	°C	IEC 60695-10-2
Vicat Softening Temp, Rate B/50	138	°C	ISO 306
Vicat Softening Temp, Rate B/120	140	°C	ISO 306
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	131	°C	ISO 75/Bf
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	118	°C	ISO 75/Af
Relative Temp Index, Elec ⁽¹⁾	80	°C	UL 746B
Relative Temp Index, Mech w/impact ⁽¹⁾	80	°C	UL 746B
Relative Temp Index, Mech w/o impact ⁽¹⁾	80	°C	UL 746B
PHYSICAL			
Specific Gravity	1.2	-	ASTM D 792
Specific Volume	0.85	cm ³ /g	ASTM D 792
Density	1.17	g/cm ³	ASTM D 792
Water Absorption, (23°C/24hrs)	0.08	%	ASTM D 570
Water Absorption, (23°C/Saturated)	0.28	%	ASTM D 570
Moisture Absorption, (50% RH, Equilibrium)	0.13	%	ASTM D 570
Moisture Absorption, (23°C/50% RH/24 hrs)	0.04	%	ASTM D 570
Mold Shrinkage, flow, 3.2 mm	0.5 – 0.8	%	SABIC method
Melt Flow Rate, 300°C/1.2 kgf	14.5	g/10 min	ASTM D 1238
Density	1.17	g/cm ³	ISO 1183
Water Absorption, (23°C/saturated)	0.27	%	ISO 62-1
Moisture Absorption (23°C / 50% RH)	0.13	%	ISO 62
Melt Volume Rate, MVR at 300°C/1.2 kg	13	cm ³ /10 min	ISO 1133
OPTICAL			
Light Transmission, 2.54 mm	88	%	ASTM D 1003
Haze, 2.54 mm	<0.8	%	ASTM D 1003
Refractive Index	1.584	-	ASTM D542
Refractive Index	1.584	-	ISO 489
ELECTRICAL			
High Amp Arc Ignition (HAI), PLC 0 ⁽¹⁾	≥1	mm	UL 746A
Hot-Wire Ignition (HWI), PLC 3 ⁽¹⁾	≥1	mm	UL 746A
Hot-Wire Ignition (HWI), PLC 2 ⁽¹⁾	≥3	mm	UL 746A
Comparative Tracking Index (UL) {PLC} ⁽¹⁾	3	PLC Code	UL 746A
FLAME CHARACTERISTICS ⁽¹⁾			
UL Yellow Card Link	E207780-100081394	-	-

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
UL Recognized, 94HB Flame Class Rating	≥0.4	mm	UL 94
UL Recognized, 94V-2 Flame Class Rating	≥1.5	mm	UL 94
UL Recognized, 94V-0 Flame Class Rating	≥2.5	mm	UL 94
Glow Wire Ignitability Temperature, 3.0 mm	825	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 2.0 mm	850	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 1.0 mm	850	°C	IEC 60695-2-13
Glow Wire Flammability Index, 3.0 mm	960	°C	IEC 60695-2-12
Glow Wire Flammability Index, 2.0 mm	960	°C	IEC 60695-2-12
Glow Wire Flammability Index, 1.0 mm	960	°C	IEC 60695-2-12
INJECTION MOLDING			
Drying Temperature	120	°C	
Drying Time	3 – 4	hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	295 – 315	°C	
Nozzle Temperature	290 – 310	°C	
Front - Zone 3 Temperature	295 – 315	°C	
Middle - Zone 2 Temperature	280 – 305	°C	
Rear - Zone 1 Temperature	260 – 280	°C	
Hopper Temperature	60 – 80	°C	
Mold Temperature	70 – 95	°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.

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