LEXAN™ COPOLYMER DMX2415

DESCRIPTION

LEXAN DMX2415 is a standard flow Polycarbonate (PC) copolymer resin with improved scratch resistance. This is available in transparent, translucent, and opaque colors.

GENERAL INFORMATION	
Features	Scratch Resistance, No PFAS intentionally added
Fillers	Unreinforced
Polymer Types	Polycarbonate (PC)
Processing Techniques	Injection Molding

INDUSTRY	SUB INDUSTRY
Automotive	Automotive Interiors
Consumer	Consumer Goods, Sport/Leisure, Home Appliances, Commercial Appliance
Electrical and Electronics	Electronic Components, Lighting
Industrial	Electrical

TYPICAL PROPERTY VALUES

Revision 20231109

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Stress, yld, Type I, 50 mm/min	80	MPa	ASTM D638
Tensile Stress, brk, Type I, 50 mm/min	65	MPa	ASTM D638
Tensile Strain, yld, Type I, 50 mm/min	7	%	ASTM D638
Tensile Strain, brk, Type I, 50 mm/min	70	%	ASTM D638
Tensile Modulus, 50 mm/min	2900	MPa	ASTM D638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	120	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	2600	MPa	ASTM D790
Hardness, Rockwell L	108	-	ASTM D785
Hardness, Rockwell M	93	-	ASTM D785
Taber Abrasion, CS-17, 1 kg	10	mg/1000cy	ASTM D1044
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 D3363
Erichson scratch depth, 6N	14	micrometer	SABIC method

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
IMPACT [1]			
Izod Impact, unnotched, 23°C	NB	J/m	ASTM D4812
Izod Impact, notched, 23°C	30	J/m	ASTM D256
Izod Impact, notched, -30°C	30	J/m	ASTM D256
Instrumented Dart Impact Total Energy, 23°C	30	J	ASTM D3763
Izod Impact, unnotched 80*10*3 +23°C	NB	kJ/m²	ISO 180/1U
Izod Impact, unnotched 80*10*3 -30°C	45	kJ/m²	ISO 180/1U
Izod Impact, notched 80*10*3 +23°C	5	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*3 -30°C	4	kJ/m²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm	3	kJ/m²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm	3	kJ/m²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*3 sp=62mm	NB	kJ/m²	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*3 sp=62mm	47	kJ/m²	ISO 179/1eU
THERMAL [1]			
Vicat Softening Temp, Rate B/50	139	°C	ASTM D1525
HDT, 0.45 MPa, 3.2 mm, unannealed	133	°C	ASTM D648
HDT, 1.82 MPa, 3.2mm, unannealed	119	°C	ASTM D648
CTE, -40°C to 95°C, flow	7.E-05	1/°C	ASTM E831
CTE, -40°C to 95°C, xflow	7.E-05	1/°C	ASTM E831
Specific Heat	1.4	J/g-°C	ASTM C351
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 [2]	100	°C	UL 746B
Relative Temp Index, Mech w/impact [2]	100	°C	UL 746B
Relative Temp Index, Mech w/o impact [2]	100	°C	UL 746B
PHYSICAL [1]			
Specific Gravity	1.2	-	ASTM D792
Specific Volume	0.85	cm³/g	ASTM D792
Density	1.17	g/cm³	ASTM D792
Water Absorption, (23°C/24hrs)	0.08	%	ASTM D570
Water Absorption, (23°C/Saturated)	0.28	%	ASTM D570
Moisture Absorption, (50% RH, Equilibrium)	0.13	%	ASTM D570
Moisture Absorption, (23°C/50% RH/24 hrs)	0.04	%	ASTM D570
Mold Shrinkage, flow, 3.2 mm [3]	0.5 – 0.8	%	SABIC method
Melt Flow Rate, 300°C/1.2 kgf	14.5	g/10 min	ASTM D1238
Density	1.17	g/cm³	ISO 1183
Water Absorption, (23°C/saturated)	0.27	%	ISO 62-1

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Moisture Absorption (23°C / 50% RH)	0.13	%	ISO 62
Melt Volume Rate, MVR at 300°C/1.2 kg	13	cm³/10 min	ISO 1133
Oxygen Permeability (23°C)	2	cm³-cm/cm²-day-atm	ASTM F1307
Water Vapor Transmission Rate (38-°C/100%RH)	0.9	g-mm/m²-day	ASTM F1249
OPTICAL [1]			
Light Transmission, 2.54 mm	88	%	ASTM D1003
Haze, 2.54 mm	<0.8	%	ASTM D1003
Refractive Index	1.584	-	ASTM D542
Refractive Index	1.584	-	ISO 489
ELECTRICAL [1]			
Hot-Wire Ignition (HWI), PLC 2 [2]	3	mm	UL 746A
Hot-Wire Ignition (HWI), PLC 3 [2]	1.5	mm	UL 746A
High Amp Arc Ignition (HAI), PLC 1 [2]	3	mm	UL 746A
High Amp Arc Ignition (HAI), PLC 2 [2]	1.5	mm	UL 746A
Comparative Tracking Index (UL) {PLC} [2]	2	PLC Code	UL 746A
Dielectric Strength, in oil, 1.6 mm	27	kV/mm	ASTM D149
Volume Resistivity	1E14	Ω.cm	ASTM D257
Volume Resistivity	>1.E+17	Ω.cm	ASTM D257
Relative Permittivity, 50/60 Hz	2.9	-	ASTM D150
Relative Permittivity, 1 MHz	2.8	-	ASTM D150
FLAME CHARACTERISTICS [2]			
Glow Wire Flammability Index, 1.0 mm	900	°C	IEC 60695-2-12
Glow Wire Flammability Index, 2.0 mm	960	°C	IEC 60695-2-12
Glow Wire Ignitability Temperature, 1.0 mm	825	°C	IEC 60695-2-13
UL Recognized, 94HB Flame Class Rating	≥0.4	mm	UL 94
UL Yellow Card Link	E207780-100081393	-	-
UL Yellow Card Link 2	E121562-539761	-	-
UL Yellow Card Link 3	E45329-100081388	-	-
INJECTION MOLDING [4]			
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) The information stated on Technical Datasheets should be used as indicative only for material selection purposes and not be utilized as specification or used for part or tool design.

(2) 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.

(3) Measurements made from laboratory test coupon. Actual shrinkage may vary outside of range due to differences in processing conditions, equipment, part geometry and tool design. It is recommended that mold shrinkage studies be performed with surrogate or legacy tooling prior to cutting tools for new molded article.

(4) Injection Molding parameters are only mentioned as general guidelines. These may not apply or may need adjustment in specific situations such as low shot sizes, large part molding, thin wall molding and gas-assist molding.

DISCLAIMER

Any sale by SABIC, its subsidiaries and affiliates (each a "seller"), is made exclusively under seller's standard conditions of sale (available upon request) unless agreed otherwise in writing and signed on behalf of the seller. While the information contained herein is given in good faith, SELLER MAKES NO WARRANTY, EXPRESS OR IMPLIED, INCLUDING MERCHANTABILITY AND NONINFRINGEMENT OF INTELLECTUAL PROPERTY, NOR ASSUMES ANY LIABILITY, DIRECT OR INDIRECT, WITH RESPECT TO THE PERFORMANCE, SUITABILITY OR FITNESS FOR INTENDED USE OR PURPOSE OF THESE PRODUCTS IN ANY APPLICATION. Each customer must determine the suitability of seller materials for the customer's particular use through appropriate testing and analysis. No statement by seller concerning a possible use of any product, service or design is intended, or should be construed, to grant any license under any patent or other intellectual property right.