

LEXANTM COPOLYMER HFD1014

REGION EUROPE

DESCRIPTION

7 MFR LEXAN HFD Copolymer

TYPICAL PROPERTY VALUES

Revision 20240621

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL (1)			
Tensile Stress, yld, Type I, 50 mm/min	58	MPa	ASTM D638
Tensile Stress, brk, Type I, 50 mm/min	67	MPa	ASTM D638
Tensile Strain, yld, Type I, 50 mm/min	6	%	ASTM D638
Tensile Strain, brk, Type I, 50 mm/min	142	%	ASTM D638
Tensile Modulus, 5 mm/min	2260	MPa	ASTM D638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	98	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	2240	MPa	ASTM D790
Hardness, Rockwell R	120	-	ASTM D785
Tensile Stress, yield, 50 mm/min	60	MPa	ISO 527
Tensile Stress, break, 50 mm/min	73	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	6	%	ISO 527
Tensile Strain, break, 50 mm/min	141	%	ISO 527
Tensile Modulus, 1 mm/min	2080	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	89	MPa	ISO 178
Flexural Modulus, 2 mm/min	2070	MPa	ISO 178
IMPACT (1)			
Izod Impact, notched, 23°C	966	J/m	ASTM D256
Izod Impact, notched, -30°C	899	J/m	ASTM D256
Multiaxial Impact	134	J	ISO 6603
Instrumented Dart Impact Total Energy, 23°C	78	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	NB	kJ/m²	ISO 180/1U
Izod Impact, notched 80*10*3 +23°C	72	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*3 -30°C	63	kJ/m²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm	82	kJ/m²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm	69	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	NB	kJ/m²	ISO 179/1eU
THERMAL (1)			
Vicat Softening Temp, Rate B/50	136	°C	ASTM D1525
HDT, 0.45 MPa, 3.2 mm, unannealed	125	°C	ASTM D648
HDT, 1.82 MPa, 3.2mm, unannealed	115	°C	ASTM D648
CTE, -40°C to 40°C, flow	8.E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, xflow	8.E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, flow	8.E-05	1/°C	ISO 11359-2



PROPERTIES TYPICAL VALUES UNITS TEXT METHODS CT., 40°Cs 4				
Ball Presume Test, 125°C+ ; 2°C 9KS 9C 10 60 609610-20 Vicat Softening Temp, Rate 8] 90 130 °C 80 306 HOT ALS ASSTRAINED, Rate 8] 120 131 °C 80 305 HOT ALS ASSTRAINED, Rate 8] 120 115 °C 80 75 /A Relative Temp Index, Blee ⁽⁰⁾ 105 °C U.7468 Relative Temp Index, Mich w/ impact ⁽⁰⁾ 105 °C U.7468 Relative Temp Index, Mich w/ impact ⁽⁰⁾ 105 °C W.7468 Relative Temp Index, Mich w/ impact ⁽⁰⁾ 10 °C W.7468 Relative Temp Index, Mich w/ impact ⁽⁰⁾ 10 °C ASTM D792 Relative Temp Index, Mich w/ impact ⁽⁰⁾ 12 W.7468 ASTM D792 Bern Controll 12 9C ASTM D792 ASTM D792 Bern Style 12 9C ASTM D792 ASTM D792 Most David Shrinkage, flow, 3.2 mm ⁽⁰⁾ 10 9.2 MICh D792 ASTM D792 ASTM D792 Bern Style 10 2 9C 11 MICh D792 MICh	PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Vicat Softening Temp, Rate B/120 130 °C 300 500 Vicat Softening Temp, Rate B/120 131 °C 300 500 Rolative Temp Index, Riec P ⁽¹⁾ 105 °C 107 400 Relative Temp Index, Mech w/impact P ⁽¹⁾ 105 °C 10.7486 Relative Temp Index, Mech w/impact P ⁽¹⁾ 105 °C 10.7486 Relative Temp Index, Mech w/impact P ⁽¹⁾ 105 °C 10.7486 Relative Temp Index, Mech w/impact P ⁽¹⁾ 105 °C 300 70 400 70 Relative Temp Index, Mech w/impact P ⁽¹⁾ 12 °C ASTM 0792 400 70 200	CTE, -40°C to 40°C, xflow	8.E-05	1/°C	ISO 11359-2
Victa Sortening Temp, Rate 8/120 131 C 05 (A)	Ball Pressure Test, 125°C +/- 2°C	PASS	-	IEC 60695-10-2
IADIT/AL 1.8 MPa Flatw 80°10'4 spe4mm 15 °C No 75/AL Relative Temp Index, Elec (°) 105 °C U. 7468 Relative Temp Index, Mech w/Impact (°) 105 °C U. 17468 Relative Temp Index, Mech w/Impact (°) 105 °C U. 17468 Prints (Author) For Gravity 12 STIN DYS ASTIN DYS2 Density 50-07 % ASAIC (method) Mold Shrinkage, flow, 3.2 mm (°) 30 50-07 Mold Shrinkage, flow, 3.2 mm (°) MolT DYS2 Mel Flow Rate, 300°C/1.2 kgf 7 9/10 min ASTIN D1238 Moltsture Absorption (23°C/ shurated) 0.3 8 50-62 Mel Volume Rate, AWR at 300°C/1.2 kg 3 50-62 4 Mel Volume Rate, AWR at 300°C/1.2 kg 8 50-62 4 Mel Volume Rate, AWR at 300°C/1.2 kg 8 50-62 4 Mel Volume Rate, AWR at 300°C/1.2 kg 8 50-62 ASTIN D1032 Mel Valley 5 50-52 ASTIN D1032 ASTIN D1032	Vicat Softening Temp, Rate B/50	130	°C	ISO 306
Relative Temp Index, Mech w/ impact (**) 105 **C U. 7468 Relative Temp Index, Mech w/ impact (**) 105 **C U. 7468 Relative Temp Index, Mech w/ impact (**) 105 **C U. 7468 POPYSICAL (**) **S **STM O792 POPYSICAL (**) 1.2 \$*C ASTM 0792 Bed file Gravity 1.2 \$*C ASTM 0792 Mold Shrinkage, flow, 3.2 mm (**) 1.2 \$*C ASTM 0792 Mold Shrinkage, flow, 3.2 mm (**) 1.2 \$*C \$*C ASTM 0792 Mold Shrinkage, flow, 3.2 mm (**) 1.2 \$*C **C	Vicat Softening Temp, Rate B/120	131	°C	ISO 306
Relative Temp Index. Mech w/ impact. (a) 105 °C 11.4 (a) 12.4 (a)	HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	115	°C	ISO 75/Af
Relative Temp Index, Mech w/j impact (P) 1975 (CA)	Relative Temp Index, Elec ⁽²⁾	105	°C	UL 746B
Physicial (Financial Financial F	Relative Temp Index, Mech w/impact (2)	105	°C	UL 746B
Specific Gravity 1.2 AFM D792 Denity 1.2 Common (Procession) ASTM D792 Mold Shrikage, flow, 3.2 mm (Procession) 1.2 2.7 3.0 ASTM D792 Molet Flow Rate, 30°C/1.2 kg 7 3.0 3.0 1.0	Relative Temp Index, Mech w/o impact (2)	105	°C	UL 746B
Density 1.2 1.	PHYSICAL (1)			
Mold Shrinkage, flow, 3.2 mm ⁶⁾ 0.5 – 0.7 % ASEM Centhod Mek Flow Rate, 300°C/1.2 kgf 7 g/m² ASTM D1238 Density 10.2 g/m² 50 1183 Water Absorption (23°C/ 150′KRH) 0.15 % 50 62-1 Molisture Absorption (23°C/ 150′KRH) 0.15 % 50 62-1 Melt Volume Rate, MVR at 300°C/ 1.2 kg 6 m³/l 0 min b 10133 OPTICAL ⁽¹⁾ Usystem Action (23°C/ 150′KRH) 8 % ASTM D1003 Haze, 2.54 mm 8 % ASTM D1003 Haze, 2.54 mm 1 1 ASTM D1003 Refractive Index 1 2 ASTM D1003 Uzellow Card Link 1529-100912746 3 4 ASTM D1023 Uzellow Card Link 105-110 C 2 4 Driying Time (200 Malter) 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	Specific Gravity	1.2	-	ASTM D792
Melt Flow Rate, 300°C/1.2 kgf 7 9/10 min ASTM D238 Density 1.2 9/10° 1051183 Water Absorption, (23°C/saturated) 0.3 % 506 £2.1 Moisture Absorption, (23°C/50% RH) 0.15 % 506 £2.1 Melt Volume Rate, MVR at 300°C/1.2 kg 6 m³/10 min 103 133 BY MELT ASTM STORY (1.2 kg) 8 0.7 m²/10 min ASTM D103 BY MELT ASTM STORY (1.2 kg) 8 % ASTM D103 ASTM D103 BY MELT ASTM STORY (1.2 kg) 2 ASTM D103 ASTM D103 ASTM D103 BY MELT ASTM STORY (1.2 kg) 2 ASTM D103	Density	1.2	g/cm³	ASTM D792
Density 1.2 g/cm³ ISO 1183 Water Absorption (23°C/ saturated) 0.3 % ISO 62-1 Moisture Absorption (23°C / 50% RH) 0.15 % ISO 62-1 Melt Volume Rate, MVR at 300°C/1.2 kg 6 cm²/10 min iSO 62-1 Melt Volume Rate, MVR at 300°C/1.2 kg 8 cm²/10 min ASTM D1003 Haze, 2.54 mm 8 % ASTM D1003 Refractive Index 1582 2 ASTM D1003 Refractive Index 5 ASTM D1003 C FLUX CHORACATERISTICS (2) TURE CHARACTERISTICS (2) TURL CHARACT	Mold Shrinkage, flow, 3.2 mm ⁽³⁾	0.5 – 0.7	%	SABIC method
Water Absorption (23°C/saturated) 0.3 % SO 62-1 Moisture Absorption (23°C/50% RH) 0.15 % ISO 62 Melt Volume Rate, MVR at 300°C/1.2 kg 6 m²/10 min ISO 133 OPTICAL ¹¹ Light Transmission, 2.54 mm 88 % ASTM D1003 Refractive Index 1.582 2 ASTM D1003 Refractive Index Lise2 x ASTM D1003 Refractive Index 5.252.9 mm ASTM D1003 ASTM D1003 Refractive Index 5.252.9 mm mm D1003 ASTM D1003 Viry Yellow Card Link £523.91.0912746 ° *	Melt Flow Rate, 300°C/1.2 kgf	7	g/10 min	ASTM D1238
Moisture Absorption (23°C / 50% RH) 0.15 % 100 (200 mol) 100 (200 mol) Melt Volume Rate, MVR at 300°C / 1.2 kg 6 com³/10 min 150 1133 OPTICAL ⁽¹⁾ Uth Tansmission, 2.54 mm 88 % ASTM D1003 Rate, 2.54 mm 1,582 % ASTM D1003 Refractive Index 5 ASTM D1023 LUNE CHARACTERISTICS ⁽²⁾ UL Recognized, 94HB Flame Class Rating 645329-100912746 ~ * —	Density	1.2	g/cm³	ISO 1183
Melt Volume Rate, MVR at 300°C/1.2 kg 6 cm³/10 min is 1133 OPTICAL (¹) U U C <th>Water Absorption, (23°C/saturated)</th> <th>0.3</th> <th>%</th> <th>ISO 62-1</th>	Water Absorption, (23°C/saturated)	0.3	%	ISO 62-1
OPTICAL ¹¹ Light Transmission, 2.54 mm 88 % ASTM D1003 Haze, 2.54 mm 1.582 ° ASTM D542 FLAME CHARACTERISTICS ⁽²⁾ " ASTM D542 UL Yellow Card Link £45329-100912746 " " UNECTION MOLDING ⁽⁴⁾ " U.94 Injury Time (Properture) 3-4 Hrs " Prying Time (Cumulative) 24 Hrs " " Melt Temperature 260-305 "C " " Nozzle Temperature 255-300 "C " " Nozzle Temperature 260-305 "C "	Moisture Absorption (23°C / 50% RH)	0.15	%	ISO 62
Light Transmission, 2.54 mm88%ASTM D1003Haze, 2.54 mm1.5822.0ASTM D542FLAME CHARACTERISTICS (*)UL Yellow Card Link£45329-100912746**U. Recognized, 94HB Flame Class Rating8.0**Dying Temperature105-110**Drying Time (Cumulative)3-4Hrs*Prograture Diving Time (Lomulative)3.0**Maximum Moisture Content0.02%*Nozzle Temperature255-300**Pront - Zone 3 Temperature260-305**Middle- Zone 2 Temperature260-295**Mold Temperature260-295**Mold Temperature20-295**Mold Temperature50-80**Mold Temperature30-30,7MPa*Back Pressure35-75mpa*Screw Speed35-75mpa*Shot to Cylinder Size40-60%*	Melt Volume Rate, MVR at 300°C/1.2 kg	6	cm³/10 min	ISO 1133
Haze, 2.54 mm<1	OPTICAL (1)			
Refractive Index 1.582 ATM D542 FLAME CHARACTERISTICS (2) UL Yellow Card Link £45329-100912746 - - UL Recognized, 94HB Flame Class Rating 20.75 mm UL 94 INJECTION MOLDING (4) Trying Temperature Drying Time 105-110 °C Drying Time (Cumulative) 4Hrs Maximum Moisture Content 24 Hrs Melt Temperature 260-305 °C Nozzle Temperature 255-300 °C Front - Zone 3 Temperature 260-305 °C Middle - Zone 2 Temperature 260-295 °C Rear - Zone 1 Temperature 240-280 °C Mold Temperature 50-80 °C Mold Temperature 30-30.7 MPa Back Pressure 30-30.7 MPa Screw Speed 35-75 pm Stote Olylinder Size 40-60 %	Light Transmission, 2.54 mm	88	%	ASTM D1003
FLAME CHARACTERISTICS (2)UL Yellow Card LinkE45329-100912746UL Recognized, 94HB Flame Class Rating50.75mmUL 94INJECTION MOLDING (4)Drying Temperature105 - 110°CDrying Time (Cumulative)3 - 4Hrs-Maximum Moisture Content0.02%-Mozel Temperature260 - 305°C-Nozzle Temperature255 - 300°C-Moiddle-Zone 2 Temperature260 - 305°C-Middle-Zone 2 Temperature250 - 295°C-Moid Temperature240 - 280°C-Moid Temperature30 - 80°CBack Pressure0.3 - 0.7MPa-Screw Speed35 - 75mm-Stock Olylinder Size40 - 60%-	Haze, 2.54 mm	<1	%	ASTM D1003
UL Yellow Card Link E45329-100912746 -	Refractive Index	1.582	-	ASTM D542
UL Recognized, 94HB Flame Class Rating≥0.75mmUL 94INJECTION MOLDING (4)Drying Temperature105 – 110°CDrying Time3 – 4HrsDrying Time (Cumulative)24HrsMaximum Moisture Content0.02%Melt Temperature260 – 305°CNozzle Temperature255 – 300°CFront - Zone 3 Temperature260 – 305°CMiddle - Zone 2 Temperature250 – 295°CRear - Zone 1 Temperature240 – 280°CMold Temperature50 – 80°CBack Pressure0.3 – 0.7MPaScrew Speed35 – 75rpmStote Olylinder Size40 – 60%	FLAME CHARACTERISTICS (2)			
INJECTION MOLDING (4) Drying Temperature 105 – 110 °C Drying Time (Cumulative) 24 Hrs Maximum Moisture Content 0.02 % Melt Temperature 260 – 305 °C Nozzle Temperature 255 – 300 °C Front - Zone 3 Temperature 260 – 305 °C Middle - Zone 2 Temperature 260 – 305 °C Middle - Zone 2 Temperature 260 – 305 °C Mold Temperature 260 – 305 °C Rear - Zone 1 Temperature 260 – 305 °C Mold Temperature 300	UL Yellow Card Link	<u>E45329-100912746</u>	-	-
Drying Temperature 105 − 110 °C Drying Time 3 − 4 Hrs Drying Time (Cumulative) 24 Hrs Maximum Moisture Content 0.02 % Melt Temperature 260 − 305 °C Nozzle Temperature 255 − 300 °C Middle- Zone 3 Temperature 260 − 305 °C Middle- Zone 2 Temperature 250 − 295 °C Rear - Zone 1 Temperature 240 − 280 °C Mold Temperature 50 − 80 °C Back Pressure 0.3 − 0.7 MPa Screw Speed 35 − 75 pm Shot to Cylinder Size 40 − 60 %	UL Recognized, 94HB Flame Class Rating	≥0.75	mm	UL 94
Drying Time 3 - 4 Hrs Drying Time (Cumulative) 24 Hrs Maximum Moisture Content 0.02 % Melt Temperature 260 - 305 ° C Nozzle Temperature 255 - 300 ° C Front - Zone 3 Temperature 260 - 305 ° C Middle- Zone 2 Temperature 250 - 295 ° C Rear - Zone 1 Temperature 240 - 280 ° C Mold Temperature 50 - 80 ° C Back Pressure 0.3 - 0.7 MPa Screw Speed 35 - 75 pm Shot to Cylinder Size 40 - 60 %	INJECTION MOLDING (4)			
Drying Time (Cumulative) 24 Hrs Maximum Moisture Content 0.02 % Melt Temperature 260 – 305 °C Nozzle Temperature 255 – 300 °C Front - Zone 3 Temperature 260 – 305 °C Middle - Zone 2 Temperature 250 – 295 °C Rear - Zone 1 Temperature 240 – 280 °C Mold Temperature 50 – 80 °C Back Pressure 0.3 – 0.7 MPa Screw Speed 35 – 75 rpm Shot to Cylinder Size 40 – 60 %	Drying Temperature	105 – 110	°C	
Maximum Moisture Content 0.02 % Melt Temperature 260 - 305 °C Nozzle Temperature 255 - 300 °C Front - Zone 3 Temperature 260 - 305 °C Middle - Zone 2 Temperature 250 - 295 °C Rear - Zone 1 Temperature 240 - 280 °C Mold Temperature 50 - 80 °C Back Pressure 0.3 - 0.7 MPa Screw Speed 35 - 75 pm Shot to Cylinder Size 40 - 60 %	Drying Time	3 – 4	Hrs	
Melt Temperature 260 – 305 °C Nozzle Temperature 255 – 300 °C Front - Zone 3 Temperature 260 – 305 °C Middle - Zone 2 Temperature 250 – 295 °C Rear - Zone 1 Temperature 240 – 280 °C Mold Temperature 50 – 80 °C Back Pressure 0.3 – 0.7 MPa Screw Speed 35 – 75 pm Shot to Cylinder Size 40 – 60 %	Drying Time (Cumulative)	24	Hrs	
Nozzle Temperature 255 – 300 °C Front - Zone 3 Temperature 260 – 305 °C Middle - Zone 2 Temperature 250 – 295 °C Rear - Zone 1 Temperature 240 – 280 °C Mold Temperature 50 – 80 °C Back Pressure 0.3 – 0.7 MPa Screw Speed 35 – 75 pm Shot to Cylinder Size 40 – 60 %	Maximum Moisture Content	0.02	%	
Front - Zone 3 Temperature 260 – 305 °C Middle - Zone 2 Temperature 250 – 295 °C Rear - Zone 1 Temperature 240 – 280 °C Mold Temperature 50 – 80 °C Back Pressure 0.3 – 0.7 MPa Screw Speed 35 – 75 rpm Shot to Cylinder Size 40 – 60 %	Melt Temperature	260 – 305	°C	
Middle - Zone 2 Temperature 250 – 295 °C Rear - Zone 1 Temperature 240 – 280 °C Mold Temperature 50 – 80 °C Back Pressure 0.3 – 0.7 MPa Screw Speed 35 – 75 rpm Shot to Cylinder Size 40 – 60 %	Nozzle Temperature	255 – 300	°C	
Rear - Zone 1 Temperature 240 – 280 °C Mold Temperature 50 – 80 °C Back Pressure 0.3 – 0.7 MPa Screw Speed 35 – 75 rpm Shot to Cylinder Size 40 – 60 %	Front - Zone 3 Temperature	260 – 305	°C	
Mold Temperature 50 – 80 °C Back Pressure 0.3 – 0.7 MPa Screw Speed 35 – 75 rpm Shot to Cylinder Size 40 – 60 %	Middle - Zone 2 Temperature	250 – 295	°C	
Back Pressure 0.3 – 0.7 MPa Screw Speed 35 – 75 rpm Shot to Cylinder Size 40 – 60 %	Rear - Zone 1 Temperature	240 – 280	°C	
Screw Speed 35 – 75 rpm Shot to Cylinder Size 40 – 60 %	Mold Temperature	50 - 80	°C	
Shot to Cylinder Size 40 – 60 %	Back Pressure	0.3 – 0.7	MPa	
·	Screw Speed	35 – 75	rpm	
Vent Depth 0.038 - 0.076 mm	Shot to Cylinder Size	40 – 60	%	
	Vent Depth	0.038 - 0.076	mm	



- (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. 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.
- (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.

MORE INFORMATION

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