

LEXAN™ COPOLYMER HFD4412

REGION AMERICAS

DESCRIPTION

LEXAN HFD4412 is a 20% glass filled, injection moldable grade designed for high flow and superior surface appearance. Internal mold release.

TYPICAL PROPERTY VALUES

Revision 20170913

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, yld, Type I, 5 mm/min	96	MPa	ASTM D 638
Tensile Stress, brk, Type I, 5 mm/min	96	MPa	ASTM D 638
Tensile Strain, yld, Type I, 5 mm/min	3	%	ASTM D 638
Tensile Modulus, 5 mm/min	6400	MPa	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	159	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	5850	MPa	ASTM D 790
Tensile Stress, yield, 5 mm/min	110	MPa	ISO 527
Tensile Stress, break, 5 mm/min	110	MPa	ISO 527
Tensile Strain, yield, 5 mm/min	2.8	%	ISO 527
Tensile Strain, break, 5 mm/min	2.7	%	ISO 527
IMPACT			
Izod Impact, unnotched, 23°C	830	J/m	ASTM D 4812
Izod Impact, notched, 23°C	109	J/m	ASTM D 256
Instrumented Impact Total Energy, 23°C	21	J	ASTM D 3763
Izod Impact, unnotched 80*10*3 +23°C	42	kJ/m ²	ISO 180/1U
Izod Impact, unnotched 80*10*3 -30°C	40	kJ/m ²	ISO 180/1U
Izod Impact, notched 80*10*3 +23°C	7	kJ/m ²	ISO 180/1A
Izod Impact, notched 80*10*3 -30°C	7	kJ/m ²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm	8	kJ/m ²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm	8	kJ/m ²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*3 sp=62mm	43	kJ/m ²	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*3 sp=62mm	48	kJ/m ²	ISO 179/1eU
THERMAL			
HDT, 0.45 MPa, 3.2 mm, unannealed	130	°C	ASTM D 648

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
HDT, 1.82 MPa, 3.2mm, unannealed	125	°C	ASTM D 648
CTE, -40°C to 40°C, flow	3.E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	7.E-05	1/°C	ASTM E 831
CTE, 23°C to 80°C, flow	3.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
Vicat Softening Temp, Rate B/120	143	°C	ISO 306
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	127	°C	ISO 75/Af
Relative Temp Index, Elec	80	°C	UL 746B
Relative Temp Index, Mech w/impact	80	°C	UL 746B
Relative Temp Index, Mech w/o impact	80	°C	UL 746B
PHYSICAL			
Specific Gravity	1.3	-	ASTM D 792
Mold Shrinkage, flow, 3.2 mm (5)	0.1 – 0.3	%	SABIC method
Mold Shrinkage, xflow, 3.2 mm (5)	0.1 – 0.3	%	SABIC method
Melt Flow Rate, 300°C/1.2 kgf	15	g/10 min	ASTM D 1238
Density	1.35	g/cm ³	ISO 1183
Water Absorption, (23°C/sat)	0.3	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.12	%	ISO 62
Melt Volume Rate, MVR at 300°C/1.2 kg	14	cm ³ /10 min	ISO 1133
FLAME CHARACTERISTICS			
UL Recognized, 94HB Flame Class Rating (3)	0.3	mm	UL 94
Glow Wire Flammability Index 960°C, passes at	2	mm	IEC 60695-2-12
Glow Wire Ignitability Temperature, 1.0 mm	850	°C	IEC 60695-2-13
INJECTION MOLDING			
Drying Temperature	120	°C	
Drying Time	3 – 4	hrs	
Drying Time (Cumulative)	48	hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	290 – 310	°C	
Nozzle Temperature	280 – 305	°C	
Front - Zone 3 Temperature	290 – 310	°C	
Middle - Zone 2 Temperature	275 – 300	°C	
Rear - Zone 1 Temperature	265 – 290	°C	
Mold Temperature	70 – 95	°C	
Back Pressure	0.3 – 0.7	MPa	
Screw Speed	40 – 70	rpm	
Shot to Cylinder Size	40 – 60	%	

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Vent Depth	0.025 – 0.076	mm	

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