

# LEXANTM COPOLYMER EXL4019

### **REGION AMERICAS**

### **DESCRIPTION**

LEXAN EXL4019 is an opaque 9% Glass Fiber (GF) reinforced polycarbonate (PC) siloxane copolymer resin for injection molding (IM) applications requiring improved stiffness. This resin also offers improved ductility over conventional GF reinforced PC resins in combination with medium flow characteristics and excellent processability with opportunities for shorter IM cycle times when compared to standard PC. LEXAN EXL4019 resin is a product that may be an excellent candidate for a wide variety of applications. Available in limited colors only.

### **TYPICAL PROPERTY VALUES**

Revision 20230607

PROPERTIES         TYPICAL VALUES         UNITS         TEST METHODS           MECHANICAL <sup>(1)</sup> ************************************				
Tensile Stress, bfd, Type I, 5 mm/min         55         Min         ASTM D638           Tensile Stress, bft, Type I, 5 mm/min         45         Mra         ASTM D638           Tensile Strain, Jrd. Type I, 5 mm/min         14         %         ASTM D638           Tensile Strain, Jrd. Type I, 5 mm/min         3950         Mra         ASTM D638           Tensile Modulus, 5 mm/min, 50 mm span         103         Mra         ASTM D790           Flexural Modulus, 15 mm/min, 50 mm span         54         Mra         S0527           Tensile Stress, yield, 5 mm/min         48         Mra         S0527           Tensile Stress, yield, 5 mm/min         43         Mra         S0527           Tensile Strain, bird, 5 mm/min         43         Mra         S0527           Tensile Strain, bird, 5 mm/min         43         Mra         S0527           Tensile Strain, bird, 5 mm/min         43         Mra         S0527           Tensile Modulus, 1 mm/min         80         Mra         S0527           Tensile Strain, bird, 5 mm/min         43         Mra         S0527           Tensile Strain, bird, 5 mm/min         43         Mra         S0527           Tensile Strain, bird, 5 mm/min         50         Mra         S0527	PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Tensile Stress, brk, Type I, 5 mm/min         45         Mina         ASTM D638           Tensile Strain, Jot, Type I, 5 mm/min         43         6         ASTM D638           Tensile Modulus, 5 mm/min         3950         MPa         ASTM D638           Flexural Stress, yld, 1.3 mm/min, 50 mm span         3950         MPa         ASTM D790           Flexural Modulus, 1.3 mm/min, 50 mm span         3900         MPa         ASTM D790           Tensile Stress, yield, 5 mm/min         48         MPa         OS 527           Tensile Stress, break, 5 mm/min         48         MPa         ISO 527           Tensile Strain, break, 5 mm/min         48         MPa         ISO 527           Tensile Strain, break, 5 mm/min         8.7         %         ISO 527           Tensile Strain, break, 5 mm/min         8.7         %         ISO 527           Tensile Strain, break, 5 mm/min         8.7         %         ISO 527           Tensile Strain, break, 5 mm/min         8.7         %         ISO 527           Tensile Strain, break, 5 mm/min         8.7         %         ISO 527           Tensile Strain, break, 5 mm/min         8.7         %         ISO 527           Tensile Strain, break, 5 mm/min         4.8         MPa         ISO 178 <td>MECHANICAL (1)</td> <td></td> <td></td> <td></td>	MECHANICAL (1)			
Tensile Strain, yld. Type I, 5 mm/min         4.3         %         ASTM DG38           Tensile Strain, brk, Type I, 5 mm/min         14         %         ASTM DG38           Tensile Strain, brk, Type I, 5 mm/min         3950         MPa         ASTM DG38           Tensile Modulus, 5 mm/min 50 mm span         3500         MPa         ASTM D790           Flexural Modulus, 1.3 mm/min, 50 mm span         3500         MPa         ASTM D790           Tensile Stress, yleld, 5 mm/min         48         MPa         150 527           Tensile Stress, break, 5 mm/min         8.7         %         150 527           Tensile Strain, break, 5 mm/min         8.7         %         150 527           Tensile Modulus, 1 mm/min         8.7         %         150 527           Tensile Strain, break, 5 mm/min         8.7         %         150 527           Tensile Modulus, 1 mm/min         8.7         %         150 527           Tensile Strain, break, 5 mm/min         8.7         %         150 527           Tensile Strain, break, 5 mm/min         8.7         %         150 527           Tensile Strain, break, 5 mm/min         8.7         8         150 527           Tensile Strain, break 5, 5 mm/min         4.7         8         150 527 <tr< td=""><td>Tensile Stress, yld, Type I, 5 mm/min</td><td>55</td><td>MPa</td><td>ASTM D638</td></tr<>	Tensile Stress, yld, Type I, 5 mm/min	55	MPa	ASTM D638
Tensile Strain, brk, Type I, 5 mm/min         14         %         ASTM D638           Tensile Modulus, 5 mm/min         3950         MPa         ASTM D790           Flexural Stress, yld, 1.3 mm/min, 50 mm span         103         MPa         ASTM D790           Tensile Stress, yield, 5 mm/min         54         MPa         ASTM D790           Tensile Stress, break, 5 mm/min         48         MPa         105 527           Tensile Stress, break, 5 mm/min         4.3         %         105 527           Tensile Strain, break, 5 mm/min         4.3         %         105 527           Tensile Strain, break, 5 mm/min         8.7         %         105 527           Tensile Strain, break, 5 mm/min         9.8         MPa         105 527           Tensile Strain, break, 5 mm/min         4.3         %         105 527           Tensile Strain, break, 5 mm/min         9.0         MPa         105 527           Tensile Strain, break, 5 mm/min         9.0         MPa         105 527           Tensile Strain, break, 5 mm/min         9.0         MPa         105 127           Tensile Strain, break, 5 mm/min         4.0         MPa         107 182           Tensile Strain, break 5 mm/min         4.0         10 18         10 18         10 18 <td>Tensile Stress, brk, Type I, 5 mm/min</td> <td>45</td> <td>MPa</td> <td>ASTM D638</td>	Tensile Stress, brk, Type I, 5 mm/min	45	MPa	ASTM D638
Tensile Modulus, 5 mm/min         3990         MPa         ASTM D638           Flexural Stress, yld, 1.3 mm/min, 50 mm span         103         MPa         ASTM D790           Flexural Modulus, 1.3 mm/min, 50 mm span         3500         MPa         ASTM D790           Tensile Stress, yild, 5 mm/min         48         MPa         ISO 527           Tensile Stress, break, 5 mm/min         48         MPa         ISO 527           Tensile Strain, yield, 5 mm/min         43         %         ISO 527           Tensile Strain, break, 5 mm/min         48.7         %         ISO 527           Tensile Modulus, 1 mm/min         3900         MPa         ISO 527           Tensile Modulus, 2 mm/min         98         MPa         ISO 178           Flexural Modulus, 2 mm/min         98         MPa         ISO 180           Tensile Modulus, 1 mm/min         98         MPa         ISO 180           Infexural Modulus, 2 mm/min         98         MPa         ISO 180           Infexural Modulus, 2 mm/min         98         MPa         ISO 180           Infexural Modulus, 2 mm/min         98         MPa         ISO 180           Infexural Stress, yield, 2 mm/min         48         MPa         ISO 180           Infexural Stress, y	Tensile Strain, yld, Type I, 5 mm/min	4.3	%	ASTM D638
Flexural Stress, yield, 1.3 mm/min, 50 mm span         193         MPa         ASTM D790           Tensile Stress, yield, 5 mm/min         54         MPa         ISSTM D790           Tensile Stress, yield, 5 mm/min         48         MPa         150 527           Tensile Stress, break, 5 mm/min         48         MPa         150 527           Tensile Strain, break, 5 mm/min         87         80         150 527           Tensile Strain, break, 5 mm/min         3900         MPa         150 527           Tensile Strain, break, 5 mm/min         3900         MPa         150 527           Tensile Strain, break, 5 mm/min         3900         MPa         150 178           Tensile Strain, break, 5 mm/min         3900         MPa         150 178           Tensile Strain, break, 5 mm/min         3900         MPa         150 178           Tensile Strain, break, 5 mm/min         3900         MPa         150 178           Tensile Strain, break, 5 mm/min         3900         MPa         30 178           Tensile Strain, break, 5 mm/min         3900         MPa         30 178           Tensile Strain, break, 5 mm/min         30 180 178         30 178           Every all Strain, 1500         MPa         30 178         30 178 <t< td=""><td>Tensile Strain, brk, Type I, 5 mm/min</td><td>14</td><td>%</td><td>ASTM D638</td></t<>	Tensile Strain, brk, Type I, 5 mm/min	14	%	ASTM D638
Flexural Modulus, 1.3 mm/min, 50 mm span         3500         MPa         ASTM D790           Tensile Stress, yield, 5 mm/min         54         MPa         150 527           Tensile Stress, break, 5 mm/min         48         MPa         150 527           Tensile Stress, break, 5 mm/min         43         50 527         150 527           Tensile Modulus, 1 mm/min         3900         MPa         150 527           Flexural Stress, yield, 2 mm/min         3900         MPa         150 178           Flexural Stress, yield, 2 mm/min         3450         MPa         150 178           Flexural Modulus, 2 mm/min         3450         Jm         251 178           Impact Till         3450         Jm         351 178           Impact Till         350         Jm         351 178           Izod Impact, notched, 30°C         150         Jm         351 179           Izod Impact, notched 80°10°3 +23°C         40         Jm²         351 180/11           Izod Impact, notched 80°10°3 +23°C         18         Jm²         150 180/11           Izod Impact, notched 80°10°3 +23°C         18         Jm²         150 180/11           Izod Impact, notched 80°10°3 +23°C         18         Jm²         150 180/11           Izod Impact, notch	Tensile Modulus, 5 mm/min	3950	MPa	ASTM D638
Tensile Stress, yield, 5 mm/min         54         MPa         ISO 527           Tensile Stress, break, 5 mm/min         48         MPa         ISO 527           Tensile Strain, yield, 5 mm/min         4.3         %         ISO 527           Tensile Strain, break, 5 mm/min         8.7         %         ISO 527           Tensile Modulus, 1 mm/min         3900         MPa         ISO 178           Flexural Modulus, 2 mm/min         450         MPa         ISO 178           Flexural Modulus, 2 mm/min         450         MPa         ISO 178           Flexural Modulus, 2 mm/min         450         MPa         ISO 178           Impact, 100         WPa         ISO 178         ISO 178           Impact, 100         MPa         ISO 178         ISO 180           Izod Impact, unotched, 23°C         345         J/m         ASTM D256           Izod Impact, unotched 80°10°3 +23°C         NB         Id/m²         ISO 180/10           Izod Impact, unotched 80°10°3 +23°C         Pa         Id/m²         ISO 180/10           Izod Impact, notched 80°10°3 +23°C         25         Id/m²         ISO 180/1A           Izod Impact, notched 80°10°3 +23°C         25         Id/m²         ISO 180/1A           Charpy 23°C, V-notch Edgew	Flexural Stress, yld, 1.3 mm/min, 50 mm span	103	MPa	ASTM D790
Tensile Stress, break, 5 mm/min         48         MPa         ISO 527           Tensile Strain, yield, 5 mm/min         4.3         %         ISO 527           Tensile Strain, break, 5 mm/min         8.7         %         ISO 527           Tensile Modulus, 1 mm/min         3900         MPa         ISO 527           Flexural Stress, yield, 2 mm/min         98         MPa         ISO 178           Flexural Modulus, 2 mm/min         3450         MPa         SO 178           Impact, 100         MPa         ASTM D256         MPa           Impact, notched, 23°C         350         J/m         ASTM D256           Instrumented Dart Impact fotal Energy, 23°C         40         J/m         ASTM D3763           Izod Impact, unnotched 80°10°3 +23°C         NB         J/m²         ISO 180/10           Izod Impact, notched 80°10°3 +23°C         NB         J/m²         ISO 180/10           Izod Impact, notched 80°10°3 +23°C         NB         J/m²         ISO 180/10           Izod Impact, notched 80°10°3 +23°C         NB         J/m²         ISO 180/10           Izod Impact, notched 80°10°3 +23°C         NB         J/m²         ISO 180/10           Izod Impact, notched 80°10°3 +23°C         NB         J/m²         ISO 180/10 <tr< td=""><td>Flexural Modulus, 1.3 mm/min, 50 mm span</td><td>3500</td><td>MPa</td><td>ASTM D790</td></tr<>	Flexural Modulus, 1.3 mm/min, 50 mm span	3500	MPa	ASTM D790
Tensile Strain, yield, 5 mm/min         4.3         %         ISO 527           Tensile Strain, break, 5 mm/min         8.7         %         ISO 527           Tensile Modulus, 1 mm/min         3900         MPa         ISO 527           Flexural Stress, yield, 2 mm/min         98         MPa         ISO 178           Impact Professional Modulus, 2 mm/min         3450         MPa         ISO 178           Impact Professional Modulus, 2 mm/min         3450         Jm         ASTM D256           Impact Professional Modulus, 2 mm/min         3450         Jm         ASTM D256           Impact Professional Modulus, 2 mm/min         3450         Jm         ASTM D256           Impact Professional Modulus, 2 mm/min         3450         Jm         ASTM D256           Impact Professional Modulus, 2 mm/min         3450         Jm         ASTM D256           Izad Impact, notched, 23°C         40         Jm         ASTM D256           Izad Impact, unnotched 80°10°3 +23°C         NB         I/m²         ISO 180/10           Izad Impact, unnotched 80°10°3 +23°C         10         I/m²         ISO 180/10           Izad Impact, unnotched 80°10°3 +23°C         10         I/m²         ISO 180/10           Izad Impact, unnotched 80°10°3 +23°C         10         I	Tensile Stress, yield, 5 mm/min	54	MPa	ISO 527
Tensile Strain, break, 5 mm/min         8.7         %         ISO 527           Tensile Modulus, 1 mm/min         3900         MPa         ISO 527           Flexural Stress, yield, 2 mm/min         98         MPa         ISO 178           Flexural Modulus, 2 mm/min         3450         MPa         ISO 178           IMPACT <sup>(1)</sup> USD 178         IMPA         ASTM 0256           Izod Impact, notched, 30°C         345         J/m         ASTM 0256           Izod Impact, notched, 30°C         40         J/m         ASTM 03763           Izod Impact, unnotched 80°10°3 +23°C         NB         I/m²         ISO 180/10           Izod Impact, unnotched 80°10°3 +23°C         NB         I/m²         ISO 180/10           Izod Impact, notched 80°10°3 +23°C         NB         I/m²         ISO 180/10           Izod Impact, notched 80°10°3 +23°C         NB         I/m²         ISO 180/10           Izod Impact, notched 80°10°3 sp=62mm         5         I/m²         ISO 180/10           Izod Impact, notched 80°10°3 sp=62mm         5         I/m²         ISO 179/1eA           Charpy 30°C, Vnotch Edgew 80°10°3 sp=62mm         15         I/m²         ISO 179/1eA           Charpy 30°C, Unnotch Edgew 80°10°3 sp=62mm         NB         I/m²         SIN	Tensile Stress, break, 5 mm/min	48	MPa	ISO 527
Tensile Modulus, 1 mm/min         3900         MPa         ISO 527           Flexural Stress, yield, 2 mm/min         98         MPa         ISO 178           Flexural Modulus, 2 mm/min         3450         MPa         ISO 178           IMPACT (**)         Use of Impact, notched, 23°C         345         J/m         ASTM D256           Izod Impact, notched, 30°C         150         J/m         ASTM D256           Izod Impact, unnotched 80°10°3 +23°C         NB         Id/m²         ASTM D3763           Izod Impact, unnotched 80°10°3 +23°C         NB         Id/m²         ISO 180/1U           Izod Impact, unnotched 80°10°3 +23°C         25         Id/m²         ISO 180/1U           Izod Impact, notched 80°10°3 +23°C         25         Id/m²         ISO 180/1U           Izod Impact, notched 80°10°3 +23°C         25         Id/m²         ISO 180/1A           Izod Impact, notched 80°10°3 sp=62mm         25         Id/m²         ISO 179/1eA           Charpy -30°C, V-notch Edgew 80°10°3 sp=62mm         NB         Id/m²         ISO 179/1eA           Charpy -30°C, Unnotch Edgew 80°10°3 sp=62mm         NB         Id/m²         ISO 179/1eA           Charpy -30°C, Unnotch Edgew 80°10°3 sp=62mm         NB         Id/m²         ISO 179/1eA           Charpy -30°C,	Tensile Strain, yield, 5 mm/min	4.3	%	ISO 527
Flexural Stress, yield, 2 mm/min         98         MPa         ISO 178           Flexural Modulus, 2 mm/min         3450         MPa         ISO 178           IMPACT (1)         IMPACT (2)         IMPACT (3)	Tensile Strain, break, 5 mm/min	8.7	%	ISO 527
Flexural Modulus, 2 mm/min         3450         MPa         ISO 178           IMPACT (¹)         ASTM D256           Izod Impact, notched, 23°C         345         J/m         ASTM D256           Instrumented Dart Impact Total Energy, 23°C         40         J/m         ASTM D3763           Izod Impact, unnotched 80°10°3 +23°C         NB         I/m²         ISO 180/10           Izod Impact, notched 80°10°3 +23°C         NB         I/m²         ISO 180/10           Izod Impact, notched 80°10°3 +23°C         25         I/m²         ISO 180/1A           Izod Impact, notched 80°10°3 sp=62mm         15         I/m²         ISO 179/1eA           Charpy 23°C, V-notch Edgew 80°10°3 sp=62mm         15         I/m²         ISO 179/1eA           Charpy 23°C, Unnotch Edgew 80°10°3 sp=62mm         NB         I/m²         ISO 179/1eA           Charpy 23°C, Unnotch Edgew 80°10°3 sp=62mm         NB         I/m²         ISO 179/1eA           Charpy 23°C, Unnotch Edgew 80°10°3 sp=62mm         NB         I/m²         ISO 179/1eA           Charpy 30°C, Unnotch Edgew 80°10°3 sp=62mm         18         I/m²         ISO 179/1eA           Charpy 30°C, Unnotch Edgew 80°10°3 sp=62mm	Tensile Modulus, 1 mm/min	3900	MPa	ISO 527
IMPACT (1)           izod Impact, notched, 23°C         345         J/m         ASTM D256           izod Impact, notched, -30°C         150         J/m         ASTM D256           izod Impact, unnotched 80°10°3 +23°C         40         J/m         ASTM D3763           izod Impact, unnotched 80°10°3 +23°C         NB         kJ/m²         150 180/10           izod Impact, unnotched 80°10°3 +23°C         NB         kJ/m²         150 180/10           izod Impact, notched 80°10°3 +23°C         10         kJ/m²         150 180/1A           izod Impact, notched 80°10°3 +23°C         10         kJ/m²         150 180/1A           izod Impact, notched 80°10°3 +23°C         10         kJ/m²         150 180/1A           izod Impact, notched 80°10°3 +23°C         15         kJ/m²         150 180/1A           Charpy 23°C, V-notch Edgew 80°10°3 sp=62mm         15         kJ/m²         150 179/1eA           Charpy 23°C, Unnotch Edgew 80°10°3 sp=62mm         NB         kJ/m²         150 179/1eU           Charpy 30°C, Unnotch Edgew 80°10°3 sp=62mm         NB         kJ/m²         150 179/1eU           Charpy 30°C, Unnotch Edgew 80°10°3 sp=62mm         NB         kJ/m²         ASTM D1525           Charpy 30°C, Unnotch Edgew 80°10°3 sp=62mm         146         C         ASTM D1525	Flexural Stress, yield, 2 mm/min	98	MPa	ISO 178
Izod Impact, notched, 23°C         345         I/m         ASTM D256           Izod Impact, notched, 30°C         150         J/m         ASTM D256           Instrumented Dart Impact Total Energy, 23°C         40         J         ASTM D3763           Izod Impact, unnotched 80°10°3 +23°C         NB         kJ/m²         ISO 180/1U           Izod Impact, notched 80°10°3 +23°C         NB         kJ/m²         ISO 180/1A           Izod Impact, notched 80°10°3 +23°C         25         kJ/m²         ISO 180/1A           Izod Impact, notched 80°10°3 sp=62mm         25         kJ/m²         ISO 180/1A           Charpy 23°C, V-notch Edgew 80°10°3 sp=62mm         15         kJ/m²         ISO 179/1eA           Charpy 23°C, Unnotch Edgew 80°10°3 sp=62mm         NB         kJ/m²         ISO 179/1eA           Charpy 23°C, Unnotch Edgew 80°10°3 sp=62mm         NB         kJ/m²         ISO 179/1eA           Charpy 30°C, Unnotch Edgew 80°10°3 sp=62mm         NB         kJ/m²         ISO 179/1eA           Charpy 30°C, Unnotch Edgew 80°10°3 sp=62mm         NB         kJ/m²         SO 179/1eA           Charpy 30°C, Unnotch Edgew 80°10°3 sp=62mm         NB         kJ/m²         SO 179/1eA           Charpy 30°C, Unnotch Edgew 80°10°3 sp=62mm         NB         K         C         ASTM D1525	Flexural Modulus, 2 mm/min	3450	MPa	ISO 178
Izod Impact, notched, -30°C         150         J/m         ASTM D256           Instrumented Dart Impact Total Energy, 23°C         40         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         25         kJ/m²         ISO 180/1A           Izod Impact, notched 80*10*3 sp=62mm         10         kJ/m²         ISO 179/1eA           Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm         15         kJ/m²         ISO 179/1eA           Charpy 23°C, Unnotch Edgew 80*10*3 sp=62mm         NB         kJ/m²         ISO 179/1eA           Charpy 30°C, Unnotch Edgew 80*10*3 sp=62mm         NB         kJ/m²         ISO 179/1eA           Charpy 30°C, Unnotch Edgew 80*10*3 sp=62mm         NB         kJ/m²         ISO 179/1eA           Charpy 30°C, Unnotch Edgew 80*10*3 sp=62mm         NB         kJ/m²         SO 179/1eA           Charpy 30°C, Unnotch Edgew 80*10*3 sp=62mm         NB         kJ/m²         SO 179/1eA           Charpy 30°C, Unnotch Edgew 80*10*3 sp=62mm         146         °C         ASTM D1525           HDT, 1.82 MPa, 3.2mm, unannealed         137         °C         ASTM D648	IMPACT (1)			
Instrumented Dart Impact Total Energy, 23°C         40         J         ASTM D3763           Izod Impact, unnotched 80°10°3 +23°C         NB         kJ/m²         ISO 180/1U           Izod Impact, unnotched 80°10°3 +23°C         NB         kJ/m²         ISO 180/1U           Izod Impact, notched 80°10°3 +23°C         25         kJ/m²         ISO 180/1A           Izod Impact, notched 80°10°3 spe62mm         10         kJ/m²         ISO 179/1eA           Charpy 23°C, V-notch Edgew 80°10°3 spe62mm         15         kJ/m²         ISO 179/1eA           Charpy 23°C, Unnotch Edgew 80°10°3 spe62mm         NB         kJ/m²         ISO 179/1eU           Charpy 30°C, Unnotch Edgew 80°10°3 spe62mm         NB         kJ/m²         ISO 179/1eU           Charpy 30°C, Unnotch Edgew 80°10°3 spe62mm         NB         kJ/m²         ISO 179/1eU           Charpy 30°C, Unnotch Edgew 80°10°3 spe62mm         NB         kJ/m²         ISO 179/1eU           Charpy 30°C, Unnotch Edgew 80°10°3 spe62mm         NB         kJ/m²         SO 179/1eU           Charpy 30°C, Unnotch Edgew 80°10°3 spe62mm         NB         kJ/m²         SO 179/1eU           Charpy 30°C, Unnotch Edgew 80°10°3 spe62mm         146         °C         ASTM D1525           HDT, 1.82 MPa, 3.2mm, unannealed         146         °C         ASTM D	Izod Impact, notched, 23°C	345	J/m	ASTM D256
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         25         kJ/m²         ISO 180/1A           Izod Impact, notched 80°10°3 -30°C         10         kJ/m²         ISO 179/1eA           Charpy 23°C, V-notch Edgew 80°10°3 sp=62mm         25         kJ/m²         ISO 179/1eA           Charpy -30°C, V-notch Edgew 80°10°3 sp=62mm         15         kJ/m²         ISO 179/1eA           Charpy -30°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           Charpy -30°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         ASTM D1525           THERMAL (¹¹)         Vicat Softening Temp, Rate B/50         146         °C         ASTM D648           HDT, 1.82 MPa, 3.2mm, unannealed         137         °C         ASTM D648           CTE, -40°C to 40°C, flow         4.7E-05         1/°C         ASTM E831	Izod Impact, notched, -30°C	150	J/m	ASTM D256
Izod Impact, unnotched 80°10°3 -30°C         NB         kJ/m²         ISO 180/1U           Izod Impact, notched 80°10°3 +23°C         25         kJ/m²         ISO 180/1A           Izod Impact, notched 80°10°3 -30°C         10         kJ/m²         ISO 180/1A           Charpy 23°C, V-notch Edgew 80°10°3 sp=62mm         25         kJ/m²         ISO 179/1eA           Charpy -30°C, V-notch Edgew 80°10°3 sp=62mm         15         kJ/m²         ISO 179/1eA           Charpy -30°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 (¹¹)         Vicat Softening Temp, Rate B/50         146         °C         ASTM D1525           HDT, 1.82 MPa, 3.2mm, unannealed         137         °C         ASTM E831           CTE, -40°C to 40°C, flow         4.7E-05         1/°C         ASTM E831	Instrumented Dart Impact Total Energy, 23°C	40	J	ASTM D3763
Izod Impact, notched 80*10*3 +23°C         25         Izof Impact, notched 80*10*3 -30°C         ISO 180/1A           Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm         25         Izof Impact, notched 80*10*3 sp=62mm         ISO 179/1eA           Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm         15         Izof Impact, notched Edgew 80*10*3 sp=62mm         ISO 179/1eA           Charpy -30°C, Unnotch Edgew 80*10*3 sp=62mm         NB         Izof Impact, notched Edgew 80*10*3 sp=62mm         Ixof Impact, notched Impact, notched Impact, notched Impact, notched Edgew 80*10*3 sp=62mm         Ixof Impact, notched Imp	Izod Impact, unnotched 80*10*3 +23°C	NB	kJ/m²	ISO 180/1U
Izod Impact, notched 80°10°3 -30°C         10         kJ/m²         ISO 180/1A           Charpy 23°C, V-notch Edgew 80°10°3 sp=62mm         25         kJ/m²         ISO 179/1eA           Charpy 23°C, V-notch Edgew 80°10°3 sp=62mm         15         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         146         °C         ASTM D1525           HDT, 1.82 MPa, 3.2mm, unannealed         137         °C         ASTM E831           CTE, -40°C to 40°C, flow         4.7E-05         1/°C         ASTM E831	Izod Impact, unnotched 80*10*3 -30°C	NB	kJ/m²	ISO 180/1U
Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm         25         kJ/m²         ISO 179/1eA           Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm         15         kJ/m²         ISO 179/1eA           Charpy -30°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         146         °C         ASTM D1525           HDT, 1.82 MPa, 3.2mm, unannealed         137         °C         ASTM D648           CTE, -40°C to 40°C, flow         4.7E-05         1/°C         ASTM E831           CTE, -40°C to 40°C, xflow         7.E-05         1/°C         ASTM E831	Izod Impact, notched 80*10*3 +23°C	25	kJ/m²	ISO 180/1A
Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm         15         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         146         °C         ASTM D1525           HDT, 1.82 MPa, 3.2mm, unannealed         137         °C         ASTM D648           CTE, -40°C to 40°C, flow         4.7E-05         1/°C         ASTM E831           CTE, -40°C to 40°C, xflow         7.E-05         1/°C         ASTM E831	Izod Impact, notched 80*10*3 -30°C	10	kJ/m²	ISO 180/1A
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         146         °C         ASTM D1525           HDT, 1.82 MPa, 3.2mm, unannealed         137         °C         ASTM D648           CTE, -40°C to 40°C, flow         4.7E-05         1/°C         ASTM E831           CTE, -40°C to 40°C, xflow         7.E-05         1/°C         ASTM E831	Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm	25	kJ/m²	ISO 179/1eA
Charpy -30°C, Unnotch Edgew 80°10°3 sp=62mm         NB         kJ/m²         ISO 179/1eU           THERMAL <sup>(1)</sup> Vicat Softening Temp, Rate B/50         146         °C         ASTM D1525           HDT, 1.82 MPa, 3.2mm, unannealed         137         °C         ASTM D648           CTE, -40°C to 40°C, flow         4.7E-05         1/°C         ASTM E831           CTE, -40°C to 40°C, xflow         7.E-05         1/°C         ASTM E831	Charpy -30°C, V-notch Edgew 80*10*3 sp=62mm	15	kJ/m²	ISO 179/1eA
THERMAL (1)           Vicat Softening Temp, Rate B/50         146         °C         ASTM D1525           HDT, 1.82 MPa, 3.2mm, unannealed         137         °C         ASTM E831           CTE, -40°C to 40°C, flow         4.7E-05         1/°C         ASTM E831           CTE, -40°C to 40°C, xflow         7.E-05         1/°C         ASTM E831	Charpy 23°C, Unnotch Edgew 80*10*3 sp=62mm	NB	kJ/m²	ISO 179/1eU
Vicat Softening Temp, Rate B/50         146         °C         ASTM D1525           HDT, 1.82 MPa, 3.2mm, unannealed         137         °C         ASTM D648           CTE, -40°C to 40°C, flow         4.7E-05         1/°C         ASTM E831           CTE, -40°C to 40°C, xflow         7.E-05         1/°C         ASTM E831	Charpy -30°C, Unnotch Edgew 80*10*3 sp=62mm	NB	kJ/m²	ISO 179/1eU
HDT, 1.82 MPa, 3.2mm, unannealed       137       °C       ASTM D648         CTE, -40°C to 40°C, flow       4.7E-05       1/°C       ASTM E831         CTE, -40°C to 40°C, xflow       7.E-05       1/°C       ASTM E831	THERMAL (1)			
CTE, -40°C to 40°C, flow       4.7E-05       1/°C       ASTM E831         CTE, -40°C to 40°C, xflow       7.E-05       1/°C       ASTM E831	Vicat Softening Temp, Rate B/50	146	°C	ASTM D1525
CTE, -40°C to 40°C, xflow 7.E-05 1/°C ASTM E831	HDT, 1.82 MPa, 3.2mm, unannealed	137	°C	ASTM D648
	CTE, -40°C to 40°C, flow	4.7E-05	1/°C	ASTM E831
CTE -40°C to 40°C flow 4.75.05 11°C ISO 11350.2	CTE, -40°C to 40°C, xflow	7.E-05	1/°C	ASTM E831
-1.12-05 1/ C 150 11333-2	CTE, -40°C to 40°C, flow	4.7E-05	1/°C	ISO 11359-2



PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
CTE, -40°C to 40°C, xflow	7.E-05	1/°C	ISO 11359-2
Ball Pressure Test, 75°C +/- 2°C	Passes	-	IEC 60695-10-2
Vicat Softening Temp, Rate B/50	146	°C	ISO 306
Vicat Softening Temp, Rate B/120	146	°C	ISO 306
HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm	135	°C	ISO 75/Ae
Relative Temp Index, Elec (2)	80	°C	UL 746B
Relative Temp Index, Mech w/impact (2)	80	°C	UL 746B
Relative Temp Index, Mech w/o impact (2)	80	°C	UL 746B
PHYSICAL (1)			
Specific Gravity	1.25	-	ASTM D792
Mold Shrinkage, flow, 3.2 mm (3)	0.2 - 0.6	%	SABIC method
Mold Shrinkage, xflow, 3.2 mm (3)	0.2 – 0.6	%	SABIC method
Melt Flow Rate, 300°C/1.2 kgf	7.5	g/10 min	ASTM D1238
Density	1.25	g/cm³	ISO 1183
Water Absorption, (23°C/saturated)	0.15	%	ISO 62-1
Moisture Absorption (23°C / 50% RH)	0.4	%	ISO 62
Melt Volume Rate, MVR at 300°C/1.2 kg	6	cm³/10 min	ISO 1133
FLAME CHARACTERISTICS (2)			
UL Yellow Card Link	E121562-508391	-	
UL Recognized, 94HB Flame Class Rating	≥0.75	mm	UL 94
INJECTION MOLDING (4)			
Drying Temperature	120	°C	
Drying Time	3 – 4	Hrs	
Drying Time (Cumulative)	48	Hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	310 – 330	°C	
Nozzle Temperature	305 – 325	°C	
Front - Zone 3 Temperature			
Tront Zone 3 remperature	310 – 330	°C	
Middle - Zone 2 Temperature	310 - 330 300 - 320	°C	
•			
Middle - Zone 2 Temperature	300 – 320	°C	
Middle - Zone 2 Temperature  Rear - Zone 1 Temperature	300 – 320 290 – 310	°C	
Middle - Zone 2 Temperature  Rear - Zone 1 Temperature  Mold Temperature	300 – 320 290 – 310 80 – 115	°C °C	
Middle - Zone 2 Temperature  Rear - Zone 1 Temperature  Mold Temperature  Back Pressure	300 – 320 290 – 310 80 – 115 0.3 – 0.7	°C °C °C MPa	

<sup>(1)</sup> 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.

## **MORE INFORMATION**

<sup>(2)</sup> 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.

<sup>(3)</sup> 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.

<sup>(4)</sup> 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**

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